

ISA² WORK PROGRAMME

2018

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FOREWORD

The structure of the ISA² work programme used in this document is designed to help identify links between similar initiatives by grouping them together in "packages".

This document gives a detailed description of each action in the work programme along with detailed budgetary information.

The actions are based on proposals from the Commission and/or the Member States.

Actions under the ISA² programme are continuously coordinated and aligned with ongoing work under other EU initiatives. Similarly, the ISA^s programme supports these and similar initiatives whenever they contribute to interoperability between EU public administrations.

1 KEY AND GENERIC INTEROPERABILITY ENABLERS

1.1 ACCESS TO BASE REGISTRIES (2016.28)

1.1.1 IDENTIFICATION OF THE ACTION

Type of Activity	Common frameworks
Service in charge	DG DIGIT.D.2
Associated Services	

1.1.2 EXECUTIVE SUMMARY

The Communication on the Digital Single Market Strategy states that public services in Europe have embraced new technologies to varying degrees. However more can be done in order to modernise public administrations, achieve cross-border interoperability and facilitate easy interactions with citizens.

One way to achieve efficiency and increase user-friendliness is the once-only principle, meaning that instead of asking the citizen for information that they have already provided, public administrations will reuse the information they already have. The eGovernment action plan 2016-2020 states that only in 48% of cases do public administrations reuse information about citizens and businesses that they already possess.

This Action will contribute towards achieving the goals stated in the DSM Strategy and Action Plan. Base registries are authentic sources of data for public administrations. As such, they are one of the basic building blocks of public services and the key to making the once-only principle a reality.

The situation on access and interconnection of base registries is varied. Most Member States have realized the importance of interconnecting their base registries and are implementing interconnection infrastructures in order to achieve this.

On the European level, some important initiatives are in the process of being developed. The Directive on the Interconnection of Business Registries (**Directive 2012/17/EU**) mandates the interconnection of the business registries of all the Member States and also has a provision on the construction of an interconnecting infrastructure. This has been achieved with the BRIS infrastructure that went live on July 2017. The e-Justice Portal also serves as an important point for the interconnection of different types of registries. A first interconnection of the national Insolvency Registries has been in operation on the e-Justice Portal since 2014 and presently the Commission and Member States are carrying out activities towards an obligatory interconnection further to **Regulation (EU) 848/2015** by mid-2019. Work is also ongoing with respect to the voluntary interconnection of Member States' Land Registers. Three main problems that hinder the work on the interconnection of base registries and the once-only principle have been identified:

- 1) There is a lack of an overview of solutions that have already been developed and could be reused in order to facilitate the interconnection and access to base registries. Reusing solutions could make

the development of base registries and interconnecting infrastructures much faster and more cost-efficient.

2) The exchange and promotion of best practices among Member States could also help in speeding up development and overcome certain problems that are being faced by developers. Currently there is a lack of such guidelines.

3) There is no overview and detailed analysis of the current state of affairs on base registry interconnection and the once-only principle in the individual Member States. This overview is a pressing priority, as it is needed in order to develop the right policies on the European level and also to identify missing solutions.

The Action on Base Registries has been addressing these three challenges. A Catalogue of Reusable Solutions for Base Registries has been developed and will continue to be updated. In parallel, a set of guidelines for dealing with challenges that are often encountered when trying to set up registries and making them interoperable has also been drawn up.

The third challenge has also been tackled and has resulted in a series of descriptions of the state-of-affairs in base registry access and interconnection in the different Member States. These profiles are in the process of being validated.

This more detailed analysis of the state of affairs will serve as input for the tackling of the first two challenges, but also as input to the formulation of European Commission policies on the once only principle. Any policies that the EC enacts need to keep in mind the particular situations of the Member States and the subsidiarity principle. The ways to achieve the objective of interconnection and access to base registers and the information they contain, may differ depending on the particular institutional context of each Member State. But keeping in mind the subsidiarity principle, efforts should be made to achieve a certain level of harmonisation even if it requires the introduction of changes in national systems, procedures and practices.

The next phase of the Action will concentrate on coming up with an initial Framework on Base Registry Access and Interconnection. This Framework will be aligned with the European Interoperability Framework, and consulted with the Member States.

1.1.3 OBJECTIVES

- Create a Cartography of Reusable Solutions for Base Registry Interconnection
- Create Guidelines for Successful Base Registry Interconnection
- Map out the state of play for base registries in all 28 EU Member States, plus non-MS ISA countries and some relevant accession countries
- Continuously update the three previous objectives in order to keep them up to date and relevant
- Formulate a Framework on Base Registry Access and Interconnection

1.1.4 SCOPE

The current phases of Action will aim at the improvement and promotion of three important elements which have been delivered in the last phase and which will be further expanded in future phases:

- 1) Cartography of Reusable Solutions for Base Registry Interconnection
- 2) Guidelines for Successful Base Registry Interconnection
- 3) State of Play of Base Registry Interconnection in the EU and MS

These three deliverables will be displayed in a user-friendly way in order for interested parties to be able to get the information they seek as soon as possible without having to search for a long time.

The next phase of the Action will expand upon the work done under the previous phases, whose main output have been the Catalogue of Reusable Solutions, Guidelines for Base Registry Access and Interconnection, as well as MS profiles, and formulate a Framework on Base Registry Access and Interconnection.

1.1.5 ACTION PRIORITY

Base Registries form one of the most important building blocks of public services, as they contain the data which many of these services then use. The Once-Only Principle is listed as one of the key priorities for the European Commission under the Digital Single Market Strategy, and base registries play a key role in making this goal a reality.

1.1.5.1 Contribution to the interoperability landscape

The contribution of the action to the interoperability landscape, measured by the importance and necessity of the action to complete the interoperability landscape across the Union

Question	Answer
<p><i>How does the proposal contribute to improving interoperability among public administrations and with their citizens and businesses across borders or policy sectors in Europe?</i></p> <p><i>In particular, how does it contribute to the implementation of:</i></p> <ul style="list-style-type: none"> • <i>the new European Interoperability Framework (EIF),</i> • <i>the Interoperability Action Plan and/or</i> • <i>the Connecting European Facility (CEF) Telecom guidelines</i> • <i>any other EU policy/initiative having</i> 	<p>According to the EIF, base registries are one of the key building blocks of public services.</p> <p>Improving the access to the data contained in base registries and their interconnection has been identified as a priority for most the EU Member States.</p>

<i>interoperability requirements?</i>	
<i>Does the proposal fulfil an interoperability need for which no other alternative action/solution is available?</i>	Base registries fulfil an interoperability role that cannot be carried out by any alternative solution. They contain the authentic and authoritative data needed to carry out public services.

1.1.5.2 Cross-sector

The scope of the action, measured by its horizontal impact, once completed, across the policy sectors concerned.

Question	Answer
<i>Will the proposal, once completed be useful, from the interoperability point of view and utilised in two (2) or more EU policy sectors? Detail your answer for each of the concerned sectors.</i>	The data contained in base registries can be reused for any type of public service and it is very important for the once-only principle. In terms of the Action results, the Cartography of Reusable Solutions will map out different reusable solutions for base registries, which will allow the developers of base registries to reuse already existing solutions, instead of building new ones.
<i>For proposals completely or largely already in operational phase, indicate whether and how they have been utilised in two (2) or more EU policy sectors.</i>	Solutions developed under the Action on Base Registries are used in the Business Register Interconnection System.

1.1.5.3 Cross-border

The geographical reach of the action, measured by the number of Member States and of European public administrations involved.

Question	Answer
<i>Will the proposal, once completed, be useful</i>	The results of the Action on Base

<i>from the interoperability point of view and used by public administrations of three (3) or more EU Members States? Detail your answer for each of the concerned Member State.</i>	Registries can be reused by any Member State or public administration.
<i>For proposals completely or largely already in operational phase, indicate whether and how they have been utilised by public administrations of three (3) or more EU Members States.</i>	Some reusable elements delivered in past phases of the action, such as the search engine or the e-payment mechanism are in the process of being put into use by BRIS and are being considered for reuse by other interconnection initiatives.

1.1.5.4 Urgency

The urgency of the action, measured by its potential impact, taking into account the lack of other funding sources

Question	Answer
<i>Is your action urgent? Is its implementation foreseen in an EU policy as priority, or in EU legislation?</i>	Base Registries are seen as a priority in the EIS, EIF, as well as form a key pillar of the Once-Only Principle.
<i>How does the ISA² scope and financial capacity better fit for the implementation of the proposal as opposed to other identified and currently available sources?</i>	As one of the priorities in the EIS and the EIF, ISA2 is the best fit for the implementation of this proposal.

1.1.5.5 Reusability of action's outputs

The re-usability of the action, measured by the extent to which its results can be re-used.

Can the results of the action (following this proposal) be re-used by a critical part of their target user base, as identified by the proposal maker? For proposals or their parts already in operational phase: have they been re-used by a critical part of their target user base?

Name of reusable solution	Cartography of Reusable Solutions
Description	This is a catalogue of existing reusable solutions for different phases of base registry projects.

Reference	
Target release date / Status	The initial Cartography was released and will be continuously updated.
Critical part of target user base	
For solutions already in operational phase - actual reuse level (as compared to the defined critical part)	

Name of reusable solution	Guidelines for Base Registry Access and Interconnection
Description	The guidelines tackle different challenges and problems that projects on base registry access and interconnection come across and provide instructions on how to tackle them.
Reference	
Target release date / Status	The initial Guidelines have been released and will be continuously updated.
Critical part of target user base	
For solutions already in operational phase - actual reuse level (as compared to the defined critical part)	

Name of reusable solution	State of Affairs in the MS
Description	This is a state of affairs analysis for base registry access and interconnection in the MS. It will allow policymakers to have up to date information on what is happening in the MS and use that as input for the crafting of different policies on the MS and EU levels.
Reference	
Target release date / Status	An initial state of affairs analysis should be completed by the end of 2017. It will be continuously updated.
Critical part of target user base	
For solutions already in operational phase - actual reuse level (as compared to the defined critical part)	

Name of reusable solution to be produced (for new proposals) or	Framework for Base Registry Access and Interconnection
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produced (for existing actions)	
Description	This Framework should serve as the guiding principle for different projects dealing with base registries.
Reference	
Target release date / Status	The Framework should be released towards the end of 2018 after thorough consultations with the Member States.
Critical part of target user base	
For solutions already in operational phase - actual reuse level (as compared to the defined critical part)	

1.1.5.6 Level of reuse of existing solutions

The re-use by the action (following this proposal) of existing common frameworks and interoperability solutions.

Question	Answer
<i>Does the proposal intend to make use of any ISA², ISA or other relevant interoperability solution(s)? Which ones?</i>	The proposal makes use of several ISA interoperability solutions, including the Core Vocabularies and EIRA.
<i>For proposals completely or largely already in operational phase: has the action reused existing interoperability solutions? If yes, which ones and how?</i>	

1.1.5.7 Interlinked

The extent to which the action (following this proposal) contributes to Union's initiatives such as the DSM.

Question	Answer
<i>Does the proposal directly contribute to at least</i>	The Action contributes to the Once-Only

<i>one of the Union's high political priorities such as the DSM? If yes, which ones? What is the level of contribution?</i>	Principle, which is one of the priorities of the DSM.
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1.1.6 PROBLEM STATEMENT

Currently most public administrations store their authentic data on citizens, businesses, properties, vehicles and other items in large databases called base registries. The problem is that this data is often duplicated in other databases as well and the different parts of the public administrations are not interconnected between each other.

This results in a subpar delivery of public services and higher costs. Citizens are often asked to provide their data multiple times to different entities within the public administration, which causes significant burden for them.

The solution to this problem is to interconnect the different base registries, which will allow the citizen to provide their data only once. The different public administration entities providing this data will then be able to access this data without having to ask the citizen for it again (provided there is user consent).

Describe using the table below one or more problems addressed by the proposal.

The problem of	Base registry access and interconnection
affects	Most public services
the impact of which is	inefficient and costly public services, and hassle to citizens if the challenges are not tackled
a successful solution would be	An ecosystem of interoperable or interconnected base registries with clear rules to accessing the data and making the once-only principle a reality

[please copy and use a separate table for each problem addressed.]

1.1.7 IMPACT OF THE ACTION

1.1.7.1 Main impact list

Impact	Why will this impact occur?	By when?	Beneficiaries
(+) Savings in money	Savings in money can occur in a variety of ways. One way		Member State public

	is through the reuse of already existing solutions. The Catalogue of Reusable Solutions will allow developers of base registries to potentially reuse solutions instead of developing new ones from scratch, saving money. The Guidelines address many of the potential challenges that occur in different base registry projects. By solving these challenges, significant problems can be avoided, which results in money saved.		administrations, Citizens
(+) Savings in time	The Guidelines are designed to describe ways of tackling common problems in base registry projects, which can result in significant cost savings for these projects.		Developers of base registries
(+) Better interoperability and quality of digital public service	As the cornerstones of public services, a better access to the data in base registries will promote greater interoperability as well as result in higher quality public services.		

1.1.7.2 User-centricity

The user-centricity principle is kept in mind when designing the different outputs of the Action. For greater ease in accessing the information in the different deliverables, a Dashboard on JoinUp is being created, which will organize all the information in a user-friendly way.

1.1.8 EXPECTED MAJOR OUTPUTS

Major outputs are presented in section 1.1.5.5. "Reusability of action's outputs".

1.1.9 ORGANISATIONAL APPROACH

1.1.9.1 Expected stakeholders and their representatives

Stakeholders	Representatives	Involvement in the action
Member States		Giving inputs on the Framework
European Commission		Inputs for policy on once-only principle
Developers of public services, base registries		Inputs for Framework

1.1.9.2 Identified user groups

The results of this Action should be useful for any public administration that is looking to create base registries, interconnect their base registries, or creating their data management strategy. The Catalogue of Services can be used by developers who are considering the reuse of solutions when building their base registries, while the other deliverables are meant to help not only them, but also policy makers and public service administrators.

1.1.9.3 Communication and dissemination plan

The main outlet for the dissemination of the results of the Action will be a Dashboard on JoinUp, which will consist of the Catalogue of Reusable Solutions, Guidelines, as well as MS Profiles. All of these will be organized in a user-friendly way.

1.1.9.4 Key Performance indicators

Provide a list of KPIs allowing the measurement of the progress and completions of milestones and the action. In case of an on-going action with already identified metrics¹ indicate the current values.

Description of the KPI	Target to achieve	Expected time for target
Validation of all MS Factsheets by MS representatives	28 Factsheets (one for each EU MS)	2018

¹ For examples see the ISA2 dashboard <https://ec.europa.eu/isa2/dashboard/isadashboard>, effectiveness tab.

1.1.9.5 Governance approach

The entire action is coordinated under the ISA² Programme. A Steering Committee has been set up.

The Steering Committee:

- Champions the project, raising awareness at senior level
- Guides and promotes the successful execution of the project at a strategic level
- Provides high level monitoring and control of the project
- Adopts the project charter
- Follows timely delivery and quality of new developments delivered by the system supplier
- Sets priorities, authorise plan deviations, scope changes with high project impact and decide on recommendations
- Arbitrates on conflicts and negotiate solutions to important problems
- Drives and manages change in the organisation
- Ensures adherence to organisation policies and directions
- Approves and signs-off all key management milestone artefacts (vision document, project plan, business case, etc.)

1.1.10 TECHNICAL APPROACH AND CURRENT STATUS

The technical approach will build upon the previous studies done under the Action on Base Registries and take advantage of synergies with other ISA² Actions such as the European Interoperability Cartography and the European Interoperability Reference Architecture.

The Action is in the process of implementing a practical tool (dashboard) in JoinUp. This tool will allow different stakeholders to access the three main outputs of the current phases of the Action (Cartography of Reusable Solutions, Guidelines for Base Registry Interconnection, State of Play on Base Registry Interconnection in the MS) in an interactive way.

The three main deliverables are being converted into dashboards and interested parties will be able to click through to the relevant information they are looking for. In this way, they won't have to read through long word documents, but instead have all the relevant information be gathered in a user-friendly way on JoinUp. This dashboard will serve as the main hub of a community that will promote the interconnection and access to base registries.

The three studies will serve as main inputs to the dashboard. As such, these studies will be continuously updated in order to reflect the changing situation of base registry interconnection on the EU and MS levels.

The aim of this Action is to be of practical help to the different initiatives trying to interconnect base registries. The action should provide guidance to the different initiatives and some potentially reusable solutions.

1.1.11 COSTS AND MILESTONES

1.1.11.1 Breakdown of anticipated costs and related milestones

Phase: Initiation Planning Execution Closing/Final evaluation	Description of milestones reached or to be reached	Anticipated Allocations (KEUR)	Budget line ISA/ others (specify)	Start date (QX/YYYY)	End date (QX/YYYY)
Update of actions' deliverables and dashboard creation and maintenance		250		Q4/2016	Q3/2017
Creation of a Framework for Base Registry Access and Interconnection		200		Q4/2017	Q3/2018
Further steps		150		Q4/2018	Q3/2019

1.1.11.2 Breakdown of ISA² funding per budget year

Budget Year	Phase	Anticipated allocations (in KEUR)	Executed budget (in KEUR)
2016	Study, inception, execution	250	
2017	Study, inception, execution	200	
2018	Study, inception, execution	150	
2019			
2020			

1.2 CATALOGUE OF SERVICES (2016.29)

1.2.1 IDENTIFICATION OF THE ACTION

Type of Activity	Common frameworks
Service in charge	DG DIGIT.D2
Associated Services	DG GROW

1.2.2 EXECUTIVE SUMMARY

A large number of public administration portals have been/ are being implemented throughout Europe with no harmonisation among them in terms of the description of public services and associated information. This lack of harmonisation makes it difficult to link or federate them. Furthermore, public services are often not organised in a user-centric perspective making more difficult the search of the information and the integration of several services around business or life events.

The action is oriented to deliver a set of specifications and solutions to achieve a certain level of interoperability around national and European public services descriptions as well as to facilitate the federation of public services and the creation of national and European catalogues and contribute to the "Single Digital Gateway" action established in the Digital Single Market Strategy.

Under the ISA programme, in collaboration with the representatives of the Point of Single Contacts of the Services Directive in several Member States, a Core Public Service Vocabulary Application Profile was defined as an extension of the ISA Core Public Service Vocabulary in order to model in more detailed public services information and to link them to business events.

The Core Public Service Vocabulary Application Profile (CPSV-AP) has been extended to cover all types of public services in order to support life events, as well as other controlled vocabularies. Translated versions of the labels in the 24 official languages of the EU will be incorporated to the model over the last months of 2017.

A set of software tools for the creation, validation, mapping and harvesting/ federation of public service descriptions have been implemented for potential re-use and as supporting instruments for the use of the CPSV-AP.

In addition to this, a number of interested Member States and European portals has been engaged in order to launch a series of real life pilots in order to test and prove the benefits of adopting the CPSV-AP and the software tools as means to: harmonise the descriptions of public services at national PSCs (Points of Single Contact); federate public services at the national portals and also at the European level; and create ultimately harmonised catalogues of public services

With regards to 2018 plans, the data model specification for describing public services (CPSV-AP) will be further maintained. The same will be done for the software tools. Technical support like testing use

cases will continue to be provided to EU MSs and EUIs (for instance DG GROW in the context of the Digital Single Gateway and Your Europe portal) in order to assist them in creating a catalogue of public services around life and business events, and use the CPSV-AP and/or the tools.

New pilots with some portal owners will be launched to promote the creation of public services catalogues at national level as well as across-borders and improve the user's experience.

Finally, guidelines and recommendations will be created on how to build Catalogue of public services at one-stop-shop portals based on interoperable solutions already available (like those from ISA2, CEF) and sound practices. The guidelines will also look at the user interface and how to establish easy-to-use searching facilities, display, and present the public service information and catalogues of public services in a user-centric approach. The guidelines and recommendations will be based on best practices.

1.2.3 OBJECTIVES

The main objective of the action is to achieve interoperability around national and European service descriptions that would help European public administrations build national as well as cross-border harmonised catalogues of public services.

The action will work towards the fulfilment of these objectives:

- implement interoperability specifications that will help European public administrations to describe public services a group them under life and business events
- implement solutions to enable the link and federation of national and European public service into a Single Digital Gateway in order to foster them as one-stop-shops;
- test in real life how those solutions can provide the expected benefits and based on the practical results improve them
- promote the creation of public services catalogues and improve the user's experience at public services portals
- Promote the federation and in some cases aggregation of the public services offered by the various levels of public administrations into national Single Digital Gateways or one-stop-shops. This would lead at a later stage to the creation of a European catalogue of public services in various domains;

1.2.4 SCOPE

The objective of the present action will be served through implementing interoperability solutions and running pilots to link the Catalogues of public services existing throughout the EU. Initially the scope was limited to the Services Directive but under ISA² it was extended to other policy domains as well.

The main target audience are public administrations, in particular the entities in public administrations that are responsible for the implementation and provisioning of public services and the owners of the public service portals acting as one-stop-shops.

The action will deliver a set of specifications and solutions to achieve a certain level of interoperability around national and European public services descriptions as well as to facilitate the federation of public services and the creation of catalogues. This will help European public administrations to improve the discovery and the provisioning of national and cross-border services.

1.2.5 ACTION PRIORITY

This section is used to assess the priority of the proposal to become a programme's action according to Art. 7 of the ISA² decision².

1.2.5.1 Contribution to the interoperability landscape

The contribution of the action to the interoperability landscape, measured by the importance and necessity of the action to complete the interoperability landscape across the Union

According to the revised EIF and the Interoperability Strategy, MS need to put in place catalogues of public services, interoperability solutions and use common models for describing them. To support the ability to find reusable resources (like public services) relevant catalogues are needed. This component allows publishers to document and make available resources with the potential to be reused by others. Commonly agreed descriptions of services and interoperable solutions published by catalogues are fundamental, to enable interoperability amongst different catalogues. This action aims at defining a technical specification (data model) and at implementing tools to facilitate the creation of catalogue of public services, one of the interoperability enablers for integrated public services according to the conceptual model defined by the EIF.

Question	Answer
<p><i>How does the proposal contribute to improving interoperability among public administrations and with their citizens and businesses across borders or policy sectors in Europe?</i></p> <p><i>In particular, how does it contribute to the implementation of:</i></p> <ul style="list-style-type: none"> • <i>the new European Interoperability Framework (EIF),</i> • <i>the Interoperability Action Plan and/or</i> • <i>the Connecting European Facility (CEF) Telecom guidelines</i> • <i>any other EU policy/initiative having</i> 	<p>This action will help accomplishing action 13 of the action plan for interoperability "Implement and promote common models for describing and cataloguing public services across the EU".</p> <p>It also addresses recommendation 44 of the revised version of the EIF on catalogue of public services. Catalogue of Public services is one of the interoperability enablers for integrated public services according to the conceptual model defined by the revised</p>

² DECISION (EU) 2015/2240 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

<i>interoperability requirements?</i>	EIF. To that end, the action is defining a technical specification (data model) and implementing a set of tools to facilitate the creation of catalogue of public services.
<i>Does the proposal fulfil an interoperability need for which no other alternative action/solution is available?</i>	There is not a data model at EU level to harmonise the description of public services and the creation of catalogues of public services

1.2.5.2 Cross-sector

The scope of the action, measured by its horizontal impact, once completed, across the policy sectors concerned.

Question	Answer
<i>Will the proposal, once completed be useful, from the interoperability point of view and utilised in two (2) or more EU policy sectors? Detail your answer for each of the concerned sectors.</i>	This action aims at defining a technical specification (data model) and at implementing tools to facilitate the creation of catalogues of public services in cross-cutting policies areas like the Services Directive, the Digital Single Gateway Regulation proposal or electronic service portals.
<i>For proposals completely or largely already in operational phase, indicate whether and how they have been utilised in two (2) or more EU policy sectors.</i>	The CPSV-AP is already being used by some MS to create federated catalogue of public services in the domains of the Service Directive, national public service and eGovernment portals.

1.2.5.3 Cross-border

The geographical reach of the action, measured by the number of Member States and of European public administrations involved.

Question	Answer
<i>Will the proposal, once completed, be useful from the interoperability point of view and used by public administrations of three (3) or more EU Members States? Detail your answer for each of the concerned Member State.</i>	This action aims at defining a technical specification (data model) and at implementing tools to facilitate the creation of catalogues of public services in cross-cutting policies areas like the Services Directive, the Digital Single Gateway Regulation proposal or electronic service portals.
<i>For proposals completely or largely already in operational phase, indicate whether and how they have been utilised by public administrations of three (3) or more EU Members States.</i>	The CPSV-AP is already being used by some MS to create cross-border federated catalogue of public services.

1.2.5.4 Urgency

Question	Answer
<i>Is your action urgent? Is its implementation foreseen in an EU policy as priority, or in EU legislation?</i>	<p>The action facilitates the creation of a one-stop-shop catalogue of public services thus contributing to the implementation of the Digital Single Gateway.</p> <p>The Services Directive establishes a single market for services within the EU and obliges MS to create Point of Single Contacts with all the information and the electronic access to the formalities to set-up a business. These portals can make use of the tools and solutions of this action for the harmonisation of the descriptions and the federation of public services, in order to foster the PSCs as one-stop-shops.</p>
<i>How does the ISA² scope and financial capacity better fit for the implementation of the proposal</i>	Yes, since interoperability is fundamental in the implementation of solutions in this

<p><i>as opposed to other identified and currently available sources?</i></p>	<p>action. In addition to that, the scope of this action falls under the development, establishment, bringing to maturity, operation and re-use of new cross-border or cross-sector interoperability solutions and common frameworks; all of them principles of the ISA2 programme.</p>
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1.2.5.5 Reusability of action's outputs

The re-usability of the action, measured by the extent to which its results can be re-used.

Can the results of the action (following this proposal) be re-used by a critical part of their target user base, as identified by the proposal maker? For proposals or their parts already in operational phase: have they been re-used by a critical part of their target user base?

Output name	Core Public Service Vocabulary Application Profile (CPSV-AP)
Description	Data model to facilitate the creation of catalogue of public services and the interoperability of machine readable descriptions of any type of public service; the model will also allow for the modelling of public service descriptions around life and business events.
Reference	https://joinup.ec.europa.eu/asset/cpsv-ap/home
Target release date / Status	Updated v2.0 to be released in October 2017. This version will be maintained in 2018
Critical part of target user base	Some portals acting as one-stop-shops for public services (PSCs; eGovernment portals; Digital Single Gateways)
For solutions already in operational phase - actual reuse level (as compared to the defined critical part)	Reused by Belgium, Italy, Finland, and Estonia to create national or cross-border catalogues of public services

Output name	Tools for the creation of Catalogues of Public Services
Description	Tools for the automated federation of public service descriptions and for the creation of catalogue of public services at national and cross-border level. The tools will provide the following functionalities: CPSV-AP mappings, public service description editor, public service description harvester, CPSV-AP validator.

	It will be analysed how to organise and maintain the existing pilots and tools to facilitate the use and adoption of them by PAs through test cases in a testing facility.
Reference	
Target release date / Status	The pilot implementations of the tools have been released in summer 2016 Fully production releases expected in 2017
Critical part of target user base	Some portals acting as one-stop-shops for public services (PSCs; eGovernment portals)
For solutions already in operational phase - actual reuse level (as compared to the defined critical part)	In piloting phase, some MS are reusing the pilot implementation of the tools.

1.2.5.6 Level of reuse of existing solutions

Question	Answer
<i>Does the proposal intend to make use of any ISA², ISA or other relevant interoperability solution(s)? Which ones?</i>	<p>The CPSV-AP is based on the Core Public Service Vocabulary.</p> <p>DCAT-AP specification has been reused to create at the CPSV-AP a container of public service descriptions like a catalogue.</p> <p>A Solution Architecture Template of the European Interoperability Reference Architecture on Catalogue of Public Services will be finalised in 2017.</p> <p>The CPSV-AP validator is offered as a service through the ISA test bed action. Also a demo on how the tools can be orchestrated in a one-stop-shop public service portal is displayed in the test bed.</p> <p>A new page is being created in JoinUp to host the open source tools.</p>

<p><i>For proposals completely or largely already in operational phase: has the action reused existing interoperability solutions? If yes, which ones and how?</i></p>	
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1.2.5.7 Interlinked

Question	Answer
<p><i>Does the proposal directly contribute to at least one of the Union's high political priorities such as the DSM? If yes, which ones? What is the level of contribution?</i></p>	<p>The Services Directive establishes a single market for services within the EU and obliges MS to create Point of Single Contacts with all the information and the electronic access to the formalities to set-up a business or formalities for citizens. These portals can make use of the tools and solutions of this action for the harmonisation of the descriptions and the federation of public services, in order to foster the PSCs as one-stop-shops.</p> <p>The action facilitates the creation of a one-stop-shop catalogue of public services thus contributing to the implementation of the Digital Single Gateway regulation.</p>

1.2.6 PROBLEM STATEMENT

The problem of	Not having a standard way of describing and documenting public services following a user centric approach
affects	citizens and businesses when they search for information on administrative formalities based on life and business events
the impact of which is	lots of trouble in finding the right information in an easy way
a successful solution would be	A common semantic model and interoperability tools to describe and federate public services information at national and cross-border one-stop-shop portals. Finally, public administrations

can create national and European catalogues

1.2.7 IMPACT OF THE ACTION

1.2.7.1 Main impact list

Impact	Why will this impact occur?	By when?	Beneficiaries
(+) Savings in money	Using the CPSV-AP and the other tools will support the PSCs and other one-stop-shops to integrate info on public services following a user centric approach (and the creation of catalogues of public services). That will save money to citizens and businesses when they want to complete formalities with competent authorities thanks to the creation of catalogue of public services	Solutions already available. Some portals already using it	Public authorities, citizens and businesses
(+) Savings in time	The same way, it will save time to citizens and businesses	Solutions already available. Some portals already using it	Public authorities, citizens and businesses
(+) Better interoperability and quality of digital public service	Using the CPSV-AP and the other tools will support the PSCs and other one-stop-shops to integrate info on public services following a user centric approach and the creation of Public Service Catalogues	Solutions already available. Some portals already using it	Public authorities, citizens and businesses
(+) Integration or usage cost	Reduced cost of integration of public service information at the one-stop-shop portals	Solutions already available. Some portals already using it	Public authorities

1.2.7.2 User-centricity

In the definition of the CPSV-AP user centricity was taken into account from the very beginning. The model was defined taking into consideration the way citizens and businesses perceive and search for

public services (through life and business events). A specific controlled vocabulary defining a suggested list of first and second level of business events and a first level of life events was defined with the portal owners of several Member States.

As for the other tools, some pilots have been carried out with the technical teams working in the point of single contacts and other one-stop-shop portals to improve the user experience when using the technical tools developed in this action.

Continuous feedback from the users will be captured through webinars and the piloting experience in order to keep in mind further user's needs when maintaining the solutions.

1.2.8 EXPECTED MAJOR OUTPUTS

Output name	Consolidated technical specification of the Core Public Service Vocabulary Application Profile
Description	Data model to facilitate the creation of catalogue of public service; interoperable machine readable descriptions of any type of public service and grouping of them around life and business events.
Reference	https://joinup.ec.europa.eu/asset/cpsv-ap/home
Target release date / Status	The consolidated version is available since the end of 2016. Updated v2.0 to be released in October 2017. This version will be maintained in 2018

Output name	Tools for the automated creation of Catalogues of Public Services
Description	To for the automated federation of public service descriptions and for the creation of catalogue of public services at national and cross-border level. The tools provide the following functionalities: CPSV-AP mappings, public service description editor, public service description harvester, CPSV-AP validator.
Reference	
Target release date / Status	The CPSV-AP validator to be offered as a service in the ISA2 Test bed by the end of 2017. Fully production releases in JoinUP expected in Q3 of 2017

1.2.9 ORGANISATIONAL APPROACH

1.2.9.1 Expected stakeholders and their representatives

Stakeholders	Representatives	Involvement in the action
Member States	ISA ² representatives from the various working groups and Committees.	Policy makers and business owners defining business requirements and raising awareness of the solutions implemented in this action
Member States	Points of Single Contact (EUGO Network) owners; other public service portals and national catalogues at Member State Level Portals at local level (for instance municipalities working on smart cities projects)	Potential users of solutions; participants in pilots
DG GROW	Representatives of the EUGO Network; DG GROW services responsible for the Digital Single Gateway Regulation proposal and for Your Europe portal.	Potential users of the solutions

1.2.9.2 Identified user groups

The action is managed by DIGIT with the support of an external contractor. Whenever major deliverables are to be published, the validation of the MS representatives will be sought.

The current technical working group composed of several Member States from the EUGO Network has been extended in order to hold the technical discussions and build consensus related to the implementation and the piloting of interoperability solutions. This group is counting on relevant European and Member States' stakeholders responsible for the provisioning of one-stop-shops of public services and for the creation of national catalogue of public services.

1.2.9.3 Communication and dissemination plan

The progress of this action will be communicated on a regular basis to ISA² representatives from the various working groups and committees.

The current technical working group composed of several PSCs owners has been extended to other portal owners. Several webinars have been held. A distribution list was created to communicate and

exchange working documents and other information with the various participants in the working group. All the deliverables and related info to the action will be available in a workspace set-up on Joinup.

Some dissemination and communication material will be produced to raise awareness on the works carried out in this action and in order to engage all interested public administrations.

Several pilots with the Member States are currently underway where technical assistance is given on how to adopt and use the solutions implemented in this action.

1.2.9.4 Key Performance indicators

Description of the KPI	Target to achieve	Expected time for target
Number of Member States participating in the creation of the model	16	2017
Number of Member States using the tools or adopting the model	7	2018
Number of policy domains using the model	3	2018

1.2.9.5 Governance approach

The action is managed by DIGIT with the support of an external contractor.

The current technical working group is composed of several Member States representatives nominated by the ISA2 Committee members, representatives of the EUGO Network of the Services Directive and other public service portal owner. In this group technical discussions are held to build consensus related to the implementation, maintenance and piloting of interoperability solutions. This group is counting on relevant European and Member States' stakeholders responsible for the provisioning of one-stop-shops of public services and for the creation of national catalogue of public services, as well as policy DGs like DG GROW.

The ISA2 Committee and Coordination Group will be updated regularly on the progress of this project.

Strong coordination with DG GROW is in place when it comes to the proposal Regulation on the Single Digital Gateway.

1.2.10 TECHNICAL APPROACH AND CURRENT STATUS

The Core Public Service Vocabulary Application Profile (CPSV-AP) has been extended to cover all types of public services in order to support life events, as well as other controlled vocabularies. Translated versions of the labels in the 24 official languages of the EU will be incorporated to the model over the last months of 2017.

A set of software for the creation, validation, mapping and harvesting/ federation of public service descriptions have been implemented for potential re-use and as supporting tools for the use of the CPSV-AP.

In addition to this, a number of interested Member States and European portals has been engaged in order to launch a series of real life pilots in order to test and prove the benefits of adopting the CPSV-AP and the software tools as means to: harmonise the descriptions of public services at national PSCs (Points of Single Contact); federate public services at the national portals and also at the European level; and create ultimately harmonised catalogues of public services

The data model specification for describing public services (CPSV-AP) will be further maintained. The software tools will be maintained and enhanced to be release as fully-fledged production tools.

Technical support like testing use cases will continue to be provided to EU MSs and EUIs (for instance DG GROW in the context of the Digital Single Gateway and Your Europe portal) in order to assist them in creating a catalogue of public services around life and business events, and use the CPSV-AP and/or the tools.

New pilots with some portal owners will be launched to promote the creation of public services catalogues at national level as well as across-borders and improve the user's experience.

Finally, guidelines and recommendations will be created on how to build Catalogue of public services at one-stop-shop portals based on interoperable solutions already available (like those from ISA2, CEF) and sound practices. The guidelines will also look at the user interface and how to establish easy-to-use searching facilities, display, and present the public service information and catalogues of public services in a user-centric approach. The guidelines and recommendations will be based on best practices.

1.2.11 COSTS AND MILESTONES

1.2.11.1 Breakdown of anticipated costs and related milestones

Phase: Inception Execution Operational	Description of milestones reached or to be reached	Anticipated Allocations (KEUR)	Budget line ISA, ISA ² / others (specify)	Start date (QX/YYYY)	End date (QX/YYYY)
Inception/ execution	Extension of the public services data model. Implementation, test and pilot of solutions for the federation of public services descriptions. Maintenance of the solutions Guidelines and recommendations to build public service portals	325	ISA ²	Q2/2016	Q3/2018
Operation	Pilot operation with some national and European portals	225	ISA ²	Q3/2016	Q3/2018
	Total	550			

1.2.11.2 Breakdown of ISA² funding per budget year

Budget Year	Phase	Anticipated allocations (in KEUR)	Executed budget (in KEUR)
2016	Inception, Execution, Operation	200	200
2017	Execution, Operation	200	200
2018	Execution, Operation	150	

1.2.12 ANNEX AND REFERENCES

Description	Reference link	Attached document
CPSV-AP	https://joinup.ec.europa.eu/asset/cpsv-ap/home	First release of the Core Public Service Vocabulary application profile

1.3 DATA COMMUNICATION NETWORK SERVICE (TESTA / TESTA NG) (2016.02)

Type of Activity	Common Services
Service in charge	DIGIT.D3
Associated Services	OLAF, DG MOVE, DG EMPL, DG HOME, DG SANTE, CDT, DG JUST, DG ECHO, DG TRADE

1.3.1 EXECUTIVE SUMMARY

The TESTA-ng network service is the continuation of an existing action of the ISA Programme. A number of sectorial networks are currently using the TESTA services for their sectorial applications (OLAF, DG MOVE, DG EMPL, DG HOME, DG SANTE, CDT, DG JUST, DG ECHO and DG TRADE). The network is also used by the European Institutions and the European agencies. In addition, the TESTA framework is also extensively used by DG HOME for the implementation of the SIS II and VIS II networks and by EUROPOL for the implementation of their own dedicated EUROPOL network. Also, the General Secretariat of the Council is using the TESTA framework contract for the implementation of the FADO network, the Council Extranet and Courtesy networks.

The TESTA network is also used in the context of non-Community projects by Member State administrations or organisations acting on their behalf under certain conditions as described in the TESTA Memorandum of understanding. One of the most successful non-community programmes is the trans-border police cooperation in the context of the Prüm treaty and the Financial Intelligence Unit network in the context of money laundering.

Currently TESTA is facing problems with regard to the long-term financial sustainability. Also the structural captivity and vendor lock-in due to the "one vendor provides all" approach needs attention.

In order to address these problems DIGIT D3 is preparing the next evolution in order to keep abreast of the latest technologies and developments and to achieve DIGIT's vision of becoming the sole and only network of choice of the European Union that handles all data transactions between Member State, EU Institutions, EU Agencies, EFTA Countries, Acceding Countries and members of community programs.

The strategy is to have more control on the provided services by implementing a new organisational structure. The problem of captivity of the market will be solved by splitting the future contracts in autonomous entities.

The main objectives of the future implementation of TESTA are:

- To consolidate the network and ensure financial sustainability
- To guarantee and further increase security and reliability
- To introduce secured trans-European collaborative services
- To increase control by bringing together a technical core team that manages the network in Commission premises

The activities related to the preparation of the future network are not part of this request.

1.3.2 SCOPE

Ensure continuity for the provision of the current TESTA-ng network.

1.3.3 ACTION PRIORITY

1.3.3.1 Contribution to the interoperability landscape

The contribution of the action to the interoperability landscape, measured by the importance and necessity of the action to complete the interoperability landscape across the Union

Question	Answer
<p><i>How does the proposal contribute to improving interoperability among public administrations and with their citizens and businesses across borders or policy sectors in Europe?</i></p> <p><i>In particular, how does it contribute to the implementation of:</i></p> <ul style="list-style-type: none"> • <i>the new European Interoperability Framework (EIF),</i> • <i>the Interoperability Action Plan and/or</i> • <i>the Connecting European Facility (CEF) Telecom guidelines</i> • <i>any other EU policy/initiative having interoperability requirements?</i> 	<p>The nature of the TESTA project "trans-border data communication" makes TESTA an underlying communication infrastructure directly contributing to cross border interoperability. Various policy areas (trans-border police cooperation, money laundering, asylum policy etc....) are directly served via the TESTA initiative.</p>
<p><i>Does the proposal fulfil an interoperability need for which no other alternative action/solution is available?</i></p>	<p>TESTA provides network infrastructure that</p> <ul style="list-style-type: none"> - is private and only accessible to the EUI, Agencies and Public Administrations, ensuring confidentiality of transmissions and a greatly reduced surface of exposure to intrusion and hacking; - is independent of public Internet backbones, and therefore always available if when the Internet is down, ensuring that crucial information systems such as border control and police cooperation will continue to work even in the event of large-scale cyber attacks - has its own Security Operations Centre providing 24/7 monitoring and protection by security cleared

	<p>personnel;</p> <ul style="list-style-type: none"> - has built-in redundancy so as to guarantee 99,95% measured availability even in case of technical problems within its own infrastructure.
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1.3.3.2 Cross-sector

The scope of the action, measured by its horizontal impact, once completed, across the policy sectors concerned.

Question	Answer
<i>Will the proposal, once completed be useful, from the interoperability point of view and utilised in two (2) or more EU policy sectors? Detail your answer for each of the concerned sectors.</i>	YES, once the future TESTA is completed it will also provide collaborative secured cross border and cross sector services
<i>For proposals completely or largely already in operational phase, indicate whether and how they have been utilised in two (2) or more EU policy sectors.</i>	TESTA is the undelaying secured transport platform for many policy areas. Justice and Home Affairs, Health, Transport, Trade, Employment are examples of policy areas that rely since years on TESTA.

1.3.3.3 Cross-border

The geographical reach of the action, measured by the number of Member States and of European public administrations involved.

Question	Answer
<i>Will the proposal, once completed, be useful from the interoperability point of view and used by public administrations of three (3) or more EU Members States? Detail your answer for</i>	YES, is operational

<i>each of the concerned Member State.</i>	
<i>For proposals completely or largely already in operational phase, indicate whether and how they have been utilised by public administrations of three (3) or more EU Members States.</i>	Yes. TESTA is covering the whole territory of the European Union, EFTA Countries and Acceding Countries

1.3.3.4 Urgency

The urgency of the action, measured by its potential impact, taking into account the lack of other funding sources

Question	Answer
<i>Is your action urgent? Is its implementation foreseen in an EU policy as priority, or in EU legislation?</i>	The continuation of the funding of this action for 2018 is urgent in order to guarantee the continuity of the services to the current stakeholders.
<i>How does the ISA² scope and financial capacity better fit for the implementation of the proposal as opposed to other identified and currently available sources?</i>	Since ISA ² is focussing on new initiatives, the long-term financial sustainability has been questioned. In the preparation of the future of TESTA, a cost recovery mechanism will guarantee the long term financial funding. Consolidation of all existing European networks is envisaged

1.3.3.5 Reusability of action's outputs

The re-usability of the action, measured by the extent to which its results can be re-used.

Name of reusable solution to be produced (for new proposals) or produced (for existing actions)	TESTA-ng
Description	
Reference	

Target release date / Status	
Critical part of target user base	
For solutions already in operational phase - actual reuse level (as compared to the defined critical part)	<p>One of the main objectives of TESTA is "network consolidation". In this perspective a common data communication infrastructure has been set up and is used and reused by many policy areas.</p> <p>The last decade TESTA as actively avoided the proliferation of communication infrastructures dedicated to one application.</p>

1.3.3.6 Level of reuse of existing solutions

The re-use by the action (following this proposal) of existing common frameworks and interoperability solutions.

Question	Answer
<i>Does the proposal intend to make use of any ISA², ISA or other relevant interoperability solution(s)? Which ones?</i>	<p>TESTA is a generic key interoperability solution, supporting public administrations by providing a secured communication infrastructure and facilitating secured cross border data communications.</p> <p>TESTA serves information systems in various EU policy areas such as, Asylum (Eurodac/ Dublinet), trans border police cooperation (Prüm), judicial cooperation (ECRIS), financial intelligence (FIUNET), civil protection (CECIS), transport (TACHONET/EUCARIS), social security (EESSI) and health (eHealth/Tobacco).</p> <p>Also the ISA action 2017.04 REGDEL relies on TESTA.</p>
<i>For proposals completely or largely already in operational phase: has the action reused existing interoperability solutions? If yes, which ones and how?</i>	<p>TESTA is reusing existing interoperability solutions such as CIRCABC, EU Survey.</p> <p>See also answer above.</p>

1.3.3.7 Interlinked

The extent to which the action (following this proposal) contributes to Union's initiatives such as the DSM.

Question	Answer
<p><i>Does the proposal directly contribute to at least one of the Union's high political priorities such as the DSM? If yes, which ones? What is the level of contribution?</i></p>	<p>As underlying secured communication infrastructure TESTA EuroDomain contributes directly via the information systems that are using TESTA to the implementation of:</p> <ol style="list-style-type: none"> 1. <u>Justice and fundamental rights</u> by providing secured and reliable communication infrastructure to information systems in the context of Fight against organised crime: <ol style="list-style-type: none"> a) European Criminal records Information Systems (ECRIS), b) Cross border police cooperation combating terrorism and cross border crime (Prüm), c) System of Control of Explosives for the Prevention and Fights against the terrorism (SCEPYLT). 2. Migration: by providing secured and reliable communication infrastructure to information systems in the context of Asylum (Eurodac/ Dublinet for the comparison of finger Prints of asylum applications 3. The Internal Market: by providing secured and reliable communication infrastructure to information systems in the context of <ol style="list-style-type: none"> a) Financial Intelligence Network (FIUNET) in the context of money laundering b) By letting people move more freely by supporting the electronic exchange of social security information (EESSI)

1.3.4 PROBLEM STATEMENT

The problem of	<ol style="list-style-type: none"> 1. TESTA EuroDomain is a public private pan-European network with private central value-added services. The followed "One Shop All" sourcing approach gave structural captivity and vendor lock-in problems 2. Financial Sustainability, dependence on funding from community programme
affects	All EU communities
the impact of which is	Less quality, higher price
a successful solution would be	<ol style="list-style-type: none"> 1. Captivity of the market can be solved by splitting the "One fits All" contract in autonomous entities that are separately tendered. . Such an approach should also increase competition and attract a bigger number of tenderers 2. <u>Financial sustainability</u> - Currently the EuroDomain is financed by the ISA² programme. The strategy for the future is focused on becoming financially sustainable by working towards a sound legal basis and by applying cost sharing by end 2020.

1.3.5 IMPACT OF THE ACTION

1.3.5.1 Main impact list

The funding of the continuation of the TESTA services will allow all communities that use the TESTA network to continue their services.

In parallel an action for the preparation of the future TESTA with a different governance model will be started. The activities in this context will initially be started up by budget that has been recovered from the TESTA-ng provider due to late delivery of the services.

Impact	Why will this impact occur?	By when?	Beneficiaries
(+) Savings in money	Consolidation of network infrastructure	2021	All Member States and user communities in all different policy areas
(+) Savings in time	The new organisational	2020	All Member States and

	model for the operation of this network will avoid future costly big bang migrations		user communities in all different policy areas
(+) Better interoperability and quality of digital public service	the innovative collaborative needs stated by the users, redundant and well integrated cloud architecture with a robust and performant consolidated network	2019-2020	All Member States and user communities in all different policy areas
(+) Cost sharing	Cost sharing will after setup of the core infrastructure and governance model	2021	All Member States and user communities in all different policy areas
(+) Security	The implementation of dedicated optical backbone that is centrally engineered and managed will give more control and more security to the EU. Additional	2020	All Member States and user communities in all different policy areas
(-) Governance	The governance organization will require more resources to operate and coordinate the different contractual and organisational components.	2020	DIGIT

1.3.5.2 User-centricity

In order to keep track of the needs of the users the TESTA team is assisting different policy sectors for the integration of their information systems on TESTA, (e.g. eHealth, EUCEG, nf-Net of DG SANTE, EDES EEAS, Agriculture expenditure audit DG AGRI, CERTEU, ARIS EU Parliament).

On a yearly basis a TESTA workgroup with the TESTA representatives of the Member States is organised. The meeting in 2017 will take place on 4 October.

Also, the TESTA team is closely following up the ICTAC activities of EU Agencies .

1.3.6 EXPECTED MAJOR OUTPUTS

Output name	SCEPYLT
Description	(Explosives Control & Protection System to prevent and fight against terrorism). <i>DG for Migration and Home Affairs - Unit D1: Terrorism and Crisis Management is looking to expand the SCEPYLT system to additional Member States and 3rd</i>

	<i>countries.</i>
Reference	Legal basis: meeting in Sheffield July 2004
Target release date / Status	2018

Output name	SIMSTAT / ESDEN
Description	ESDEN (modernisation of the data exchange services across the European Statistical System (ESS)).
Reference	
Target release date / Status	2018

Output name	EU ETS
Description	Union Registry information system which handles the registration of carbon emission allowances exchanges (within the European Emission Trading System)
Reference	
Target release date / Status	2019

Output name	<i>NCPeH</i>
Description	eHealth System via National eHealth Infrastructure Agency
Reference	
Target release date / Status	2018

1.3.7 ORGANISATIONAL APPROACH

1.3.7.1 Expected stakeholders and their representatives

Stakeholders	Representatives	Involvement in the action
Specific sectors	Ability for sectors and EU agencies to use a secured trans-European network service for the exchange of data with specific availability or security requirements over a shared quality solution. Prevents proliferation of uncontrolled networks.	user
Member States' Public administrations	Ability for MS administrations to use a secured trans-European network service for the exchange of data with specific availability or	user

	security requirements, with EU Institutions, EU agencies and other MS administrations. The provided solution is managed and the access points are under control of the MS administrations.	
EU institutes and agencies	Avoids the unnecessary implementation of costly shadow network infrastructures.	user
Non-community programs	TESTA can be used in the context of a non-Community project by Member States administrations or organisations acting on their behalf under certain conditions described in the TESTA Memorandum of Understanding. It stimulates the re-usage of an existing infrastructure.	user

1.3.7.2 Identified user groups

This table is an extract of the list of policy areas where TESTA is referenced.

This is not an exhaustive list

Action / Policy	Description of relation
ECRIS	Council Decision 2009/316/JHA on the establishment of the European Criminal Records Information System (ECRIS).
Prüm	EU Council Decision (2008/616/JHA) on the implementation of Decision 2008/615/JHA on the stepping up of cross-border cooperation, particularly in combating terrorism and cross-border crime. Trans-border police cooperation in a non-community programme.
DUBLINET	Commission Regulation (EC) No 1560/2003 of 2 September 2003 laying down detailed rules for the application of Council Regulation (EC) No 343/2003 establishing the criteria and mechanisms for determining the Member State responsible for examining an asylum application lodged in one of the Member States by a third-country national. DubliNet is based on the use of the generic IDA services referred to in Article 4 of Decision No 1720/1999/EC.
Eurodac	Council Regulation No 2725/2000 of 11 December 2000 concerning the establishment of 'Eurodac' for the comparison of fingerprints for the effective application of the Dublin Convention. But in the COM/2016/0272 Proposal for a Regulation of the European Parliament and of the Council on the establishment of 'Eurodac' for the comparison of fingerprints for the effective application of [Regulation (EU) No 604/2013 establishing the criteria and mechanisms for determining the Member State responsible for examining an application for international protection lodged in one of the Member States by a third-country national or a stateless person] , for identifying an illegally staying third-country national or stateless person and on requests for the comparison with Eurodac data by Member States' law enforcement authorities and Europol for law enforcement purposes (recast)
CECIS	Council Decision 2007/779/EC, Euratom of 8 November 2007 establishing a

	Community Civil Protection Mechanism.
EDRIS (ex 14 POINTS – HOLIS)	Council Regulation (EC) No 1257/96 of 20 June 1996 concerning humanitarian aid
FIUNET	Council Decision 2000/642/JHA of 17 October 2000 concerning arrangements for cooperation between financial intelligence units of the Member States in respect of exchanging information
SIGL	Council Regulation (EEC) No 3030/93 of 12 October 1993 on common rules for imports of certain textile products from third countries.

1.3.7.3 Communication and dissemination plan

Event	Representatives	Frequency
TESTA workshop	TESTA national experts + representatives from EU Institutions, EU Agencies and EC application owners	1 to 2 times a year
TESTA stakeholders	EU Institutions or national governments	On demand
TESTA webportal	https://demo.portal.testa.eu	

1.3.7.4 Key Performance indicators

Key performance indicators for the continuation of services of TESTA-ng are contractually defined by the service level agreements and associated penalties.

Average availability of EURODOMAIN for 2017: 99.95%

P1 Tickets: 16

P1 Tickets with breached SLA: 8

1.3.7.5 Governance approach

Organisational: TESTA workgroup with the TESTA experts of the Member States.

Technical: The network's governance approach for 2018 shall remain as is. It is fully outsourced to T-Systems whereby a SOC manages the day to day operations and a layer of specialists sits in between DIGIT and the SOC to facilitate quarterly reporting. An independent team of auditors perform the necessary controls and audit checks on the entire project scope.

For the next iteration, DIGIT is working upon a new governance structure that shall minimise costs, be more flexible whilst ensuring better control over outputs and processes.

Also a cost sharing model will be implemented to make the project financial sustainable As from end 2020

1.3.8 TECHNICAL APPROACH AND CURRENT STATUS

Currently the contract with T-Systems is active up until 06/2020. This will allow continuity of the current TESTA-ng services during one year.

It concerns all activities in providing the TESTA-ng EuroDomain network during one year including Security Operations Services, Central Domain Services to Member States, EU Institutions and EU-agencies in the execution of the different policy areas.

In order to control the quality of the provided services and adherence to the security requirement of the project, assistance services are necessary in the domains of (service provisioning, security, ITIL processes, customer relationship management.)

Activities in relation to the preparation of the future TESTA are NOT covered by this budget.

1.3.9 COSTS AND MILESTONES

1.3.9.1 Breakdown of anticipated costs and related milestones

Phase: Initiation Planning Execution Closing/Final evaluation	Description of milestones reached or to be reached	Anticipated Allocations (KEUR)	Budget line ISA/ others (specify)	Start date (QX/YYYY)	End date (QX/YYYY)
TESTA-ng continuation	Continuation of the current TESTA-ng services contract T-Systems	2600	ISA	01/2019	12/2019
TESTA-ng continuation	Assistance services to TESTA ng, contract DESIS III	1000	Other	01/2019	12/2019
TOTAL		3600			

1.3.9.2 Breakdown of ISA² funding per budget year

Budget Year	Phase	Anticipated allocations (in KEUR)	Executed budget (in KEUR)
2016		2500	2500
2017		3946	
2018		2000	
2019			
2020			

1.4 IPV6 FRAMEWORK FOR EUROPEAN GOVERNMENTS (2016.09) – FUNDING CONCLUDED IN 2017

1.4.1 IDENTIFICATION OF THE ACTION

Type of Activity	“Common Frameworks “
Service in charge	DG CNECT. E1
Associated Services	

1.4.2 EXECUTIVE SUMMARY

Almost all relevant data networks today are operating with the Internet Protocol - IP. Thus, every European digital cross-border communication is based on IP. The Internet Protocol Version 4 has around 4 billion addresses available, which officially run out. The lack of available IPv4 addresses is one of the main reasons why the change from IPv4 to IPv6 (which has a significantly greater address space) is without alternative.

The adoption of IPv6 in Europe, in particular within European public administrations, is still low, but the availability of IPv6 communication is vital for the economic development and the digitisation of European public administrations. The goals of the Digital Agenda for Europe and the Digital Single Market Strategy are based on stable and reliable data networks.

This project will create a common framework for European public administrations on how to procure addresses, organize the address space and adapt IPv6.

The first step to accomplish this is to create a detailed guide to implement a Local Internet Registry (LIR) to act as an address provider on national level within the public administration. Further steps are to create technical IPv6 profiles for the Network equipment and to introduce an IPv6 Transition Guide. Furthermore, this project will create Training Material for IPv6 Workshops that will help to enable the public administration of the EU Member states (MS) to cope with the IPv4 to IPv6 Transition.

1.4.3 OBJECTIVES

To ensure the cross-border interoperability of online services and the digitisation of European public administrations IPv6 is a must-have for the ISA² goals. Member States as for instance Germany could bring strong support to the deployment of IPv6 within the European public administrations. Experience from certain Member States, e.g. Germany and other GEN6³ (Governments ENabled with IPv6) participants should be reused and be made available and usable for all MS and the EC itself. Existing local IPv6 concepts and guidelines for public administrations shall be merged and adapted for a European-wide usage. These concepts and guidelines consider technical as well as organizational aspects.

This will help to create a common framework to support all EU Member States in managing the transition from IPv4 to IPv6.

³ See <http://www.gen6.eu/home>

1.4.4 SCOPE

The aim is to deliver a clear blueprint for public administrations within Europe on how to procure and organize IPv6 address space and implement it within their organisations. The results will be derived from research and transition experience from MS that already derived concepts and guidelines like Spain, Slovenia, Switzerland (non-EU) and Germany. For the creation of these blueprints and guidelines, tangible experiences already made by European countries will be used. For example why and how to operate a so-called government Local Internet Registry (LIR) for the public administration of a MS. Therefore, the results can be the basis for a standardisation of the IPv6 introduction in the EU.

1.4.5 PROBLEM STATEMENT

In context of the lack of IPv4 addresses, the ability for a successful transition to IPv6 is crucial. The low deployment rate and a lack of experience and proven concepts for public administrations in Europe hinder cooperation within the EU.

Technically IPv6 is the only available solution on the network layer which has the ability to fulfil the requirements resulting from the sum of EU initiatives related to information technology.

1.4.6 EXPECTED BENEFICIARIES AND ANTICIPATED BENEFITS

Beneficiaries	Anticipated benefits
Member states' public administrations	Every Member state faces technical and organizational challenges in the transition to IPv6. A Common IPv6 framework will help to share best practices among the European public administration.
European Commission	A common European IPv6 framework will help the Commission to coordinate the development of next generation networks throughout Europe.
Member states' public administrations, vendors, ISPs, public users, universities	As a buyer and user of network infrastructure and applications, public administrations play an important role in the European market. With the introduction of IPv6, the demand for IPv6-capable products will rise. A support of IPv6 will create greater transparency and make planning for participating interest groups easier. At the same time, the stimulus package will help to motivate the IT sector to adopt IPv6.
governments, vendors, ISPs, public users, universities	IPv6 is a new technology. With professional guidance on how to use it, the security and the reliability of IT infrastructures across Europe will rise.
European citizens / universities	Support within the EU public administration of IPv6 will create greater transparency and make planning for participating interest groups easier.

1.4.7 RELATED EU ACTIONS / POLICIES

Action / Policy	Description of relation, inputs / outputs
GEN6	http://www.gen6-project.eu The project described here is based on the results of the GEN6 project.
Digital Agenda for Europe and Digital Single Market Strategy	http://ec.europa.eu/priorities/digital-single-market/ http://ec.europa.eu/digital-agenda/en/digital-agenda-europe-2020-strategy IPv6 is the essential precondition for a digital Europe. This work will enable the public administrations of the MS to communicate safe, secure and cross-border. The adoption of IPv6 in the public sector will reinforce business in the European ICT market
Digitisation of the EU	http://ec.europa.eu/digital-agenda/en/digitisation-digital-preservation Digitisation of the EU will need more addresses for the additional digitised systems and applications. This is only possible by the usage of IPv6, which needs support to be deployed in the EU public administrations. To push this, the EU administration itself has to be a pioneer.
European eGovernment Action Plan 2011-2015	http://ec.europa.eu/digital-agenda/en/european-egovernment-action-plan-2011-2015 The basis of a successful European e-Government strategy is a European communications network. A “Common IPv6 Framework” will help to achieve this for the near future. This is also valid for the upcoming follow up plan “new EU eGovernment Action Plan 2016-2020” http://ec.europa.eu/digital-agenda/en/news/workshop-new-eu-egovernment-action-plan-2016-2020

1.4.8 REUSE OF SOLUTIONS DEVELOPED BY ISA, ISA² OR OTHER EU / NATIONAL INITIATIVES

This project will be based on the results of the GEN6 project (<http://www.gen6-project.eu/>). The work will also take into account the relevant documents of the RIPE (<http://www.ripe.net>). In addition, the extensive results of the local German governmental IPv6 research and development project (http://www.bva.bund.de/DE/Organisation/Abteilungen/Abteilung_BIT/Leistungen/IT_Beratungsleistung/gen/IPv6/best_practice/bestpractice_node.html) will be extended and adapted for an EU level usage. The content is already partly translated to English and available free under a creative commons licence for everyone over the Internet.

1.4.9 EXPECTED RE-USABLE OUTPUTS (solutions and instruments)

Output name	1. Guide to setup IPv6 in the public administration - LIR setup and processes
Description	A detailed guide on how to order address space, to set up and implement a Local internet Registry
Reference	
Target release date / Status	4 / 2016

Output name	2. IPv6 Profile for public administrations of the EU
Description	A detailed technical profile with recommendations, to implement IPv6 options within IPv6 components for public administrations.
Reference	
Target release date / Status	6/ 2016

Output name	3. IPv6 Transition Guide for public administrations of the EU
Description	A guideline on how to migrate a public authority of a MS to IPv6/IPv4 dual-stack. It includes step-by-step instructions, security recommendations and project organisation guidelines.
Reference	
Target release date / Status	12/ 2016

Output name	4. IPv6 Workshop material for public administrations of the EU
Description	Slide sets and usage instructions to enable public administrations of the EU to start with a cost efficient IPv6 planning phase.
Reference	
Target release date / Status	12 / 2016

Output name	5. Description and discussing document of IPv6 related EU infrastructures, especially TESTA-NG for public administrations of the EU
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Description	This document creates the link between the guidelines and the technical profile to the actual network-infrastructure.
Reference	
Target release date / Status	09 / 2016

1.4.10 ORGANISATIONAL APPROACH

1.4.10.1 Expected stakeholders and their representatives

Stakeholders	Representatives
ISA ² coordination group	The ISA ² coordination group is expected to be one of the first and most important stakeholders
EU Member states' national authorities	CIO's, decision makers of national authorities
Some former GEN6 members	Former GEN6 representatives of the MS
RIPE NCC (in cooperation with)	Representatives of RIPE who developed the IPv6 RIPE profile document

1.4.10.2 Communication plan

The scope and the current project status will be published on a dedicated project homepage. In addition, all partners are encouraged to place articles in the media. Presentations on conferences including RIPE meetings or related events (Mobile World Congress Barcelona, CeBIT Hannover) will produce project attention.

1.4.10.3 Governance approach

The action will be carried out by CONNECT and supervised by the ISA² Coordination Group.

Cross Relations:

Cooperation with RIPE NCC, Member states, GEN6 Participants

Regular meetings and written correspondence

1.4.11 TECHNICAL APPROACH

All documents described above will be proven by results from a lab environment, so all statements are accompanied by relevant evidence.

Technical Approach:

- Organizational and Process LIR Definition
- Assessment of relevant IT devices
- Identification of relevant IPv6 standards
- Definition of requirements to IPv6 enabled devices within European public administrations
- Definition of minimal mandatory IPv6 capabilities

1.4.12 COSTS AND MILESTONES

1.4.12.1 Breakdown of anticipated costs and related milestones

Phase: Inception Execution Operational	Description of milestones reached or to be reached	Anticipated Allocations (KEUR)	Budget line ISA ² / others (specify)	Start date (QX/YYYY)	End date (QX/YYYY)
Inception	Project Charter	30	ISA ²	Q1/2016	Q1/2016
Execution	output 1	80	ISA ²	Q1/2016	Q1/2016
	output 2	120	ISA ²	Q1/2016	Q2/2016
	output 3	80	ISA ²	Q1/2016	Q4/2016
	output 4	40	ISA ²	Q1/2016	Q4/2016
	output 5	80	ISA ²	Q2/2016	Q4/2016
operational	pilot -output 3	35	ISA ²		
	pilot -output 5	35	ISA ²		
	Total	500			

1.4.12.2 Breakdown of ISA² funding per budget year

Budget Year	Phase	Anticipated allocations (in KEUR)	Executed budget (in KEUR)
2016	Inception	30	
2016	execution, operational	470	
2017			
2018			
2019			
2020			

1.4.13 ANNEX AND REFERENCES

Description	Reference link	Attached

		document
GEN6	http://www.gen6-project.eu/	
Spain's' transition to IPv6 strategy	http://administracionelectronica.gob.es/pae_Home/pae_Estrategias/pae_Interoperabilidad_Inicio/pae_Transicion_a_IPv6.html?idioma=en	
The Government of the Republic of Slovenia, Ministry of Higher Education, Science and Technology Study: Transition to IPv6 (Guideline for Deliberation on the National IPv6 Strategy)	http://go6.si/docs/Study_MVZT_IPv6_en.pdf	
Federal Ministry of the Interior and "Deutschland Online Infrastruktur", presentation IPv6 Workshop - creating a constructive Dialogue, European Commission, April 2010. Presentation in the NL	https://ec.europa.eu/digital-agenda/sites/digital-agenda/files/20114.pdf https://www.forumstandaardisatie.nl/fileadmin/os/presentaties/10mei12_constanze-buerger.pdf	
All Documents from Germany	http://www.bva.bund.de/DE/Organisation/Abteilungen/Abteilung_BIT/Leistungen/IT_Beratungsleistungen/IPv6/best_practice/bestpractice_node.html	

1.5 TRUSTED EXCHANGE PLATFORM (E-TRUSTEX) (2016.19)

1.5.1 IDENTIFICATION OF THE ACTION

Type of Activity	Reusable generic tools
Service in charge	DG DIGIT D3
Associated Services	SG A.1, JUST B.4, COMP R.3, SANTE A.4, ESTAT.B.3, DIGIT.B.2, DIGIT.B.4, OP.A.2

1.5.2 EXECUTIVE SUMMARY

Advancements in technology are progressively replacing paper-based information flows with electronic transactions. As a result, public administrations are being pressed to adopt electronic means to exchange data and documents with other public administrations, businesses and citizens. This change is inevitable as legislation at all levels increasingly foresees the exchange of data electronically.

The e-TrustEx action aims to support public administrations in this highly transformational process towards digital and electronic transactions by providing them with a service-oriented platform that helps automating the exchange of all type of documents and data.

E-TrustEx is a service-oriented platform that acts as a broker, in the exchange of data and documents, between a defined boundary (e.g. this may be a Member State, a Region, a Ministry or an organisation) and its outside world. To enable interoperability across organisational boundaries and borders, e-TrustEx uses the Internet and the secure message exchange protocol of the CEF eDelivery building block⁴ (i.e. the AS4 messaging protocol). Thanks to its standardised interfaces, e-TrustEx is capable of interacting with many different heterogeneous information systems. For example, once a Member State deploys the platform, it can swiftly interlink its several national information systems, of any type and associated to any sector, with a single messaging platform. The e-TrustEx platform is operational, offered to the EU Institutions as a service and to the Member States as an open source software tool via Joinup. The table below summarizes key features of the e-TrustEx platform.

⁴ <https://ec.europa.eu/cefdigital/wiki/display/CEFDIGITAL/eDelivery>

- 
Open and extensible: e-TrustEx is open source, released under the EUPL license.. The platform can be easily extended via its community of developers or via direct collaboration between the European Commission and the Member States.

- 
Secure: e-TrustEx enables mechanisms to ensure integrity, authenticity, confidentiality and non-repudiation of information.

- 
As a tool or as a service: e-TrustEx can be installed by public administrations (Member States) as a tool or used as a service by the EU institutions.

- 
Re-usable: e-TrustEx can be re-used by any public administration in the Member States. This may generate both cost and time savings.

- 
Customisable: New modules can be added on top of the e-TrustEx platform to fulfil specific needs of different sectors.

- 
Content agnostic documents: Users can share structured and unstructured documents.

- 
Technical support for existing users and Member States willing to re-use the platform: This includes activities such as increasing the user request resolving time, support of deployment, integration, specifications of the technical interface and of the several components of the platform, debugging, testing, etc.

- 
Development of additional features and improvements: within the e-TrustEx platform by integrating it with the AS4 Access Point of eDelivery and other elements.

The continuation of the e-TrustEx action will ensure that the platform continues to be live and that support is available to its users. The diagram below summarizes the main concepts of the e-TrustEx action.

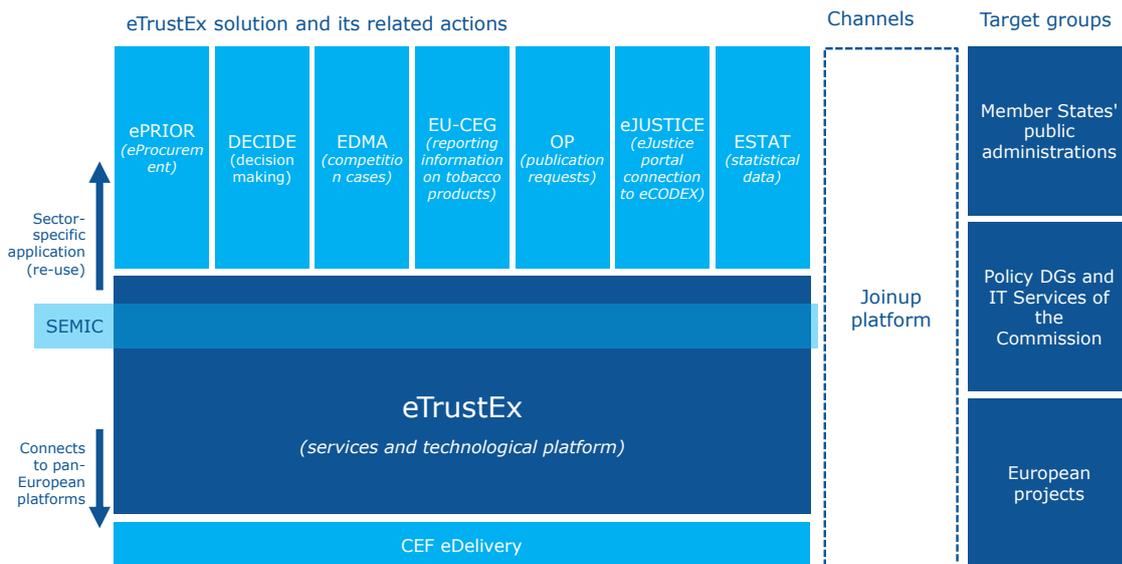


Figure 1 e-TrustEx Action at a glance

1.5.3 OBJECTIVES

The main objective of the e-TrustEx action is to support public administrations implementing EU policies that require the exchange of information across borders in an electronic format.

This is why ISA² provides Member States with a service-oriented platform such as e-TrustEx. As the e-TrustEx platform can be used in virtually every sector (eJustice, eProcurement, etc.), once deployed for the purposes of one sector, it may support and consequently accelerate the automation of data exchange in other sectors.

The e-TrustEx platform offers services such as validation, transformation and routing of data and documents as well as the ability to send large messages. The platform uses a CEF eDelivery Access Point as its most important machine-to-machine interface. The platform also has a web application that makes a mailbox-type of service available to end-users. Thanks to the open source policy of ISA², the Member States will be able to re-use and extend all elements of e-TrustEx for their own specific needs.

Another objective of this action is to **lay the groundwork for the sustainability of the e-TrustEx action** within the EU institutions and in the Member States. As several of the projects using e-TrustEx reach operations, it comes the time to prepare their sustainability outside of the ISA² Programme. Having this objective in mind, the Commission is currently considering to create a corporate service dedicated to the secure exchange of information. Once available this service would be able to sustain the projects of the EU Institutions that current rely on e-TrustEx for secure exchange of information.

1.5.4 SCOPE

In Scope

The e-TrustEX action includes the following elements:

- Development of additional features and improvements within the e-TrustEx platform;
- Operations of the platform for the EU institutions that reuse it in service delivery mode. This includes maintenance of the platform, improvement of its governance, quality control and assurance processes and mechanisms in order to enhance the services provided to the project stakeholders; and
- Technical support to users and Member States willing to re-use the platform. This includes activities such as increasing the user request resolving time, support of deployment, integration, specifications of the technical interface and of the several components of the platform, debugging, testing, etc.

Out of scope

The e-TrustEX action does not cover the following elements:

- Hosting costs linked to the open source version of e-TrustEx;
- Implementation of back-office integration (to be complemented by implementers' own budget);
- Specific support to their sectorial systems;
- Development of specific functionality and extensions; and
- The exchange of classified documents.

1.5.5 ACTION PRIORITY

1.5.5.1 Contribution to the interoperability landscape

The contribution of the action to the interoperability landscape, measured by the importance and necessity of the action to complete the interoperability landscape across the Union

Question	Answer
<p><i>How does the proposal contribute to improving interoperability among public administrations and with their citizens and businesses across borders or policy sectors in Europe?</i></p> <p><i>In particular, how does it contribute to the implementation of:</i></p> <ul style="list-style-type: none"> • <i>the new European Interoperability Framework (EIF),</i> • <i>the Interoperability Action Plan and/or</i> • <i>the Connecting European Facility (CEF) Telecom guidelines</i> • <i>any other EU policy/initiative having interoperability requirements?</i> 	<p>e-TrustEx is a platform offered to public administrations at European, national and regional level to set up secure exchange of natively digital documents or scanned documents from system to system via standardised interfaces.</p> <p>e-TrustEx is a cross-sector, open-source, free-to-use tool that will help Member States to exchange structured and unstructured documents and to connect to pan-European messaging infrastructures with reduced investment. A significant number of them already use or will soon be implementing the CEF eDelivery messaging protocol (i.e. AS4).</p> <p>Experience shows that the use of common technical specifications promotes interoperability, facilitates the cross-border and cross-sector information exchange, taking into account legal, organisational, semantic and technical aspects.</p>
<p><i>Does the proposal fulfil an interoperability need for which no other alternative action/solution is available?</i></p>	<p>Yes. This proposal refers to an already existing Action, to which its relevance in terms of interoperability has been demonstrated, and recognized by the ISA² programme⁵.</p>

1.5.5.2 Cross-sector

The scope of the action, measured by its horizontal impact, once completed, across the policy sectors concerned.

⁵ https://ec.europa.eu/isa2/actions/permitting-secure-document-workflows-between-eu-and-national-institutions_en

Question	Answer
<i>Will the proposal, once completed be useful, from the interoperability point of view and utilised in two (2) or more EU policy sectors? Detail your answer for each of the concerned sectors.</i>	See below.
<i>For proposals completely or largely already in operational phase, indicate whether and how they have been utilised in two (2) or more EU policy sectors.</i>	<p>e-TrustEx is used in the following policy areas:</p> <p><i>Business:</i></p> <ul style="list-style-type: none"> • e-Procurement⁶ (DIGIT) <p><i>Justice, home affairs and citizens' rights:</i></p> <ul style="list-style-type: none"> • eJustice portal⁷ (DG JUST) <p><i>Environment, consumers and health:</i></p> <ul style="list-style-type: none"> • EU-CEG⁸ tobacco reporting (DG SANTE) <p><i>Economy, finance and tax:</i></p> <ul style="list-style-type: none"> • EDMA⁹ competition cases (DG COMP) <p><i>Cross-cutting policies:</i></p> <ul style="list-style-type: none"> • DECIDE¹⁰ decision making process (SG) • Official Journal (OP) • ESDEN¹¹ collection of statistical data (ESTAT)

1.5.5.3 Cross-border

The geographical reach of the action, measured by the number of Member States and of European public administrations involved.

Question	Answer
<i>Will the proposal, once completed, be useful from the interoperability point of view and used by public administrations of three (3) or more EU Members States? Detail your answer for</i>	See below.

⁶ ePRIOR https://ec.europa.eu/isa2/solutions/open-e-prior_en

⁷ European e-Justice Portal <https://e-justice.europa.eu/home.do?action=home>

⁸ EU Common Entry Gate (EU-CEG) https://ec.europa.eu/health/euceg/introduction_en

⁹ Electronic Document Management Agent (EDMA) <http://ec.europa.eu/dpo-register/details.htm?id=26771>

¹⁰ Decide https://ec.europa.eu/info/sites/info/files/activity-report-2015-dg-sg_june2016_en.pdf

¹¹ European statistical data exchange network (ESDEN) <http://ec.europa.eu/eurostat/web/ess/about-us/ess-vision-2020/implementation-portfolio#ESDEN>

<i>each of the concerned Member State.</i>	
<p><i>For proposals completely or largely already in operational phase, indicate whether and how they have been utilised by public administrations of three (3) or more EU Members States.</i></p>	<p>For example, the e-TrustEx platform is currently used as a key element of pan-European messaging infrastructures by the following projects:</p> <ul style="list-style-type: none"> • e-PRIOR (DIGIT) • DECIDE (SG) • EDMA (DG COMP) • eJustice portal (DG JUST) • OPOCE (OP) • EU-CEG (DG SANTE) • ESDEN (ESTAT) – currently in implementation, estimated to be in production by the end of 2017. <p>Around 200 public institutions across the 28 Member States are in scope of these projects (such as national parliaments and permanent representations).</p> <p>Around 1 million documents have been exchanged between the European Commission, the EU Council and the Member States since its go live until July 2017.</p> <p>In addition, over 3 700 private companies have exchanged around 4.5 million documents with the EC and other EU institutions in the scope of the e-PRIOR and EU-CEG projects.</p>

1.5.5.4 Urgency

The urgency of the action, measured by its potential impact, taking into account the lack of other funding sources

Question	Answer
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<i>Is your action urgent? Is its implementation foreseen in an EU policy as priority, or in EU legislation?</i>	This proposal refers to an already on-going action. Its urgency has already been assessed by ISA ² . ¹²
<i>How does the ISA² scope and financial capacity better fit for the implementation of the proposal as opposed to other identified and currently available sources?</i>	This proposal refers to an action already under the ISA ² scope. The action includes a mix of experimentation and production and therefore fitting ISA ² 's scope and objectives.

1.5.5.5 Reusability of action's outputs

The re-usability of the action, measured by the extent to which its results can be re-used

Can the results of the action (following this proposal) be re-used by a critical part of their target user base, as identified by the proposal maker? For proposals or their parts already in operational phase: have they been re-used by a critical part of their target user base?

Name of reusable solution to be produced (for new proposals) or produced (for existing actions)	e-TrustEx open source software package
Description	The e-TrustEx open-source software package is offered to public administrations at European, national and regional level to set up secure exchange of digital structured and unstructured documents from system to system via standardised interfaces.
Reference	https://joinup.ec.europa.eu/software/openetrustex/description
Target release date / Status	Released
Critical part of target user base	Target level: continuous monitoring of reuse cases
For solutions already in operational phase - actual reuse level (as compared to the defined critical part)	EU-CEG (DG SANTE) has adopted the e-TrustEx solution to interconnect CEF eDelivery with the EU-CEG back-office. DG SANTE hosts and manages it in a secure environment.

Name of reusable solution to be produced (for new proposals) or produced (for existing actions)	e-TrustEx instance hosted at the EC
Description	e-TrustEx can be reused in a service delivery mode within the EU Institutions.
Reference	DIGIT-eTrustEx-Support@ec.europa.eu

¹² https://ec.europa.eu/isa2/actions/permitting-secure-document-workflows-between-eu-and-national-institutions_en

Target release date / Status	Released
Critical part of target user base	Target level: 5
For solutions already in operational phase - actual reuse level (as compared to the defined critical part)	<p>The following projects are reusing, or considering reusing the solution:</p> <ul style="list-style-type: none"> • e-PRIOR (DIGIT) – In production • DECIDE (SG) – In production • EDMA (DG COMP) – In production • OJ (OP) – In production • eJustice portal (DG JUST) – In production • ESDEN (ESTAT) – In implementation, estimated to be in production by the end of 2017 • ECI¹³ (DIGIT) – Considering reusing the solution <p>Around 200 public institutions across the 28 Member States are in scope of these projects (such as national parliaments and permanent representations).</p> <p>Around 1 million documents have been exchanged between the European Commission, the EU Council and the Member States since its go live until July 2017.</p> <p>In addition, over 3 700 private companies have exchanged around 4.5 million documents with the EC and other EU institutions in the scope of the e-PRIOR and EU-CEG projects.</p>

1.5.5.6 Level of reuse of existing solutions

The re-use by the action (following this proposal) of existing common frameworks and interoperability solutions

Question	Answer
<i>Does the proposal intend to make use of any ISA², ISA or other relevant interoperability solution(s)? Which ones?</i>	See below.
<i>For proposals completely or largely already in operational phase: has the action reused existing interoperability solutions? If yes, which</i>	ISA ² Action 1.7 - ePRIOR: the e-TrustEx platform was originally built on the basis of the ePRIOR platform and is now used by

¹³ European Citizens Initiative (ECI) https://ec.europa.eu/isa2/actions/reusable-tools-information-collection_en

<p><i>ones and how?</i></p>	<p>ePRIOR.</p> <p>ISA² Action 4.2.4 - Joinup: the e-TrustEx platform is made available via the ISA Collaborative Platform (Joinup).</p> <p>ISA² Action 1.1 - SEMIC: IMMC Metadata (Interinstitutional standard metadata defined in the context of the decision making process) files are transferred to EU stakeholders and Members States through e-TrustEx.</p> <p>CEF eDelivery DSI: the eTrustEx uses the Access Point and other elements of the CEF eDelivery Building Block.</p>
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1.5.5.7 Interlinked

The extent to which the action (following this proposal) contributes to Union's initiatives such as the DSM

Question	Answer
<p><i>Does the proposal directly contribute to at least one of the Union's high political priorities such as the DSM? If yes, which ones? What is the level of contribution?</i></p>	<p>DSM strategy In 2015, the digital single market strategy was released. The e-TrustEx action contributes to boosting competitiveness through interoperability and standardisation, which is explicitly mentioned in the communication.</p> <p>Juncker's political guidelines As e-TrustEx creates technical interoperability cross borders, it supports Priority n°2: A Connected Digital Single Market of the Political Guidelines for the next European Commission – A New Start for Europe: My Agenda for Jobs, Growth, Fairness and Democratic Change (15 July 2014).</p> <p>eGovernment Action Plan 2016-2020 In Action 6 of the eGovernment action plan, the Commission commits to reusing</p>

	<p>operational building blocks (such as e-TrustEx) in view of its own digital transformation.</p> <p>eIDAS Regulation The regulation on electronic identification and trust services for electronic transactions was adopted at end of 2014. It will further foster interoperability and reduce barriers in the internal market, supported by solutions such as e-TrustEx.</p> <p>Connecting Europe Facility (CEF) The e-TrustEx platform reuses the CEF eDelivery building block and is analyzing the reuse of CEF eID in its web application.</p>
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1.5.6 PROBLEM STATEMENT

The problem of	According to the eIDAS Regulation ¹⁴ " <i>electronic documents are important for further development of cross-border electronic transactions in the internal market</i> " and therefore " <i>an electronic document should not be denied legal effect on the grounds that it is in an electronic form in order to ensure that an electronic transaction will not be rejected only on the grounds that a document is in electronic form.</i> "
affects	Public administrations that will be required to replace information flows based on paper with electronic transactions.
the impact of which is	Public administrations are being pressed to adopt electronic means to exchange data and documents. This change is inevitable as legislation at all levels increasingly foresees the exchange of data electronically with other public administrations, businesses and citizens.
a successful solution would be	<p>To support public administrations implementing EU policies requiring the exchange of information across borders in electronic format by providing them with a service-oriented platform that can be used in every sector.</p> <p>As the e-TrustEx platform is multi-sector (eJustice, eProcurement, etc.), once deployed for one of them, it accelerates the automation of data and documents exchange</p>

¹⁴ http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv%3AOJ.L_2014.257.01.0073.01.ENG

	in the other sectors. The platform implements several services such as validation, transformation and routing of data and documents as well as the ability to send large messages. The platform uses a CEF eDelivery Access Point as its most important API. The platform also has a web application that makes available mailbox-type services to its end-users.
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1.5.7 IMPACT OF THE ACTION

1.5.7.1 Main impact list

Impact	Why will this impact occur?	By when?	Beneficiaries
(+) Savings in money	Switching from registered post to digital exchange of information reduces the cost of these exchanges (as an example, public administrations in France exchange millions of letters with delivery receipt – each one of them costing around €4 to €5 each).	Once sectors start switching to digital exchanges of information instead of paper-based means.	<ul style="list-style-type: none"> • European Projects • Member States • Public Administrations • EU Institutions.
	Cost savings and improved efficiency by enabling interoperability within and across sectors.		
	Cost savings to connect to pan-European messaging infrastructures.		
(+) Savings in time	Time savings to connect to pan-European messaging infrastructures.	Once critical mass has been reached.	
	Creation of a 'deploy once, use multiple times' platforming approach. This will create economies of scale avoiding that each sector develops their own specific solution.		
	Full automation of message exchanges among several parties in different sectors.		

(+) Better interoperability and quality of digital public service	Increase the security and reliability of information exchange and at the same time reduce the effort that usually needs to be dedicated to this type of process.	Once implemented	
	Provide free-to-use open source tools for national parliaments and permanent representations to send and receive electronic legal documents and metadata.		
	Sharing of experiences, lessons learnt, specifications, tools and components published as open source reusable by any Member State or EU Institution on Joiunup.		

1.5.7.2 User-centricity

In the context of e-TrustEx, user-centricity has different meanings. On one hand, the governance model facilitates stakeholders' involvement in the process by enabling them to exchange views and voice specific needs. On the other hand, e-TrustEx also has end-users, the people using the e-TrustEx Graphical User Interface (GUI). They expect a clean, intuitive interface that helps them get work done. Both dimensions of user centricity in the context of e-TrustEx are explained in the sections below.

Governance as a means to listen to the stakeholders' voice

As detailed in section 1.1.9.5 "Governance approach", the users form part of the governance of e-TrustEx. There are regular management board meetings, enabling the users to steer the direction of the action within the scope and guidelines set by the ISA² Programme. The governance process is based on open government principles and collaborative practices. Consultations and discussions, encouraging users' feedback, are therefore an integral part of the governance structure.

Improving the user experience of the e-TrustEx GUI: a journey, not a destination

A recent UX redesign study¹⁵ has been carried out in view of better meeting the users' needs and improving their experience using the GUI. The study assessed the users' needs, including expanding

¹⁵ Study completed as part of WP5 of ISA² Work Programmes 2016-2017, available on request.

the GUI to mobile users, complemented by UX concepts drawn from the theory behind the Magnus Revang's UX Wheel¹⁶.

- DESIRABILITY (colour scheme, contrast, graphic elements and placement of elements);
- USABILITY (navigation, intuitiveness, structure, naming, categorisation and consistency);
- CREDIBILITY (expected information and tone of voice);
- USEFULNESS (expected functionality, satisfaction and differentiation);
- FINDABILITY (user guidance and process guidance);
- ACCESSIBILITY (response time).

A first phase of the findings and recommendations of the study are already in implementation. The remaining phases will be planned together with the users through the governance structure.

1.5.8 EXPECTED MAJOR OUTPUTS

Major outputs are presented in section 1.1.5.5. "Reusability of action's outputs".

1.5.9 ORGANISATIONAL APPROACH

1.5.9.1 Expected stakeholders and their representatives

Stakeholders	Representatives	Involvement in the action
ISA ² Coordination Committee	Appointed ISA ² Coordination committee members	Assists the European Commission in translating priorities into actions and to ensure continuity and consistency in their implementation.
Secretariat General (SG)	SG.A.1 (Advice and Development)	This unit is the system owner and business project manager of DECIDE and represents the interests of DECIDE's users.
Directorate General for Informatics (DIGIT)	Unit DIGIT.D.3 (Trans-European Services)	This unit is the service in charge of this action and responsible for the development coordination and maintenance of e-TrustEx.
	Unit DIGIT.B.2 (Solutions for Legislation, Policy & HR)	This unit is in charge of the ISA action 'Reusable tools for EU public participation' that includes the European Citizens Initiative (ECI). This unit is also in charge of developing the DECIDE system for the

¹⁶ <http://userexperienceproject.blogspot.be/2007/04/user-experience-wheel.html>

		SG.
	Unit DIGIT.B.4 (Software Engineering Capabilities)	This unit coordinates the development of the eProcurement modules within the European Commission.
Directorate General for Communication Networks, Content and Technology (DG CONNECT)	Unit CONNECT.H4 (Trust and Public Services)	The cooperation with DG CONNECT is key given its role in the provision of the building blocks via the CEF programme.
Directorate General Competition (DG COMP)	Unit COMP.R.3. (Information Technology)	This unit is in charge of the EDMA project.
The statistical office of the European Union (DG EUROSTAT)	ESTAT.B.3 (IT for statistical production).	This unit is responsible for the ESDEN project that involves the exchange of statistical information between Member States and the EU institutions.
Directorate General for Health and Food Safety (DG SANTE)	Unit SANTE.A.4 (Information Systems)	This unit is the system owner of the EU-CEG project on Tobacco Reporting.
Organisations in the Member States	Members States representatives of administrations either working on similar initiatives or interested in reusing e-TrustEx.	As required
Other DGs of the European Commission (as required)	Representatives of other DGs / EU Institutions either working on similar initiatives or interested in reusing e-TrustEx.	As required

1.5.9.2 Identified user groups

The e-TrustEx action targets Member States' public administrations, policy DGs and IT services of the European Commission and various European projects. The following projects are identified as user groups:

- e-PRIOR (DIGIT)
- DECIDE (SG)
- EDMA (DG COMP)
- OJ (OP)
- eJustice portal (DG JUST)
- EU-CEG Project (DG SANTE)
- CEF eDelivery (DG CONNECT)
- ESDEN (ESTAT)

- ECI (DIGIT), currently considering reuse

1.5.9.3 Communication and dissemination plan

The e-TrustEx action uses Joinup to publicly disseminate information and is also invited to participate in Joinup's governance meetings. The e-TrustEx action further uses an intranet wiki to collaborate and engage with its users. The table below presents an overview of the foreseen events.

Event	Representatives	Frequency of meetings / absolute dates of meetings?
ISA ² Coordination Committee	Appointed ISA ² Coordination committee members	Quarterly
Operational Management Board Meetings	Representatives of the system suppliers or owners connected to eTrustEx or in the process of being connected to eTrustEx	Regular basis (specific periodicity as defined together with the stakeholders).
Bilateral meetings with Member States	DIGIT representatives and Member States representatives	These meetings are arranged by DIGIT on an ad-hoc basis.
Bilateral meetings with EU-wide initiatives	DIGIT representatives and representatives of EU-wide initiatives	These meetings are arranged by DIGIT on an ad-hoc basis.
Bilateral meetings with policy DGs	DIGIT representatives and policy DGs representatives	These meetings are arranged by DIGIT on an ad-hoc basis.
Relevant conferences and events	DIGIT with any other project stakeholder	On invitation to participate in relevant meetings or events organised by Member States or other stakeholders.

1.5.9.4 Key Performance indicators

The table below presents key traffic figures extracted from the e-TrustEx platform operated by the European Commission and of the software package that is made available to the Member States.

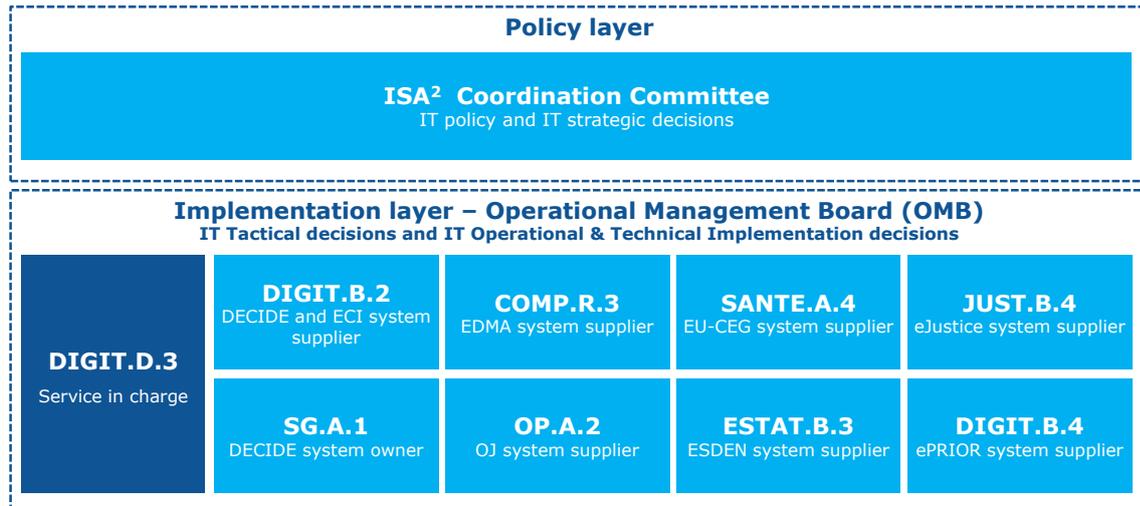
Description of the KPI	Target to achieve	Values
Number of documents exchanged via the GUI	150 000 (Per quarter, cumulative)	Q3-2016: 55 767 Q4-2016: 250 499 Q1-2017: 129 920 Q2-2017: 98 399
Number of projects using the e-TrustEx infrastructure for the exchange of documents	5 (Per quarter, not cumulative)	Q3-2016: 5 Q4-2016: 5 Q1-2017: 5 Q2-2017: 5
Number of downloads of Open e-TrustEx	150 (Per year, cumulative)	Q3-2016: 81 Q4-2016: 132 Q1-2017: 196 Q2-2017: 201
Number of documents exchanged in the generic e-TrustEx environment (via the e-TrustEx Node)	300 000 (Per quarter)	Q3-2016: 181 151 Q4-2016: 242 999 Q1-2017: 231 653 Q2-2017: 248 588

1.5.9.5 Governance approach

The e-TrustEx project, an action of the ISA² programme, follows the ISA² governance structure. To achieve its objectives, this action will collaborate with several DGs of the European Commission and with various other stakeholders.

Regular Operational Management Board (OMB) meetings aim to ensure continuous coordination with the system owners of the various systems connected to e-TrustEx. The OMB will be composed of representatives of the system suppliers and system owners of systems already connected to eTrustEx or in the process of being connected to eTrustEx. The objective of the OMB is to provide a vehicle for the participants to take decisions and handle all IT tactical and IT operational and technical implementation matters.

The graphic below presents an overview of the governance structure.



1.5.10 TECHNICAL APPROACH AND CURRENT STATUS

This action is the continuation of work started in ISA and on-going work funded under the first Work Programmes of ISA². After several enhancements, the e-TrustEx platform is today more scalable, reliable and supports additional functionalities.

During the last years, a number of pilots involving the secure exchange of information have been carried out in several sectors using the e-TrustEx platform. As a result of these successful pilots, eTrustEx is now on-boarding an increasing number of stakeholders. Some of them are already using the platform in a production mode.

As from 2018, the project will be focusing on three key work packages:

1. Making AS4, the messaging protocol of the CEF eDelivery building block, the prevalent API for communications over the Internet. This will involve simplifying the native web-services offered by the platform, the associated message exchange patterns and the full removal of the e-TrustEx Adapter by AS4 Access Points;
2. Continuous improvement of the platform (and the e-TrustEx web application), including its documentation, combined with the implementation of a governance model more in line with the maturity level of the platform. The activities involved in each improvement cycle will contribute towards the further development of its functionality. The activities associated to the operational parts of the action will contribute towards the provision of support and the rollout capacity required by the Member States and the policy DGs of the European Commission;
3. Support the creation of a dedicated service in the European Commission with the capacity of sustaining projects that have reached operational mode.

The outputs and results of the execution phase are divided into work packages as detailed in the next section.

Execution phase [PHASE 1] – completed, from April 2016 – March 2017

Main focus: Additional functionalities and improvements

Details: The activities of this phase are contained in the following WPs:

	Scope	Identified objectives
WP2	Continuous Improvement of software package	Improvement of the several elements of the e-TrustEx platform, including its web application, based on change requests received from users and technological advancements. This included elements such as: <ul style="list-style-type: none"> • Implementation of interoperable queue protocol • UX redesign study for the eTrustEx GUI, taking mobile access into account • Centralised configuration mechanism • Notification mechanism • Interoperable queue protocol • Start work on replacement of the web applet using WebStart
WP3	Operation and support	Supporting projects that have already reached production such as DECIDE.

Execution phase [PHASE 2] – currently ongoing, from April 2017 with planned conclusion in March 2018

Main focus: Adoption of development QA and QC best practices, continuous improvement

Details: The activities of this phase are contained in the following WPs:

	Scope	Identified objectives
WP1	Migration of e-TrustEx Adapter	Preparation of migration of the e-TrustEx Adapters to the AS4 Access Point of CEF eDelivery.
WP2	Continuous Improvement of software package	Improvement of the several elements of the e-TrustEx platform, including its web application, based on change requests received from users and technological advancements. This is expected to include elements such as: <ul style="list-style-type: none"> • Removal of JSCEF framework from the admin console • Improvements to the admin console • eTrustEx mobile access • Complete work on replacement of the web applet using WebStart • Improved security • Improve existing documentation • Implementation of code QA and QC methods and tool (code quality review, unit testing and integration testing tools, test automation)
WP3	Operation and support	Supporting projects that have already reached production such as DECIDE.

Execution phase [PHASE 3] – From April 2018 with planned conclusion for March 2019

Main focus: Migration of the e-TrustEx Adapter by the AS4 Access Point of CEF eDelivery

Details: The activities of this phase are contained in the following WPs:

	Scope	Identified objectives
WP1	Migration of e-TrustEx Adapter	Full migration of the e-TrustEx Adapters to the AS4 Access Point of CEF eDelivery.
WP2	Continuous Improvement of software package	Improvement of the several elements of the e-TrustEx platform, including its web application, based on change requests received from users and technological advancements. This is expected to include elements such as: <ul style="list-style-type: none"> • Normalising the eTrustEx DB • Setup of a cloud instance of the eTrustEx node for demo purposes • Integrate new design on eTrustEx GUI • Improve the environment for eTrustEx testing
WP3	Operation and support	Supporting projects that have already reached production such as DECIDE.

Execution phase [PHASE 4] – From April 2019 with planned conclusion for March 2020

Main focus: Leveraging the AS4 Access Point of CEF eDelivery

Details: The activities of this phase are contained in the following WPs:

	Scope	Identified objectives
WP1	Migration of e-TrustEx Adapter	After replacing the e-TrustEx Adapter with the AS4 Access Point of CEF eDelivery, several efforts will be done to: <ul style="list-style-type: none"> • Simplify the native web-services of e-TrustEx and • Of its message exchange patterns. Changes will be implemented in order to leverage the functionalities of the AS4 Access Point.
WP2	Continuous Improvement of software	Improvement of the several elements of the e-TrustEx platform, including its web application, based on change requests received from users and technological advancements. This is expected to include elements such as: <ul style="list-style-type: none"> • eTrustEx Message/User Reporting • Simplify and document the eTrustEx node data model • Improved logging on eTrustEx
WP3	Operation and support	Supporting projects that have already reached production such as DECIDE.

Execution phase [PHASE 5] – From April 2020 with planned conclusion for March 2021

Main focus: Handing operations to a dedicated service to be created in the Commission

Details: The activities of this phase are contained in the following WPs:

	Scope	Identified objectives
WP2	Continuous Improvement of software	Improvement of several elements of the e-TrustEx platform, including its web application, based on change requests received from users and technological advancements. This is expected to include elements such as: <ul style="list-style-type: none"> • Admin console new features • eTrustEx message export
WP3	Operation and support	Handing over of the operational part of the action to a dedicated service that is planned to be created in the European Commission.

1.5.11 COSTS AND MILESTONES

1.5.11.1 Breakdown of anticipated costs and related milestones

Phase: Initiation Planning Execution Closing/Final evaluation	Description of milestones reached or to be reached	Anticipated Allocations (KEUR)	Budget line ISA/ others (specify)	Start date (QX/YYYY)	End date (QX/YYYY)
Phase 1 – Execution	Additional functionalities and improvements	950	ISA ²	Q2/2016	Q1/2017
Phase 1 – Operational	Operation phase 1	250	ISA ²	Q2/2016	Q1/2017
Phase 2 – Execution	Adoption of development QA and QC best practices, Continuous improvement	1020	ISA ²	Q2/2017	Q1/2018
Phase 2 - Operational	Operation phase 2	250	ISA ²	Q2/2017	Q1/2018
Phase 3 – Execution	Migration of e-TrustEx Adapter and Continuous Improvement of software	950	ISA ²	Q1/2018	Q1/2019
Phase 3 – Operational	Operation and support	250	ISA ²		
Phase 4 – Execution	Leveraging the AS4 Access Point of CEF	750	ISA ²	Q2/2019	Q1/2020

	eDelivery and Continuous Improvement of software				
Phase 4 – Operational	Operation and support	250	ISA ²		
Phase 5 – Execution	Finalising Improvements	650	ISA ²	Q2/2020	Q1/2021
Phase 5 – Operational	Operation and support	250	ISA ²		
	Total	5.670.000			

1.5.11.2 Breakdown of ISA² funding per budget year

Budget Year	Phase	Anticipated allocations (in KEUR)	Executed budget (in KEUR)
2016	Phase 1 – Execution	950	
	Phase 1 – Operational	250	
2017	Phase 2 – Execution	1170	
	Phase 2 – Operational	250	
2018	Phase 3 – Execution	750	
	Phase 3 – Operational	250	
2019	Phase 4 – Execution	750	
	Phase 4 – Operational	250	
2020	Phase 5 – Execution	650	
	Phase 5 – Operational	250	

1.5.12 ANNEX AND REFERENCES

Description	Reference link	Attached document
Digital Single Market	http://ec.europa.eu/priorities/digital-single-market_en	
Digital Single Market Strategy	http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A52015DC0192	
CEF Digital	https://ec.europa.eu/digital-agenda/en/connecting-europe-facility	
eIDAS regulation	http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.L_.2014.257.01.0073.01.ENG	

1.6 Electronic Documents and Electronic Files: Interoperability Agreements and Form Generators (2016.26)

1.6.1 IDENTIFICATION OF THE ACTION

Type of Activity	Common Frameworks
Service in charge	DIGIT D2, GROW E3
Associated Services	GROW R3, R4, SG, DIGIT.B2, EU Publications Office, DG CONNECT

1.6.2 EXECUTIVE SUMMARY

Administrative activity is distinguished by its documentary character, in the sense that the administrative documents are evidences of their activity and the external form of such acts.

The need to exchange the above documents and files in an electronic format make necessary the establishment of interoperability guidelines about their exchange. Special consideration should be given to the context in which the object of exchange is the electronic document and not just the data it carries.¹⁷

Preliminary work has been done under the ISA programme, to explore what Member State administrations try to achieve when using electronic documents and how they do it.

This has, under the ISA² programme, been extended to get an extensive overview and serve as the basis for the categorisation of requirements, possible solutions and interoperability issues related to these solutions, with the goal to identify areas where interoperability agreements would be useful, and consequently establish such agreements.

An interesting use case to implement the digitalisation of administrative documents is provided by the proposal for a Regulation on a Single Digital Gateway of 2 May 2017 that aims at making it easier for citizens and businesses to move, live, work or establish in another EU Member States.

The proposal requires Member States to digitalise the front office of the 13 procedures¹⁸.

Some Member States, like Denmark and Ireland, are using form generators for digitalising procedures, which are estimated to be particularly cost efficient. This is why, in order to facilitate the implementation of the Regulation, it is envisaged to examine the feasibility of an EU form generator that could be easily used by Member States who are interested, for digitalising at least the 13 procedures listed above.

The action will assess the technical, organisational and economical feasibility of an multilingual open source form generator that could be easily customised by national, regional and local authorities for the many different procedures for which they are responsible.

¹⁷ From the original entry in the ISA work programme that established the action

¹⁸ See Annex II of the [Proposal for a Regulation on establishing a Single Digital Gateway](#).

1.6.3 OBJECTIVES

The objective of the action is the definition of common specifications (interoperability agreements) in relation to electronic documents and the electronic files¹⁹:

- "An interoperability agreement for electronic documents would define a common approach describing e-documents, including contents, e-signatures, and minimum required metadata;"
- "An interoperability agreement for e-files would define a common approach to the structure of e-files (being a collection of electronic documents grouped into a common context, e.g. a case), including e-documents, e-indexes, e-signatures, and minimum required metadata, and specifications on how to send and make them available."

The action has been aiming to first establish a complete picture of solutions and standards for electronic documents and electronics files, covering the whole lifecycle of e-electronic documents and electronic files, including bundling (containers), exchange (e-Safe and others) and archiving.

This picture covers at present a large number of solutions at national level and some at EU level, used in various domains, taking into account security, privacy and data protection and the citizen's right to data preservation and will propose the concrete development of a solution covering a number of administrative procedures.

The next step to achieve would be to examine how ISA² can contribute to the actual establishment of interoperability agreements.

On the Form Generators tool, the action will:

- analyse existing form generators, their characteristics (capacity, scale of use, technical characteristics, governance) and their adaptability, scalability and reusability by other Member States,
- analyse business, functional, design and technical requirements,
- estimate development, maintenance and support costs according to various development options,
- explore sustainability and underlying governance models

The tool should facilitate efficient and effective electronic cross-border interaction between European public administrations and businesses and citizens, and contribute to the development of a more effective, simplified and user-friendly e-administration, in line with the objectives of the ISA² programme.

1.6.4 SCOPE

Compared to the original proposal to examine and propose common specifications for the structure of electronic documents and electronic files, the scope of the action has been extended to examine all types of solutions related to electronic documents, on all interoperability layers.

Building on the reference architecture for electronic documents that was developed under the ISA programme, the action has considered various aspects related to e-documents and identified interoperability issues. While the underlying needs / requirements have been examined and best

¹⁹ Definitions from the original ISA work programme entry

practices identified, it has become clear that there is at present little cross-border use of such solutions, obstacles being predominantly at the legal and organisational levels.

Though the ISA² programme has itself little mandate to establish a legal framework, relevant initiatives in the policy DGs have been identified (in particular the Public Documents Regulation of DG JUST) and cooperation initiated. The ISA² action will continue to support these initiatives, while at the same time for the creation of common specifications returning to the original scope which is mostly the Semantic layer. For the Single Digital Gateway, building on the previous results of the action will feed the list of requirements of the Forms Generator tool. A state of the art market survey as well as development options will be provided.

Member States should be able to easily install the tool and link it with existing back office systems where relevant. The tool should enable the generation of forms:

- with fields enabling the input by users of all required information to launch a procedure,
- available in all EU languages,
- enabling the option to submit supporting documents,
- enabling the option for users to identify themselves and to sign electronically,
- enabling an option for payments,
- enabling the option of an interconnection with back office systems to populate the forms with personal information coming from authentic sources,
- ensuring sufficient data protection,
- enabling the option to issue statistics on the requests submitted.

Development of the tool itself is outside the project scope.

1.6.5 ACTION PRIORITY

This section is used to assess the priority of the proposal to become a programme's action according to Art. 7 of the ISA² decision²⁰.

1.6.5.1 Contribution to the interoperability landscape

The contribution of the action to the interoperability landscape, measured by the importance and necessity of the action to complete the interoperability landscape across the Union

Question	Answer
<p><i>How does the proposal contribute to improving interoperability among public administrations and with their citizens and businesses across borders or policy sectors in Europe? In particular, how does it contribute to the</i></p>	<p>The EIF calls for the establishment of interoperability agreements. The action aims at establishing such agreements for electronic documents and electronic files. It will contribute to the implementation of</p>

²⁰ DECISION (EU) 2015/2240 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

<p><i>implementation of:</i></p> <ul style="list-style-type: none"> • <i>the new European Interoperability Framework (EIF),</i> • <i>the Interoperability Action Plan and/or</i> • <i>the Connecting European Facility (CEF) Telecom guidelines</i> • <i>any other EU policy/initiative having interoperability requirements?</i> 	<p>the following principles of the EIF:</p> <ul style="list-style-type: none"> - principle 3: visibility (by contributing to the development of the Single Digital Gateway) - principle 4: reusability of IT solutions (by enabling the reuse of form generators by other Member States) - principle 6: user-centricity (by contributing to the development of the Single Digital Gateway – which is a single point of contact for final users and which is built around the needs of the users). <p>The project will build on existing CEF building blocks such as eSignatures.</p>
<p><i>Does the proposal fulfil an interoperability need for which no other alternative action/solution is available?</i></p>	<p>The landscape of existing solutions and their cross-border / cross-sector interoperability is little known; it is one of the goals of the action to get a better understanding of the solutions that fulfil this interoperability need.</p> <p>The Forms Generator will avoid also fragmentation in the development of solutions at administration level.</p>

1.6.5.2 Cross-sector

The scope of the action, measured by its horizontal impact, once completed, across the policy sectors concerned.

Question	Answer
<p><i>Will the proposal, once completed be useful, from the interoperability point of view and utilised in two (2) or more EU policy sectors? Detail your answer for each of the concerned sectors.</i></p>	<p>Cross-sector applicability of e-documents solutions is one of the aspects that the action examines.</p> <p>The e-documents reference architecture is certainly applicable across sectors.</p> <p>Existing Interoperability agreements that relate to the content of electronic files are often sector-specific; where they relate to the generic aspects of documents they often remain very high-level (related to e-delivery and security)</p>

	<p>Also the 13 procedures initially considered for the tool are used in a wide range of policy sectors (education, employment, civil status, transport, social security, business registration).</p> <p>Besides, the form generator envisaged should also be easily extended for the digitalisation of procedures in additional policy sectors.</p>
<p><i>For proposals completely or largely already in operational phase, indicate whether and how they have been utilised in two (2) or more EU policy sectors.</i></p>	<p>The form generators already in use in Ireland and Denmark already cover various policy sectors: taxes, transport, customer service, licenses.</p>

1.6.5.3 Cross-border

The geographical reach of the action, measured by the number of Member States and of European public administrations involved.

Question	Answer
<p><i>Will the proposal, once completed, be useful from the interoperability point of view and used by public administrations of three (3) or more EU Members States? Detail your answer for each of the concerned Member State.</i></p>	<p>One purpose of the action is to facilitate the cross-border exchange and mutual recognition of electronic documents and electronic files.</p> <p>Many Member States are requiring such a tool.</p>
<p><i>For proposals completely or largely already in operational phase, indicate whether and how they have been utilised by public administrations of three (3) or more EU Members States.</i></p>	<p>Many Member States have contributed to the stock-taking of solutions.</p> <p>Interest in the e-documents reference architecture has been shown from similar architecture initiatives in Belgium and Denmark.</p> <p>Such tools are already in used in some countries such as Ireland, Denmark and Belgium. France is also interested in the approach.</p>

1.6.5.4 Urgency

The urgency of the action, measured by its potential impact, taking into account the lack of other funding sources

Question	Answer
<i>Is your action urgent? Is its implementation foreseen in an EU policy as priority, or in EU legislation?</i>	Electronic documents and their mutual recognition play a role in many policy areas (e.g. Services Directive, Justice). If the Single Digital Gateway regulation is adopted it will become urgent to offer such tools to some member states not having already digitised.
<i>How does the ISA² scope and financial capacity better fit for the implementation of the proposal as opposed to other identified and currently available sources?</i>	Since a large portion of the work consists in an analysis of the as-is-situation and a gap analysis, it fits well into the scope of the ISA ² programme. Elaboration of interoperability agreements / specifications is closely linked to other ISA ² actions (SEMIC, EIRA). In order to provide a general purpose tool, the Form Generators will also improve the efficiency of the electronic interaction between European public administrations and businesses / citizens.

1.6.5.5 Reusability of action's outputs

Can the results of the action (following this proposal) be re-used by a critical part of their target user base, as identified by the proposal maker? For proposals or their parts already in operational phase: have they been re-used by a critical part of their target user base?

Output name	Updated and extended Reference Architecture for e-Documents
Description	Under the ISA programme, the e-Documents action has produced a reference architecture for electronic documents, based on the European interoperability Reference Architecture (EIRA). Under ISA ² , this will further maintained. It is meant to enable public administrations to make informed architecture decisions when building e-document solutions.
Reference	http://joinup.ec.europa.eu/site/isa_edocuments/edocuments/index.html
Target release date /	2016 / Status: first version published in 2015, updated in 2016 and

Status	2017
Critical part of target user base	A measurable number would be the architecture initiatives in Member states that reuse this reference architecture. The number of solution architects that use it for the creation is difficult to know.
For solutions already in operational phase - actual reuse level (as compared to the defined critical part)	Information was exchanged / cooperation initiated with architecture initiatives in Belgium and Demark, which took some input from the reference architecture.

Output name	XML schemas for Public Documents
Description	Schemas that were produced for DG Justice and Consumers for the forms that will be published in the European e-Justice Portal in the context of the Public Documents Regulation.
Reference	To be published on Joinup
Target release date / Status	Q4 2017
Critical part of target user base	Since the forms will be implemented in the e-Justice Portal, they will be implicitly used by all MS – however there is no obligation for Member States to implement the XML schemas in their own system(s). An achievement towards interoperability would be if a large number (one third) of Member States would implement the schemas in their IT systems.
For solutions already in operational phase - actual reuse level (as compared to the defined critical part)	Too early for MS to make a commitment, but some have expressed interest to implement the schemas in their national system.

Output name	Tool for the creation of XML schemas
Description	An eclipse-based tool that transforms (under the control of scripts) UML Diagrams into XML schema. Reuse of ISA Core Vocabularies and Naming and Design Rules are built into the tool as a configurable feature.
Reference	To be published on Joinup
Target release date / Status	Finalization Q4 2017, release as a public beta 2018
Critical part of target user base	Since an important aspect of the tool is that it has support for the ISA Core Vocabularies built-in, the interesting number to measure is not the number of end users but

	the number of policy DGs, cross-border projects and/or Member States that use the tool for the creation of their schemas. Target for 2018: 2 different projects in 2 policy areas.
For solutions already in operational phase - actual reuse level (as compared to the defined critical part)	Currently the maintenance of the DG JUST schemas (for which the tool was created) is done by ISA ² , therefore the need to hand the tool over to the policy owner.

Name of reusable solution to be produced (for new proposals) or produced (for existing actions)	Form generator
Description	Feasibility study to develop an open source tool that can be used by a Member State to generate forms building the front office of administrative procedures
Reference	Existing tools in IE, DK, BE
Target release date / Status	2019
Critical part of target user base	All Member States authorities to which the Regulation will apply are potential users. Several of them already expressed interest in the tool. Beyond the authorities in charge of the 13 procedures listed in the executive summary, it is expected that the tool could easily be used within a wider range of policy areas.
For solutions already in operational phase - actual reuse level (as compared to the defined critical part)	N/A

1.6.5.6 Level of reuse of existing solutions

The re-use by the action (following this proposal) of existing common frameworks and interoperability solutions.

Question	Answer
<i>Does the proposal intend to make use of any ISA², ISA or other relevant interoperability solution(s)? Which ones?</i>	The e-documents engineering method put forward in the first phase of the action was developed in cooperation with the ISA action 1.1 (SEMIC). Any future work on standardised formats will have to take into account the instruments created by the

	<p>SEMIC action. Core Vocabularies in particular can play a role in the definition of e-document formats (side by side with international standards such as Dublin Core, SBDH, UN/CEFACT and UBL). Specifications developed in the Member States and coming from other funded projects (e.g. LSPs), as well as the analysis done in the context of the Services Directive will serve as input for any draft interoperability agreements.</p> <p>The Form Generator will build on existing CEF building blocks such as eSignatures. The possibility to use the CPSV-AP and the ISA core vocabularies like the persons and location vocabularies in this frame will also be assessed.</p> <p>Besides, the action will start with a state of the art, in order to assess the possibility to reuse existing tools.</p>
<p><i>For proposals completely or largely already in operational phase: has the action reused existing interoperability solutions? If yes, which ones and how?</i></p>	

1.6.5.7 Interlinked

Question	Answer
<p><i>Does the proposal directly contribute to at least one of the Union's high political priorities such as the DSM? If yes, which ones? What is the level of contribution?</i></p>	<p>Mutual recognition of electronic documents and efficient exchange between administrations are certainly key elements for the free movement of citizens and goods and establishing the once-only principle. , therefore contributing directly to the DSM and the eGovernment Action Plan calling for a Single Digital Gateway.</p>

1.6.6 PROBLEM STATEMENT

The problem of	Exchange and processing of electronic documents being done at present almost exclusively at national level
affects	Citizens and business that move and economically act across borders
the impact of which is	that many processes that citizens can in their own country already execute digitally, remained closed to citizens of other Member States.
a successful solution would be	Interoperability agreements that permit the exchange and mutual recognition of electronic documents across borders.

The problem of	Lack of digitalisation of administrative procedures
affects	Cross-border citizens and businesses (including both nationals living abroad and stakeholders from other Member States)
the impact of which is	Costs, administrative burden, and the lack of use of the opportunities offered by the Single Market to their highest potential
a successful solution would be	Form generators

The problem of	Costs for digitalising administrative procedures
affects	Member States authorities
the impact of which is	Delayed or incomplete implementation of the single digital gateway, especially at decentralised levels of government
a successful solution would be	Form generators, offering an easy to use and cost effective tool for authorities when digitalising procedures

1.6.7 IMPACT OF THE ACTION

1.6.7.1 Main impact list

Impact	Why will this impact occur?	By when?	Beneficiaries
(+) Savings in money	Common specifications for	A first	Citizens,

(+) Savings in time	electronic documents (data and metadata) will enable the processing of such documents generated by systems in one MS (or in central EU portals) by systems in another MS. This will generate savings in processing time and (through the avoidance of manual work) also in money in the public administration: At the same time, it will provide better service quality to the citizens and businesses, because requests can be processed faster and with higher data quality.	manifestation of these benefits will be realised when Member States implement the schemas developed for the Public Documents Directive. (Currently MS have indicated no timeline for that, but it could happen as of 2018 / 2019)	businesses, public administrations.
(+) Better interoperability and quality of digital public service			

1.6.7.2 Main impact list

Impact	Why will this impact occur?	By when?	Beneficiaries
(+) Savings in money and in time	Direct impact: form generators will limit the costs incurred by Member States authorities for digitalising procedures (from max. 600 k€ to max. a few thousands € per procedure). Indirectly, this will enable citizens and businesses to launch administrative procedures online, thereby saving them money and time (estimated benefits: 855 000 hours and € 11-55 billion saved yearly).	2020	Member States authorities, EU cross-border citizens and businesses
(+) Better interoperability and quality of digital public service	Indirectly, a form generator proposed at the EU level will improve quality of the procedures offered, and facilitate interoperability with final users	2020	EU cross-border citizens and businesses

(-) Integration or usage cost	Expected to be very limited	2020	Authorities
(+) Full use of the opportunities offered by the Single Market	Indirectly, through facilitating access to procedures for cross-border users	2020	EU cross-border citizens and businesses

1.6.7.3 User-centricity

As is the case with many interoperability solutions, citizens are not directly the users of the action's output. The approach to user-centricity therefore needs to be twofold:

- On the one-hand the usability for direct users (see section 1.6.9.2 below) is being assured by paying special attention to requirements analysis and documentation.
- On the other hand, to assure that benefits are being realised for citizens and businesses, the action's team is actively participating in the Member State groups of the relevant policy DGs that represent the end users in their countries.

On the Form Generator:

- Member States authorities will be involved in the whole process through exchanges on the project and its implementation in the frame of the meetings of the EUGO network and of the Single Digital Gateway coordination group.
- Final users of procedures (citizens and businesses) will also be involved in the development through the establishment of a dedicated stakeholder group, foreseen at the latest for 2018. Besides, the whole Single Digital Gateway will include tools for gathering user feedback, which will also feed into possible evolutions of the form generator.

1.6.8 EXPECTED MAJOR OUTPUTS

Output name	Updated study on state of the art of e-Document and eSafe solutions in Europe
Description	The inventory and analysis of what exists in this area in terms of existing standards and solutions actually in use in Member States and at EU level has been extended to more Member States and to cover eSafe solutions in Europe, too.
Reference	https://joinup.ec.europa.eu/sites/default/files/ckeditor_files/files/SC112-D02_01%20Report%20on%20Architectural%20and%20Solution%20Building%20Blocks%20for%20e-Documents%20used%20in%20Member%20States_v2_01.pdf

Target release date / Status	2016 / published
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Output name	Cross-border usability and use of eDelivery and eSafe solutions
Description	Analysis of cross-border usability and use of eDelivery and eSafe solutions, identification of obstacles and recommendations
Reference	To be published on Joinup
Target release date / Status	Q4 2017

Output name	Description of Architectural Alternatives
Description	Study on architectural alternatives for the exchange of electronic documents, including process descriptions
Reference	To be published on Joinup
Target release date / Status	Q4 2017

Output name	Metadata Specifications for Case Management / Document Management
Description	Analysis of Specification used in the MS, Mappings
Reference	To be published on Joinup
Target release date / Status	2018

Output name	State of the art on Form Generators
Description	State of the art analysing existing form generators, their characteristics and their reusability by other Member States
Reference	Existing tools in IE, DK, BE, ES, FR
Target release date / Status	2018

1.6.9 ORGANISATIONAL APPROACH

1.6.9.1 Expected stakeholders and their representatives

Stakeholders	Representatives	Involvement in the action
Member States	ISA ² Committee, ISA ² Coordination group and working groups Points of Single Contact representatives Single Digital Gateway national coordinators	Decision-making about the further course of the action, providing input stock-taking
Commission Services - Policy DGs (DG JUST, potentially DG GROW)	Project officers	Direct beneficiaries as schemas / specifications are being created for them
ICT	Representatives of ICT industry, SMEs	Gave input in previous phases
Cross-border businesses and citizens	Single Digital Gateway stakeholder group	Regular meetings to discuss development; user feedback mechanism

1.6.9.2 Identified user groups

The reports produced by the action and the reference architecture are meant to be used by:

- Policy makers in the Member States that want to know what kind of solutions are in place in other MS
- Policy makers at European level that want to know what kind of solutions are in place in the Member States, to what extent they can be used across borders and sectors and where there are potential gaps to be filled
- Enterprise and IT architects in the Member States that want to know the typical components of solutions for electronic documents and how to make them interoperable

Tools, XML schemas and similar technical interoperability agreements are meant to be used by

- IT architects and system implementers when creating systems for the exchange of electronic documents across organisational and political borders.

The Form Generator tool is meant to be used by:

- Member States authorities responsible for the 13 procedures listed in the executive summary

1.6.9.3 Communication and dissemination plan

Under the ISA programme, MS solutions for electronic documents and electronic files were examined. This inventory continues under ISA² – targeted communication with experts took place through e-mail and telephone interviews, as well as some visits, so as to achieve a complete picture of the situation in Member States. The reference architecture for electronic documents that was also created under the ISA programme has been finalised and will be further disseminated, through presentations and webinars.

Based on what is known about existing (national) interoperability agreements in the MS from the previous analysis, and some further examination, communalities and overlaps will be identified, and the potential for harmonisation and/or mappings as well as pilots will be discussed with the experts from the MS that have contributed in previous phases.

The action will also be advertised in the frame of the EUGO network and of the Single Digital Gateway coordination group. Both groups will enable to reach the authorities that are the target group for the project. Each group is meeting twice a year. Specific events dedicated to this project may also be organised.

Besides, promotion of the Single Digital Gateway as a whole towards businesses and citizens is foreseen in the proposal for a Regulation as an essential task that will take place in cooperation with Member States authorities, mainly online.

1.6.9.4 Key Performance indicators

The ISA dashboard gives an overall efficiency indicator of 7.5; the effectiveness indicators provided to the "Monitoring and evaluation" action are indicated in the table below together with their value at the time of writing. Note however that these indicators are related to the present specific contract, not to future work under the 2018 Work programme.

Description of the KPI	Target to achieve	Value Q2 2017	Expected time for target
Number of Member States visits for further exchange of information	3	3	Q4 2017
Number of Member States to provide additional input/specific fields for the creation of XML schemas	27	18	Q4 2017
The number of eDelivery solutions examined	4	3	Q4 2017
The number of eSAFE solutions examined	4	3	Q4 2017
Number of alignments of the reference architecture with other ongoing efforts	3	3	Q4 2017

Number of existing form generators analysed	At least 5	N/A	2018
Number of Member States consulted on their needs and requirements	28	N/A	2018
Level of preparation of the final recommendations	100%	N/A	2018

1.6.9.5 Governance approach

The action will be managed by DIGIT with the support of an external contractor. Whenever major deliverables are to be published, the validation of the MS representatives will be sought.

This action will be run in close collaboration with the concerned Commission services. Once interoperability agreements are established, they will require a more formal governance – this will be created in a later stage of the action, depending on the nature of the agreements (based on existing work for similar types of interoperability agreements, e.g. SEMIC), and taking into account the participation of relevant stakeholders.

For the Form Generator it will be co-managed by the Single Digital Gateway team in DG GROW, and in particular by its working group 6 "technical tools".

Member States authorities and final users will be involved in its development and implementation in the way described in previous section.

1.6.10 TECHNICAL APPROACH AND CURRENT STATUS

During the inception phase, the inventory and analysis of what exists in the Member States has been completed. The e-documents reference architecture enables identification of requirements on the different interoperability layers. Additional research was conducted in 2017 to understand different technical approaches to the exchange of electronic documents. This work will be used to identify where definition and agreements on common templates of interoperability agreements (specifically oriented towards electronic documents and electronic files) could contribute to increase interoperability amongst EU systems.

Cooperation with DG JUST is ongoing, for the development of XML schemas for electronic documents in the scope of the Public Documents Regulation²¹. These are very fundamental documents and very good candidates for interoperability agreements. Similarly, the planned work on form generators in DG GROW, in the context of the Regulation on a Single Digital Gateway covers administrative processes and documents that are also within the scope of this action. Instead of creating its own specifications (interoperability agreements), the action will therefore in the present phase support these initiatives of the policy DGs. At the same time, within the action, research will focus on metadata accompanying

²¹ See http://ec.europa.eu/justice/civil/judicial-cooperation/document-circulation/index_en.htm

documents in case management and document management systems, and related standards and specifications.

1.6.11 COSTS AND MILESTONES

1.6.11.1 Breakdown of anticipated costs and related milestones

Phase: Initiation Planning Execution Closing/Final evaluation	Description of milestones reached or to be reached	Anticipated Allocations (KEUR)	Budget line ISA/ others (specify)	Start date (QX/YYYY)	End date (QX/YYYY)
Inception	Scope definition: <ul style="list-style-type: none"> • Begin analysis of MS solutions • Inception of Reference Architecture 	100	ISA ²	Q2 2016	Q3 2016
	Scope definition: <ul style="list-style-type: none"> • Extended Analysis of MS solutions • Finalization of Reference Architecture 	150	ISA ²	Q4 2016	Q2 2017
Execution	<ul style="list-style-type: none"> • Analysis of different technical approaches to document exchange • Business process analysis • Interoperability Agreements: Public Documents XML schemas 	197	ISA ²	Q3 2017	Q4 2017
Execution Operation	<ul style="list-style-type: none"> • Analysis of standards for document managing / case management • Maintenance of outputs from previous phases (tools, schemas, 	150		Q1 2018	Q4 2018

	reference architecture) <ul style="list-style-type: none"> • Support of policy DGs (schema creation) 				
Initiation	<ul style="list-style-type: none"> • Inception report 	10	ISA ²	Q1 2018	Q1 2018
Planning	<ul style="list-style-type: none"> • First list of existing form generators • List of contacts to be made • Timeplan 	10	ISA ²	Q1 2018	Q1 2018
Execution	<ul style="list-style-type: none"> • Analysis of existing form generators 	60	ISA ²	Q2 2018	Q2 2018
Execution	<ul style="list-style-type: none"> • Analysis of business needs by each Member State 	100	ISA ²	Q3 2018	Q3 2018
Execution	<ul style="list-style-type: none"> • List of requirements for the tool 	100	ISA ²	Q3 2018	Q4 2018
Execution	<ul style="list-style-type: none"> • Options for development 	20	ISA ²	Q4 2018	Q4 2018
Closing / Final evaluation		10	ISA ²	Q4 2018	Q4 2018
	Total	897			

1.6.11.2 Breakdown of ISA² funding per budget year

Budget Year	Phase	Anticipated allocations (in KEUR)	Executed budget (in KEUR)
2016	Inception Execution	250	
2017	Execution	197	
2018	Inception Execution Operation	450	

1.6.12 ANNEX AND REFERENCES

Description	Reference link	Attached document
Updated Reference	http://joinup.ec.europa.eu/site/isa_edocuments/edocuments/	

Architecture for e- Documents		
Proposal for a Regulation on a Single Digital Gateway	https://ec.europa.eu/info/law/better-regulation/initiatives/com-2017-256-0_en	

1.7 INNOVATIVE PUBLIC SERVICES (2018.01)

1.7.1 IDENTIFICATION OF THE ACTION

Service in charge	DIGIT B4, D2
Associated Services	TAXUD, GROW, DGT,CONNECT

1.7.2 EXECUTIVE SUMMARY

Modernising Public Administration is a race against the rapid development of new innovative digital technologies. Although there has been a tremendous increase in the digitisation of public services, technological innovations (e.g. blockchain and the distributed ledgers, Artificial Intelligence, Mixed reality, Big Data Analytics, etc.) and associated business models are currently under-embraced in the public sphere. The World Economic Forum 2016 Global Information Technology Report²² even highlights a widening and worrying gap between growth in individual ICT usage and public-sector engagement in the digital economy, as government usage is increasingly falling short of expectations. Governments can do more to invest in innovative digital solutions to drive social impact, pull innovation to the market and foster value creation for example through promoting a European Gov.Tech or Civic.tech sector.

There is a need to support activities that will allow relevant stakeholders to put in practice political priorities, take better decisions, improve trust and security for the citizen.

This proposal intends to identify and assess the innovative technologies which are currently entering the market and the impact they could bring, in terms of service delivery, citizen experience and interaction, policy making among others. Based on this assessment, the proposal will then propose possible activities for ISA² for the remaining years of the programme but also through other financing programmes.

Furthermore in these emerging technologies, interoperability issues are already a challenge (e.g. in IoT, Big Data) and need to be addressed also at an early stage in the context of public administration to avoid further fragmentation and allow an easy and effective sharing and reuse of solutions.

Blockchain technologies offer a resilient distributed architecture for timestamping, recording and executing contracts, transactions and services, able to achieve trust-by-design, with potentially disruptive consequences. The action also proposes a pilot with a number of municipalities to explore a practical implementation.

For a stakeholder to utilize blockchain technology effectively, it must add trust to an untrusted environment and exploit a distributed ledger mechanism. By using blockchain technology and

²² See Figures 6 on page 12 - http://www3.weforum.org/docs/GITR2016/WEF_GITR_Full_Report.pdf

providing the explorer tool, these conditions can be satisfied and therefore increase the trust between the different actors.

This proposal is intended to examine existing use-cases where the blockchain technology could be used. Once these use cases are proven valid candidates they will be developed as a proof of concept.

As a starting point, the pilot will aim at underpinning the voucher scheme of the Wifi4EU project with blockchain technology, allowing for transparent and traceable payment of EU funds to the private companies which install the Wifi4EU infrastructure (project from DG CNECT). It will also provide the citizens with the tools to examine the transactions registered in the ledger. It will rely on Open Source software and seek collaboration with Member States for providing blockchain services (also known as Govchains). This proposal will not interfere with the existing Wifi4EU project as such but use the acquired knowledge on the use cases and process flows.

With this initiative the local authorities will be encouraged to develop and promote their own digital services in areas such as e-government, e-health and e-tourism.

1.7.3 OBJECTIVES

The action has the following objectives:

- Provide a state of play at EU level of the usage and implementation of new digital technologies, illustrating the benefits and transformative potential
- Identify interoperability hurdles
- Propose recommendations for EU institutions and Public Administration for future pilots and policy measures that could be undertaken.
- Develop a first pilot implementing blockchain technology in a context that could be scaled and replicated in other contexts.

1.7.4 SCOPE

In scope:

- Assessment of the added-value of adoption of new digital technologies usage in Public Administration and their impact in terms of efficiencies gains, trust and security, i.e. societal transformation for the policy actors, citizens and businesses.
- A map of initiatives in Member States (at local, regional or national level) fostering ICT Innovation in Public Services.
- Investigating the feasibility of a blockchain, from a technical, legal and process perspective. This will be done together with Member States willing to cooperate, some of which might already be working with blockchain technology. From the collaboration other use cases might emerge, these will be documented in a separate deliverable.

- Rolling out the blockchain platform (prototype) by implementing business use cases (e.g. wifi4EU) while at the same time providing tool/services to EU citizens and governments to explore the transactions.
- All European citizens will have access to a distributed trusted repository that contains all transactions
- Investigate the legal requirements/restrictions needed for this technology
- A timing to scale up from the prototype to a production ready platform

Not in scope:

- Complete landscape of new technologies and piloting activities except blockchain.
- A production ready platform for blockchain services for interoperability between the EU institutions, The Member States, the local governments and the European citizens.

1.7.5 ACTION PRIORITY

New technologies such as Blockchain will impact the ICT landscape and offer a strong potential to improve the interaction between the EU institutions, the Member States and the citizens. Investigating the feasibility and possibilities by exploring the use cases from the voucher scheme project and rolling out the associated platform represent a concrete opportunity for the Union to offer a higher level of transparency to the European citizens and create a trusted ledger mechanism. The fast evolving market makes it urgent As the market is evolving at a fast pace the European Union needs to be prepared to tackle this urgently.

1.7.5.1 Contribution to the interoperability landscape

Question	Answer
<p><i>How does the proposal contribute to improving interoperability among public administrations and with their citizens and businesses across borders or policy sectors in Europe?</i></p> <p><i>In particular, how does it contribute to the implementation of:</i></p> <ul style="list-style-type: none"> • <i>the new European Interoperability Framework (EIF),</i> • <i>the Interoperability Action Plan and/or</i> • <i>the Connecting European Facility (CEF) Telecom guidelines</i> 	<p>The proposal will identify possible gaps and hurdle to adoption of innovative technologies by public administration as well as identifying possible interoperability issues at an early stage.</p> <p>The Blockchain pilot will bring transparency and trust between all stakeholders across borders</p>

<ul style="list-style-type: none"> any other EU policy/initiative having interoperability requirements? 	
Does the proposal fulfil an interoperability need for which no other alternative action/solution is available?	Blockchain Pilot: Yes, at present there is merely any interoperability between the different data sources (the Websites of the EC) where the citizens can retrieve information. With this initiative the information will be transparent and interoperable between all parties

1.7.5.2 Cross-sector

Question	Answer
Will the proposal, once completed be useful, from the interoperability point of view and utilised in two (2) or more EU policy sectors? Detail your answer for each of the concerned sectors.	The following policy sectors will be addressed by this proposal : <ul style="list-style-type: none"> Fraud prevention : as all the transactions will be distributed there will be no fraud possible Digital economy and society : all players will have access to the same information as the same time Competition : due to the transparency of the system the competition amongst all players will be fair
For proposals completely or largely already in operational phase , indicate whether and how they have been utilised in two (2) or more EU policy sectors.	n.a.

1.7.5.3 Cross-border

Question	Answer
Will the proposal, once completed , be useful from the interoperability point of view and used by public administrations of three (3) or more	The study results will be available to any public administration and use to embrace the adoption of new technologies.

<i>EU Members States? Detail your answer for each of the concerned Member State.</i>	The Blockchain solution will be available and used by ALL Member States and more than 100.000 municipalities. The first milestone will be mid of 2018 whereas the prototype will be used for all Member States. The roll-out of the complete solution is foreseen for 2019.
<i>For proposals completely or largely already in operational phase, indicate whether and how they have been utilised by public administrations of three (3) or more EU Members States.</i>	n.a.

1.7.5.4 Urgency

Question	Answer
<i>Is your action urgent? Is its implementation foreseen in an EU policy as priority, or in EU legislation?</i>	Innovative technologies are currently under-embraced and in order to modernise efficiently public administrations. Blockchain is a new technology with a relevant potential for the interaction between the EU institutions, the Member States and the citizens. Investigating the legal feasibility to underpinning the voucher scheme and rolling out the associated platform represent a concrete opportunity to set-up legislation activities. As the market is evolving at a fast pace the European Union needs to be prepared to tackle this urgently.
<i>How does the ISA² scope and financial capacity better fit for the implementation of the proposal as opposed to other identified and currently available sources?</i>	In light of the urgency the ISA ² programme (where a decision can be expected in September) fits better than any other possible source

1.7.5.5 Reusability of action's outputs

Name of reusable solution to be produced (for new proposals) or	Recommendations on the most promising technologies to be adopted by Public Administration .
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produced (for existing actions)	
Description	The study will provide a catalogue of usage of innovative technologies in terms of impact on public administrations in their interactions with citizens and businesses.
Reference	
Target release date / Status	End of 2018
Critical part of target user base	Any public administration at any level (national, regional, local)
For solutions already in operational phase - actual reuse level (as compared to the defined critical part)	n.a.

Name of reusable solution to be produced (for new proposals) or produced (for existing actions)	BLOCKCHAIN4EU services
Description	Blockchain services will be first of all offered as a prototype to implement several business use cases (some of them will be coming from the Wifi4EU project)). These services will consist, amongst others, of storing the vouchers, indicating the status of the implementations, list of the winning municipalities, contracts for the Wifi installations, etc
Reference	
Target release date / Status	End of 2018
Critical part of target user base	All the services from the prototype will be reused by all users of the target base
For solutions already in operational phase - actual reuse level (as compared to the defined critical part)	n.a.

1.7.5.6 Level of reuse of existing solutions

Question	Answer
<i>Does the proposal intend to make use of any ISA², ISA or other relevant interoperability solution(s)? Which ones?</i>	The study will reuse existing studies performed either by the Commission or other Institutions.

	<p>The study will also liaise with existing activities in research such as the Next Generation Internet initiative.</p> <p>The PM² methodology will be applied to the project</p>
<p><i>For proposals completely or largely already in operational phase: has the action reused existing interoperability solutions? If yes, which ones and how?</i></p>	n.a.

1.7.5.7 Interlinked

Question	Answer
<p><i>Does the proposal directly contribute to at least one of the Union's high political priorities such as the DSM? If yes, which ones? What is the level of contribution?</i></p>	<p>The proposal will contribute highly to the principles of the DSM (see before) as all relevant documents (deliverables, contract, CFT, proposals, invoices, etc) of DSM can be using the blockchain technology by enhancing the use of digital technologies to improve citizens' access to information and culture, improve their job opportunities. It can promote modern open trustworthy government.</p>

1.7.6 PROBLEM STATEMENT

The problem of	under uptake of innovative technologies by Public Administration
affects	the modernisation of Public Administrations
the impact of which is	inefficient delivery of Public Services to citizens and Businesses
a successful solution would be	identification of the critical technologies that would have the most impactful.

The problem of	Currently the European citizens experience a lack of simplicity in the processes when they need to check information coming from the administrations.
affects	This problem affects first of all the European citizens and as a consequence all Member States and administrations
the impact of which is	For the European citizens the impact is that they hardly find their way in the administration and due to this lack of simplicity also auditing is very time consuming and difficult
a successful solution would be	A successful solution would be that the blockchain technology can be used to simplify the administration and the transparency. The aim of this proposal is to build a prototype that fulfils most of the business requirements of all stakeholders be it legal, technical, social,...

The problem of	The problem is that currently a lot of initiatives are setup around blockchain technology to see what business needs can be fulfilled by it. as a consequence no check is done regarding the operability of these possible solutions or business needs
affects	This problem affects first of all the European citizens and as a consequence all Member States and governments
the impact of which is	The impact is that several different blockchain services will be used depending on which government has created the service. So for the MS and EU citizens is will look like a labyrinth
a successful solution would be	A successful solution would be that all these initiatives are gathered in one proposal (this one) and that a prototype is build that fulfils most of the business requirements of all stakeholders be it legal, technical, social,...

1.7.7 IMPACT OF THE ACTION

1.7.7.1 Main impact list

Impact	Why will this impact occur?	By when?	Beneficiaries
(+) Savings in money	As there will be more transparency on contracts, documents etc there will be less questions to be answered and most likely less court cases	Probably 2019	All administrations (EU, National, local) that work with contracts, grants, legal policies,...
(+) Savings in time	Because of previous gain less time needs to be spend by Member States, municipalities, local administrations and European citizens in finding the relevant information. Auditing the transactions will be much easier and bring huge time savings	Probably 2019	All administrations (EU, National, local) and European citizens that work with contracts, grants, legal policies,...
(+) Better interoperability and quality of digital public service	As all European citizens will have access to the same information and can follow up all initiatives/contracts there will be	Probably 2020	All European Citizens and local administration as well.
(-) Integration or usage cost	Local Infrastructure needs to set-up (depending if EU takes care of this). The maintenance of the system needs to be foreseen but will be lower than the gains	Probably 2020	Local administrations of EU
(+) Fraud and trust	Due to the solution there will be less fraud possible and the trust on the information will increase	Probably 2020	All European citizens

1.7.7.2 User-centricity

It is known that the that the new technologies will allow better, more intuitive and simplified interaction with the user, for this reason the study will will contribute to further improve user-centricity.

In addition, the blockchain prototype will be directly tested by the municipalities and suppliers of wifi material, the feedback will be taken into account for the production platform. Currently several municipalities and suppliers already confirmed their involvement in the proposal.

1.7.8 EXPECTED MAJOR OUTPUTS

Output name	BLOCKCHAIN4EU services
Description	A proof of concept platform that offers blockchain services to all European administrations and citizens
Reference	
Target release date / Status	End of 2018/in preparation

Output name	BLOCKCHAIN4EU legal investigations
Description	The proposal will create a possible transition path for the implementation of blockchain services from a legal, social and technical point of view
Reference	
Target release date / Status	End of 2018

1.7.9 ORGANISATIONAL APPROACH

1.7.9.1 Expected stakeholders and their representatives

Stakeholders	Representatives	Involvement in the action
Municipalities	Specific Mayors or representatives	Business users
Suppliers	Several network/telecom suppliers	Business users
Local Administrations	Libraries, museums,...	Beneficiaries
All citizens	A group of citizens	Beneficiaries
Member States	MS representatives	Product owner
European Commission	DIGIT	Project owner
European Commission	CONNECT (eGovernment Unit, Next Generation Internet Unit)	Associated

1.7.9.2 Identified user groups

The end-user group will contain:

- Members States
- Municipalities (local authorities)
- Suppliers
- European citizens....

1.7.9.3 Communication and dissemination plan

The project will use the ISA² channel for disseminating and engaging with users, results of the study will be published on Joinup and by the Publication Office.

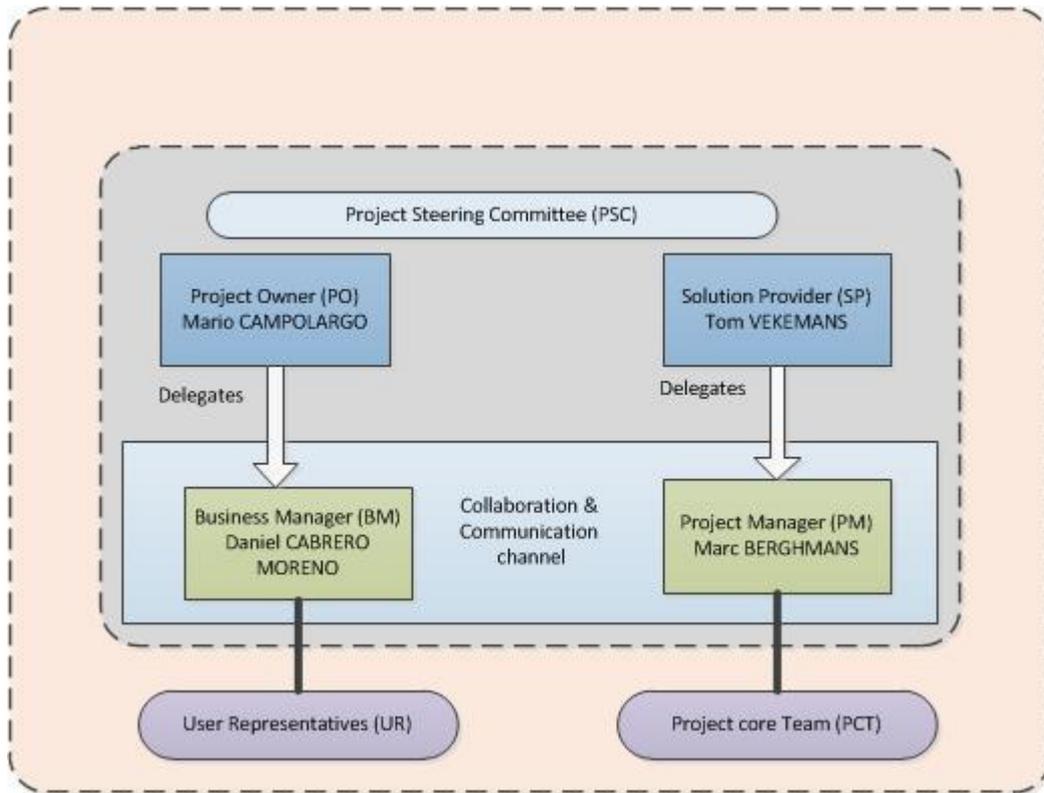
1.7.9.4 Key Performance indicators

Description of the KPI	Target to achieve	Expected time for target
Number of municipalities testing the prototype	20	End of 2018
Number of suppliers testing the prototype	10	End of 2018
Number of registered transactions	500	End of 2018

1.7.9.5 Governance approach

Blockains4EU

According to the guidelines of the European Commission the project will be managed following the PM² methodology. Hereafter you will find the governance model.



1.7.10 TECHNICAL APPROACH AND CURRENT STATUS

The study should identify, reuse and compile existing studies having explored any particular innovative technology as well as a compilation of research and innovation projects (e.g. Horizon 2020).

1.7.11 COSTS AND MILESTONES

1.7.11.1 Breakdown of anticipated costs and related milestones

Phase: Initiation Planning Execution Closing/Final evaluation	Description of milestones reached or to be reached	Anticipated Allocations (KEUR)	Budget line ISA/ others (specify)	Start date (QX/YYYY)	End date (QX/YYYY)
Execution	Study on Innovation Technologies for	100	ISA ²	Q2/2018	Q4/2018

Phase: Initiation Planning Execution Closing/Final evaluation	Description of milestones reached or to be reached	Anticipated Allocations (KEUR)	Budget line ISA/ others (specify)	Start date (QX/YYYY)	End date (QX/YYYY)
	Public Administration				
Initiation	Creation of the project charter	10	ISA ²	Q1/2018	Q1/2018
Planning	Create the WBS and project plans	20	ISA ² /Other	Q1/2018	Q1/2018
Execution	Design and creation of the prototype	500	ISA ² /Other	Q2/2018	Q3/2018
	Integration with the Wifi4EU voucher scheme	340	ISA ² /Other	Q3/2018	Q4/2018
	Dissemination of results	80	ISA ²	Q4/2018	Q4/2018
Closing	Final evaluation	25	ISA ²	Q1/2019	Q1/2019

1.7.11.2 Breakdown of ISA² funding per budget year

Budget Year	Phase	Anticipated allocations (in KEUR)	Executed budget (in KEUR)
2018	Initiation, planning and Execution	500	
2019	Closing	25	

2 SEMANTIC INTEROPERABILITY

2.1 SEMIC: PROMOTING SEMANTIC INTEROPERABILITY AMONGST THE EUROPEAN UNION MEMBER STATES (2016.07)

2.1.1 IDENTIFICATION OF THE ACTION

Type of Activity	Common Services
Service in charge	DIGIT.D2
Associated Services	European Commission (DIGIT, EAS, JRC, ESTAT, SG) EU Publications Office European Parliament, European Court of Auditors, Translation Centre for the bodies of the European Union, European Environment Agency (EEA), European Institute for Gender Equality (EIGE)

2.1.2 EXECUTIVE SUMMARY

Within the ISA Programme, the Action has produced specifications, created communities, and supported policy domains, DGs and MSs in improving semantic interoperability.

In the ISA² programme, the Action continues to develop specifications in the form of data standards and reference data in close collaboration with the domain owners and addressing needs from DGs and MSs.

The existing semantic interoperability solutions produced by the Action and other EC initiatives will be further promoted to be used in operational systems. Recent examples include the successful use of the Core Business vocabulary in the DG JUST Business Registers Interconnection System (BRIS), the DCAT-AP specification in the DG CNECT pan-European Open Data Portal (part of the CEF DSIs), the Core Vocabularies for the DG COMP State Aid Notification system, the Core Public Service Vocabulary in Estonia and the Maltese National Data Strategy where the Core Vocabularies are referred as the starting point for developing national core data standards. Moreover, resources will be invested to exploit these core data model in base registries, with the aim to develop the missing common semantic layer to allow exchange of basic data amongst the MSs, contributing to the "once-only" vision.

Furthermore, aiming at addressing the lack of a mature and interoperable tool for the management and publication of controlled vocabularies, the Action, in close collaboration with the Publications Office of the EU, will continue the development around the open-source thesaurus management tool VocBench.

Having experienced this first hand and unsatisfied with the existing tools on the market, the Food and Agriculture Organization of the United Nations (FAO) and the Publications Office of the EU together with the University of Rome (UNITOV) have decided to use their expertise for the further development of the open-source thesaurus management tool VocBench.

VocBench 3.0 offers a ready solution for the management, alignment and publication of controlled vocabularies as Linked Open Data, thus taking away the burdens for public administrations to maintain and publish their controlled vocabularies in an open and interoperable way.

VocBench 3.2 will evolve beyond the core functionalities which have been developed in the context of the first 2016 funding and of the extensions developed in the 2017 action. In particular, an extension of the visualization possibilities to include graph exploration and other advanced navigation modes still in interactive modality (i.e. the possibility to edit inline the selected elements or to take other actions connected to their type) is the core contribution of this action. Other refinements include advanced search functionalities and search customization (providing users with the possibility to define their own customized searches, defining the input elements and benefiting from automatically drawn user interfaces based on the above declared elements). Advanced SPARQL editing support will feature an improved interaction with the resource stored in the managed dataset, providing suggestions which are highly contextualized depending also on the portion of the query being edited. Finally, drag and drop will be implemented, with different semantics, for all different kind of tree visualizations (classes, properties, concepts, collections).

Since version 3.0, VocBench is able to deal with ontologies and RDF data models. In version 3.2, VocBench will be able to search for data models in public dataset repositories and registries and to retrieve and reuse them completely or partially for the creation of own data models

2.1.3 OBJECTIVES

The objective of this action is to promote semantic interoperability amongst the EU Member States (MSs) and the EU Institutions. This is achieved by:

- Supporting alignments and agreements on common definitions and specifications at the semantic layer for the MSs and the EU Institutions.
- Promoting the use of the ISA Core Vocabularies, the ADMS and DCAT-AP specifications.
- Identification of areas for new Core Vocabularies and/or common data models.
- Supporting relevant policy and projects executed by DGs and MSs.
- Using core data models in base registries.
- Supporting DGs and MSs for using the ISA data models in operational systems.
- Supporting and promoting metadata management policies to MSs and DGs.
- Promoting open and linked data approaches and technologies.
- Promoting best practices, and lessons-learned in the area of semantic interoperability.
- Supporting the development of a new version of VocBench (version 3.2) as a toolbox for controlled vocabularies, metadata, glossaries, ontologies and data models.
- Continuation of the promotion and dissemination work including the SEMIC conference.

2.1.4 SCOPE

Development of new specifications, policy and technical support, pilots, promotion activities are within the scope of the Action. Emphasis will be given on promoting cross-domain interoperability but single-domain, cross-border and/or cross-EU institutions initiatives remain with the scope of the Action.

Moreover, the Action will develop a new version (version 3.2) of the collaborative thesaurus-management platform VocBench

The following activities are not considered within the scope of this Action:

- All technical development related to the Joinup platform including the implementation of the federation of interoperability solutions.

2.1.5 ACTION PRIORITY

2.1.5.1 Contribution to the interoperability landscape

The contribution of the action to the interoperability landscape, measured by the importance and necessity of the action to complete the interoperability landscape across the Union

Question	Answer
<p><i>How does the proposal contribute to improving interoperability among public administrations and with their citizens and businesses across borders or policy sectors in Europe?</i></p> <p><i>In particular, how does it contribute to the implementation of:</i></p> <ul style="list-style-type: none"> • <i>the new European Interoperability Framework (EIF),</i> • <i>the Interoperability Action Plan and/or</i> • <i>the Connecting European Facility (CEF) Telecom guidelines</i> • <i>any other EU policy/initiative having interoperability requirements?</i> 	<p>The Action supports the implementation of the EIF and the EIS, the INSPIRE Directive, the PSI Directive, the Service Directive by promoting semantic interoperability, through the definition and use of common specifications.</p> <p>Vocbench is an open-source reference tool for the management of semantic interoperability assets, it promotes the opening of data and facilitates the exchange of data between national and EU administrations. It also opens up the possibility for potential reuse by businesses and citizens. The proposal covers the following underlying principles of the EIF: Reusability, Multilingualism, Openness, Semantic interoperability, Technical interoperability and Standardisation.</p>
<p><i>Does the proposal fulfil an interoperability need for which no other alternative action/solution is available?</i></p>	<p>The Action tries to develop and promote common specifications when such specifications are not available. It is the only horizontal action for promoting semantic interoperability for the European public administrations. Moreover, VocBench is the most mature OSS platform for advanced thesaurus</p>

	<p>management.</p> <p>In the paper: "VocBench: A Web Application for Collaborative Development of Multilingual Thesauri"; A. Stellato, S. Rajbhandari, A. Turbati, M. Fiorelli, C. Caracciolo, T. Lorenzetti, J. Keizer, M. T. Paziienza²³; the most important systems (i.e. renowned, and satisfying more than half of the above requirements) among those listed above have been compared to VocBench 2.</p>
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2.1.5.2 Cross-sector

The scope of the action, measured by its horizontal impact, once completed, across the sectors concerned

Question	Answer
<p><i>Will the proposal, once completed be useful, from the interoperability point of view and utilised in two (2) or more EU policy sectors? Detail your answer for each of the concerned sectors.</i></p>	<p>The specifications developed by the Action are generic and reusable in any policy domain. VocBench can be used for hosting any type of thesauri and vocabulary, allowing also mappings and alignment amongst assets coming from different policy areas.</p> <p>Vocbench will facilitate the cross-sector interoperability by use of semantic technologies/formats and by facilitating alignments between controlled vocabularies from different sectors/policy domains. E.g. Alignment of specialised thesauri from the "Agriculture, fisheries and foods" policy domain with specialised thesauri from the "Environment, consumers and health domain with generic thesauri that cover all EU policy domains such as EuroVoc</p>
<p><i>For proposals completely or largely already in</i></p>	<p>The DCAT-AP spec is used in the PSI</p>

²³ The paper is available here: http://link.springer.com/chapter/10.1007%2F978-3-319-18818-8_3 or in its self-archived camera-ready version here: http://art.uniroma2.it/publications/docs/2015_ESWC15_VocBench.pdf.

<p>operational phase, indicate whether and how they have been utilised in two (2) or more EU policy sectors.</p>	<p>(open data) and in environmental (INSPIRE) policy areas. The Core Public Service Vocabulary has been used in the Service Directive (points of single contacts), eGovernment (national portals) and local government (OSLO initiative). VocBench has been used to create semantic interoperability between datasets in the fields of agriculture, environment, gender equality, education.</p>
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2.1.5.3 Cross-border

The geographical reach of the action, measured by the number of Member States and of European public administrations involved.

Question	Answer
<p>Will the proposal, once completed, be useful from the interoperability point of view and used by public administrations of three (3) or more EU Members States? Detail your answer for each of the concerned Member State.</p>	<p>The proposal will facilitate the cross-border interoperability thanks to its inherent support for multilinguality. Further cross-border interoperability improvements can be expected through the alignment of the generic EuroVoc thesaurus that covers the EU policy domains with specialised EU and national controlled vocabularies through VocBench. Potentially all stakeholders listed under 1.1.9.1 and 1.1.9.2 can in such a way be linked using VocBench. VocBench is already used by public administrations in France, Italy, the Netherlands and Scotland and interest has been expressed from public administrations in Belgium and Slovenia.</p>
<p>For proposals completely or largely already in operational phase, indicate whether and how they have been utilised by public administrations of three (3) or more EU Members States.</p>	<p>VocBench is already used by public administrations in France, Italy, the Netherlands and Scotland. See 1.1.9.2 for more details.</p>

2.1.5.4 Urgency

The urgency of the action, measured by its potential impact, taking into account the lack of other funding sources

Question	Answer
<i>Is your action urgent? Is its implementation foreseen in an EU policy as priority, or in EU legislation?</i>	Semantic interoperability has always been identified as an important barrier in digital EU policies (e.g. Digital Agenda for Europe, Digital Single Market) Implementation of this version of VocBench is not urgent, but as the major revision of VocBench 3.0 concerned in particular under the hood technological changes, the multilingual controlled vocabulary management community and the key stakeholders are eagerly waiting for the inclusion of the requirements identified in the context of the ISA 2015 action.
<i>How does the ISA² scope and financial capacity better fit for the implementation of the proposal as opposed to other identified and currently available sources?</i>	As semantic interoperability should be promoted at a horizontal and cross-domain level, the ISA ² is a perfect match for hosting such activities.

2.1.5.5 Reusability of action outputs

Can the results of the action (following this proposal) be re-used by a critical part of their target user base, as identified by the proposal maker? For proposals or their parts already in operational phase: have they been re-used by a critical part of their target user base?

Name of reusable solution	Data models
Description	A set of 6 Core Vocabularies, three DCAT-related specifications, ADMS have been developed by the Action
Reference	https://joinup.ec.europa.eu/community/semic/description
Target release date / Status	2012 – today: All the specifications are released on Joinup.
Critical part of target user base	The specifications can be used by all system architects, designers and national authorities as horizontal data standards.

For solutions already in operational phase - actual reuse level (as compared to the defined critical part)	34 known implementations in 8 countries are presented on https://joinup.ec.europa.eu/community/semic/description
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Name of reusable solution	VocBench 3 (revision 2)
Description	The main outcome of the work. A fully fledged collaborative platform for management of SKOS thesauri OWL ontologies and RDF datasets in general, with particular emphasis on Controlled Collaboration, Extensibility and Scalability
Reference	http://vocbench.uniroma2.it/
Target release date / Status	3.0 released to Publications Office on July 2017. Currently under evaluation. Planned 3.1 by July 2018. Planned 3.2 by the end of this project (at most, or intermediate release and further features added by the end).
Critical part of target user base	VocBench 3 is an open source system for collaborative editing of RDF data, OWL ontologies and SKOS and SKOS-XL thesauri. VocBench's adoption is not meant to be in any way restricted to the registered stakeholders, and its full compliance with W3C standards make it a perfect platform for the evolution of many organizations and authorities towards production and publication of Linked Open Data. At the time of writing there are already several users adopting VocBench 2, the previous version of VocBench developed before the ISA ² action that funded development of VocBench 3. Major users and the thesauri managed through VB2 are described here: http://vocbench.uniroma2.it/support/community.jsf . There is also a mailing list (vocbench-user@googlegroups.com) with more than 100 registered users.
For solutions already in operational phase - actual reuse level (as compared to the defined critical part)	N.A.

2.1.5.6 Level of reuse by the proposal

The re-use by the action (following this proposal) of existing common frameworks and interoperability solutions.

Question	Answer
Does the proposal intend to make use of any ISA ² , ISA or other relevant interoperability solution(s)? Which ones?	<p>Joinup is used as a publishing and community building tool for all the specifications developed under the Action. The specifications produced by the Action have the potential to be used by several other Actions in all data modelling tasks.</p> <p>For VocBench, the current platform already generates metadata descriptions of the controlled vocabulary in DCAT, DCAT-AP and ADMS. The module can be extended to cover other ISA interoperability solutions such as StatDCAT-AP and GeoDCAT-AP and the various DCAT-AP-xx developed by the single member states of the EU.</p> <p>This version will reuse information from the EU Data Visualization Catalogue of the EU Open Data Portal developed thanks to ISA2 funding: (http://52.50.205.146:8890/data_visualisation_catalogue/). A catalogue pointing to different visualization technologies..</p>
For proposals or their parts already in operational phase: has the action reused existing interoperability solutions? If yes, which ones?	Joinup is the main publishing and community platform for the Action.

2.1.5.7 Interlinked

The extent to which the action (following this proposal) contributes to Union's initiatives such as the DSM.

Question	Answer
<i>Does the proposal directly contribute to at least one of the Union's high political priorities such as the DSM? If yes, which ones?</i>	<p>Interoperability is considered critical for the progress of the Digital Single Market, and special references are included in the relevant strategy. Admittedly, semantic interoperability together with organisational are the two layers where most MSs experience the most severe problems.</p> <ul style="list-style-type: none"> ○ The Action contributes to "better public services" in the Digital Single Market strategy.

<p>What is the level of contribution?</p>	<ul style="list-style-type: none"> ○ Copying from the DSM strategy "<i>The lack of open and interoperable systems and services and of data portability between services represents another barrier for the cross-border flow of data and the development of new services.</i>" The Action contributes to better interoperability and data portability. ○ The DSM promotes the "Free flow of data" and identifies interoperability as an important issue for achieving this. ○ The DSM strategy asks for a revision of the European Interoperability Framework. One of the interoperability levels there refers to "semantic interoperability". ○ The DSM discusses about the interconnection of base registries and the Once-Only principle. Semantic interoperability is a prerequisite for achieving these targets. <p>PSI and Open Data</p> <p>In line with the EC objectives in the area of the PSI Directive, the Action promotes policies towards both open data and open metadata by the MSs and the EU services as a support measure for the more general Open Data policy.</p> <p>One of the concrete measures developed to implement this policy entails the setting up of the EU Open data Portal which is operated by the Publications Office of the EU. Close collaboration and common activities with the Publications Office of the EU have already started in 2013 and continues to secure alignment of efforts and concrete results. The creation of the pan-European Open Data portal is also part European open data policy. The portal has started its operation in 2015, and the DCAT-AP specification is used as the metadata standard for the description of the datasets coming from over 70 Open Data portals from 34 countries. The Action closely collaborates with the relevant EC service (DG CONNECT/G3).</p> <p>In 2014, a revision of the DCAT-AP has been concluded. Moreover, two extensions of the specifications are being developed to cover description of geospatial (GEO/DCAT-AP) and statistical (STAT/DCAT-AP) data.</p>
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2.1.6 PROBLEM STATEMENT

The environment in which data exchange and service execution takes place amongst MSs is very complex contributing many barriers and challenges to the exchange of data during the execution of European Public Services. These barriers include divergent interpretations of the data, lack of commonly agreed and widely used data models, absence of universal reference data (e.g. code lists, taxonomies), from which only few are publicly available and even less as Linked Open Data, lack of interoperable tools/formats for the management and publication of reference data, the multilingual challenge. Last, in the sensitive area of labour markets, we currently experience fragmented European

labour markets which hinders European mobility as the data of jobseekers and the matching job vacancies are kept in different systems due to the existing digital segmentation etc.

Due to these pressures, semantic interoperability becomes an important element in many eGovernment and interoperability national agendas and interesting experience and lessons-learnt can already be shared at a European level.

The problem of	divergent interpretations of the data, lack of commonly agreed and widely used data models, absence of universal reference data (e.g. code lists, taxonomies), from which only few are publicly available and even less as Linked Open Data, lack of interoperable tools/formats for the management and publication of reference data, the multilingual challenge
affects	the exchange of data during the execution of European Public Services
the impact of which is	fragmented European labour markets which hinders European mobility.
a successful solution would be	having semantic interoperability as an essential elements in eGovernments and intareoperability national agendas and sgaring of leassons learnt and best practices

The problem of	Bringing existing vocabularies, thesauri, ontologies and datasets to Linked Open Data (LOD) standards
affects	EU institutions, national administrations and businesses
the impact of which is	Until this target is achieved, data interoperability is hampered
a successful solution would be	Provide system and tools for porting local data to LOD standards, facilitating (possibly collaborative) maintenance and evolution

The problem of	Exploring and visualizing data in editing tools, which are usually focused on optimizing editing
affects	Especially domain experts and naive users, less specialized in data modelling/editing and more focused on domain exploration and analysis
the impact of which is	The “understandability” of the content is affected.
a successful solution would be	Provide additional, alternative, visualization and exploration solutions

2.1.7 IMPACT OF THE ACTION

2.1.7.1 Main impact list

Impact	Why will this impact occur?	By when?	Beneficiaries
(+) Savings in money	Users adopt more tools for maintaining/browsing their data, as none of them satisfy all of user needs. The need to efficiently browse arbitrary data structures in a convenient way often asks for customized solutions that are developed ad-hoc. Adding more customization possibilities, especially for exploration navigation and search make an editing tool closer to suit different, specific needs of each user for exploring their own data.	As soon as the new version is adopted and the users abandon multiple solutions in favour of a centralized management in VocBench	All users
(+) Savings in time	Better, customizable interaction possibilities (both for data exploration, search and navigation) improve productivity and thus reduce working time	As soon as the new VocBench version is adopted	All users
(+) Better interoperability and quality of digital public service	Better data quality thanks to visual exploration of data maintained in VocBench facilitating identification of non-standard patterns	As soon as the new VocBench version is adopted	All users

(-) Integration or usage cost	The usage cost is reduced especially for those users more interested in exploring, analysing, navigating and searching the data	As soon as the new VocBench version is adopted	Final users, non-editors
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Beneficiaries	Anticipated benefits
Member States' Public Administrations	<ul style="list-style-type: none"> ○ Forum to identify opportunities for harmonization at European level ○ A virtual place to share best practices and experiences ○ Core Vocabularies, reference data, XML schemata and thesauri ready to be used in public administration information systems development. ○ Linked data best practices. ○ Reduced development costs <ul style="list-style-type: none"> • due to reuse during the initial development phase • due to less interoperability conflicts while integrating systems or providing cross-agency/domain/country services
IT Services Industry	<ul style="list-style-type: none"> ○ Reduced development costs, as explained above. ○ Reuse and integrate controlled vocabularies and metadata produced by Member States and Public Administrations or EU institutions and bodies.
European Commission Services	<ul style="list-style-type: none"> ○ A set of specifications in the form of Core Vocabularies and other relevant tools, such as reference data (e.g. authority tables), XML schemata and thesauri that can be reused by the EC services to facilitate interoperability among different applications and systems ○ Reduced development costs, as explained above.
For VocBench	
European Commission Library	Reconciliation and mapping of the European Commission thesaurus (ECLAS) with EuroVoc in the purpose of re-indexing the European Commission Library collection (ECLAS) with EuroVoc.
European Commission, Informatics Directorate General (DIGIT)	Use VocBench for the maintenance and dissemination of the glossaries and ontologies produced by DIGIT.
EU and national Open Data Portals	Use VocBench for the maintenance and dissemination of the DCAT-AP themes used as a standard vocabulary to annotate the Open Data datasets in European, trans-European and national Open Data Portals.

FAO (Food and Agricultural Organisation)	Use VocBench for the maintenance and dissemination of the Agrovoc thesaurus, the Glossary of Biotechnology for Food and Agriculture, the Land and Water controlled vocabulary and the FAO main topics. A list of the partners acting in the VocBench Community is available at http://VocBench.uniroma2.it/support/community.jsf
JRC Inspire Registry	Use VocBench for the maintenance and dissemination of the JRC Inspire themes and features concept dictionary.
Supranational, national and regional authorities	Use VocBench for the maintenance of their controlled vocabularies and metadata, for the alignment of their supranational, national and regional controlled vocabularies with EuroVoc. Enrich the EU-level semantics of EuroVoc with in-depth national and regional coverage responding to the need of the Member States.
Academy and Education	Given the open and standard compliant nature of VocBench, it is being adopted in various areas of education (ranging from digital libraries, archiving and purely IT areas of learning) for teaching how to develop thesauri compliant with W3C standards for the web of data.
European Commission Library	Reconciliation and mapping of the European Commission thesaurus (ECLAS) with EuroVoc in the purpose of re-indexing the European Commission Library collection (ECLAS) with EuroVoc.

2.1.7.2 User-centricity

The specific actions listed in this proposal follow (and mostly complete) requirements gathered from:

- a synthesis of requirements and a development plan that followed a stakeholders meeting held in the Publication Office on February 2016, before the start of the first action on VocBench. The outcomes of this synthesis have been collected in deliverable: *D03.03 Report on the provided support for the development of VocBench 3.0*
- desiderata expressed by stakeholders along the first year of the project and during the VocBench day organised end 2016
- desiderata expressed by members of the EuroVoc maintenance committee making use of VocBench (e.g. for the Graph Visualization)
- feedback provided by the Publication Office following the release of the system at the end of the first action 2016/2017 (the system is under evaluation by the OP at the time of writing)

2.1.8 EXPECTED MAJOR OUTPUTS

Output name	Component for Graph Representation of RDF Data and Additional Alternative Data Visualizations
Description	The component will satisfy the following requirements: Lay the basis for additional visualizations (graph and others) taken from existing libraries to RDF management, as a dedicated library The module will enable the graphical visualisation of the

	<p>ontology/vocabulary.</p> <p>The graphical visualisation will be possible for single concepts, concept collections or schemes and, concept search results and SPARQL query results.</p> <p>The ontology/vocabulary graphical visualisation will provide an extension point for exporting the graph into arbitrary graphics formats.</p> <p>An extension for the ontology/vocabulary graphical visualisation, will be implemented for exporting the graph to the SVG graphics format.</p> <p>Connect the additional visualizations with the pervasive addition of Extension Points: role/context-based extension points for pluggable actions on resources (developed in phase 2)</p> <p>Provide additional visualizations besides Graph-View, by checking available graphical frameworks in Javascript</p>
Reference	<p>The component will be developed by reusing existing data visualization technologies for Javascript and developing a dedicated framework for RDF.</p> <p>A state-of-the-art investigation will be conducted, though the current technologies have already been identified as potential candidates:</p> <p>JavaScript InfoVis Toolkit (http://philogb.github.io/jit/)</p> <p>Gephi: The Open Graph Viz Platform (https://gephi.org/)</p> <p>D3: Data-driven documents (https://d3js.org/)</p> <p>The investigation will also reuse information from the EU Data Visualization Catalogue of the EU Open Data Portal developed thanks to ISA² funding: (http://52.50.205.146:8890/data_visualisation_catalogue/) a catalogue pointing to different visualization technologies</p>
Target release date / Status	Q2/2019

2.1.9 ORGANISATIONAL APPROACH

2.1.9.1 Expected stakeholders and their representatives

Stakeholders	Representatives
Member States	<ul style="list-style-type: none"> ○ ISA² Committee ○ ISA² Coordination Group or ISA CG equivalent ○ Persons/units in charge of National and/or regional

	<p>Interoperability Frameworks and/or metadata standards catalogues/repositories, etc.</p> <ul style="list-style-type: none"> ○ Persons/units in charge of governmental portals
Standardization bodies	<ul style="list-style-type: none"> ○ W3C ○ OASIS ○ GS1 ○ CEN ○ UN/CEFACT ○ Dublin Core Metadata Initiative ○ EU Interinstitutional Metadata Maintenance Committee (IMMC)
DIGIT	<ul style="list-style-type: none"> ● DIGIT/B2, DIGIT/01 ● Unit (s) responsible for promoting common specifications in new and existing systems
EU Publications Office	<p>The unit responsible for metadata management</p> <p>The unit responsible for the EU Open Data portal</p> <p>The unit responsible for the Common Vocabulary for legal documents</p>
Other EC DGs and EU Institutions	<p>Representatives from the DGs who work as IT coordinators (IRMs)</p> <p>Representatives from DGs and EU Institutions (e.g. JRC, EEA etc.) who work in the area of metadata management.</p> <p>DG CNECT units for public services and G.3 PSI and open data</p> <p>The EC Secretariat General</p> <p>The EU Council, the European Parliament.</p>
FAO	<p>The unit responsible for metadata management using VocBench.</p>

2.1.9.2 Identified user groups

In principle any Public Administration from any Member states as well as EU Institutions are potential user groups.

For VocBench, other than the foreseen stakeholders, the project is already adopted by different entities. UNITOV offers open support through two mailing lists for end-users (vocbench-user@googlegroups.com) and developers (vocbench-developer@googlegroups.com) interested in the developing aspects of the system.

The lists are open and do not foresee any pre-identification of users. However, in two years of service, the following important actors have been identified as regular adopters of VocBench.

For each of them, we report the known managed resources:

- Food and Agriculture Organization (FAO) > AGROVOC, Biotechnology, Land and Water, FAO Topics
- FAO, CABI and NAL (joint effort) → GACS (Global Agriculture Concept Scheme)

- Institut National de la Recherche Agronomique (INRA) > in the context of AnaEE France project (ecosystems and biodiversity thesaurus) and Délégation à l'information scientifique et technique (DIST)
- CABI (Centre for Agriculture and Biosciences International), head office UK > CAB thesaurus
- European Commission Central Library > ECLAS (library catalogue)
- European Environment Agency (EEA) > GEMET
- EU Publications Office > EUROVOC
- European Holocaust Research Infrastructure (EHRI) project: EHRI holocaust thesaurus, supporting the work of the EHRI Editorial Board (deployed by Ontotext)
- Columbia University > IEDA Thesaurus
- Italian Senate > TESEO
- United Nations Environment Programme (UNEP) > InforMEA, in the context of MEA, the Information and Knowledge Management Initiative
- Scottish Government > Gov metadata
- United Nations Convention to Combat Desertification (UNCCD)
- UNESCO > UNESCO Thesaurus (deployed by Sparna)
- Harvard University > Unified Astronomy Thesaurus (UAT)
- Dutch Firebrigade

Another important group is represented by users working in education. We have known reports of professors adopting VocBench in order to:

- 1) Show how to develop a SKOSXL thesaurus (VocBench is in fact one of the very few systems which are at the same time: completely free, open source, and totally compliant and based on languages of the RDF family of standards).
- 2) Have students experience a collaborative experience in the development.

2.1.9.3 Communication plan

The Action will create the necessary links with the ISA² Communication Action to coordinate the promotion and dissemination of results to several types of recipients. The Action includes within its plan communication activities which are of technical nature, while Action 4.1.1 will promote the results to a broader audience, using appropriate non-technical language, and different channels.

Event	Representatives	Frequency of meetings / absolute dates of meetings?
The Action tries to disseminate its work with presentations, posters and panels in the major eGovernment and semantic technologies conferences and events		

Event	Representatives	Frequency of meetings / absolute dates of meetings?
The Action will try to raise awareness for the importance of metadata management, data standards and alignment in MSs and internally in the EC		
The Action will try to disseminate and promote the use of the Core Vocabularies and linked data best practices in the EU MSs		2 MSs visits per year
The Action will continue organising its annual conference which has been very successful so far		1 conference per year

VocBench is already a mature open-source project. Communication about its further releases, support and discussion are given and held through different channels, covering different needs with the most appropriate solution, and exhibiting redundancy to some extent.

By first, the official site of VocBench: <http://vocBench.uniroma2.it> represents an entry point for people/organizations willing to approach the system. Secondly, two mailing lists/discussion groups: Users²⁴ and Developers²⁵, provide assistance to, respectively, the community of users and of those willing to contribute the project or develop independent extensions for it. An Atlassian Suite instance provides project management, bug report and wiki services. Finally, the Agricultural Information Management Standards (AIMS) portal, managed by FAO, reports on news about VocBench and associated systems and tools.

The Publications Office of the EU will reserve a space on its future corporate EU Vocabularies website for information on VocBench. The Publications Office offers access to an instance of VocBench to other EU institutions and bodies through the Testa network. It will organise information and training sessions for services interested in managing their controlled vocabularies in VocBench.

Promotion beyond the EU institutions of the new version of VocBench is foreseen by making use of social media (Twitter), webinars and participation in conferences (posters). The project stakeholders will promote VocBench in their respective communities.

2.1.9.4 Key Performance indicators

Numbers before the KPI refer to section numbers in the deliverable D3.3 of ISA action 2015 identifying VB requirements

²⁴ <http://groups.google.com/group/VocBench-user>

²⁵ <http://groups.google.com/group/VocBench-developer>

Description of the KPI	Target to achieve	Expected time for target
Access to remote registries and repositories (not in the D3.3 deliverable, added following an action of the Denmark member state)	Access to remote registries and repositories for the search, retrieval and possibly provisioning of dataset (ontologies, thesauri, datasets in general)	Q1/2019
5.1.5 Mass Edit Actions	Mass Edit Actions for quick editing of large quantities of data with homogeneous characteristics	Q2/2019
5.3.2.1. Graph and Additional Visualizations for data		
Graph and Additional Visualizations part 1	Realization of a visualization framework for RDF with support for graphs and interactive graphical objects	Q1/2019
Graph and Additional Visualizations part 2	Realization of dedicated views for different knowledge structures, divided by resource type (e.g. RDF concepts, classes, properties, collections, schemes...)	Q2/2019
5.1.5.2. Drag and Drop Support	Support for Drag and Drop in all type of trees: rdfs/owl classes, skos concepts, skos collections, rdf properties and their specific owl subproperties with dedicated actions and outcomes depending on the resources and area of the user interface involved in the Drag and Drop	Q1/2019
Support for UNDO		Q1/2019
Action Level History Management	An History Based Time Machine allowing users to browse the evolution of resources with the granularity of single actions (previously it was available at the level of stored dataset versions)	Q2/2019

2.1.9.5 Governance approach

The Action is run by the European Commission, DG DIGIT, D2 (Interoperability Unit).

For the work expected in this Action, collaboration with MSs and other stakeholders (e.g. DG EMPL, the EU Publications Office, other DGs, EU institutions, agencies and bodies, standardisation bodies) is considered of critical importance. For this reason, communication with the MSs and third parties will be frequent and their active involvement will be encouraged via invitations for participation in ad hoc groups discussing specialised issues related to the content of the Action.

For Vocbench a Project Steering Committee will be established to provide overall guidance and to ensure the consistency of the project regarding the roadmap, the technical specifications and the programme actions. The Committee will consist of representatives from the Publications Office, UNITOV, DIGIT (European Commission), Joint Research Centre (Inspire Registry), Food and Agricultural Organisation (FAO), European Environment Agency (EEA) and representatives from the Member States' national or regional authorities.

2.1.10 TECHNICAL APPROACH AND CURRENT STATUS

Overview for work so far

The Action tries to overcome semantic interoperability problems by:

1. documenting what is available in each MS with regards to metadata policies and the management of semantic interoperability assets;
2. identifying opportunities for alignment;
3. promoting share and reuse of semantic assets, experiences and tools and facilitating agreements in key areas;
4. raising awareness on the importance of metadata management;
5. identifying and promoting successful practices and tools for linking governmental data;
6. developing and promoting common specifications.

Through this action, the ISA programme sets to achieve a better collaboration between European public administrations towards creating new and promoting existing agreements on the meaning of the exchanged information and on the common use of metadata. Joinup provides the necessary infrastructure for this collaboration while a broad network of stakeholders including several EU bodies like JRC, DG SANTE, DG EMPL, DG FISMA, DG GROW, the PO, DG TAXUD, DG MARE, DG CONNECT, DG COMP, DG COMM and DG JUST actively participate and/or follow the work.

The Action maintains communication links with relevant initiatives to promote semantic interoperability around the world (e.g. USA, Japan) to exchange views and share experiences.

Below an overview of the results of the Action during the last 5 years is provided.

In 2011, an assessment of the Action results for the period 2008-2010 took place. Based on this evaluation, recommendations were provided to identify areas where the Action could contribute. Following these recommendations, the Action produced the following results:

a) In the period 2011-2012, the Asset Description Metadata Schema (ADMS) was developed as a common vocabulary to describe semantic assets. ADMS has been extended to describe any type of interoperability solution. Based on this specification, a federation of semantic assets repositories has been developed and is available via the Joinup platform. This federation went live in January 2013. Currently, more than 20 repositories participate in the federation making available over 2.000 specifications. The Action will continue providing support to MSs to participate in the federation and use ADMS for describing their own assets. Nevertheless, the EFIR Action (action 4.2.4) remains the focal place for the federation maintenance and support in Joinup.

b) In the period 2011-2013, the Action has developed four Core Vocabularies, namely Core Business, Core Person, Core Location, and Core Public Service in close collaboration with other EU bodies including DG MARKT, Eurojust, and the JRC. These specifications (together with ADMS) have been endorsed by the ISA Coordination Group. In 2013-2014, implementations of the vocabularies have been implemented in 5 pilots with data coming from MSs and different EC/DGs.

c) In 2013, the DCAT Application Profile (DCAT-AP) as a specification to describe open data catalogues and datasets was developed in close collaboration with DG CONNECT and the EU Publications Office.

d) During the period 2011-2014 several case studies, surveys and recommendations have been published trying to raise awareness on issues related to semantic interoperability, open and linked data, metadata management and persistent Unique Resource Identifiers (URIs).

e) In 2014, the Action has tried to promote the use of core vocabularies both at national and at European level. Issues related to sustainability, governance, publication and persistence for these specifications were also identified and work has started to set up relevant policies. During the same year, the Action produced guidelines and support for the publication of high-value datasets, and initiated cross-institutional work to draft metadata and URI policies for the EU institutions which are reusable by the MSs. Work to create a stack of tools for metadata management with the participation of DG MARE, JRC, DG COMP and the PO has been also initiated.

f) In 2015/16, the Action delivered: a revision of the DCAT-AP and two extensions to describe geospatial and statistical data; supported the DCAT-AP implementation at Eu and MSs level; drafted a specification for publishing State Aid Notifications as open data working closely with DG COMP; supported the work to develop the Common Vocabulary for describing legal documents in the context of the IFC; drafted a specification for publishing the EU budget as open data with the PO; run a pilot with ESCO and DG Employment; run a pilot with the Core Public Service Vocabulary in Estonia; supported the creation of the data model for the Business Registers Interconnection System (BRIS) for DG Justice; provided the semantic layer for EIRA; supported the Secretariat General of the EC and EFSA to establish an information management strategy; supported EU inter-institutional work to establish persistent URIs management; supported local pilots to use the Core Vocabularies in Italy and Belgium.

Activities in the new WP

Activities promoting semantic interoperability at horizontal level

In the new ISA² Programme WP2017, the Action will continue to maintain, update whenever necessary, and promote the above-mentioned specifications. It will also try to identify and develop more Core Vocabularies (e.g. Core Budget), promote the real usage of the existing specifications, make available a robust toolset for metadata management, further elaborate on policies for metadata and URI management. More specifically the Action will deliver the following results:

- Core Vocabularies
 - Identification of areas for new Core Vocabularies and/or common data models.
 - Checking maturity and opportunities for developing specifications with communities.
 - New vocabularies development.
 - Sustainability of the existing specs.
- Policy and project support to DGs and MSs for promoting semantic interoperability with pilots and policy advice including the areas of open and linked data.
- Support for using the ISA data models in operational systems in DGs and MSs
- Use of core data models in base registries.
- Work for metadata management, including documenting existing policies and tools, drafting guidelines, architectures, providing direct support to MSs and DGs, aligning and coordinating relevant initiatives.
- Information management strategy: good practices, guidelines, recommendations, tools.
- Support work for open data and open data portals interoperability with further animation of the community of practice for DCAT-AP implementation.
- Continuation of the promotion and dissemination work including the SEMIC conference, identification of good practices, case studies, recommendations.

VocBench 3.2

Development will follow the modalities established in the previous ISA² actions, based on planning through JIRA, bug reporting, unit testing and possibly adding continuous development and deployment through a dedicated server.

The planned features (with section references – where applicable – to deliverable ISA 2015 SEMIC 7, D03.03: "Report on the provided support for the development of VocBench 3.0" and the set of user requirements expressed there) are:

5.3.2.1. Graph and Additional Visualisations for data

NF-O-GV-1. Lay the basis for additional visualizations

FR-O-63. Enabling the graphical visualisation of the dataset.

FR-O-64. The graphical visualisation will be possible for different resources and over search results and SPARQL query results.

FR-O-65. The dataset graphical visualisation will provide an extension point for exporting the graph into arbitrary formats.

FR-O-66. One of the formats above will be SVG

FR-New-GV-1. role/context-based extension points for pluggable actions on resources (developed in phase 2)

FR-New-GV-2. additional visualizations besides Graph-View

Advanced Search

- FR-New-AS Restore VB2-like search with the following requirements:
- FR-New-AS.1 - search by status
 - FR-New-AS.2 - search by scheme filtering
 - FR-New-AS.3 - search by outgoing relationship to resource/term
 - FR-New-AS.4 - search by ingoing relationship
 - FR-New-AS.5 - search by type

5.1.6. User Customizable Search Support (SPARQL based)

- FR-New-SS.1 Customizable searches based on user-defined and storable SPARQL queries
- FR-O-39. save and load specific search requests per user and project.
- FR-O-40. Possibility to define private search requests (visible only to the specific user) and public search requests (accessible to the all the users in the same project).
- FR-New-SS.2 privacy/visibility rules for storing SPARQL queries for custom search

5.1.7. Extended SPARQL Support

- FR-O-42. The SPARQL Panel will provide autocompletion on resource names
- FR-O-43./alt Ability to save and load specific SPARQL queries per user and projects
- FR-O-44. Ability to store public/private queries
- FR-O-45. Possibility to generate Query Templates
- FR-O-46. Export datasets resulting from the execution of SPARQL queries

5.1.5.2. Drag and Drop Support

- FR-O-30. Ability to drag and drop concepts in the hierarchical tree structure. The system will validate the proposed drag & drop gesture
- FR-O-31. After a successful drag & drop gesture the system will present a list of the actions to be performed on the dataset, requiring confirmation by the user to proceed.
- FR-O-32. On a failed of the drag & drop action the system will present to the user the reason why the action is not possible.
- FR-O-33. The user will be able to select more than one concept at once for performing a drag and drop action.
- FR-O-50. The Administrator or the Project Manager will be able to disable drag and drop functionality between concepts for a specific project.
- FR-New-DDS-1. The drag and drop will be extended not only to concepts, but to all major kind of resources shown in hierarchical views. Different management possibilities will be offered depending on the resource

Support for UNDO

Enabled when history is active (or, at least, with the presence of the sail tracking component, developed in the 2016 VB3 action). Specific behaviour and dependency analysis when multiple users are editing mus be considered

2.1.11 COSTS AND MILESTONES

2.1.11.1 Breakdown of anticipated costs and related milestones

Main SEMIC action

Phase: Initiation Planning Execution Closing/Final evaluation	Description of milestones reached or to be reached	Anticipated Allocations (KEUR)	Budget line ISA/ others (specify)	Start date (QX/YYYY)	End date (QX/YYYY)
Operational	Identification of areas for new Core Vocabularies and/or common data models. Checking maturity and opportunities for developing specifications with communities. New vocabularies development. Update and sustainability of the existing specs.	551	ISA ²	Q2/2016	Q4/2018
	Policy and project support to DGs and MSs for promoting semantic interoperability, linked and open data with pilots and policy advice.	550	ISA ²	Q2/2016	Q4/2018
	Use of core vocabularies in base registries.	200	ISA ²	Q2/2016	Q4/2018
	Support for using the ISA data models in operational systems in DGs and MSs	300	ISA ²	Q2/2016	Q4/2018
	Work for metadata management, including	200	ISA ²	Q2/2016	Q4/2018

	documenting existing policies and tools, drafting guidelines, architectures, providing direct support to MSs and DGs, aligning and coordinating relevant initiatives.				
	Support to define information management strategies: good practices, guidelines, recommendations, tools.	100	ISA ²	Q2/2016	Q4/2018
	Support work for open data interoperability with animation of a community of practice for DCAT-AP, maintenance and support for its real life-implementations.	150	ISA ²	Q2/2016	Q4/2017
	Continuation of the promotion and dissemination work including country visits, the annual SEMIC conference, international workshops and webinars.	300	ISA ²	Q2/2016	Q4/2018
	Total	2351			

VocBench subactivity

Phase:	Description of milestones reached or to be reached	Anticipated Allocations	Budget line	Start date	End date
Inception		(in KEUR)	ISA/ others (specify)	(Q2/2016)	(Q2/2017)
Inception	Study, testing and comparison of state of the art technologies that are suitable for the design of VB3.0 and its technological innovation.	10	ISA ²	Q2/2016	Q2/2016
Inception	Definition of the new	5	ISA ²	Q2/2016	Q2/2016

	technological stack				
Execution	Designing and Developing the Semantic Turkey architecture as the core system of VB3.0.	80	ISA ²	Q3/2016	Q3/2017
Execution	Enabling all user aspects (Authentication, permissions etc.) in ST	25	ISA ²	Q3/2016	Q3/2017
Execution	Action History: completely rewritten wrt old module in VB2.0.	15	ISA ²	Q3/2016	Q3/2017
Execution	Controlled Collaboration & Validation: completely rewritten wrt old module in VB2.0.	25	ISA ²	Q3/2016	Q3/2017
Execution	Versioning	25	ISA ²	Q3/2016	Q3/2017
Execution	Provenance Management	15	ISA ²	Q3/2016	Q3/2017
Execution	Metadata Registry and Retriever and integration in VB	20	ISA ²	Q3/2016	Q3/2017
Execution	MAPLE Finalization and integration in VB	20	ISA ²	Q3/2016	Q3/2017
Execution	Lexical Linked Data Registry, starting and managing the Service and making VB compliant with it.	25	ISA ²	Q3/2016	Q3/2017
Execution	Improved Alignment: access and interaction with LOD data.	15	ISA ²	Q3/2016	Q3/2017
Execution	Improved Alignment : more automatism/support for validation of externally loaded mappings	15	ISA ²	Q3/2016	Q3/2017
Execution	Metadata producer: generators for ADMS/DCAT-AP/VoID/LIME Metadata.	10	ISA ²	Q3/2016	Q3/2017
Execution	Development of extensions points for : - customized export - connectable collaboration Frameworks	15	ISA ²	Q3/2016	Q3/2017
Execution	JIRA connector as an instance of a collaboration framework connector. Execution reported in 2017-2018 (Vocbench 3.1)	8	ISA ²	Q3/2016	Q3/2017
Execution	Dedicated SKOS-AP-EU exporter as an instance of the export extension point.	5	ISA ²	Q1/2017	Q3/2017
Execution	Property Language Tags Support (sections 5.1.5.3, 5.10 and 5.10.1 of D03.03)	9	ISA ²	Q3/2017	Q4/2017
Execution	Data Export Management: Excel Export (section 5.3.2 of D03.03)	1	ISA ²	Q3/2017	Q3/2017
Execution	Extensible URI Generation System	12	ISA ²	Q3/2017	Q4/2017
Execution	Alignment covering datasets exposed through HTTP dereferenciation and datasets	10	ISA ²	Q3/2017	Q4/2017

	exposed on a SPARQL endpoint (completion of requirement FR-I-35 started in first action on VocBench 3)				
Execution	Integrated Constrains Validation Service (sect. 5.9 of D03.03)	6	ISA ²	Q3/2017	Q4/2017
Execution	User Notification Support (sect. 5.10.1.1 of D03.03)	21	ISA ²	Q3/2017	Q2/2018
Execution	Sheet2RDF: Spreadsheet Import (part of it is described in sect. 5.3.1. Data Import Management of D03.03)	37	ISA ²	Q3/2017	Q2/2018
Execution	Extension Points: role/context-based extension points for pluggable actions on resources	19	ISA ²	Q3/2017	Q2/2018
Execution	MAPLE (was left out of first ISA action on VocBench 3)	25	ISA ²	Q3/2017	Q2/2018
Execution	Support for OWL 2 (requirement NF-O-1 of D03.03)	28	ISA ²	Q3/2017	Q2/2018
Execution	Rendering Engine Extension Point and three implementations for RDFS, SKOS and SKOSXL lexical models	8	ISA ²	Q3/2017	Q3/2017
Execution	Search Support (indexing and autocompletion, sect. 5.1.6. of D03.03)	8	ISA ²	Q3/2017	Q4/2017
Execution	Data Export Management (section 5.3.2 of D03.03)	12	ISA ²	Q3/2017	Q4/2017
Execution	Overall Testing	14	ISA ²	Q3/2017	Q2/2018
Execution	Metadata Registry and Retriever (adding retriever part and the LOD registry part, while metadata production has been implemented in the first action on VocBench 3)	26	ISA ²	Q4/2017	Q2/2018
Execution	Alignment Management Service (sect. 5.5 of D03.03)	21	ISA ²	Q4/2017	Q2/2018
Execution	Action Level History Management (sect. 5.7.3 of D03.03)	12	ISA ²	Q4/2017	Q2/2018
Execution	Resource Level Metadata (sect 5.6.2 of D03.03)	21	ISA ²	Q4/2017	Q2/2018
Execution	Provenance Management	12	ISA ²	Q4/2017	Q2/2018

	(parts of 5.6.4 not dealt with in first action on VocBench 3)				
Execution	SKOS Vocabulary Constraint Management (sect. 5.9.1.1. of D03.03)	15	ISA ²	Q4/2017	Q1/2018
Execution	Advanced Concept Management (parts of 5.1.5 not dealt with in round 1)	12	ISA ²	Q1/2018	Q2/2018
Execution	Multiple Properties Editing Support (section 5.1.5.1 of D03.03)	4	ISA ²	Q1/2018	Q1/2018
Execution	Support for UNDO (sect. 5.10. of D03.03):	6	ISA ²	Q1/2018	Q1/2018
Execution	Other Collaboration Services (sect. 5.8.3. of D03.03): Development of extension points for: connectable collaboration frameworks (ext.point.2 was removed in round 1)	14	ISA ²	Q1/2018	Q2/2018
Execution	Specific extension point for connectable collaboration frameworks implementation for JIRA Support (sect. 5.8.3.1. of D03.03)	9	ISA ²	Q1/2018	Q2/2018
Execution	Extension point for accessing dataset repositories and registries, searching for datasets of interest, importing them	17	ISA2	Q4/2018	Q4/2018
Execution	Development of Specific Connectors to repositories and registries for the provisioning of datasets	15	ISA2	Q4/2018	Q1/2019
Execution	Advanced Concept Management (parts of 5.1.5 not dealt with in round 1)	13	ISA2	Q1/2019	Q1/2019
Execution	Multiple Properties Editing Support (section 5.1.5.1 of D03.03)	5	ISA2	Q1/2019	Q2/2019
Execution	5.3.2.1. Graph and Additional Visualisations for data	38	ISA2	Q1/2019	Q2/2019
Execution	5.1.5.2. Drag and Drop Support	8	ISA2	Q4/2018	Q1/2019
Execution	Support for UNDO (sect. 5.10. of D03.03):	7	ISA2	Q4/2018	Q1/2019
Execution	Action Level History Management: History Based Time Machine (sect. 5.7.3 of D03.03)	14	ISA2	Q3/2018	Q2/2019
Execution	Extension Points: role/context-based extension points for pluggable actions on resources	21	ISA2	Q3/2018	Q2/2019

	Total	833			
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2.1.11.2 Breakdown of ISA funding per budget year

Budget Year	Phase	Anticipated allocations (in KEUR)	Executed budget (in KEUR)
2016	Operational	950	950
2016	Execution (VocBench)	348	348
2017	Operational	746	746
2017	Execution (VocBench 3.1)	347	347
2018	Operational	800	
2018	Execution (VocBench 3.2)	138	

2.1.12 ANNEX AND REFERENCES

Description	Reference link	Attached document
Federation of Semantic Assets Repositories	https://joinup.ec.europa.eu/catalogue/all?filters=bs_current_version:true	
Core Vocabularies (Core Person, Core Business, Core Location, Core Public Service)	https://joinup.ec.europa.eu/community/core_vocabularies/description	
The DCAT Application Profile	https://joinup.ec.europa.eu/asset/dcat_application_profile/description	
Towards Open Government Metadata	http://www.semic.eu/semic/view/documents/towards_open_government_metadata.pdf	
Similar project in another, related domain: Specifications for the development of an open metadata schema for qualifications	 20150717 Specifications.pdf  20150717 Annex to the Specifications.pdf	

2.2 SEMANTIC INTEROPERABILITY FOR REPRESENTATION POWERS AND MANDATES (2016.12)

2.2.1 IDENTIFICATION OF THE ACTION

Type of Activity	Common frameworks and reusable generic tools
Service in charge	DIGIT D3
Associated Services	DIGIT D2, CNECT.H4

2.2.2 EXECUTIVE SUMMARY

STORK 2.0 project was initiated with the aim, among others, of developing an operational framework and infrastructure encompassing eID for secure electronic authentication of legal persons, including facilities for the management of representation powers and mandates.

In that sense, the project has achieved significant results, evolving STORK specifications to include attributes for legal persons and representation powers and mandates, and adapting the software building blocks to allow cross-border transfer of this kind of information. The feasibility of the developed solution has been verified by means of the STORK 2.0 pilots, in which use cases that require cross-border access to information about representation capabilities have been successfully tested.

However, the project has also found important barriers that currently hinder the adoption of an EU wide solution for cross-border transfer of representation information, one of the most relevant being the lack of a common semantic framework. Representation is complex and the national solutions are often too much focused on country specific details. Therefore, although there are some similarities among countries, there is not a shared European taxonomy about representation powers and mandates, what prevents powers/mandates information originated in one country from being directly machine processable in other.

Additionally, the need for service providers of having powers/mandates information together with the data regarding the represented and representing persons in order to properly assess the scope of the transactions that the representing person is allowed to perform on behalf of the represented one, has been steadily highlighted in the discussions of the eIDAS expert group.

Taking into account that the goal of the European Commission ISA² programme is the promotion of interoperable electronic public services, and that it includes specific actions about semantic interoperability like the ISA core vocabularies, there is an opportunity for continuing the work done in STORK 2.0 and other initiatives regarding representation powers/mandates under the scope of the ISA² programme and, by incorporating the results of this action in the eIDAS interoperability framework, keep progressing towards the single digital market and the semantic harmonisation Europe-wide. In that sense, an evolution of the ISA Core Vocabularies to extend the Core Person and Core Business vocabularies with a common taxonomy for representation powers/mandates linked to legal entities may be one of the potential initiatives to be taken over by the ISA² programme.

2.2.3 OBJECTIVES

The main objective is **to create a shared European data model about representation powers and mandates**, which allows powers/mandates information originated in the information systems of one country to be directly processed automatically by the information systems in other country. The data model will be tested in real life through pilots with some MS and the technical specification will be put forward to the CEF eID Operational Management Board for endorsement and proposed to be incorporated in the CEF eID sample implementation and extension of the CEF eID technical specifications.

2.2.4 SCOPE

The action will provide a common data model for representation powers / mandates linked to legal entities, aligned with the Core Person and Core Business vocabularies, as well as some tools for integrating that data model into business applications.

2.2.5 ACTION PRIORITY

For the eIDAS Technical Specifications and the associated implementation under CEF eID, a solution for power and mandates is a top priority. Preliminary results of the study phase are already expected by the eIDAS Expert Group in 2017.

2.2.5.1 Contribution to the interoperability landscape

The contribution of the action to the interoperability landscape, measured by the importance and necessity of the action to complete the interoperability landscape across the Union

Question	Answer
<p><i>How does the proposal contribute to improving interoperability among public administrations and with their citizens and businesses across borders or policy sectors in Europe?</i></p> <p><i>In particular, how does it contribute to the implementation of:</i></p> <ul style="list-style-type: none"> • <i>the new European Interoperability Framework (EIF),</i> • <i>the Interoperability Action Plan and/or</i> • <i>the Connecting European Facility (CEF) Telecom guidelines</i> • <i>any other EU policy/initiative having</i> 	<p>The proposal contributes to the implementation of REGULATION (EU) No 910/2014 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL, Commission Implementing Regulation (EU) 2015/1501 and REGULATION (EU) No 1316/2013 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL</p>

<i>interoperability requirements?</i>	
<i>Does the proposal fulfil an interoperability need for which no other alternative action/solution is available?</i>	Yes, currently there is no technical specification on how to support power in mandates in the context of the eIDAS infrastructure.

2.2.5.2 Cross-sector

The scope of the action, measured by its horizontal impact, once completed, across the policy sectors concerned.

Question	Answer
<i>Will the proposal, once completed be useful, from the interoperability point of view and utilised in two (2) or more EU policy sectors? Detail your answer for each of the concerned sectors.</i>	The solution could be implemented in the CEF eID Building block, pending Operational Management Board approval. Once integrated, the solution would be used in the same EU policy areas as the CEF eID Building Block. For more information see the CEF Reuse matrix.
<i>For proposals completely or largely already in operational phase, indicate whether and how they have been utilised in two (2) or more EU policy sectors.</i>	Nothing in operational phase.

2.2.5.3 Cross-border

The geographical reach of the action, measured by the number of Member States and of European public administrations involved.

Question	Answer
<i>Will the proposal, once completed, be useful from the interoperability point of view and used by public administrations of three (3) or more EU Members States? Detail your answer for</i>	Yes. As part of eIDAS interoperability framework.

<i>each of the concerned Member State.</i>	
<i>For proposals completely or largely already in operational phase, indicate whether and how they have been utilised by public administrations of three (3) or more EU Members States.</i>	Nothing in operational phase.

2.2.5.4 Urgency

The urgency of the action, measured by its potential impact, taking into account the lack of other funding sources

Question	Answer
<i>Is your action urgent? Is its implementation foreseen in an EU policy as priority, or in EU legislation?</i>	The main stakeholder group for which this action is addressed are the users of the CEF eID Building Block. As there are already commitments made to re-use this Building Block, and the likelihood that the requirement for power and mandates is high, the action is very urgent and has been referenced in CEF Work Program 2017.
<i>How does the ISA² scope and financial capacity better fit for the implementation of the proposal as opposed to other identified and currently available sources?</i>	As this action is about the design of a solution for powers and mandates, there are no other available sources under CEF.

2.2.5.5 Reusability of action's outputs

The re-usability of the action, measured by the extent to which its results can be re-used.

Can the results of the action (following this proposal) be re-used by a critical part of their target user base, as identified by the proposal maker? For proposals or their parts already in operational phase: have they been re-used by a critical part of their target user base?

Name of reusable solution to be produced (for new proposals) or produced (for existing actions)	Generic technical specification for the interoperability of powers and mandates
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Description	Generic technical specification for the interoperability of powers and mandates, including a common data model or vocabulary, with semantic metadata models and controlled vocabularies that can accommodate cross-domain and cross-border requirements.
Reference	
Target release date / Status	Q2/2018
Critical part of target user base	The DSIs that are committed to use CEF eID, for more information see the CEF Reuse matrix.
For solutions already in operational phase - actual reuse level (as compared to the defined critical part)	N/A

2.2.5.6 Level of reuse of existing solutions

The re-use by the action (following this proposal) of existing common frameworks and interoperability solutions.

Question	Answer
<i>Does the proposal intend to make use of any ISA², ISA or other relevant interoperability solution(s)? Which ones?</i>	Core Person and Core Business vocabularies
<i>For proposals completely or largely already in operational phase: has the action reused existing interoperability solutions? If yes, which ones and how?</i>	Nothing in operational phase

2.2.5.7 Interlinked

The extent to which the action (following this proposal) contributes to Union's initiatives such as the DSM.

Question	Answer
<i>Does the proposal directly contribute to at least</i>	This proposal contributes to CEF eID

<p><i>one of the Union's high political priorities such as the DSM? If yes, which ones? What is the level of contribution?</i></p>	<p>Building Block. The CEF finances projects which fill the missing links in Europe's energy, transport and digital backbone. It will also make Europe's economy greener by promoting cleaner transport modes, high speed broadband connections and facilitating the use of renewable energy in line with the Europe 2020 Strategy.</p>
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2.2.6 PROBLEM STATEMENT

Representation powers and mandates are an essential element for businesses establishing relationships with other businesses, governments and customers, because legal persons can only act legally by means of natural persons in most countries. Currently, there are important barriers that hinder the adoption of an EU wide solution for cross-border transfer of representation information, being one of the most relevant the lack of a common semantic framework. Representation is complex, and electronic mandates schemes and policies are basically national and usually do not contemplate the possibility to use those mandates in cross-border scenarios.

The problem of	Lack of interoperability for representation powers and mandates
Affects	businesses establishing relationships with other businesses, governments and customers because legal persons can only act legally by means of natural persons in most countries.
the impact of which is	hindering the adoption of an EU wide solution for cross-border transfer of representation information
a successful solution would be	allowing powers/mandates information originated in the information systems of one country to be directly processed automatically by the information systems in other country.

2.2.7 IMPACT OF THE ACTION

2.2.7.1 Main impact list

List the impacts of the action's outputs (following the proposal) on the beneficiaries to the extent possible. Some impacts are listed below – add others as needed.

Impact	Why will this impact occur?	By when?	Beneficiaries
(+) Savings in money	The study will produce reusable specifications	Q4/2018	Citizens and business in Europe
(+) Savings in time	The study will also help the Member States which are currently working on definition of power and mandates solutions	Q4/2018	Citizens and business in Europe
(+) Better interoperability and quality of digital public service	The action would be allowing powers/mandates information originated in the information systems of one country to be directly processed automatically by the information systems in other country	Q4/2018	Citizens and business in Europe
(-) Integration or usage cost	The solution would be piloted by extending the eIDAS infrastructure, therefore re-using an existing solution.	Q4/2018	Citizens and business in Europe

2.2.7.2 User-centricity

The users of the generic technical specifications have been consulted in the initiation phase to provide their needs and priorities and they will be asked for feedback regarding the general technical specifications.

2.2.8 EXPECTED MAJOR OUTPUTS

Output mentioned under section 1.1.5.5

2.2.9 ORGANISATIONAL APPROACH

2.2.9.1 Expected stakeholders and their representatives

Stakeholders	Representatives	Involvement in the action
Member States	<ul style="list-style-type: none"> • ISA2 Committee • ISA2 Coordination Group (or ISA CG equivalent) • CEF governance: eID DSI Operational Management Board; eID DSI expert group and Cooperation Network • Persons/units in charge of National Interoperability Frameworks and/or metadata standards catalogues/repositories, etc. • Persons/units in charge of business registers, public procurement and taxation applications, representation powers/mandates registries, etc. 	
Standardization bodies	W3C, OASIS, GS1, CEN , UN/CEFACT, etc.	
European Commission	DG JUST, DG GROW, TAXUD, DG DIGIT Unit (s) responsible for promoting common specifications in new and existing system, DG CONNECT as building block owner for eID	
End users	Citizens Representatives of companies	

2.2.9.2 Identified user groups

eIDAS interoperability framework and DSIs that are using or are committed to use CEF eID. For more information please see CEF Reuse matrix.

2.2.9.3 Communication and dissemination plan

Due to the strong link of the proposed action with action 1.1 Promoting Semantic Interoperability amongst the European Union Member States and action 1.2 Access to Base Registries, it is suggested that the communication plan for the proposed action leverages the dissemination activities already foreseen in the actions current under execution.

2.2.9.4 Key Performance indicators

Provide a list of KPIs allowing the measurement of the progress and completions of milestones and the action. In case of an on-going action with already identified metrics²⁶ indicate the current values.

Description of the KPI	Target to achieve	Expected time for target
Desk research target countries Number of Questionnaires filled in by MS	14	Q3/2017
Number of interviews performed	14	Q3/2017
Number of business/life events analysed	5	Q3/2017
Number of cross-border services identified	5	Q3/2017
Number of use cases analysed	20	Q3/2017
Number of requirements identified grouped by EIF interoperability layer	3	Q3/2017
Number of feasibility criteria defined	10	Q3/2017
Number of identified cross-border solutions / best practices	10	Q3/2017
Number of identified cross-border solutions / best practices	10	Q3/2017

NOTE: For 2018-2019 new KPIs will be defined.

2.2.9.5 Governance approach

Again, due to the link of the proposed action with the two mentioned actions, it is suggested to follow a similar approach to the one followed in those actions: Action run and coordinated by DIGIT D3, under the CEF governance for the eID DSI; i.e. Operational Management Board and the eID DSI expert group. Also with strong collaboration with other units of the Commission involved in managing information about representation (e.g. DG JUST as representation information is frequently managed by Business Registers; DG GROW for eProcurement applications; DG TAXUD in relation to the UUM&DS Project). DIGIT D2 will provide support for the development of the semantic data model.

2.2.10 TECHNICAL APPROACH AND CURRENT STATUS

STORK 2.0 project has developed an operational framework and infrastructure encompassing eID for secure electronic authentication of legal persons, including facilities for the management of representation powers and mandates. In that sense, it has evolved STORK specifications to include attributes for legal persons and representation powers and mandates, and has adapted the SW building blocks to allow cross-border transfer of this kind of information.

²⁶ For examples see the ISA2 dashboard <https://ec.europa.eu/isa2/dashboard/isadashboard>, effectiveness tab.

The feasibility of the developed solution has been verified by means of the STORK 2.0 pilots, in which use cases that require cross-border access to information about representation capabilities have been successfully tested.

To support this use cases, the project has developed a set of tools, which include a basic taxonomy for powers and mandates, that allows to obtain information about representation in one country, map this information to a common semantic model, and transfer it to another country so that it can be interpreted by an electronic service provider that needs it in order to perform a transaction with a natural person acting on behalf of a legal person.

The aim of the action is therefore to generalise this basic data model and related tools, now oriented to solve the specific needs of the STORK 2.0 project, so that it can cover any potential cross-border transfer of information about representation.

To do so, the action proposes four different phases:

An **initial phase** or feasibility study analysing the current situation on how electronic powers and mandates are managed in the individual Member States and also by other European-related projects like the UUM&DS Project from DG TAXUD, and their cross-border interoperability: The study will scope the work needed in order to develop a common data model that could be used across-sector and across-borders for the electronic identification of legal entities and the representation and mandates of those action on behalf of that legal entity.

Other similar initiatives will be taken into account, especially those in a European context offering services in production. Alignment with the eIDAS Regulation and the CEF specs on the eID DSI will be sought.

A **second phase** of production of requirements and good practices like frameworks and solutions that could facilitate the interoperable interconnection of representation information across sectors and across borders.

A **third phase** of designing and elaborating a generic technical specification for the interoperability of powers and mandates, including a common data model or vocabulary, with semantic metadata models and controlled vocabularies that can accommodate cross-domain and cross-border requirements. The action will consult with the CEF eID Expert Group in the context of phase 3.

A **fourth phase** where some solutions for integrating that framework into business applications will be implemented and also where real-life pilots with the MS will be launched to test the specification.

Finally, and as a result of the pilots the specification will be enhanced and presented to the CEF board for endorsement and proposed to be incorporated in the official specs of the CEF eID DSI.

2.2.11 COSTS AND MILESTONES

2.2.11.1 Breakdown of anticipated costs and related milestones

Phase: Initiation Planning Execution Closing/Final evaluation	Description of milestones reached or to be reached	Anticipated Allocations (KEUR)	Budget line ISA/ others (specify)	Start date (QX/YYYY)	End date (QX/YYYY)
Study	Study about cross-	150	ISA ²	Q4/2016	Q1/2017

	border interoperability of powers and mandates				
Study	Production of requirements and good practices	100	ISA ²	Q4/2016	Q3/2017
Inception	Elaboration of the technical specification for interoperability	150	ISA ²	Q3/2017	Q1/2018
Execution	Design of reusable specifications	144	ISA ²	Q1/2018	Q4/2018
Execution	Launch of pilots	100	ISA ²	Q3/2018	Q2/2019
		644			
	Total				

2.2.11.2 Breakdown of ISA² funding per budget year

Budget Year	Phase	Anticipated allocations (in KEUR)	Executed budget (in KEUR)
2016	Study	250	
2017	Inception + Execution	294	
2018	Execution	100	

2.2.12 ANNEX AND REFERENCES

Description	Reference link	Attached document
STORK 2.0 project website	https://www.eid-stork2.eu/	
STORK 2.0 Deliverable D3.3 Mandate/Attribute Management Report	https://www.eid-stork2.eu/index.php?option=com_phocadownload&view=file&id=7:d33-mandateattribute-management-report&Itemid=175	
STORK 2.0 Deliverable D3.5 Legal Entities Identification Report	https://www.eid-stork2.eu/index.php?option=com_phocadownload&view=file&id=8:d35-legal-entities-identification-report&Itemid=175	

2.3 PUBLIC MULTILINGUAL KNOWLEDGE MANAGEMENT INFRASTRUCTURE FOR THE DIGITAL SINGLE MARKET (2016.16)

2.3.1 IDENTIFICATION OF THE ACTION

Type of Activity	Common services, common frameworks
Service in charge	Publications Office of the European Union OP.A2
Associated Services	CNECT.G3 DIGIT.D2 DGT.R3 European Parliament, DG TRAD, Terminology Coordination unit

2.3.2 EXECUTIVE SUMMARY

In its open letter to the European Commission the European Language (Technology) Community claims: Europe's Digital Single Market must be multilingual!²⁷ EU cross-border online services represent only 4% of the global Digital Market and only 7% of small and medium sized enterprises (SMEs) in the EU are actually selling cross-border.²⁸ Providing support for the EU economy and in particular to SMEs to overcome the language barriers will help to unlock the e-Commerce potential within the EU.

The objective of this action is to support enterprises and in particular the language technology industry with the implementation of the necessary multilingual tools and features in order to improve cross-border accessibility of e-Commerce solutions. It will also be an input to the Connecting Europe Facility Automated Translation (CEF.AT) Platform, a common building block implemented through the CEF programme to be used by European cross-border online public services.

The Public Multilingual Knowledge Infrastructure (PMKI) will be governed by a representative subgroup of stakeholders of the final system.

In this context multilingual tools and features refer to capabilities such as machine translation, localisation and multilingual search. The Public Multilingual Knowledge Infrastructure should reduce the investments of enterprises for the creation of their individual knowledge management systems by providing an agreed, open, reliable and persistent public core knowledge management system. This would also create space for innovation instead of wasting resources for redundant activities.

Public administrations and public entities within the EU will largely benefit from this initiative, in particular regarding the internationalisation of their e-Services. They will be able to share and to

²⁷ See <https://ec.europa.eu/futurium/en/content/european-language-and-language-technology-community-europes-digital-single-market-must-be>

²⁸ See http://europa.eu/rapid/attachment/IP-15-4653/en/Digital_Single_Market_Factsheet_20150325.pdf

valorise existing taxonomies/terminologies and to extend their multilingual capabilities. This will also help to increase the interoperability between public administrations within EU in general.

To realise the Public Multilingual Knowledge Infrastructure the following aspects need to be addressed:

- Implementation of a technical infrastructure to expose existing multilingual taxonomies/terminologies in a standardised way based on semantic technology and Semantic Web standards;
- Implementation of existing alignments between terminologies and creation of further alignments and relations in order to enable interoperability;
- Creation and maintenance of meaningful supplements, i.e. of terms and relations that complete the coverage of the multilingual knowledge infrastructure and facilitate interoperability;
- Set-up of a community and a governance structure to extend systematically the coverage of the core infrastructure by the integration of supplementary public multilingual taxonomies/terminologies.

The cornerstone of the Public Multilingual Knowledge Infrastructure will be EuroVoc, the multilingual, multidisciplinary thesaurus covering the activities of the EU, which is managed by the Publications Office. The project will also benefit from already existing alignments of EuroVoc with other thesauri (Agrovoc, Eclas, Gemet, Anubis and Inspire²⁹).

In addition, it should be investigated how the publication of the information as Linked Open Data (LOD) could be enhanced by introducing lexical semantic links between semantically equivalent and similar entities in an automatized way.

2.3.3 OBJECTIVES

The objectives of the proposed activity are:

- To provide an agreed, reliable, persistent and extensible public multilingual knowledge platform for multiple purposes and for multiple stakeholders composed of open public multilingual resources.
- To increase the interoperability of existing multilingual terminologies, in particular by aligning and linking them with other existing terminologies. Linking will enable at the same time specialisation (for example by linking a concept of a more general taxonomy/terminology with the corresponding concept of a domain specific taxonomy/terminology) and broadening (for example by linking similar concepts at the same level of granularity).
- To establish the initial governance structure to support and to supervise the execution of the project as well as the implementation, the management and the evolution of the final system.
- To contribute to the further standardisation of data models for thesauri and lexical knowledge database representations using latest semantic technologies.

²⁹ See <https://open-data.europa.eu/en/data/dataset/eurovoc>

- To support the contributing institutions with the transformation of their resources into adopted semantic format of the platform.
- To further develop the LOD capabilities of the system, in particular by enhancing the creation of semantic links between similar and related concepts.

2.3.4 SCOPE

The objective of the proposed activity in the scope of the ISA² programme is to verify the feasibility of the approach and to prepare the technical and the organisational aspects for the definitive and permanent implementation of an open Public Multilingual Knowledge Infrastructure managed by the EU Institutions.

Nevertheless, it will deliver already results, which could be used and applied by public administrations and bodies of Member States and EU Institutions independent from the Public Multilingual Knowledge Infrastructure project itself.

In scope:

1. Adoption of a standard representation for multilingual terminologies (candidates include SKOS³⁰, Lemon³¹ ...).
2. Definition of a core data model based on the standard representation in order to facilitate the interoperability between different terminologies, i.e. through a shared set of metadata, and to harmonise the representation of the data, which will be made available through the platform.
3. Specification of the technical architecture of the Public Multilingual Knowledge Infrastructure and the necessary services to access and to manage the system.
4. Proof of concept – implementation of a first operational release of the system to demonstrate the core services of the system.
5. Set-up/adoption of an adequate initial governance structure.
6. Definition of an iterative implementation strategy, i.e. the specifications and the roadmap for the extension of the initial release of the system into a public service, which will be managed, further developed and maintained by the EU Institutions and governed by all contributors, i.e. in particular public entities within in EU. The result of the proof of concept should be reused for the implementation of the final system.
7. Feasibility study in order to analyse and to test the creation of lexical semantic links between semantically equivalent and similar entities in an automatized way.
8. Feasibility study for the use case of multilingual semantic indexing. PMKI's multilingual knowledge base with its alignments between taxonomies/terminologies should improve the quality of indexation and, in consequence, help to improve document search and retrieval services, including content disambiguation, geolocalisation, cross-collection and multilingual indexing.

Out of scope:

³⁰ See <http://www.w3.org/2004/02/skos/>

³¹ See <http://lemon-model.net/index.php>

1. Implementation of the definitive, permanent platform, made available as a public service and free of charge.
2. Management, further development and maintenance of the definitive system.

2.3.5 ACTION PRIORITY

The creation of a Public Multilingual Knowledge Infrastructure contributes to the overcoming of language barriers, in particular in the context of the implementation of a Digital Single Market. It should also help to reduce the investments of the different stakeholders in cross-border e-commerce solutions and multilingual eGovernment solutions and to enhance the linguistic quality of the solutions.

2.3.5.1 Contribution to the interoperability landscape

The contribution of the action to the interoperability landscape, measured by the importance and necessity of the action to complete the interoperability landscape across the Union

Question	Answer
<p><i>How does the proposal contribute to improving interoperability among public administrations and with their citizens and businesses across borders or policy sectors in Europe? In particular, how does it contribute to the implementation of:</i></p> <ul style="list-style-type: none"> • <i>the new European Interoperability Framework (EIF),</i> • <i>the Interoperability Action Plan and/or</i> • <i>the Connecting European Facility (CEF) Telecom guidelines</i> • <i>any other EU policy/initiative having interoperability requirements?</i> 	<p>The proposal meets the recommendations included in the EIS. In particular the adherence to specific standards for describing language resources and the creation of an interoperability platform to manage them comply with the main approaches and “clusters” of the EIS (reusability of the solutions, interoperability service architecture in the EU multilingual context, implication of ICT on new EU legislation, as well as promotion of the awareness on the maturity level and of the shareability of the public administration services). Similarly, the proposal meets the recommendations and principles of the European Interoperability Framework (EIF)³², in particular as regards multilingualism, accessibility, administrative simplification, transparency, reusability of the solutions. The creation of a Public Multilingual Knowledge Infrastructure will support EU public</p>

³² COM(2010) 744 final Annex 2, http://ec.europa.eu/isa/documents/isa_annex_ii_eif_en.pdf

	<p>administrations to create services that can be accessible and shareable independently from the language actually used, as well as the SMEs to sell goods and service cross-border in a digital single market.</p> <p>Moreover this action meets the Strategic Agenda 18-month Programme of the Council (1st July 2017 – 31 December 2018) as far as the focus on growth and competitiveness strategic objectives is concerned. According to such programme to achieve such strategic objectives one of the priorities is actually the effective development of the European Single Market representing one of the most significant sources of economic growth. In particular the creation of a Digital Single Market (DSM) is one of the main driver for creating employment and foster competitiveness. The PMKI action is aiming to contribute to it by facilitating connectivity and advancing the development of a competitive and fair DSM by encouraging cross-border e-commerce, and overcoming language barriers. The DSM has to be multilingual. The project contribution to the development of cross-border digital public services is also aligned with the EU e-Government Action Plan 2016-2020.</p>
<p><i>Does the proposal fulfil an interoperability need for which no other alternative action/solution is available?</i></p>	<p>This action represents a tremendous opportunity to harmonize the different language resources managed by EU institutions (for example EuroVoc, IATE, glossaries searchable on GlossaryLinks of the DG TRAD, etc.), as well as the national resources managed by Member States, and, first of all, to make them interoperable.</p>

2.3.5.2 Cross-sector

The scope of the action, measured by its horizontal impact, once completed, across the policy sectors concerned.

Question	Answer
<p><i>Will the proposal, once completed be useful, from the interoperability point of view and utilised in two (2) or more EU policy sectors? Detail your answer for each of the concerned sectors.</i></p>	<p>This action aims at establishing multilingual interoperability of language resources; therefore it will support the creation and the improvement of multilingual interoperability services, as cross-collection and cross-language information retrieval, as well as automated translation services.</p> <p>It will contribute therefore to overcome the language barriers that are one of the obstacles for the further development of Digital Single Market in the EU, which represents one of the main priorities of the European Commission. In particular it addresses all the three policy areas of such priority:</p> <ul style="list-style-type: none"> - Better online access to digital goods and services; - An environment where digital networks and services can prosper; - Digital as a driver for growth.
<p><i>For proposals completely or largely already in operational phase, indicate whether and how they have been utilised in two (2) or more EU policy sectors.</i></p>	<p>This proposal is not in operational phase yet.</p>

2.3.5.3 Cross-border

The geographical reach of the action, measured by the number of Member States and of European public administrations involved.

Question	Answer
<p><i>Will the proposal, once completed, be useful from the interoperability point of view and used by public administrations of three (3) or more EU Members States? Detail your answer for each of the concerned Member State.</i></p>	<p>By guaranteeing interoperability of language resources in all the 24 official languages of the EU, this proposal has the potential of improving the service interoperability of public administrations of all EU Member States, candidate countries or EFTA States.</p>
<p><i>For proposals completely or largely already in operational phase, indicate whether and how they have been utilised by public administrations of three (3) or more EU Members States.</i></p>	<p>This proposal is not in operational phase yet.</p>

2.3.5.4 Urgency

The urgency of the action, measured by its potential impact, taking into account the lack of other funding sources

Question	Answer
<p><i>Is your action urgent? Is its implementation foreseen in an EU policy as priority, or in EU legislation?</i></p>	<p>The outcomes of this action can greatly improve the accessibility of EU and Member States' legislation and related information systems by promoting the interoperability of the language resources used for automatic translation, as well as multilingual classification and indexing. Moreover, it will promote e-commerce solutions and related services which will rely on an agreed, authentic and persistent set of multilingual interoperable terminologies. This action is in particular foreseen in the framework of the creation of a European Digital Single Market, which is one of the priorities of the European Commission, aimed at supporting the EU economy (in particular the SMEs) to overcome the language barriers in order to unlock the e-Commerce potential within</p>

	<p>the EU.</p> <p>A prompt implementation of such proposal will have direct beneficial impacts on the addressed fields.</p>
<p><i>How does the ISA² scope and financial capacity better fit for the implementation of the proposal as opposed to other identified and currently available sources?</i></p>	<p>The proposal is specifically addressed to improve the interoperability of language resources and the services for public administration, SMEs and citizens. These are specific objectives of the ISA² which therefore fits to it better than other actions. In fact rather than other framework programmes, like for example Horizon 2020 mainly devoted to research and innovation or CEF mainly devoted to the implementation of the digital networks and infrastructures for the interoperability of digital services, ISA² represents the suitable programme for leveraging research results and implementing state-of-the-art semantic technologies for creating interoperability solutions to overcome language barriers in the EU digital market of goods and services.</p>

2.3.5.5 Reusability of action's outputs

Name of reusable solution to be produced (for new proposals) or produced (for existing actions)	Core data model for multilingual taxonomies/terminologies
Description	<p>Formal definition of the core data model for multilingual taxonomies/terminologies and its necessary extensions that will be implemented by the Public Multilingual Knowledge Infrastructure.</p> <p>The approach should be flexible in the way that data providers would be able to define private extensions, which would allow the upload of supplementary data that is available on their side and that could be useful for re-users.</p> <p>The aspects "provenance" and "license" have also to be taken into account.</p>
Reference	PUB_MUL_TERM_FORMAT
Target release date / Status	Q4/2017
Critical part of target user base	n/a
For solutions already in operational phase - actual reuse level (as compared to the defined critical part)	Not in operational phase

Name of reusable solution to be produced (for new proposals) or produced (for existing actions)	Semantic links
Description	<p>A core dataset with additional semantic links between different language resources (in particular having EuroVoc as pivot) will be available.</p> <p>This includes the development of a mapping approach based on language-independent algorithms respectively the combination of algorithms for semi-automatic mapping between multilingual language resources.</p> <p>The purpose is to demonstrate the potential of semantic technology in order to improve the semantic connectivity among multilingual knowledge resources (thesauri, vocabularies, classification schemes, etc.).</p>
Reference	PUB_MUL_TERM_SEMANTIC
Target release date / Status	Q4/2018

Critical part of target user base	n/a
For solutions already in operational phase - actual reuse level (as compared to the defined critical part)	Not in operational phase

Name of reusable solution to be produced (for new proposals) or produced (for existing actions)	PMKI platform (operational prototype)
Description	An operational prototype of the PMKI platform (repository and core services) will be available. It will be meant to demonstrate the potential of the interoperability approach in the field of multilingual language resources and can be reused for the eventual implementation of a real production system.
Reference	PUB_MUL_TERM_POC
Target release date / Status	Q1/2019
Critical part of target user base	n/a
For solutions already in operational phase - actual reuse level (as compared to the defined critical part)	Not in operational phase

Name of reusable solution to be produced (for new proposals) or produced (for existing actions)	Multilingual semantic indexing
Description	Feasibility study on documents multilingual semantic indexing. Using PMKI results on multilingual alignment between taxonomies/terminologies, the aim is to test semantic indexing facilities for improving document search and retrieval services.
Reference	PUB_MUL_TERM_INDEXING
Target release date / Status	Q2/2019
Critical part of target user base	n/a
For solutions already in operational phase - actual reuse level (as compared to the defined critical part)	Not in operational phase

2.3.5.6 Level of reuse of existing solutions

The re-use by the action (following this proposal) of existing common frameworks and interoperability solutions.

Question	Answer
<i>Does the proposal intend to make use of any ISA², ISA or other relevant interoperability solution(s)? Which ones?</i>	The proposal will make use of VocBench 3.x for the management of the language resources that will be exposed on the operational prototype of the PMKI platform. VocBench 3.x is developed in the context of the ISA ² programme.
<i>For proposals completely or largely already in operational phase: has the action reused existing interoperability solutions? If yes, which ones and how?</i>	N/A

2.3.5.7 Interlinked

Question	Answer
<i>Does the proposal directly contribute to at least one of the Union's high political priorities such as the DSM? If yes, which ones? What is the level of contribution?</i>	<p>This action contributes in particular to the Digital Single Market (DSM) priority of the European Commission (see chapter 1.1.5.2).</p> <p>In fact, by providing interlinked multilingual semantic web oriented datasets, this action aims to provide support to SMEs, in particular the language technology industry, as well as public administrations, for developing multilingual digital services able to overcome language barriers for digital services and help to unlock the e-Commerce and public e-services potential within the EU.</p> <p>The project will also provide the necessary set of tools (algorithms for semantic mapping and dataset dissemination web platform), able to set the foundations to</p>

	<p>guarantee maintenance and long-term sustainability of the service.</p> <p>Moreover, this action can contribute to the Connecting Europe Facility (CEF) programme, in particular to the Automated Translation (CEF.AT) service. It can be used for better leveraging data to support customisation and adaptation in CEF.AT. PMKI will be a source of parallel data to build/reinforce machine translation systems, in particular specific domain systems adapted to specific terminology and text types customised for the usage context (tender terminology, medical terminology, etc.).</p> <p>In general, the availability of such interoperable multilingual documents represents effective new parallel data that can contribute to improve and/or to develop machine translation systems with gradable machine translation quality for such specific domains.</p> <p>PMKI can offer also a good support to human translators providing resources such as dictionaries, thesauri, etc. These resources can be accessible from CAT "Computer Aided Translation" tools. For instance at the European Union institutions (Commission, Parliament, etc.), translators are using a customised version of SDL Trados Studio, or other CAT tools developed locally such as CAT4TRAD used at the European Parliament which these PMKI languages resources can be connected to and be accessible to the translators in order to help them in their daily translation work (for instance to find the target version of certain terms, or to disambiguate certain translations). Also, it can offer the possibility to browse available semantic networks (e.g., EuroVoc, etc.)</p> <p>Finally, the availability of interoperable multilingual documents will be a good source of data production not only for Machine Translation but for all Natural</p>
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	Language Processing applications mainly for under-resource languages, thanks to the cross-lingual and cross-collection concepts of documents.
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2.3.6 PROBLEM STATEMENT

The problem of	language barriers due to the 24 official EU languages
affects	the European Digital Single market causing its fragmentation and falling short of its economic potential
the impact of which is	that almost half of European citizens never shop online in languages other than their native tongue. Moreover the access to public e-services is usually restricted to national languages and the richness of EU educational and cultural content is confined within linguistic communities. European SME's are at particular disadvantage, because the cost of providing services in multiple languages is prohibitive and has a negative impact on their competitiveness.
a successful solution would be	<p>a Public Multilingual Knowledge Infrastructure which will contribute to reduce and to secure the investments of the different stakeholders in cross-border e-commerce solutions and related services because part of their implementation could rely on an agreed, authentic and persistent set of multilingual terminology.</p> <p>Because the contributions for the Public Multilingual Knowledge Infrastructure will come from different stakeholders (essentially public administrations and bodies of EU Member States, EU Institutions and international organizations) the challenge is to build a system, which empowers the stakeholders to manage the development and evolution of their taxonomies/terminologies on an individual base, but at the same time enables interoperability through alignment and linking.</p> <p>The only constraint should be that stakeholders</p>

	<p>have either to adopt the core data model proposed by the Public Multilingual Knowledge Infrastructure or, at least, have to be able to perform the necessary transformations to provide new releases in compliance with the core data model. Ideally, new releases have to be provided in a way that they can be integrated largely automatically.</p>
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The problem of	searching heterogeneous legal data sources in a scenario where information is spread in a distributed and multilingual environment
affects	the cross-border expansion of enterprises business. The knowledge of business regulations of a target country, in relation to domestic and European law, as well as the certainty of rights are, in fact, pre-conditions for any enterprise international business expansion
the impact of which is	that enterprises international marketing and growth strategies can be hampered
a successful solution would be	having multilingual language resources endowed with reliable mutual links so that effective multilingual indexing, search and retrieval services can be implemented. This will increase interoperability among legal information systems, as well as provide users with a seamless navigation experience. The PMKI solution will be able to support law accessibility services in different languages and legal systems, thus promoting the knowledge and the uniform application of the law.

The problem of	translation in specialized domains
affects	the accessibility of digital cross-border services
the impact of which is	a barrier hampering the exploitation of digital services in the European Single Market as one of the main contributions for offering new opportunities to citizens and businesses unlocking innovation and potential growth, in particular as far as the small, medium-sized enterprises and start-ups is concerned
a successful solution would be	to utilize the PMKI datasets to localize digital services in different languages (for example the product taxonomies of the e-commerce solution of a SME).

2.3.7 IMPACT OF THE ACTION

2.3.7.1 Main impact list

Impact	Why will this impact occur?	By when?	Beneficiaries
(+) Savings in money	PMKI will contribute to the maintenance and extension of multilingual language resources as well as their interoperability. The result will be a public service which prevents the language industry and public administrations to invest money on similar but proprietary solutions for implementing multilingual digital services. This will allow stakeholders to save money in favour to other investments, as well as to profit of the PMKI interoperability solutions.	After the service will enter in an operational phase	EU Institutions Member States EU language technology industry Terminology community
(+) Savings in time	Similar arguments as the	After the service	EU Institutions

	above hold about the possibility to save time for PMKI stakeholders while profiting of the PMKI interoperability solutions for managing multilingual language resources	will enter in an operational phase	Member States EU language technology industry Terminology community
(+) Better interoperability and quality of digital public service	The availability of semantic links between concepts from different multilingual language resources, described by proper semantic web standards, paves the way to the development of interoperable and high quality digital services	After the service will enter in an operational phase	EU Institutions Member States EU language technology industry Terminology community
(+) Integration	The PMKI service facilitates the integration of PMKI stakeholders (mainly SMEs and public administrations) in the European Digital Single Market of goods and services, by overcoming language barriers and unlocking the e-Commerce potential within the EU	After the service will enter in an operational phase	EU Institutions Member States EU language technology industry Terminology community
(+) Costs reduction for stakeholders	Stakeholders will greatly benefit from the PMKI services in terms of investments for maintaining and updating their multilingual digital services. Moreover, the use of semantic web technologies will contribute to costs reduction as for software development and long-term sustainability of the digital services.	After the service will enter in an operational phase	EU Institutions Member States EU language technology industry Terminology community

2.3.7.2 User-centricity

PMKI services are addressed to different kind of users, which can be mainly distinguished into data contributors and data consumers.

Data contributors are basically public administrations managing specific vocabularies or taxonomies around which their web services are organized and classified.

The globalization of the operational scenarios causes a natural demand of cross-border extension of such services in terms of multilingualism and interoperability.

PMKI will be able to support the implementation of such services, allowing data contributors to upload and share language resources, harmonize their technical formats, localize them in different languages, as well as linking them with other resources in order to establish interoperability between digital services.

Another typology of users is represented by data consumers, having the possibility to access the PMKI data in order to build or expand digital services, so to be accessible and interoperable cross-borders. Such users can benefit from PMKI because it allows to improve or to obtain language resources around which developing multi-lingual, interoperable, open standard-based digital services. For them the project aims to play the role of a “market place” of controlled vocabularies, with language localization and aligning facilities. In this respect PMKI can represent the foundation for providing services for different groups of stakeholders, in particular for public administrations, industries and, as a consequence for the citizens exploiting such services.

2.3.8 EXPECTED MAJOR OUTPUTS

Output name	Governance structure
Description	Proposal for an adequate governance structure for the supervision of the Public Multilingual Knowledge Infrastructure.
Reference	PUB_MUL_TERM_GOVERNANCE
Target release date / Status	Q3/2017

Output name	Implementation strategy
Description	Proposal of an iterative implementation strategy in order to prepare the political decision about whether the EU institutions will support the implementation of the Public Multilingual Knowledge Infrastructure and, if yes, how the system should be managed and financed.
Reference	PUB_MUL_TERM_STRATEGY
Target release date / Status	Q2/2019

Output name	Community building
Description	Proposal for implementation and organisation of a community (contributors, users...) to drive the further evolution of the system and of the language resources.

Reference	PUB_MUL_TERM_COMMUNITY
Target release date / Status	Q2/2019

2.3.9 ORGANISATIONAL APPROACH

2.3.9.1 Expected stakeholders and their representatives

Stakeholders	Representatives	Involvement in the action
EU Institutions	European Parliament DG TRAD, Terminology Coordination Commission DIGIT DG DGT DG CONNECT Publications Office of the EU	Execution and governance. Collection of requirements and data.
International organisations	FAO	Collection of requirements and data.
Member States	Public administrations	Collection of requirements and data
Language technology industry	For example the companies represented by the LT innovate Association	Collection of requirements
Research community	Universities and research institutions that are active in this area	Collection of requirements and data

2.3.9.2 Identified user groups

- Member States (public administrations involved in "internationalisation" and "eGovernment" initiatives)
- Implementers of eGovernment solutions
- European Institutions and bodies
- Language Technology Industry and their customers
- Citizens
- Candidate countries, EFTA and other countries (public administrations involved in "internationalisation" and "eGovernment" initiatives)

2.3.9.3 Communication and dissemination plan

The following table presents a first rough idea of a communication plan based of the different beneficiaries/interest groups, which have been identified in a first phase.

The existing platforms of the ISA² programme in the domain of language technology will be taken into account for the set-up of an adequate communication platform.

Beneficiaries	Communication channel	Frequency
EU economy	Web (information about the activity on Joinup, publicity on the Publications Office and other EU Institutions websites)	Regular updates during the lifetime of the project.
EU language technology industry	Web (information about the activity on the ISA ² website, publicity on the Publications Office and other EU Institutions websites) Conferences (delivery of presentations)	Regular updates during the lifetime of the project. 1 to 2 conferences per year
Member States	Web (information about the activity on the ISA ² website, publicity on the Publications Office and other EU Institutions websites) Workshops (organisation of dedicated workshops with interested Member States)	Regular updates during the lifetime of the project. 1 to 2 workshops per year
EU Institutions	Meetings Workshop (organisation of dedicated workshops with interested services)	Regular meetings of the EU institutional stakeholders 1 to 2 workshops per year
Terminology community	Conferences (delivery of presentations)	1 to 2 conferences per year
Semantic Web community	Conferences (delivery of presentations: SEMIC, dedicated conferences...)	1 to 2 conferences per year

2.3.9.4 Key Performance indicators

For 2018, the following key performance indicators are targeted:

Description of the KPI	Target to achieve in 2018	Expected time for target
Meetings held with stakeholders (institutions, research community, language technology industry)	12	Q4/2018
Participation in external events (conferences, workshops)	8	Q4/2018
Steering Committee meetings	2	Q4/2018
Final of deliverables	1	Q4/2018
Deliverables with a progress of more than 50%	2	Q4/2018

2.3.9.5 Governance approach

The governance of the execution of the ISA² action itself is ensured by a Steering Committee composed of the associated EU Institutions and services.

The proposal of a governance approach for the management of the PMKI platform in a real production context will be one of the deliverables of the ISA² action.

It will involve project stakeholders to supervise PMKI management and assessing its results, as well as to drive the further evolution and of the system, thus guaranteeing maintenance and long-term sustainability of the service.

Basically the PMKI governance structure will be targeted to negotiating and deciding amongst different stakeholders' value interests. Consequently, it should implement the most suitable delegations chain and decision-making structure that considers all stakeholders when making benefit, risk and resource assessment decisions in the project. Taking into account the usefulness of PMKI services for EU institutions, public administrations and language technology industry, all those beneficiaries will be represented in the PMKI governance structure.

This proposal will be discussed with a representative subset of potential of the final system stakeholders.

2.3.10 COSTS AND MILESTONES

2.3.10.1 Breakdown of anticipated costs and related milestones

Phase: Initiation Planning Execution Closing/Final evaluation	Description of milestones reached or to be reached	Anticipated Allocations (KEUR)	Budget line ISA/ others (specify)	Start date (QX/YYYY)	End date (QX/YYYY)
Inception	Project organisation has been set-up	60		Q3/2016	Q4/2016
Execution	Standard representation has been adopted	50		Q4/2016	Q1/2017
Execution	Core data model and a first set of extensions have been defined (including documentation)	150		Q4/2016	Q4/2017
Execution	Technical architecture has been defined	50		Q2/2017	Q1/2018
Execution	Proposal for an adequate governance structure has been defined	50		Q1/2017	Q3/2017
Execution	First release of the system (operational proof of concept)	300		Q3/2018	Q1/2019
Execution	Proposal for the implementation strategy	60		Q1/2019	Q2/2019
Execution	Creation of the community	60		Q4/2018	Q2/2019
Execution	Feasibility study for the enhancement of the semantic capabilities of the platform	70		Q3/2017	Q4/2018
Execution	Feasibility study on multilingual semantic	50		Q2/2018	Q2/2019

	indexing				
Execution	Project management support	90		Q1/2018	Q2/2019
	Total	990			

2.3.10.2 Breakdown of ISA² funding per budget year

Budget Year	Phase	Anticipated allocations (in KEUR)	Executed budget (in KEUR)
2016	Inception/execution	160	
2017	Execution	344	
2018	Execution	320	
2019	Execution	166	

2.3.11 Planning for the tendering procedures to be launched for the action

Call for tenders foreseen Global amount in KEUR	Call for Tenders Duration in years	Indicative planning of publication (QX/YYYY)
300	2	Q3/2018

2.4 INTEROPERABLE META DATA AND PROCESSING COMPONENTS FOR OPEN SOURCE INFORMATION MINING (2018.02)

2.4.1 IDENTIFICATION OF THE ACTION

Service in charge	Text and Data Mining Unit Directorate I: Competencies DG Joint Research Centre Ispra, Italy
Associated Services	

2.4.2 EXECUTIVE SUMMARY

The Internet and its services form a public medium with global reach, easy access and fast information propagation. The use of public information sources is crucial for the mission of many public authorities. A good example is how open source information can support investigations in law enforcement, immigration and customs authorities. However, the amount of information requires the use of automated tools. These tools need to adapt to the rapid evolution of Internet services and must be made of modular components.

Several national public authorities have invested in composite software tool chain for open source information processing. These tool chains are a mix of commercial, bespoke and open source components. Due to a lack of common meta data standards, however, software components (including the underlying resources used by them) of one Member State (MS) authority are often not interoperable with components and services of other MS authorities leading to a lack of reuse. Thus, many authorities are forced to expensively buy or develop software components from scratch which already exist in other MS. Even though, the domain of open source information processing is an ideal area for cooperation since several standards already exist and the processed information is public.

The main objective of this action is to develop and select a set of standards in the domain of processing open source information in order to facilitate interoperability and reuse of software and services between MS authorities.

The Joint Research Centre (JRC) has developed considerable experience in advanced open source information text mining and analysis for open source information processing. Open source information is acquired from the Internet and meta data is computed for different domains, such as media monitoring or law enforcement. Through organising workshops for MS law enforcement authorities and an OSINT community of practice in the last eight years the JRC has gained significant knowledge of the current state of affairs in the field. Additionally, it has developed practical software systems which are shared with the law enforcement community in Europe.

The JRC has learned that MS authorities representing different sectors have started to invest in software tools and services to digest open source information. Such tool sets are always a mix of tools which are specific to the mission of the authority and tools or services which are basically generic. The

generic components have an enormous potential for reuse. However, due to a lack of coordination and technical standards a common approach to reuse is missing with the following consequences:

- Duplication of same functionality
- Different input and output data standards
- Components from other MS authorities cannot be reused
- Knowledge bases and resources created by one authority cannot be reused by authorities in other MS without substantial effort
- Overly long time to adopt or introduce new software functionality

The dynamic evolution of Internet services providing open source information calls for a pragmatic, agile approach in software development and purchasing. Classical multi-year IT projects are often not a good fit because they do not adapt fast enough to the changing requirements and work environments in this field.

Therefore, the creation of a pool of readily available software processing components (think “Lego”) for rapid development of composite applications for acquiring, processing and analysing open source information is of paramount importance.

To give an illustrative example, a composite application with processing components could look like follows:



In this example, most processing components have generic functionality with potential of reuse. The last two components might be organisation specific with access to case specific person information and internal reference databases.

2.4.3 OBJECTIVES

The main objective of the action is to develop interoperable standards in the domain of processing open source information in order to facilitate and reduce the costs of public service organisations carrying out developments in this context. The specific objectives of the action are to:

- Define a set of meta data standards to facilitate the interchange of software components in the field of open source information processing,
- Define guidelines on how to adapt existing tools relevant for open source information processing and assemble them into composite applications (e.g. processing tool chains),
- Create a set of freely available and interchangeable software components for open source information processing compliant with the aforementioned standards,
- Develop a composite demonstrator application.

With regard to ISA² objectives the envisaged activity, using a holistic approach, will contribute to the development of interoperable cross-border and cross-sector solutions and guidelines for assembling open source information processing application that will indirectly support various Union policies.

2.4.4 SCOPE

The goal of the action is to build upon existing standards wherever possible. Existing standards may have to be adopted in a way that simplifies their use. Often this approach is already foreseen by existing standards in creating so-called profiles which leave out certain parts.

Only where there is a clear gap in existing standards new development is needed in a way to fit into the landscape of existing standards. In other words, the action does not intend to develop “yet another set of standards”.

The needed activities to choose existing standards, adapting them and to fill potential gaps are part of the action’s plan.

2.4.5 ACTION PRIORITY

2.4.5.1 Contribution to the interoperability landscape

Question	Answer
<p><i>How does the proposal contribute to improving interoperability among public administrations and with their citizens and businesses across borders or policy sectors in Europe?</i></p> <p><i>In particular, how does it contribute to the implementation of:</i></p> <ul style="list-style-type: none"> • <i>the new European Interoperability Framework (EIF),</i> • <i>the Interoperability Action Plan and/or</i> • <i>the Connecting European Facility (CEF) Telecom guidelines</i> • <i>any other EU policy/initiative having interoperability requirements?</i> 	<p>Recently, an ever-growing exploitation of open source information by many MS authorities across different sectors and borders can be observed, who are often forced to develop costly solutions for processing open source information from scratch. The activity will boost development of interoperable metadata data standards to facilitate the interchange of software components in the field of open source information processing, including underlying resources, and provide a pool of freely available (ideally open source) software components compliant with the aforementioned standards. In particular, the activity will involve contribution from wide range of MS organisations in the process of analysis and design of the data standards and evaluation of the resulting software components through testing a pilot</p>

	<p>application. The resulting data standards, software components and related reports and guidelines will be available through a publicly open web portal that will facilitate information exchange.</p> <p>Furthermore, the envisaged developments are highly related to other EU policy areas requiring interoperability. For instance, various communications of the EC emphasized the need to improve the cross-sectoral interoperability of EU information systems³³ (law enforcement, immigration, customs, etc.), in whose context exploitation of open source information plays an ever-growing role as well since it needs to be jointly processed and analysed with other type of data. Therefore, alignment of the open source information processing chains with respect to interoperability with the aforementioned systems is of paramount importance and will be taken into account.</p>
<p><i>Does the proposal fulfil an interoperability need for which no other alternative action/solution is available?</i></p>	<p>There are certain existing meta data standards. Often more than one for a specific purpose. However, it is needed to select a set interoperable meta data standards and pools of compliant software components for processing open source information that are agreed on the EU level</p>

2.4.5.2 Cross-sector

Question	Answer
<p><i>Will the proposal, once completed be useful,</i></p>	<p>Provided that the activity will turn out</p>

³³ (1) EU Agenda on Security : COM (2016) 205 “Stronger and Smarter Information Systems for Border and Security”, (2) Communication from the Commission to the European Parliament and the Council: Overview of information management in the area of freedom, security and justice. URL: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2010:0385:FIN:EN:PDF>, (3) Regulation of the European Parliament and of the Council establishing a European Travel Information and Authorisation System (ETIAS) and amending Regulations (EU) No 515/2014, (4) DIRECTIVE (EU) 2016/681 of the European Parliament and of the Council of 27 April 2016 on the use of passenger name record (PNR) data for the prevention, detection, investigation and prosecution of terrorist offences and serious crime. URL: <http://eur-lex.europa.eu/eli/dir/2016/681/oj>

<p><i>from the interoperability point of view and utilised in two (2) or more EU policy sectors? Detail your answer for each of the concerned sectors.</i></p>	<p>successfully it will pave the way towards a set of common meta data and component access standards for processing open source information. Cross-sectoral interoperability aspect is embraced through diversifying the range of end-user organisation participating in the activity. Finally, once developed, the common standards will also indirectly contribute to the improvement of the interoperability of EU information systems across various domains (law enforcement, customs, border control, migration, etc.), in whose context exploitation and sharing of open source information, whether processed or in raw format, is deemed to play an increasing role.</p>
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2.4.5.3 Cross-border

Question	Answer
<p><i>Will the proposal, once completed, be useful from the interoperability point of view and used by public administrations of three (3) or more EU Members States? Detail your answer for each of the concerned Member State.</i></p>	<ol style="list-style-type: none"> 1) Administration to Administration: The new set of standards will allow re-using existing processing components. For example processing of text for tax administration purposes can be shared across European MS authorities. 2) Administration to Business: A set of standards facilitates the procurement of bespoke or off-the-shelf components from commercial providers. Again with the ability to be shared between authorities.

2.4.5.4 Urgency

Question	Answer
<p><i>Is your action urgent? Is its implementation foreseen in an EU policy as priority, or in EU legislation?</i></p>	<p>The action as such is not urgent. However, since many MS authorities are currently investing or plan to invest into solutions for open source processing the action proposal has higher impact if implemented now than at a later stage. While there is no specific EU policy related to the exploitation of open source information, it has been widely acknowledged across different domains and in various countries that open source information often constitutes relevant complementary information in the decision making processes of whatever kind, or it constitutes the only available information on certain topic/entity etc. Many organisations, which started or plan to exploit open sources as a crucial source of information, stumble across both budgetary and technical issues (including, i.e., interoperability problems) that prevent them from taking the full advantage of open source information. Thus, creation of common standards and a pool of freely available components for assembling open source information processing pipelines would alleviate the situation enormously. Furthermore, it would allow to immediately benefiting those organisations, which are at an early stage of considering exploitation of open source information.</p>
<p><i>How does the ISA² scope and financial capacity better fit for the implementation of the proposal as opposed to other identified and currently available sources?</i></p>	<p>This project matches the ISA² goals. No other sources envisage funding of such an activity.</p>

2.4.5.5 Reusability of action's outputs

Name of reusable solution to be produced (for new proposals) or produced (for existing actions)	Registry of available processing components
Description	A description of available processing components which are commercial, open source or available from MS authorities for sharing
Reference	
Target release date / Status	Q2 / 2018
Critical part of target user base	Public services in Member States and EU organisations

Name of reusable solution to be produced (for new proposals) or produced (for existing actions)	Existing Meta Data Standards to be adopted for open source information processing applications
Description	Report of existing meta data standards and missing standards for definition
Reference	
Target release date / Status	Q2 / 2018
Critical part of target user base	Public services in Member States and EU organisations

Name of reusable solution to be produced (for new proposals) or produced (for existing actions)	Meta Data and Interoperable Components for Open Source Information Processing
Description	Report with project result: Adopted and newly designed standards, component access guide lines
Reference	
Target release date / Status	Q3 / 2019
Critical part of target user base	Public services in Member States and EU organisations

Name of reusable solution to be produced (for new proposals) or produced (for existing actions)	Core Components for Open Source Information Processing
Description	Pool of Runnable software components, with documentation and source code repository
Reference	

Target release date / Status	Q4/2019
Critical part of target user base	Public services in Member States and EU organisations

2.4.5.6 Level of reuse of existing solutions

Question	Answer
<i>Does the proposal intend to make use of any ISA², ISA or other relevant interoperability solution(s)? Which ones?</i>	The proposal aims to make use of the work done in ISA's Core Data and PM ² solutions.

2.4.5.7 Interlinked

Question	Answer
<i>Does the proposal directly contribute to at least one of the Union's high political priorities such as the DSM? If yes, which ones? What is the level of contribution?</i>	By the end user community it addresses it contributes directly to the Security Union as part of the Justice and Fundamental Rights priority.

2.4.6 PROBLEM STATEMENT

The problem of	Fragmented, non-coordinated, and redundant efforts across sectors and borders in the context development of IT tools for processing open source information by public organisations
affects	Technical interoperability and reuse of existing solutions.
the impact of which is	Increased Time needed by an organisation to develop and introduce new software functionality for processing open source information
a successful solution would be	Definition of meta data standards to facilitate the interchange of software components in the field of open source information processing and establishing guidelines to adapt existing tools

	and resources and assemble them into composite applications. Creation of a pool of generic and freely available interchangeable software components compliant with the standards.
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The problem of	Incompatibility of meta data standards and interfaces in the context of IT tools for processing open source information
affects	Capacity to reuse of existing open source information and relevant resources created by other institutions
the impact of which is	Knowledge bases and resources created by one authority cannot be reused by authorities in other Member States without substantial effort
a successful solution would be	Definition of meta data standards to facilitate information access and exchange in the field of open source information processing

2.4.7 IMPACT OF THE ACTION

2.4.7.1 Main impact list

The beneficiaries of the project are MS authorities and EU/international organisations which use open source information for their daily tasks. Especially users in law enforcement, customs, finances, public health are primary beneficiaries.

Impact	Why will this impact occur?	By when?	Beneficiaries
(+) Savings in money	The availability of freely available core components for assembling open source information processing pipeline will reduce the expenditures	Q1/2020 onwards	Member States and EU/international organisations
(+) Savings in time	The availability of freely available core components and guidelines for assembling open source	Q1/2020 onwards	Member States and EU/international

	information processing pipeline will speed up the development process and potentially eliminate some procurements on the end-user side.		organisations
(+) Improved cross-border and cross-sector exploitation and reuse of existing open source information	Through introduction of common meta data standards and corresponding APIs access and sharing of information will be easier	Q1/2020 onwards	Member States and EU/international organisations
(+) Improved interoperability at EU level	Due to consideration in the action meta data formats of the EU-level It systems conversion and integration of open source information in the related workflows will be easier	Q1/2020 onwards	Member States and EU/international organisations

2.4.7.2 User-centricity

The action will be strictly end-user driven, in particular, one will aim at involving possibly high diversity of end users with respect to different sectors and countries being involved. Information of the specific workflows related to processing open source information by end user will be collected at a very early stage of the project in order to best embrace end user needs in the scope of the planned activities and developments. A network of end-users will be established in order to safeguard end-user interests and sustainability of the to-be-developed deliverables and steer potential future developments.

2.4.8 EXPECTED MAJOR OUTPUTS

Please see major outputs already listed in 1.1.5.5.

Output Name	Pilot Application
Description	Pilot composite application using core components for open source information processing
Reference	
Target Release Date / Status	Q4/2019

2.4.9 ORGANISATIONAL APPROACH

2.4.9.1 Expected stakeholders and their representatives

The JRC has created a community of practice for Open Source Information exploitation with yearly meetings. The community is comprised of MS authorities, EU institutions and international organisations. The community as such will be brought in as a stakeholder. The following organisations have explicitly expressed support for the action:

Stakeholders	Representatives	Involvement in the action
Authority for Consumers & Markets, The Netherlands	Remco Siderius	Provision of expertise in analysis, design and evaluation of the deliverables
Financial Investigation Service of the Tax Authority, The Netherlands	G.H. De Grutter	Provision of expertise in analysis, design and evaluation of the deliverables
Tax Authority, Denmark	Michael Krogh Jacobsen	Provision of expertise in analysis, design and evaluation of the deliverables
HS Leiden, Forensics Institute	Jos Griffioen	Provision of expertise in analysis, design and evaluation of the deliverables
Swedish Tax Agency	Joanna Kozakiewicz	Provision of expertise in analysis, design and evaluation of the deliverables
Dutch Customs Administration	Liesbeth Kremer	Provision of expertise in analysis, design and evaluation of the deliverables
Joint Research Centre	Gerhard Wagner	Provision of expertise in open source information processing tools and standards development. Action management

Furthermore, the following organisations have voiced interest and will most likely join:
Swedish Tax Administration, Police Slovenia, Europol

2.4.9.2 Identified user groups

- Member State public service organisations (law enforcement, customs, tax, public health, etc.)

- EU Communities of Practice (e.g., ENLETS – European Network for Law Enforcement Technologies and Services)
- EU Institutions (COMM DGs, EU Agencies, etc.)
- International Institutions (e.g., International Criminal Court, IAEA)

2.4.9.3 Communication and dissemination plan

Both online and offline communication channels will be used. A web-based information sharing platform will be established to:

- a) report on the action progress,
- b) disseminate information on the deliverables,
- c) gather end-user feedback,
- d) facilitate information exchange between the different stakeholders involved.

At the end of the project a workshop to present the outcomes will be organised. This workshop will be used to set up a post-action dissemination plan to inform other relevant communities will be elaborated with the participating end-users. Furthermore, on-site trainings and workshops to MS authorities will be organised. Finally, ISA² Member States-network will be exploited for action result dissemination.

2.4.9.4 Key Performance indicators

Description of the KPI	Target to achieve	Expected delivery (months after kick-off)
Level of end-user interest with respect to the definition of the project	Participation of at least 15 experts from different authorities and countries to define the scope of the project	M +1
Level of end-user satisfaction with the respect to the report on “Overview Existing Meta Data Standards“	An average level of 4 in a scale from 1 (not satisfied) to 5 (very satisfied) in an end-user survey	M +6
Level of end-user satisfaction with the respect to the report on “New Meta Data Standards and Component Access Defined “	An average level of 4 in a scale from 1 (not satisfied) to 5 (very satisfied) in an end-user survey	M +12
Level of readiness of the Core Components developed	At least 5 MS authorities have adopted the deliverables for operational work	M +18
Level of interest of end-user community in the events dedicated to the dissemination of the outcomes of the activity	At least 20 experts from 5 different sectors/countries participating in the result dissemination events	M +24

2.4.9.5 Governance approach

The project management board will be composed of the Head of the Text and Data Mining Unit of the Competencies Directorate of DG JRC, project manager Text and Data Mining Unit of the Competencies Directorate of DG JRC, and one representative from each participating Member States or other EU/international organisation. The board will meet 3 times during the execution of the project (at the beginning, at the end of 2018 and at the closing). Additional meetings could be organised if deemed necessary. An electronic web-based platform for monitoring the progress of the project and facilitation of the communication of the project management board will be put in place.

Since the continuous participation of the end-user community is crucial for accomplishing the goals of the project a pool of reserve end-user organisations will be maintained in case of unexpected resignation of the partners that agreed to participate in the project. This pool will be centred on the Member State expert OSINT community created circa 10 years ago by DG JRC.

2.4.10 TECHNICAL APPROACH AND CURRENT STATUS

The project is structured into separate phases. After project initialisation with the main goal of setting up a stakeholder group, the main project phase is an iterative design and implementation phase to minimize risks and optimizes results with immediate stakeholder feedback. Finally, in the Closing/Evaluation phase the project results are presented and limited on-site trainings are provided to interested MS authorities. The various phases are detailed below.

1. **Initialisation Phase:** Take stock of state of play, form stakeholder group
 - a. Take stock of currently used open sources information processing workflows to define state of play (data standards and software used) and best practices
 - b. Create a stakeholder group of interested MS authorities, research and education institutions and EU partners willing to participate, give feedback and test the results in practice
2. **Definition Phase:** Define scope of project with stakeholders
 - a. Create a registry of used existing components which can potentially be shared or adapted for interoperability
 - a. Create a list of already used meta data standards
 - b. Create a list of missing standards and components with the greatest potential for reuse
3. **Execution Phase:** Design and Implementation
 - a. Define data formats and component access (see Annex 1 for detailed description)
 - i. Analyse existing meta data standards to be adopted or amended, find missing ones (gap analysis)³⁴.
 - ii. Define missing meta data formats for component interoperability
 - iii. Define guidelines on how to adopt existing or newly developed software components to be interchangeable³⁵.

³⁴ There are already several meta data standards, most notably the European Commission's ISA Core Vocabularies (see https://ec.europa.eu/isa2/solutions/core-vocabularies_en) which can be adopted as underlying basis.

- b. Implement core components and pilot application
 - i. Develop core set of software components (proof of concept) for open source information processing to be shared with MS authorities and EU institutions³⁶
 - ii. Develop a best practice pilot application³⁷ which demonstrates how the core software components can be assembled into a composite application³⁸
- c. Gather feedback from stakeholders to minimize risks and maximise applicability of results
4. Closing/Final Evaluation Phase:
 - a. Present project results to interested MS authorities and EU institutions at a workshop
 - b. Disseminate project results and carry an evaluation thereof through on-site trainings/workshops to/for MS authorities

It is important to emphasize that the Definition and Execution phase will also encompass studying the latest developments in the context of EU-level security-related IT systems³⁹ and existing EU customs-related information exchange platforms (e.g., CIS, FIDE)⁴⁰ in order to safeguard interoperability therewith whenever applicable. In addition, recently introduced and future envisaged data exchange formats at EU level for sharing security-related information, e.g., Passenger Name Record (PNR)⁴¹ or European Travel Information and Authorisation System (ETIAS)⁴² records, would also be considered if deemed relevant.

2.4.11 COSTS AND MILESTONES

2.4.11.1 Breakdown of anticipated costs and related milestones

Phase: Initiation Planning Execution Closing/Final evaluation	Description of milestones reached or to be reached	Anticipate d Allocation s (KEUR)	Budget line ISA/ others (specify)	Start date (QX/YYYY)	End date (QX/YYYY)
Initiation and	Announcement, Forming Stakeholder Group, Kick-	10	ISA	Q1 / 2018	Q2 / 2018

³⁵ As far as possible reuse of existing approaches, such as REST-like interfaces for loosely coupled internet applications.

³⁶ The JRC has already developed certain components which can be shared.

³⁷ The exact subject of the pilot application is identified by the involved stakeholders.

³⁸ The pilot application might not be shared with the public if it deals with requirements of law enforcement or other sensible topics.

³⁹ Communication from the Commission to the European Parliament and Council. COM (2016) 205. "Stronger and Smarter Information Systems for Borders and Security"

<http://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:52016DC0205>

⁴⁰ Communication from the Commission to the European Parliament and the Council: Overview of information management in the area of freedom, security and justice.

<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2010:0385:FIN:EN:PDF>

⁴¹ DIRECTIVE (EU) 2016/681 of the European Parliament and of the Council of 27 April 2016 on the use of passenger name record (PNR) data for the prevention, detection, investigation and prosecution of terrorist offences and serious crime. <http://eur-lex.europa.eu/eli/dir/2016/681/oj>

⁴² Regulation of the European Parliament and of the Council establishing a European Travel Information and Authorisation System (ETIAS) and amending Regulations (EU) No 515/2014

planning	off				
Planning	Project Scope Defined	10	ISA	Q1 / 2018	Q2 / 2018
Execution	Management and Supervision	20	DG JRC	Q1 / 2018	Q4 / 2019
Execution	Review Existing Meta Data Standards	25	ISA	Q2 / 2018	Q2 / 2018
Execution	New Meta Data Standards and Component Access Defined	100	ISA	Q3 / 2018	Q4 / 2018
Execution	Core Components designed and developed	85	ISA	Q1 / 2019	Q2 / 2019
Execution	Pilot application developed and tested	40	ISA	Q3 / 2019	Q3 / 2019
Final Evaluation	Result Presentation	15	ISA	Q4 / 2019	Q4 / 2019
Closing/Final Evaluation	On-Site Trainings and Result Dissemination	15	ISA	Q4 / 2019	Q4 / 2019
	Sums	ISA: 300 JRC: 20 Total: 320			

2.4.11.2 Breakdown of ISA² funding per budget year

Budget Year	Phase	Anticipated allocations (in KEUR)	Executed budget (in KEUR)
2018	Initiation and planning	20	
2018	Execution	125	
2019	Execution	125	
2019	Closing/Final Evaluation	30	

2.4.12 ANNEX AND REFERENCES

Description	Reference link	Attached document
Letter of Support from Stakeholders		<ul style="list-style-type: none"> Letter of Support, NL Tax Letter of Support, DK Tax Letter of Support, NL

		<p>Consumer Market Authority</p> <ul style="list-style-type: none">• Letter of Support, NL HS Leiden Forensics Institute• Letter of Support Swedish Tax Agency• Letter of Support Dutch Customs
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3 ACCESS TO DATA / DATA SHARING / OPEN DATA

3.1 SHARING STATISTICAL PRODUCTION AND DISSEMINATION SERVICES AND SOLUTIONS IN THE EUROPEAN STATISTICAL SYSTEM (2016.06)

Type of Activity	Common services
Service in charge	ESTAT.B3
Associated Services	ESTAT.B1 ESTAT.B5

3.1.1 EXECUTIVE SUMMARY

European statistics are produced by the European Statistical System (ESS) that is a partnership between the Commission (Eurostat), and the public administration responsible for the production and dissemination of official statistics in each Member State⁴³ (mainly national statistical institutes (NSIs) as well as other national authorities). Member States collect data and compile statistics for national and EU purposes. The ESS functions as a network in which Eurostat has a key role to ensure harmonization of statistics working in close cooperation with the national statistical authorities. The ESS members share the same challenges and drivers: they have to embrace the digital transformation as well as to produce new, innovative and high quality standard statistical products under the pressure of limited and decreasing resources.

Based on a long tradition of sharing information, standards and tools, Eurostat and the members of the ESS jointly developed a common vision, the "ESS Vision 2020"⁴⁴, which

- Aims at further developing the cooperation between ESS members;
- Strives for setting up more collaborative production processes based on a shared architecture in the ESS, which should enable addressing new business requirements with a reduced time to market, strengthened quality and increased efficiency;
- Aims in particular at a future-proof dissemination and communication strategy that satisfies user needs at both national and European level, is flexible enough to adapt to emerging technologies and offers a variety of output channels and services.

Actions of this proposal elaborate on closely related to on-going ESS Vision 2020 implementation initiatives:

1. ESS Enterprise Architecture (ESS EA) – a joint effort to create a comprehensive target state ESS architecture considering both Member States and Eurostat. This allows harmonisation of business processes and bridging the gap between business and IT;
2. "Shared SERVICES" (SERV) – a project to create the conditions for sharing technical statistical services (including dissemination) and supporting their integration in the statistical production processes at national, ESS and Commission level;
3. Digital Communication (DIGICOM) – a programme to develop key capabilities to support user analytics, communication, dissemination, data visualisation, mobile solutions etc.

Part of those initiatives are already funded by Eurostat and some other parts require additional funding – potentially from ISA². ISA² funding is necessary to:

1. Finalise and extend the current **ESS statistical production reference architecture** to get it closer to implementation integrating the information sharing and the interoperability aspects;

⁴³ and EEA and EFTA countries

⁴⁴ The statistical dissemination has received as well special attention at EC level as external communication is listed as a key domain for cross sector and cross policy IT rationalisation in "Communication from VP Šefčovič to the Commission: Follow up to the Communication "Getting the best from IT in the Commission" of 7 October 2010 - First decisions in the IT rationalisation process".

2. Develop a sustainable release of **common infrastructure elements** such as the ESS catalogue of shared services;
3. Perform a thorough benchmark of as is architecture in MS to **identify components which can be readily transformed into shared services** as well as mapping the needs and gaps and tentatively define roadmaps for benefiting from shared development;
4. Provide new **reusable services and solutions** based on existing components or certified open source statistical library/components and to allow statistical producer to upgrade their architecture. For **dissemination of statistics, reusable solutions** will be derived from the "renovated Eurostat dissemination chain for statistical dissemination";
5. Set up **reference implementations of processes using shared services** suitable to various environments and to propose technical architecture patterns and open source environments suitable for integration of service in statistical production.

The results of these actions will be publicly available benefiting a broad range of public administrations that *produce and disseminate statistics*. In particular, the European Commission DG and Agencies of the European Union that collect and disseminate "other" statistics for their policy monitoring could reuse the dissemination packages, should they need so. In this case the cost of integration should be relatively low as the reusable components should operate as well on the generic EC infrastructure.

This proposal was already selected for the first two years of implementation of the ISA2 work programme.

The preparatory work (contract preparation and signature etc.) started in May 2016. The development activities started in September 2016 (see more details in section 1.1.10)

A budget of 1690k€ was allocated to ESTAT for 2017. Contracts are mostly under execution and the project plan is mostly in line with the initial scope and objectives.

3.1.2 OBJECTIVES

Initiative area	Objectives
Enterprise Architecture	<ul style="list-style-type: none"> • Provide a reference architecture for statistical production provisioning for operational, semantic and technical operability of processes and information systems in the European Statistical System
Statistical Data production	<ul style="list-style-type: none"> • Develop the common infrastructure necessary to support sharing of components; • Improve the alignment to ESS reference architecture and adoption of Shared Services standards for at least 5 ESS members; • Support and guide statistical organisations to upgrade their architecture to align to the target state architecture and to benefit from services sharing; • Identify and build shared services based on existing components in use or certified open source statistical libraries.
Statistical Data Dissemination	<ul style="list-style-type: none"> • Deliver reusable services and a packaged solution for the statistical dissemination.

3.1.3 SCOPE

Initiative area	In the scope
Enterprise Architecture	<ul style="list-style-type: none"> Extension and consolidation of the ESS Statistical Production Reference Architecture (for the 4 layers of EA).
Statistical Production	<ul style="list-style-type: none"> Development of a multi-tenant version of the ESS Service Catalogue and related common infrastructure; Support to statistical production organisation to upgrade and align their infrastructure to benefit from shared statistical services; Establishment of a list of certified and existing components or libraries suitable for the compilation of shared services; Setting up of a whitelist of architecture patterns and open source components for realising the integration and usage of shared services; Implementation of new statistical production processes using shared services providing reference implementations adapted to different contexts.
Statistical Dissemination	<ul style="list-style-type: none"> Development and packaging of reusable solution and services for statistical dissemination

Out of scope
Development of statistical methodologies; Production of statistical data; Standardisation of metadata repositories used by statistical data producers.

3.1.4 ACTION PRIORITY

3.1.4.1 Contribution to the interoperability landscape

The contribution of the action to the interoperability landscape, measured by the importance and necessity of the action to complete the interoperability landscape across the Union

Question	Answer
<p><i>How does the proposal contribute to improving interoperability among public administrations and with their citizens and businesses across borders or policy sectors in Europe?</i></p> <p><i>In particular, how does it contribute to the implementation of:</i></p> <ul style="list-style-type: none"> <i>the new European Interoperability Framework (EIF),</i> <i>the Interoperability Action Plan and/or</i> 	<p>The project contributes to the new EIF and the Interoperability Action Plan by</p> <ol style="list-style-type: none"> 1) developing, maintaining and promoting interoperable solutions for the production and dissemination of statistics by EU public administrations (including the EC) 5EIF (Focus Area 4) 2) developing, maintaining and promoting <ol style="list-style-type: none"> a) a specification of the EIRA to support better interoperability and cooperation for the production and

<ul style="list-style-type: none"> • <i>the Connecting European Facility (CEF) Telecom guidelines</i> • <i>any other EU policy/initiative having interoperability requirements?</i> 	<p>dissemination of Official Statistics in the European Statistical System</p> <p>b) a common infrastructure and for the exposure and consumption of shared statistical services. (Focus Area 5)</p> <p>In addition, the proposal contributes significantly to the realisation of the ESS Vision 2020 objectives in the domain of sharing tools and improving statistical dissemination.</p>
<p><i>Does the proposal fulfil an interoperability need for which no other alternative action/solution is available?</i></p>	<p>The proposal follows an interoperability standard (CSPA) which has been proposed at the level of the Official Statistics Community for the sharing of statistical services.</p>

3.1.4.2 Cross-sector

The scope of the action, measured by its horizontal impact, once completed, across the policy sectors concerned.

Question	Answer
<p><i>Will the proposal, once completed be useful, from the interoperability point of view and utilised in two (2) or more EU policy sectors? Detail your answer for each of the concerned sectors.</i></p>	<p>Yes, in general, the statistical products and services produced, developed and disseminated by the ESS constitute key data and information assets in order to help the Commission achieve its overall political objectives.</p> <p>The realisation of all Commission political priorities as a whole indeed relies heavily on the quality and accessibility of the European statistics</p> <p>In the case of dissemination, solution reuse is already planned in the domains of</p> <ol style="list-style-type: none"> 1. Economics and Financial affairs (DG ECFIN) 2. Taxation and Customs union (DG TAXUD), 3. Employment (DG EMPL), 4. Internal Market (DG GROW), 5. Competition (DG COMP) <p>and could be extended after 2018 to other interested DGs (e.g. potentially EAC, JUST, ENER+MOVE, REGIO ...)</p>
<p><i>For proposals completely or largely already in operational phase, indicate whether and how they have been utilised in two (2) or more EU policy sectors.</i></p>	<p>NA</p>

3.1.4.3 Cross-border

The geographical reach of the action, measured by the number of Member States and of European public administrations involved.

Question	Answer
<p><i>Will the proposal, once completed, be useful from the interoperability point of view and used by public administrations of three (3) or more EU Members States? Detail your answer for each of the concerned Member State.</i></p>	<p>Yes, in the current state, the development of statistical services includes a broad international community.</p> <p>In the ESS, no less than 14 MS are actively involved in a Task Force and a consortium of 6 MS (FR, PT, UK, LT, DE, SI) has been set up to provide input and take part in the development of the guidelines for sharing of statistical services and to implement the reuse of</p>

	<p>developed solutions and services with the European Commission.</p> <p>In the architecture domain, the ESS reference architecture in its current state has been adopted by the 28 NSI's CIO's and Heads of Methodology. Its improvement towards more interoperability through more standards and deeper architectural guidance is done in collaboration with an ESS EA Board involving 5 MS</p>
<p><i>For proposals completely or largely already in operational phase, indicate whether and how they have been utilised by public administrations of three (3) or more EU Members States.</i></p>	NA

3.1.4.4 Urgency

The urgency of the action, measured by its potential impact, taking into account the lack of other funding sources

Question	Answer
<p><i>Is your action urgent? Is its implementation foreseen in an EU policy as priority, or in EU legislation?</i></p>	<p>All actions of the proposal are key actions for the ESS Vision 2020 implementation which aims among others to upgrade ESS capacity to respond to policy needs by providing high quality and timely indicators for the monitoring of the objectives of EU 2020 strategy.</p> <p>More specifically, several business projects like the European Systems of Business Registers or the National Accounts are in demand of clear interoperability guidance and reusable services ensuring the smooth functioning of their service based target architecture. In addition, in the domain of statistical dissemination, the project has been listed as a critical project for Eurostat, with a strong commitment for the delivery of package solutions to DG ECFIN, TAXUD, COMP, EMPL, GROW.</p>
<p><i>How does the ISA² scope and financial capacity better fit for the implementation of the proposal as opposed to other identified and currently available sources?</i></p>	<p>A closer integration of production and dissemination of statistics with ISA2 framework will clearly generate economies of scale and sustainability of the results. The financial support of the ISA2 will certainly allow going a step further in the operationalization of the ESS Vision 2020</p>

objectives.

3.1.4.5 Reusability of action's outputs

The re-usability of the action, measured by the extent to which its results can be re-used.

Name of reusable solution	Reusable solution for the dissemination of statistics
Description	<p>Dissemination means the activity of making statistics and statistical analysis accessible to users.</p> <p>The project aims at providing a reusable solution for the dissemination of statistics (cross policy & cross sector) to significantly improve technical interoperability in the fields of statistics, i.e. allowing multiple organisation to expose the same dissemination tools towards data consumers.</p> <p>The dissemination tools included in the solution are based on the established SMDX standards⁴⁵ (information model, guidelines for web services, implementations & tools);</p>
Reference	<p>SDMX Information model</p> <p>See https://webgate.ec.europa.eu/fpfis/mwikis/sdmx/index.php?title=Special:Print&page=SDMX https://webgate.ec.europa.eu/fpfis/mwikis/sdmx/index.php/Self_Learning_Tutorial:_Information_Model https://sdmx.org/wp-content/uploads/SDMX_2-1-1_SECTION_2_InformationModel_201108.pdf</p>
Target release date / Status	<p>1) For ECFIN, TAXUD, COMP, EMPL, GROW</p> <ul style="list-style-type: none"> • Alpha release delivered in early July 2016 • Beta releases delivered in January 2017 and June 2017 • Release Candidate release to be delivered by end Q3 2017 • Release for production to be delivered by end Q4 2017 <p>2) For ESS and other purposes Available on Joinup by end of 2018 (first publication), as a downloadable package</p>
Critical part of target user base	Any administration, institution or organisation in need of disseminating statistics
For solutions already in operational phase - actual reuse level (as compared to the defined critical part)	<p>The solution is not yet operational</p> <p>Two beta releases of the solution were delivered in the 1st half of 2017 to five DGs for functional tests and validations</p>

⁴⁵ <https://sdmx.org/>

	<p>by those DGs.</p> <p>The five listed DGs should go live after Q4 2017, for COMP, EMPL and GROW before the end of Q1 2018.</p>
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Name of reusable solution	Statistical Production Reference Architecture V1.0 and subsequent
Description	<p>Based on the ESS EA RF developed by the ESS, this (ISA2) project will release a fully fledged and ready for implementation Statistical Production Reference Architecture i.e. set of artefacts to standardise EU statistic production processes including information and interoperability aspects. Subsequent releases will be enriched by reference to standard solution and reference implementations. Organisation should use it to benchmark their production architecture, develop services to be shared and integrate shared service in their production of statistics.</p> <p>This Statistical Production Reference Architecture can be re-used by the ESS Members and also by other Commission DG's dealing with official statistics.</p>
Reference	<p>ESS EA RF</p> <p>European Interoperability Reference Architecture (EIRA)</p>
Target release date / Status	SPRA v1.0 (first release) : 30/09/2017
Critical part of target user base	ESS 32 NSIs (EU + EFTA) and Eurostat
For solutions already in operational phase - actual reuse level (as compared to the defined critical part)	The ESS EA RF has been adopted as a common reference for ESS Vision 2020 implementation by 28 NSI CIO's

Name of reusable solution	Multi-tenant version of the ESS Service Catalogue
Description	Multi-tenancy is an architecture in which a single instance of a software application serves multiple customers. A central ESS Service Catalogue is required to publish the statistical services that are available for re-use in the European Statistical System. This service catalogue should use the same solution as the global (UN sponsored) service catalogue of statistical services (CSPA Service Catalogue). These catalogues shall be based on the same system, but shall clearly indicate the level of availability of the offered statistical services (e.g. ESS level or global level). It shall be also analysed how the ESS Service Catalogue – that contains statistical services according to international standards – can be integrated with the Service Catalogue of the Joinup platform.
Reference	SERV Business Case ESSC 29th meeting minutes
Target release date / Status	31/12/2017
Critical part of target user base	ESS 32 NSIs (EU + EFTA) and Eurostat Other statistical organisations
For solutions already in operational phase - actual reuse level (as compared to the defined critical part)	

Name of reusable solution	Reference implementations of statistical production and dissemination processes using shared services adapted to different contexts
Description	The project will identify and prioritise development of shared services within the ESS. 5 new shared services based on existing components or statistical libraries will be implemented during the project and reference point in the ESS catalogue. The shared service will be implemented in the statistical processes of multiple ESS members and bring them process improvements. Furthermore the implementation and integration of those statistical services in several ESS members will lead to improvement of those services, which will allow easier adoption by further organisations.

Reference	TF Shared Services Mandate
Target release date / Status	31/12/2019
Critical part of target user base	ESS 32 NSIs (EU + EFTA) and Eurostat
For solutions already in operational phase - actual reuse level (as compared to the defined critical part)	

Name of reusable solution	White list of open source packages for statistical production business functions and for integration and orchestration of statistical productions
Description	Re-using services can be based on services developed by other statistical organizations and also on open source. This work package will leverage the open source solutions for statistical production and for process orchestration.
Reference	SERV Business Case ESSC 29 th meeting minutes
Target release date / Status	31/12/2019
Critical part of target user base	ESS 32 NSIs (EU + EFTA) and Eurostat Other statistical organisations
For solutions already in operational phase - actual reuse level (as compared to the defined critical part)	

Name of reusable solution	Technical architecture patterns for realising the ESS EA
Description	The analysis of open source software packages and the benchmark of MS architectures will produce a number of technical architecture patterns for realising the target state architecture. This will enable MS's to make practical decisions to start implementing the architecture in full scale. These architecture patterns will also be available and beneficial to other producers of statistics such as parts of the Commission.

Reference	CSPA
Target release date / Status	31/12/2018
Critical part of target user base	ESS 32 NSIs (EU + EFTA) and Eurostat
For solutions already in operational phase - actual reuse level (as compared to the defined critical part)	

Name of reusable solution	Fit / Gap Analysis and roadmaps for the transition to a target state architecture
Description	<p>As part of the project, at least 5 ESS members use the benchmarks to evaluate their fit to the defined architecture. The members will perform a fit/gap analysis, define roadmap to target architecture, and implement measures to improve alignment with the target architecture.</p> <p>The roadmaps can be used by other organizations as examples for transitioning to a modernised architecture, which should lower barriers and increase the likelihood of successful realisation of the ESS EA.</p>
Reference	
Target release date / Status	31/12/2018
Critical part of target user base	ESS 32 NSIs (EU + EFTA) and Eurostat
For solutions already in operational phase - actual reuse level (as compared to the defined critical part)	

Name of reusable solution	Inventory of reusable software components for statistical production
Description	The benchmark of the Member State architectures will identify and qualify a various solutions and services that can be made available to the ESS community and potentially outside the ESS
Reference	

Target release date / Status	31/12/2018
Critical part of target user base	ESS 32 NSIs (EU + EFTA) and Eurostat
For solutions already in operational phase - actual reuse level (as compared to the defined critical part)	

3.1.4.6 Level of reuse of existing solutions

The re-use by the action (following this proposal) of existing common frameworks and interoperability solutions.

Question	Answer
<i>Does the proposal intend to make use of any ISA², ISA or other relevant interoperability solution(s)? Which ones?</i>	<p>Joinup The reusable statistical services delivered by the project will be made available to anyone by means of Joinup, Joinup will serve as a repository for the ESS shared services catalogue where interfaces and service description will be make available in a standard way.</p> <p>EIRA - European Interoperability Reference Architecture EIRA will be used to upgrade the ESS Statistical Production Reference Architecture.</p> <p>DCAT Application Profile for data portals in Europe</p> <p>EIC - European Interoperability Cartography</p> <p>Open data Support(DG CONNECT)</p> <p>Catalogue of Services - Service attributes</p>
<i>For proposals completely or largely already in operational phase: has the action reused existing interoperability solutions? If yes, which ones and how?</i>	<p>EUPL - European Union Public Licence The expected applicable license scheme used for the delivery of this project is likely to EUPL</p> <p>EUSurvey EU Survey is used for the publication of surveys and public consultations.</p>

3.1.4.7 Interlinked

The extent to which the action (following this proposal) contributes to Union's initiatives such as the DSM.

Question	Answer
<i>Does the proposal directly contribute to at least one of the Union's high political priorities such as the DSM? If yes, which ones? What is the level of contribution?</i>	DSM – Open government + Content & Media The reusable solution for the dissemination of statistics can be used by any administration (first EC DGs, in 2018 any organisation through Joinup) to <ul style="list-style-type: none"> • Ease the public delivery of statistical data to consumers, i.e. promoting open data and the reuse of public sector information / statistical data • Reduce the costs of dissemination • Re-use building block(s)

3.1.5 PROBLEM STATEMENT

The problem of	The lack of standards
affects	The exchange of software and statistical data
the impact of which is	Preventing reusability and sharing, increasing costs overall
a successful solution would be	Implement existing standards in the Statistical institutes and across DGs

The problem of	The lack of international collaboration and planning
affects	The efficiency of IT solutions development at EU and EFTA level
the impact of which is	High development costs due to multiplicity of IT tools developed
a successful solution would be	Use collaborative or community based approaches to reduce the number of IT solutions developed and increase efficiency

The problem of	Multiple, heterogeneous interfaces to disseminate statistical data
affects	Data consumers (e.g. citizens, journalists, researchers, ..) and data publishers
the impact of which is	Data consumer face complexity when integrating statistical data from institutions, e.g. European Commission Directorates General or National Statistical Institutes, resulting in costs Data publishers develop and maintain multiple dissemination interfaces, resulting in costs
a successful solution would be	To have a reusable solution for the dissemination of statistics, - managed by Eurostat within the EC for other DGs, and - made available through JoinUp to other stakeholders)

Historically, statistical organizations have developed their own business processes and IT-systems. This can be referred to as 'accidental architecture' as the process and solutions were not designed from a holistic view.

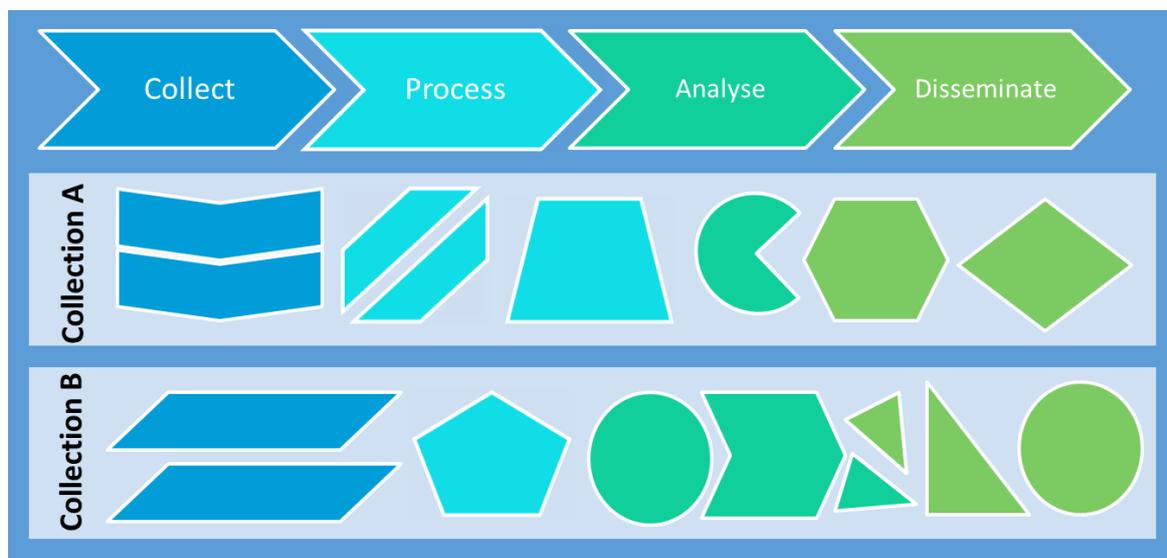


Figure 1: Accidental Architectures

Statistical organizations find it difficult to produce and share data and information aligned to modern standards⁴⁶. Process and methodology changes are time consuming and expensive resulting in an inflexible, unresponsive statistical organization.

Enterprise architecture is more and more used by statistical organisation to underpin their vision and change strategy. Enterprise architecture work enables to standardize organisation and processes.

⁴⁶ E.g. Data Documentation Initiative (DDI) and Statistical Data and Metadata eXchange (SDMX))

This is shown in Figure 2 where, as opposed to Figure 1, the countries have standardized their components and interfaces.

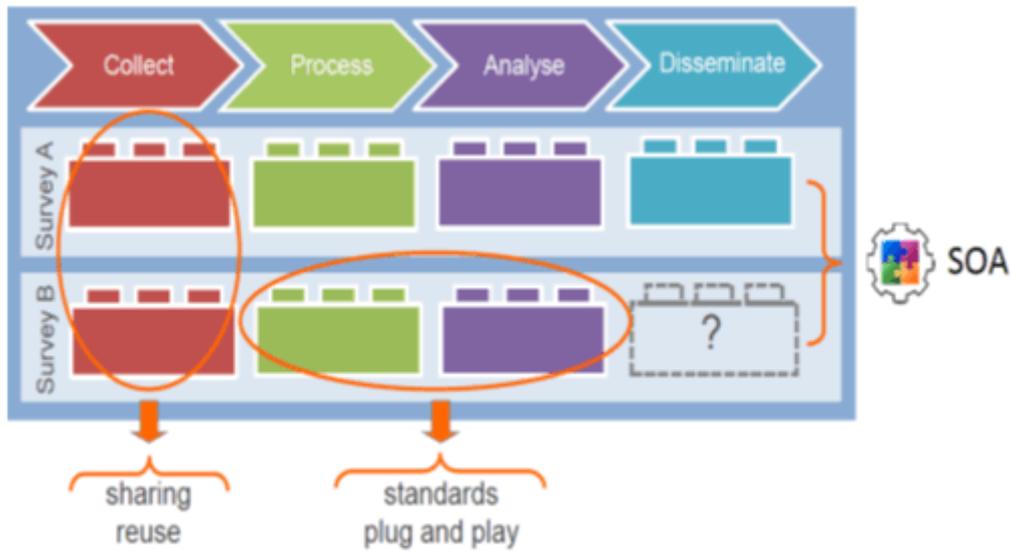


Figure 2: The result of standardization within an organization

A common reference architecture is a set of standards will allow the statistical organisation in the ESS to share development costs and to provide new statistical products in a cost efficient manner.

3.1.6 IMPACT OF THE ACTION

3.1.6.1 Main impact list

Impact	Why will this impact occur?	By when?	Beneficiaries
(+) Savings in money	Deduplication of IT tools developed	Already started	National Statistical Institutes, Directorates General of the European Commission, other organisations of EU, Member States, EFTA countries. Also the worldwide statistical community
(+) Savings in time	Reuse of existing solutions taken from a catalogue Reuse of statistical production architecture model and template	2018	See above

(+) Better interoperability and quality of digital public service	Standardisation	Already started	See above
(-) Integration or usage cost	Reuse of IT tools developed by a third party	2018	See above

3.1.6.2 User-centricity

One of the conditions for maximizing the impact of the ISA² actions is by ensuring that they meet users' needs. For this to happen, users' engagement and involvement is needed before and during solutions' implementation, and users' feedback is sought after solutions are in operation. Explain how you intend to achieve the above.

User's engagement

- The reusable solution for the dissemination of statistics is currently in implementation with 5 DGs
- Eurostat will conduct in 1st half of 2018 a number of communication actions with various stakeholder groups (Digital Stakeholders Forum, European Political Strategy Centre EPSC, European Union Open Data Portal Steering Committee, Inter-institutional Editorial Committee on the Internet (CEII), SDMX Global Conference)
- Users of statistical architecture models and services are brought together in many different fora e.g. the yearly Eurostat and UNECE Common Statistical Production Architecture workshops, the bi-yearly Eurostat meeting of the network on ESS Enterprise Architecture

Collection of comments and feedbacks

- The reusable solution for the dissemination of statistics includes in its web based user interface a "Contact" functionality, that each data publisher can configure.
- Eurostat will also use the Data Browser, part of the reusable solution for the dissemination of statistics for its own dissemination of European statistics and conducts regularly user surveys
- Consultation of stakeholders on needs and use of standard are carried out using EU surveys.

3.1.7 EXPECTED MAJOR OUTPUTS

N/A (all described in 1.1.5.5)

3.1.8 ORGANISATIONAL APPROACH

3.1.8.1 Expected stakeholders and their representatives

Stakeholders	Representatives	Involvement in the action
Eurostat	<ul style="list-style-type: none"> • Eurostat Architecture Team • ESS Vision 2020 portfolio managers • Eurostat units B3, B4, B5 	Project Management, Working Groups organisation, procurement
National Statistical Institutes	<ul style="list-style-type: none"> • Members for the Task Force and Steering Groups Shared SERVICES • Visions 2020 SERV Grant participants • Members of the ESS EA Board 	Provide collaborative input and define practical aspects for sharing and reuse. Provide list of priorities in the action
EC & inter-institutional stakeholders	<ul style="list-style-type: none"> • EC (other statistics): network of statistical correspondents • Inter-institutional: Editorial Committee on the Internet (CEII) 	Reusable dissemination chain tools and techniques
Information Resource Managers (IRMs)	<ul style="list-style-type: none"> • List of Information Resource Managers • Digital Stakeholder Forum - chaired by DIGIT and assures inter-service communication and coordination for all matters relating to IT in the Commission 	Interface between DIGIT, DG ESTAT and other DGs
DIGIT	<ul style="list-style-type: none"> • DIGIT.B1 (Architecture centre of excellence) • DIGIT ISHS • DIGIT IPCIS team 	Expertise on EA, assistance on service hosting for Mses and other EC DGs

3.1.8.2 Identified user groups

The ESS IT Working Group bringing together IT correspondents in 32 NSIs and EVUG (EDAMIS and Validation Service User group)

The ESS EA Community of Practice (first meeting on 23 November 2016)

The EC DGs and agencies disseminating statistics

3.1.8.3 Communication and dissemination plan

Being part of the ESS Vision 2020 implementation the project will benefit from a broad communication plan designed for its purpose. Specific component targeting Commission services producing statistics will be added in January 2018.

The main list of stakeholders for ESS Vision 2020 and tentative related communication channels are:

European Commission	MyIntraComm Videos and webinars on the reusable solution for the dissemination of statistics Ad hoc seminar and workshops Digital Stakeholder Forum Leaflets
Eurostat staff	Eurostat-Cybernews Eurostat-Infos Lunchtime presentations Ad hoc seminar and workshops
NSI staff	European Statistical Training Program Quartely newsletter on Vision implementation Videos and webinars on the Vision implementation
NSI management	Regular presentation of project advances (Vision Implementation Group) ESS Website Dedicated European Statistical Training Program courses Circabc and CROS Portal Leaflets
General Public	Eurostat website (ESS vision dedicated section) Videos and webinars on the reusable solution for the dissemination of statistics Joinup
Official statistics Community	Conferences, Workshops Leaflets

3.1.8.4 Key Performance indicators

Provide a list of KPIs allowing the measurement of the progress and completions of milestones and the action. In case of an on-going action with already identified metrics⁴⁷ indicate the current values.

Description of the KPI	Target to achieve	Expected time for target
Number of National Architecture benchmark	27	2 (pilot phase in 2017)

⁴⁷ For examples see the ISA2 dashboard <https://ec.europa.eu/isa2/dashboard/isadashboard> , effectiveness tab.

		27 by 2019
Number of detailed (domain) architecture produced	At least 3	2 by 2017
Reuse of the solution for the dissemination of statistics	Solution in use by 5 DGs (COMP, ECFIN, EMPL, GROW, TAXUD) in 2018	3 first DGs in 2018 Q1 2 other DGs at the latest by end of 2018
Reusable solution for the dissemination of statistics	Solution made available on Joinup as a software package	End of 2018

3.1.8.5 Governance approach

Project owner: E. Baldacci, Director - Methodology; corporate statistical and IT services (ESTAT.B).
The project will report (mainly the reusable dissemination solution) for internal Eurostat governance to the

- Eurostat Dissemination Chain Steering Group;
- Eurostat IT Advisory Committee, and finally to
- Eurostat Director's Meeting

The project will report to the related ESS governance bodies

- The ESS Steering Group on Shared Services;
- The ESS Task Force on Shared Services for the project;
- ESS IT Director's Group (ITDG) will review project progress and its main deliverables;
- The Vision Implementation Group established by delegation of ESSC (The European Statistical System Committee) will provide strategic guidance for the project.

At EC level, involved governance bodies are the following

- IT Governance: the [IT Board](#)
- ISA2 Governance bodies (through monitoring & evaluation reports, reporting about sub-delegated credits usage)

3.1.9 TECHNICAL APPROACH AND CURRENT STATUS

The project builds on a service-oriented paradigm to establish the cooperative architecture for ESS and for sharing statistical services among organisations. This approach leans on the SOA strategy of the Commission and on the Common Statistical Production Architecture developed at industry level facilitated by UNECE. The reusable solution for dissemination leans on the future renovated Eurostat dissemination chain (see task 8 description)

Task 1: Develop detailed ESS EA.

Activities: Detail the existing ESS EA to provide an operationalization of the sharing of services, the orchestration of these services in production processes and the management of data and metadata in

the process. Communicate the ESS EA and facilitate the discussion and agreement in the ESS community on the ESS EA.

Deliverables: The ESS EA incorporating EIRA and operationalizing the sharing and orchestration of services and the management of metadata.

Current status: Benchmarking of ESS EA / SPRA concluded by Nov 2017 that there is a good alignment between EIF/EIRA and ESS EARF. SPRA will be released as a specific instance of EIRA (September 2017).

Task 2: Benchmark ESS architectures.

Activities: Analyse the ESS member architectures (as-is and target architectures) and benchmark the implementations and usage of technology to support the ESS EA. Identify potential components and services for sharing in the community.

Deliverables: Best practice architecture patterns, list of sharable services/solutions, sample roadmaps for realising the ESS EA based on specific as-is architectures and business requirements. List of possible candidates for shared services.

Current status: A first version of the benchmarking model is available and has been piloted with 2 MS (Portugal and Malta)

Task 3: Develop multi-tenant version of the ESS Service catalogue.

Activities: Develop an ESS Service catalogue for federated use in the ESS with requirements that support a flexible adoption and supporting easy discovery, test, and implementation of usage of a shared service which is preferably built on existing software.

Deliverables: An ESS service catalogue, which can be deployed in a federated manner including both service shared in the ESS as well as MS specific services.

Current status: the architecture of the multitenant catalogue is being elaborated and discussed with stakeholders. Contracts are being launched for implementation. First release planned for December 2016, full featured release planned for December 2017

Task 4: Develop statistical and dissemination services for sharing.

Activities: To select and develop existing functionality into shared services that can be used by the community.

Deliverables: Three services developed and made available to the community either at ESTAT or an NSI.

Current status: not started

Task 5: Produce white-list of open source software.

Activities: Analyse existing open source software packages and produce a white-list of components to be used in the technical architectures

Deliverables: The white-list of open source packages and guidance on its usage in the ESS EA.

Current status: not started

Task 6: Support architecture alignment.

Activities: Support the architecture alignment in ESS member to be carried out by a central helpdesk e.g.: support for implementing an open source software package, detailed guidelines for exposing a shared service to the community.

Deliverables: Active support function to architecture alignment with established KPI (e.g. number of reuse of reference architectures in the ESS) .

Current status: Scope has been aligned to stick to ISA2 principles - not started

Task 7: Implement shared services in production processes.

Activities: Support the implementation in production processes of the shared statistical services within ESS members.

Deliverables: The integration of shared statistical services in 7 ESS members production processes.

Current status: not started

Task 8: deliver a reusable solution for the dissemination of statistics.

Activities: retain and further develop the future renovated Eurostat dissemination tools specific components and package these as a software solution for systematic reuse.

Deliverables: Integrated software components and services for the dissemination of statistics, made available to other Directorates General of the European Commission and Agencies of the European Union by means of direct request to Eurostat, and to other stakeholders by means of JoinUp

Current status: Times & Means Contracts signed and contracts under preparation⁴⁸. Beta release delivered to DG ECFIN, TAXUD, COMP, EMPL, GROW.

3.1.10 COSTS AND MILESTONES

3.1.10.1 Breakdown of anticipated costs and related milestones

Phase: Initiation Planning Execution Closing/Final evaluation	Description of milestones reached or to be reached	Anticipated Allocation s (KEUR)	Budget line ISA / others (specify)	Start date (QX/YYYY)	End date (QX/YYYY)
Inception	Project plan	0	ESTAT	15/09/2015	31/12/2015
Execution	Task 1: Develop detailed ESS EA.	200	ISA ²	01/09/2016	30/06/2017
Execution	Task 2: Benchmark ESS architectures.	290	ISA ²	01/01/2017	31/12/2018
Execution	Task 3: Develop multi- tenant version of the ESS Service catalogue.	200	ISA ²	01/10/2016	31/12/2017
Execution	Task 4: Develop statistical services for sharing.	350	ISA ²	01/07/2017	31/12/2019
Execution	Task 5: Produce white-list of open source software.	194	ISA ²	01/07/2017	31/12/2019

⁴⁸ Usage of DESIS III (all lots), using Times & Means, Proximity Times & Means, Quoted Times and Means. There is not one single contract. The different contracts cover various periods of times across the project lifecycle, i.e. are prepared and signed accordingly at different points in time

Operational	Task 6: Support architecture alignment.	500	ISA ²	01/01/2018	31/12/2019
Operational	Task 7: Implement shared services in production processes.	300	ISA ²	01/07/2018	31/12/2019
Execution & Operational	Task 8: Deliver a reusable solution for the dissemination of statistics.	1420	ISA ²	01/01/2016	31/03/2019
	Total	3470			

3.1.10.2 Breakdown of ISA² funding per budget year

Budget Year	Phase	Anticipated allocations (in KEUR)	Executed budget (in KEUR)
2016	Initiation & Execution	1.050	1.035 commitment accepted
2017	Execution & Implementation	1.695	670 for reusable solution for dissemination of statistics (forecast) 340 for architecture benchmarking and alignment (forecast)
2018	Execution, Implementation & Operation	650	
2019	Implementation & Operation	75	

3.1.11 ANNEX AND REFERENCES

Description	Reference link	Attached document
SERV Business Case	https://circabc.europa.eu/sd/a/0ffc64b1-5d5c-4a61-a030-4acd897779e0/SERV%20Business%20case%20v0.7.pdf	-
ESSC 29 th meeting (SERV document)	https://circabc.europa.eu/w/browse/2102612c-8f20-4a16-bb5e-5d5541b03492	-
SERV TF Mandate	-	Version 1.1
ESS EA RF	https://ec.europa.eu/eurostat/cros/content/ess-enterprise-architecture-reference-framework_en	Version 1.0
SPRA	https://ec.europa.eu/eurostat/cros/content/spra_en	Version 0.4
ESS Vision 2020	http://ec.europa.eu/eurostat/web/ess/about-us/ess-vision-2020	-
DISSCHAIN RENOV Business Case	https://circabc.europa.eu/w/browse/a21ebeeaa-7491-4806-8306-2ace57894218	
CSPA	http://www1.unece.org/stat/platform/display/CSPA/CSPA+v1.5	Version 1.5

3.2 FISMA: FINANCIAL DATA STANDARDISATION (2016.15)

3.2.1 IDENTIFICATION OF THE ACTION

Type of Activity	Common frameworks
Service in charge	FISMA B2
Associated Services	DG CONNECT, DG DIGIT, DG ECFIN, EUROSTAT

3.2.2 EXECUTIVE SUMMARY

Many stakeholders from the financial sector including private companies like banks or public administrations and National and European Regulatory/Supervisory Agencies, need to report or act on financial data as requested by EU law in force.

The huge amount of financial legislative acts and level 2 measures (implemented and expected), together with a call launched by financial industry for further data reporting standardisation and the Call for Evidence (CfE) undertaken in 2016 by DG FISMA to analyse and review the EU regulatory framework for financial services under the Better Regulation agenda and REFIT exercise, are among the driving factors for further standardisation in financial data reporting.

The main issues pointed out are related to the difference in data formats and the lack of modelling and reporting standards allowing the tracing of financial risk on an instrument-by-instrument and transaction-by-transaction basis in the financial system. The lack of a common financial language and the lack of inter-operability between public risk data infrastructures increase on one side the costs related to legal reporting requirements while making it difficult on the other side to aggregate risk data and to ensure a complete market monitoring.

The FDS project will address these issues by applying, amongst others, the ISA² Core Vocabularies Methodology and the European Interoperability Framework (EIF) recommendations.

3.2.3 OBJECTIVES

The high-level objectives of the FDS project are to propose a framework of interoperable financial data reporting standards and enhance the interoperability of relevant data infrastructures, in order to enable a more (cost-)efficient reporting of financial data and monitoring of the financial system (banks, insurance companies, and financial markets) as well as to enhance the risk assessment capabilities of the EU and the national supervision authorities, and thus contributing to the safeguarding of the stability of the EU's financial system.

3.2.4 SCOPE

The scope of the FDS project is the analysis of existing data reporting requirements enshrined in the EU financial acquis and to work towards a framework of standards capable of enhancing interoperability and reusability of reporting data.

The diagram below clarifies the different roles in the regulatory scene: the EU, European regulatory and supervisory bodies, and reporting entities. Currently, there is no common financial language.

Diagram 1: The regulatory scene



Based on the analysis of the EU financial acquis, the FDS project delivered already a shortlist of 22 reporting frameworks containing structured data that will be subject to a detailed analysis in terms of gaps, overlaps, redundancies and inconsistencies of reporting requirements. The stakeholders that are practically implementing the reporting frameworks and other involved stakeholders have been identified.

The FDS project covers all areas necessary to achieve the objectives: financial legislation, standardisation, stakeholder requirements, governance, security and data protection, and innovative technologies to comply with regulation (RegTech).

Table 1: Shortlist of structured reporting frameworks & stakeholders

Shortlist of 22 “Structured Data” Reporting Frameworks

Rank	Reporting Framework	Structured data?	Active?	EC	EBA	Member States	EIOPA	ECB	ESMA	ESCB	CEA/OB	SRB
1	CRR/CRD IV	Yes	Yes	X	P		X	X	X			
2	Solvency II	Yes	Yes	X			P					
3	MIFID II/MIFIR	Yes	No	X	X				P			
4	IORP	Yes	Yes				P					
5	EMIR	Yes	Yes		X				P			
6	MIFID I	Partially	Yes						P			
7	AIFMD	Yes	Yes						P			
8	CSDR	Yes	Yes	X	X	X			P			
9	Transparency Directive	Partially	Partially						P			
10	Statutory Audit Regulation (SAR)	Partially	Yes	X	X	P	X				X	
11	SRM	Yes	Yes	X	X			X				P
12	SFTR	Yes	Partially						P	X		
13	NEW DGS Directive	Yes	Yes	X	X	P						
14	AoIU	Partially	Yes				P					
15	PRIPs Regulation	Partially	Partially		X		P		X			
16	Short Selling Regulation (SSR)	Yes	Yes	X					P			
17	BRRD	Yes	Yes	X	P	X			X			
18	UCITS (IV) Directive	Partially	Partially	X					P			
19	MCD	Partially	Partially	X	P	X						
20	Credit Rating Agencies Regulation/Directive CRAR/CRAD	Yes	Yes	X					P			
21	UCITs (V) Directive	Partially	Partially	X	X				P			
22	Market Abuse Directive/Regulation (MAD/MAR)	Yes	Partially			X			P			

X the EU body is involved as stakeholder in the Reporting Framework
P the EU body is practically implementing the Reporting Framework

3.2.5 ACTION PRIORITY

3.2.5.1 Contribution to the interoperability landscape

Question	Answer
<p><i>How does the proposal contribute to improving interoperability among public administrations and with their citizens and businesses across borders or policy sectors in Europe?</i></p> <p><i>In particular, how does it contribute to the implementation of:</i></p> <ul style="list-style-type: none"> <i>the new European Interoperability Framework (EIF),</i> <i>the Interoperability Action Plan and/or</i> <i>the Connecting European Facility (CEF) Telecom guidelines</i> <i>any other EU policy/initiative having interoperability requirements?</i> 	<p>The project will develop a framework for interoperable financial data reporting standards and targets the interoperability for exchange of information between administrations on business requests (scenario 2 from EIF) as well as the exchange of information between national administrations and EU institutions (scenario 3 from EIF).</p> <p>A roadmap for standardisation will be proposed implementing the 4 interoperability layers of the EIF conceptual model for cross-border/ cross-sectoral services and promote many of the EIF recommendations.</p> <p>In addition, the FDS project will re-use the ISA² Core Vocabularies Methodology in order to create a harmonized financial language.</p> <p>The FDS project will also analyse financial data</p>

	identifiers and reference data models (including business registers) used across the industries and propose ways to harmonise the models.
<i>Does the proposal fulfil an interoperability need for which no other alternative action/solution is available?</i>	The innovative aspect of the FDS approach is that it brings together analysis from several stakeholder viewpoints and from different financial sectors operating cross-border (banks, insurance companies, and financial markets). Per sector, information is already available but has never been put together. The main actors in the financial data reporting domain (ESMA, EIOPA, EBA, ECB, Eurofiling, and the Frankfurt Group) strongly believe that the involvement of the European Commission is required to define a common vision and strategy to address the current financial data reporting issues. The financial actors tried for many years to solve the inconsistencies but failed because no actor had sufficient authority to set cross-sector standards on its own. As a result, for example, a single taxonomy for the financial sector is still missing today.

3.2.5.2 Cross-sector

Question	Answer
<i>Will the proposal, once completed be useful, from the interoperability point of view and utilised in two (2) or more EU policy sectors? Detail your answer for each of the concerned sectors.</i>	The FDS project is cross sector and involving legislation from different financial policy areas (banks, insurance companies, financial markets). This is demonstrated by Table 1 (see above). The stakeholders requested the Commission to address the reporting burden in a holistic (cross-sector) manner in one go to avoid a further increase of the burden as a result of piecemeal adjustments.
<i>For proposals completely or largely already in operational phase, indicate whether and how they have been utilised in two (2) or more EU policy sectors.</i>	N/A

3.2.5.3 Cross-border

Question	Answer
<p><i>Will the proposal, once completed, be useful from the interoperability point of view and used by public administrations of three (3) or more EU Members States? Detail your answer for each of the concerned Member State.</i></p>	<p>Financial transactions don't stop at national borders. The FDS proposal will therefore need to take the EU/global dimension of the financial sector into account. The FDS project results will be instrumental for public and private stakeholders in all EU Member States and in non-EU countries covered by equivalence decisions for EU legislation.</p>
<p><i>For proposals completely or largely already in operational phase, indicate whether and how they have been utilised by public administrations of three (3) or more EU Members States.</i></p>	<p>N/A</p>

3.2.5.4 Urgency

Question	Answer
<p><i>Is your action urgent? Is its implementation foreseen in an EU policy as priority, or in EU legislation?</i></p>	<p>The FDS project has meanwhile been proposed by the Commission as a concrete follow-up action of REFIT exercise under the Better Regulation Commission Agenda. The first concrete deliverables are now expected as soon as possible since the project complements the Better Regulation actions by providing a "deeper" and more technical perspective on reporting. Completing the detailed analysis of the reporting frameworks is a prerequisite for a comprehensive assessment of the coherence and efficiency of the existing reporting frameworks and for the formulation of specific recommendations for future action.</p>
<p><i>How does the ISA² scope and financial capacity better fit for the implementation of the proposal as opposed to other identified and currently available sources?</i></p>	<p>The DG FISMA budget is limited and, on the short term, no other funding sources than those received from the ISA² Programme have been identified. Future standardisation actions may be funded by the Rolling Plan for ICT standardisation (DG GROW).</p>

3.2.5.5 Reusability of action's outputs

Name of reusable solution to be produced (for new proposals) or produced (for existing actions)	Methodology for Data Reporting Requirements (DRR) analysis
Description	A validated methodology for the analysis of detailed reporting requirements embedded in the EU financial acquis. The methodology will combine a top-down (EU viewpoint) and bottom-up (industry stakeholder viewpoint) approach and combine both in order to find overlaps, redundancies, inconsistencies and gaps in the reporting requirements.
Reference	
Target release date / Status	Q3 2017
Critical part of target user base	Methodology can be reused for the analysis of structured reporting frameworks in other areas of the EU acquis.
For solutions already in operational phase - actual reuse level (as compared to the defined critical part)	N/A

Name of reusable solution to be produced (for new proposals) or produced (for existing actions)	Financial Core Vocabulary
Description	The FDS project aims to lay the foundation for a Common Financial Data Language which will address, <i>inter alia</i> , the issue of unclear definitions which is a main cause of the current reporting burden.
Reference	
Target release date / Status	Q3 2018
Critical part of target user base	The current scope of the Financial Core Vocabulary will be supervisory reporting but this vocabulary can be extended/reused to other domains such as financial reporting, non-financial reporting (on environment and social and governance (ESG) impacts), financial disclosure for consumer and investor protection purposes, market integrity measures, post-trade activities, statistical reporting, anti-money laundering, measures to counter terrorist financing, etc.
For solutions already in operational phase - actual reuse level (as compared to the defined critical part)	N/A

Name of reusable solution to be produced (for new proposals) or produced (for existing actions)	Business Process Modelling
Description	The analysis of the relations between reporting frameworks throughout the life cycle of the financial products is a prerequisite for optimizing and re-engineering these reporting frameworks. Innovative technology (RegTech) solutions can re-use this information to enable more effective compliance with regulation at lower cost; a positive feedback on FinTech can be expected as well since the latter's main focus is on new business models enabled by technology where in many cases harmonized data formats and interoperability are considered prerequisites.
Reference	
Target release date / Status	Q4 2018
Critical part of target user base	All financial actors will better understand the impact of new regulations and changes to regulations on data flows and be able to identify opportunities to increase the effectiveness of regulation while lowering compliance cost and reporting burden.
For solutions already in operational phase - actual reuse level (as compared to the defined critical part)	N/A

3.2.5.6 Level of reuse of existing solutions

Question	Answer
<i>Does the proposal intend to make use of any ISA², ISA or other relevant interoperability solution(s)? Which ones?</i>	<p>The FDS project will re-use the ISA² Core Vocabularies Methodology the European Interoperability Framework (EIF). In addition, the FDS project will investigate possible reuse of other ISA solutions, e.g. in the legislative domain (data automation tools for lawyers).</p> <p>Different standards already exist for reporting - issued by European and International Standardisation Organisations. During the analysis, the FDS project will create an inventory of existing standards and map these standards to reporting requirements. The project aims to deliver a framework of (existing) interoperable financial data reporting standards.</p>
<i>For proposals completely or largely</i>	N/A

<i>already in operational phase: has the action reused existing interoperability solutions? If yes, which ones and how?</i>	
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3.2.5.7 Interlinked

Question	Answer
<i>Does the proposal directly contribute to at least one of the Union's high political priorities such as the DSM? If yes, which ones? What is the level of contribution?</i>	Digital Single Market (DSM): The legacy data and systems in the financial sector are costly to maintain and create barriers to competition; in the absence of fully machine readable financial data (including contractual information) the sector will not realise the full potential contained in interoperability and data sharing solutions and is falling behind. The FDS project intends to address these interoperability issues with concrete actions in the domain of ICT standardisation and the once-only principle.
	The Commission's Better Regulation / REFIT agenda has identified financial services as a focus area where stakeholders have indicated their concerns regarding the administrative burden. The FDS project is a concrete follow-up action proposed by Commission (Communication of 23 November 2016) and will address many of the reported issues.

3.2.6 PROBLEM STATEMENT

The problem of	supervisory reporting obligations are perceived as too burdensome because of duplicative, overlapping and inconsistent reporting requirements
affects	EU and national supervisory and regulatory authorities, and reporting entities (financial institutions in the banking, insurance, asset management, pension funds sectors, operators of financial market infrastructure, etc., including SMEs)
the impact of which is	that (i) implementing legal reporting requirements is excessively complex and costly; (ii) it is difficult to share efficiently reporting data, including between national authorities and EU and national authorities, or between EU authorities, because of lacking interoperability; (iii) it is excessively difficult to monitor financial risk in the EU's financial system;
a successful solution would be	to reduce the administrative burden and compliance costs for industry and provide supervisory authorities with high quality data on market players and their activities; access to such data is essential to perform supervision of financial institutions, monitoring of systemic risk, market oversight and ensure orderly markets, financial stability, investor protection and fair competition.

3.2.7 IMPACT OF THE ACTION

3.2.7.1 Main impact list

Impact	Why will this impact occur?	By when?	Beneficiaries
(+) Savings in money (+) Savings in time	A common financial language will address the issue of unclear definitions which is emerging as the main cause of the reporting burden.	Planning will be based on the problem definition provided by the detailed analysis.	Supervisory Authorities, Industry
(+) Better	A framework for interoperable financial	See above.	Supervisory

interoperability and quality of digital public service	data reporting standards will be developed based on the project findings. An assessment will be done of innovative technologies to optimise supervisory reporting requirements		Authorities, Industry
(+) Improve the quality and accessibility of data	The FDS project deliverables will be the culmination of the most extensive and comprehensive assessment of financial reporting requirements undertaken to date at the EU level, and will lay a very solid groundwork for the Commission to launch co-ordinated future action which could help revolutionise reporting and significantly improve the quality and accessibility of data, not just within the EU but internationally.	See above.	Supervisory Authorities, Industry
(-) Integration or usage cost	Cost/benefit assessment of proposed solution will be done at a later stage.	See above.	Supervisory Authorities, Industry

3.2.7.2 User-centricity

A Stakeholder Expert Group on reporting will be established. This group would primarily be formed by experts from the European Supervisory Agencies (ESMA, EBA, EIOPA), the European Systemic Risk Board (ESRB), the European Central Bank (ECB)/Single Supervision Mechanism (SSM), and the Single Resolution Board (SRB), but may also include National Authorities and Industry stakeholders that have relevant experience in this field. The experts will provide valuable practical knowledge and experience, and can also be an important source of data and information on work ongoing in various international fora.

3.2.8 EXPECTED MAJOR OUTPUTS

Output Name	Framework of interoperable financial data reporting standards and roadmap for standardisation
Description	This output will provide regulators with an interoperable set of open standards facilitating efficient data exchange and processing and establish a common understanding of technological interoperability between electronic data standards operated by the banking, insurance and capital markets entities and supervisors in the European Union. A roadmap identifying priority areas for financial data standardisation will also be delivered. This roadmap will need to take into account the need for a general financial data reporting

	framework and specialised reporting in sectors.
Reference	
Target release date / Status	2019

3.2.9 ORGANISATIONAL APPROACH

3.2.9.1 Expected stakeholders and their representatives

Stakeholders	Representatives	Involvement in the action
European Commission	DG FISMA units (internal stakeholders)	
European Central Bank (ECB)	Statistical Reporting	
European Supervisory Agencies	ESMA, EBA, EIOPA	
Single Resolution Board (SRB)		
The Frankfurt Group		
Eurofiling		
European Systemic Risk Board (ESRB)		
Industry	Banks, insurance companies, listed companies	

3.2.9.2 Identified user groups

The identified users of the FDS project results are the same as identified in §3.2.9.1.

3.2.9.3 Communication and dissemination plan

A website has been set up as a central point to collect and share information on the FDS project. The information is updated on a regular basis. Access has been provided to relevant internal and external stakeholders such as financial agencies and to the external contractor performing the studies. For discussions, emails and video-conferencing will (continue to) be used. In the case of stakeholder's consultation, the EU Survey tool will be used when appropriate. In addition, the ISA² join-up platform will be used to communicate the main project outcomes.

3.2.9.4 Key Performance indicators

Provide a list of KPIs allowing the measurement of the progress and completions of milestones and the action. In case of an on-going action with already identified metrics indicate the current values.

Description of the KPI	Target to achieve	Expected time for target
Overview of the relevant reporting frameworks	100% completed in time	Target reached
Methodology for detailed analysis validated	100% completed in time	Target reached
Detailed Analysis of 22 reporting frameworks	100% completed in time	12 months
Other KPIs will be defined once the problem definition (based on the detailed analysis) has been completed		

3.2.9.5 Governance approach

The governance of the project is a key factor for the effective delivery of its objectives and is expected to improve the quality of the services provided, guarantee the alignment of its deliverables with the strategic objectives, ensure the proper allocation of roles and responsibilities and clearly identify the timeframes for a manageable and transparent execution of projects.

DG FISMA Unit B2 is the Business Owner, provides the Project Manager and is responsible for the coordination inside the DG. As part of the Better Regulation Call for Evidence follow up, the FDS project has become an essential and integral part of the supervisory reporting project in DG FISMA. Its deliverables will directly feed into the REFIT Fitness Check. The DG FISMA project team on supervisory reporting, staffed by all units handling one or several reporting frameworks, is indeed now the main vehicle that is ensuring that all work streams are well integrated and connected with the policy making in DG FISMA.

3.2.10 TECHNICAL APPROACH AND CURRENT STATUS

Achievements so far

With the ISA² funding received in 2016, the FDS project procured all planned actions and produced the first concrete deliverables. These deliverables will be the basis for the further actions in 2017 and onwards:

- a) a structured overview of the relevant reporting frameworks in DG FISMA;
- b) a proposal for the relative ranking (by importance) of these frameworks based on objective criteria;
- c) a robust methodology for a detailed analysis of the reporting frameworks; and
- d) a Regulatory Distributed Ledger Technology (DLT) feasibility study.

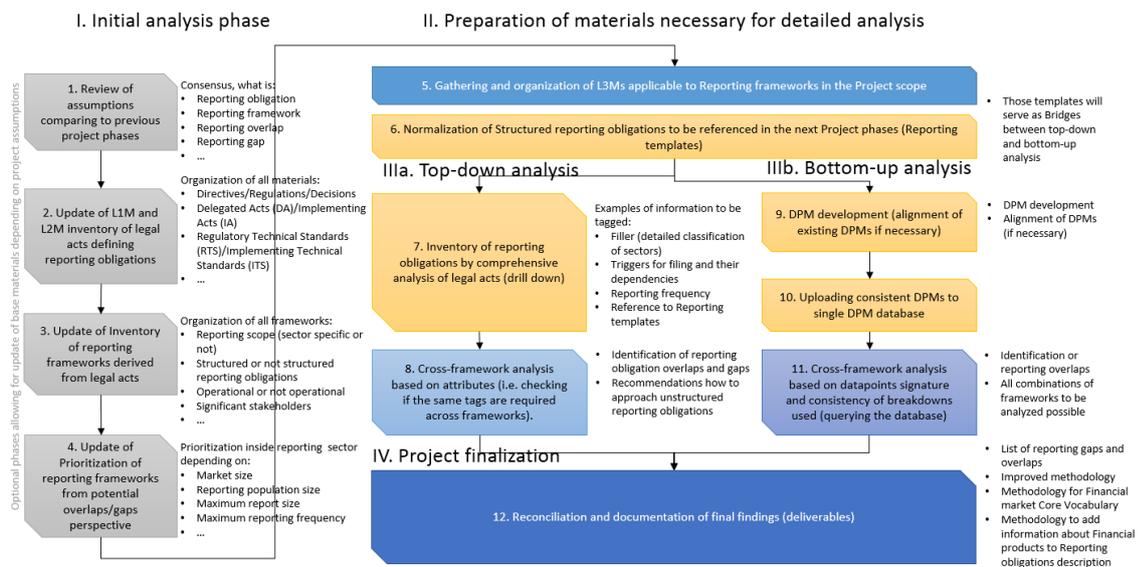
Situation now

The detailed analysis of the Data Reporting Requirements (DRR Analysis) in terms of overlaps, gaps, duplications and inconsistencies in the regulatory frameworks will be the most urgent and important FDS project deliverable for the revised ISA² Work Programme.

Completing the analysis is indeed a prerequisite for a comprehensive assessment of the efficiency and coherence of the existing reporting frameworks and for the formulation of specific recommendations for future action. This detailed analysis will be carried out at the data element level according to the validated methodology.

Diagram 2: DRR analysis methodology

Methodology for FDS project



The FDS project's present priority is thus the DRR Analysis, for which most of 2017 funding is allocated (apart from the developer and business analyst/system architect). From the original actions planned for 2017, the Financial Standards Map and Final Methodology will be integrated within the DRR Analysis because these actions logically fit together. The Business Process Modelling and Roadmap for Standardisation will be postponed to 2018, awaiting the exact problem definition provided by the DRR Analysis.

Next steps

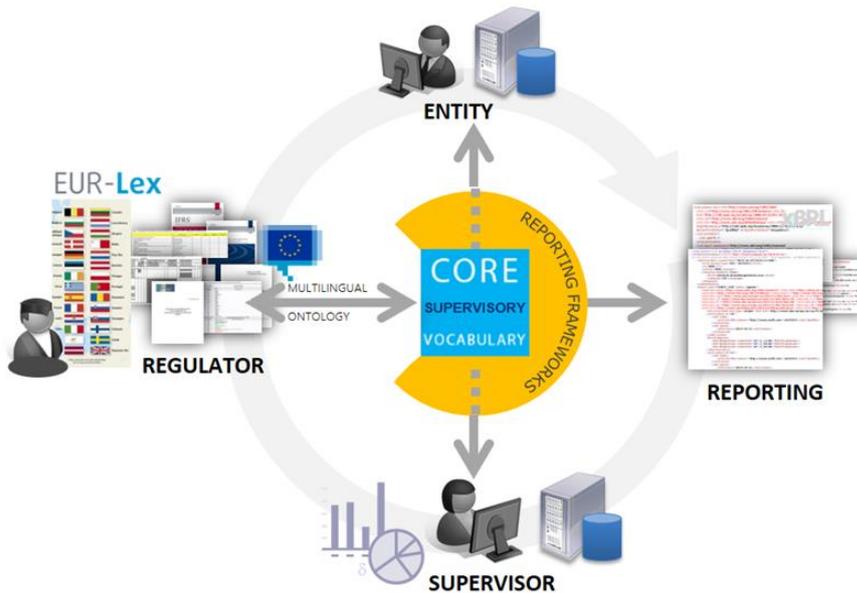
The future project deliverables beyond 2018 will address areas where further standardisation could bring benefits and identify concrete proposals for streamlining and simplifying reporting requirements without compromising their objectives, with the long-term objective of having all reporting entities to report their data only once ("report once principle"), including via the use of innovative technology (e.g., DLT RegTech).

The FDS project will deal with the reporting issues in a holistic way and two initiatives have already been identified that represent the essential building blocks for any future RegTech solution:

- Development of a Common Financial Data Language**, which will build on the detailed analysis of the FDS project and the ISA² Core Vocabularies methodology. A common language will address the issue of unclear definitions which is one of the main causes of the reporting burden.
- Feasibility study for a European Reference Data Repository**. The study will analyse financial data identifiers and reference data models used across the industries and propose ways to harmonise the models through direct harmonisation approaches and application of common identifiers across regulations.

Currently, there is no common financial language, and the FDS project proposes to put a common supervisory reporting data dictionary in place in the centre of the regulatory scene to connect the different roles which is illustrated in the diagram below. The regulators, while developing new legislation or amending the existing legislation, will need to make use of common definitions and vocabulary in order to implement the "define once" principle:

Diagram 3: Regulatory scene and Core Supervisory Vocabulary



It is anticipated that a tool will be developed allowing regulators to use the definitions from the Core Supervisory Vocabulary while drafting new legislation. This approach would effectively implement the "define-once" principle during the initiation phase of new legislation and thus avoids the current issue of overlapping inconsistent definitions which is the largest source of costs and reporting burden.

The Business Process Modelling action will focus on the establishment of a clear understanding of information flows from the creation of a financial product until the stages where regulators request data about the product and further when they propose policies and actions based on such data sets. This knowledge is a prerequisite for (e.g.) a future cost-benefit analysis and RegTech solutions (new business models enabled by technology).

A framework of interoperable financial data reporting standards together with a roadmap for standardisation will be elaborated, taking into account the need for a general financial data reporting framework and specialised reporting in sectors. This action will provide a set of open standards facilitating efficient data exchange and processing, based on the Common Financial Data Language and transparent financial business processes.

Later actions may cover pilot projects in priority areas to test the feasibility and measure the impact of interoperability, standardisation and new technology, and a cost/benefit assessment of financial data standardisation with the costs of "standardisation" versus the costs for "non-standardisation".

3.2.11 COSTS AND MILESTONES

3.2.11.1 Breakdown of anticipated costs and related milestones

Phase: Initiation Planning Execution Closing/Final evaluation	Description of milestones reached or to be reached	Anticipated Allocations (KEUR)	Budget line ISA/ others (specify)	Start date (QX/YYYY)	End date (QX/YYYY)
Initiation	Methodology validation for DRR analysis	80	ISA ²	Q3 2016	Q4 2016
Initiation	High-level DRR analysis of selected frameworks	50	ISA ²	Q3 2016	Q1 2017
Initiation	Detailed DRR analysis of 4 selected financial frameworks	150	ISA ²	Q4 2016	Q1 2017
Initiation	Feasibility study Distributed Ledger Technology	200	ISA ²	Q4 2016	Q2 2017
Execution	Tool development supporting efficient DRR analysis and reporting	220	ISA ²	Q2 2016	Q1 2018
Execution	Definition of functional requirements and system architecture of solution	265	ISA ²	Q2 2016	Q1 2018
Execution	Detailed DRR analysis, Final Methodology, and Financial standards Map	1050	ISA ²	Q2 2017	Q3 2018
Execution	Common Financial Data Language technical preparation	250	ISA ²	2018	2019
Execution	Feasibility study for a European Reference Data Repository	250	ISA ²	2018	2019
Execution	Business Process Modelling	250	ISA ²	2018	2019
Execution	Enterprise Architect	340	ISA ²	2018	2020
Execution	Framework for interoperable financial data reporting standards and Roadmap for standardisation	150	ISA ²	2018	2020
Execution	Assessment of innovative technologies to optimise supervisory reporting	200	ISA ²	2019	2020
Execution	Cost/benefit assessment of proposed innovative solutions	300	ISA ²	2019	2020
Execution	Pilot in priority area to test feasibility and measure the impact of innovative solutions	300	ISA ²	2019	2020
Execution	Technology for regulators drafting	500	ISA ²	2019	2020

	future legislation				
	Total FDS project	4605			

3.2.11.2 Breakdown of ISA² funding per budget year

Budget Year	Phase	Anticipated allocations (in KEUR)	Executed budget (in KEUR)
2016	Initiation & Execution	700	700
2017	Execution	1170	1170
2018	Execution	1265	
2019	Execution	1470	
2020	Closing/Final Evaluation		

3.2.12 Planning for the tendering procedures to be launched for the action

Call for tenders foreseen Global amount in KEUR	Call for Tenders Duration in years	Indicative planning of publication (QX/YYYY)
477k€	1 year	Q3/2017
550k€	1 year	Q2/2018

3.3 DEVELOPMENT OF AN OPEN DATA SERVICE, SUPPORT AND TRAINING PACKAGE IN THE AREA OF LINKED OPEN DATA, DATA VISUALISATION AND PERSISTENT IDENTIFICATION (2016.18)

3.3.1 IDENTIFICATION OF THE ACTION

Type of Activity	Common Services and Reusable Generic Tools
Service in charge	Publications Office of the European Union (OP), Unit C1.
Associated Services	EC: JRC, CONNECT, DIGIT, COMM, ESTAT. Agencies: EMA, ERA, INEA.

3.3.2 EXECUTIVE SUMMARY

European Union Open Data Portal (EU ODP⁴⁹) and other stakeholders (European Data Portal⁵⁰ including affiliated Member State portals and administrations) with a service package in order to enable them to enhance their data visualisation capacity, to further open up their data as well as to increase data quality and interoperability in view of better data reusability.

Data visualisation is indispensable for a better and faster understanding of the data published. For policymakers it facilitates decision-making based on evidence and the communication of complex issues. Moreover visualisation is indispensable for data analytics.

The current package is the continuation of ISA² Action 2016.18 of the WP 2016 and 2017⁵¹ which has been triggered by the needs expressed by EU institutions and agencies during meetings with the EU ODP, and additionally brought to evidence by the interinstitutional survey on data visualisation needs in 2015.

The ISA² Action 2016.18 delivered the prototype of a catalogue of data visualisation tools, trainings on visualisation, data visualisation projects based on high-value open datasets, EU budget as Linked Open Data and it laid the basis for an interinstitutional community of data visualisation practitioners.

The proposal addresses the needs for:

- **corporate visualisation solutions** by further developing the catalogue, by working on corporate solutions for groups of datasets (e.g. dashboards for reporting, visualisation of textual datasets), and on wizards in order to better guide the users.
- **building and strengthening the visualisation community** and the knowledge base through trainings, workshops, and regular webinars on specific visualisation topics (e.g. infographics, accessibility, cookies, data preparation, corporate glossaries).

⁴⁹ <https://data.europa.eu/euodp>

⁵⁰ <https://data.europa.eu/europeandataportal>

⁵¹ "Development of an open data service, support and training package in the area of linked open data, data visualisation and persistent identification".

- **enhanced interoperability of metadata and datasets**, improvement of data quality, increased data literacy and systematic publishing of metadata on EU ODP (e.g. via development of harvesting solutions based on DCAT-AP⁵²).

In order to increase the outreach of the action and to better understand the needs of reusers it is further envisaged to organize a **hackathon** and a **conference on data visualisation** with renowned experts and EU staff working in the domain.

The project will be implemented with Commission associated services such as JRC, DG COMM, ESTAT (GISCO for corporate visualisations of maps for non-statistical data), DIGIT and some EU agencies - as well as with new partners identified during the ongoing work (DG ENV for streamlining and facilitating of environmental reporting by Member States).

3.3.3 OBJECTIVES

The project aims at providing data providers (EU institutions, agencies and other bodies) of the EU Open Data Portal (EU ODP) and other stakeholders of the EU ODP, e.g. the European Data Portal and its affiliated Member State data portals, with a service package in order to enable them to enhance their data visualisation capacity, to enhance collaboration in the area across organizational borders, and to further open up their data as well as to increase data quality and interoperability in view of better data reusability.

The project fully supports the objectives of the ISA² programme and relates in particular to the ISA² activities 1, 2, 10 and 11 by:

- further developing and maintaining the catalogue, i.e. bringing new interoperability services to maturity and maintaining existing interoperability solutions on an interim basis.
- reusing and bringing to maturity existing cross-border and cross-sector interoperability solutions such as DCAT-AP, and by promoting interinstitutionally agreed reference metadata maintained within the Publications Office Metadata Registry⁵³.
- identifying through work on data from different sectors areas in which such solutions are still missing and promoting the use of existing common specifications and standards and by sensitivising stakeholders for developing in future common specifications and standards.
- building up, animating and supporting a community of practice in data visualisation, which is open to Member State administrations and supports cross-border and cross-section interaction, and the nurturing of a related knowledge base for capacity building.

⁵² DCAT Application Profile for data portals in Europe, https://ec.europa.eu/isa2/solutions/dcat-application-profile-data-portals-europe_en

⁵³ <http://publications.europa.eu/mdr/>. The Metadata Registry registers and maintains definition data (metadata elements, named authority lists, schemas, etc.) used by the different European Institutions and available for reuse for everybody.

3.3.4 SCOPE

Within the project scope are:

- Improvement of the catalogue of the visualisation tools features and maintenance of **the content**
- Working on pilot projects for **corporate solutions** for groups of datasets for example:
 - dashboards for internal indicators allowing for business intelligence and monitoring
 - visualisation of environmental reporting (with DG ENV)
 - maps (with ESTAT)
 - Integration of controlled vocabularies and thesauri into selected data visualisation tools/solutions
 - visualisation of non-statistical datasets e.g. ontologies, texts
- Developing data quality guidelines
- Continuation of **trainings** on data visualisation, adding a training on data literacy (training materials, delivery of the trainings)
- Organization of a **conference** on data visualisation, which are very rare in Europe, with some renowned experts, EU staff working on visualisations, representatives of public administrations in Europe
- Monthly or bi-monthly **webinar** on specific visualisation topics (e.g. infographics, accessibility, cookies, data preparation, corporate glossaries)
- **Harvesting** solution for open data based on DCAT-AP
- **Hackathon** 2018, 2019

Outside the project scope are:

- The project is about achieving interoperability, corporate capability and a network of actors driving a service ahead through **pilot projects**. Hence, at this stage of work, the delivery of data visualisation services upon request, such as normally addressed towards an established corporate service are excluded.

3.3.5 ACTION PRIORITY

This section is used to assess the priority of the proposal to become a programme's action according to Art. 7 of the ISA² decision⁵⁴.

3.3.5.1 Contribution to the interoperability landscape

The contribution of the action to the interoperability landscape, measured by the importance and necessity of the action to complete the interoperability landscape across the Union

Question	Answer
<p><i>How does the proposal contribute to improving interoperability among public administrations and with their citizens and businesses across borders or policy sectors in Europe? In particular, how does it contribute to the implementation of:</i></p> <ul style="list-style-type: none"> • <i>the new European Interoperability Framework (EIF),</i> • <i>the Interoperability Action Plan and/or</i> • <i>the Connecting European Facility (CEF) Telecom guidelines</i> • <i>any other EU policy/initiative having interoperability requirements?</i> 	<p>The proposal fully supports the EIF principles. The list below lists the relevant principles and the way the proposal addresses them:</p> <ul style="list-style-type: none"> • Openness: the project evolves around open data production, processing and visualisation • Transparency: Datasets classified as high-value according to the G8 Open Data Charter⁵⁵ are given priority in the project, and concern often transparency (EU Budget, etc.). • Reusability: the project looks actively for reusable solutions and visualisations. All underlying data are reusable, as are the training materials and visualisation outputs • Data portability: the project promotes the use of controlled vocabularies and ontologies and DCAT-AP for the description of datasets • User centricity: users are EU and Member State staff of public administrations faced with visualisation needs. The design of the catalogue and of the knowledge base is fully geared towards the community needs and shall be driven by the community needs. Multiple channels of knowledge acquisition are foreseen (training, knowledge base). • Multilingualism: OP promotes the use of multilingual controlled vocabularies in the datasets dealing with data from different Member States • accessibility: visualisation, dashboards, technically open data formats

⁵⁴ DECISION (EU) 2015/2240 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

⁵⁵ The European Commission signed the G8 Open Data Charter in 2013, committing to make its data as fully available as possible for re-use. It is accessible at <https://www.gov.uk/government/publications/open-data-charter>. The EU G8 Implementation Plan was transmitted to the European Parliament and the Council on 10 and 6 November 2013 respectively. It sets out 5 strategic principles that all G8 members will act on. These include an expectation that all government data will be published openly by default, alongside principles to increase the quality, quantity and re-use of the data that is released. G8 members identified 14 high-value areas (such as: transparency, finance, education, transport, health, etc.) from which they will release data.

	<ul style="list-style-type: none"> • simplification: simplification of reports via dashboards <p>Some of the high-value datasets are in RDF format, and are hence involving semantic interoperability.</p> <p>Through this it contributes to the implementation of the Interoperability Action Plan via relevant enablers, the encouragement of public administrations to use existing interoperability solutions, and the further development of interoperability solutions.</p> <p>It also corresponds to the New European Interoperability Framework, namely the interoperability principles: Openness (2), Transparency (3), Reusability (4), User –centricity (6) and Multilingualism (9). The action contributes to priorities in the focus area n2: organisational interoperability, n3 sharing of good practices, n1: governance structure and n4 key enablers: EU open data initiative.</p>
<p><i>Does the proposal fulfil an interoperability need for which no other alternative action/solution is available?</i></p>	<p>Yes, to our knowledge no other initiative among the EU institutions addresses the topic of interoperability for data visualisation purposes.</p>

3.3.5.2 Cross-sector

The scope of the action, measured by its horizontal impact, once completed, across the policy sectors concerned

Question	Answer
<p><i>Will the proposal, once completed be useful, from the interoperability point of view and utilised in two (2) or more EU policy sectors? Detail your answer for each of the concerned sectors.</i></p>	<p>Data visualisation is per se of cross-sector relevance. The data that are currently lacking any visualisation solution exist in all domains. Data visualisation becomes particularly interesting when it combines data from different sources and domains.</p> <p>The participants in the data visualisation community of practice come from across all EU institutions, agencies and bodies.</p> <p>The pilots envisage the visualisation of data from different sectors, e.g. EU research results (CORDIS), EU budget, textual data, etc.</p>

<i>For proposals completely or largely already in operational phase, indicate whether and how they have been utilised in two (2) or more EU policy sectors.</i>	Not applicable

3.3.5.3 Cross-border

The geographical reach of the action, measured by the number of Member States and of European public administrations involved.

Question	Answer
<i>Will the proposal, once completed, be useful from the interoperability point of view and used by public administrations of three (3) or more EU Members States? Detail your answer for each of the concerned Member State.</i>	<p>The need for more sharing of visualisation solutions is also expressed by Member States and demonstrated for example in ESTAT meetings with National Statistical Institutes. Some of them already reuse visualisation solutions provided by the EC. Member States can consult and reuse the project outputs (knowledge base, training, catalogue, visualisation and the catalogue application). It is too early to say which Member State will reuse particular elements of the catalogue.</p> <p>The use of tools depends on the respective underlying licences. Preference is given to open source and corporate tools allowing for reuse within public administrations of EU Members States.</p>
<i>For proposals completely or largely already in operational phase, indicate whether and how they have been utilised by public administrations of three (3) or more EU Members States.</i>	Not applicable

3.3.5.4 Urgency

The urgency of the action, measured by its potential impact, taking into account the lack of other funding sources

Question	Answer
<p><i>Is your action urgent? Is its implementation foreseen in an EU policy as priority, or in EU legislation?</i></p>	<p>The action is urgent and responds to needs expressed in different policies.</p> <p>For instance, the Communication on the Digital Single Market midterm review announced for spring 2018 "<i>an initiative on accessibility and re-use of public and publicly funded data.</i>" The overall aim of the open data policy is to promote economic growth and societal benefits by opening up public sector data. The basic idea is that data that has been funded by the public purse should be available for all to use for commercial and non-commercial purposes.</p> <p>Opening public data includes aspects of interoperability, the possibilities to collect data and publish them on portals, data quality and curation, and ways of better communicating and exploiting them through visualisation and exposure for reuse.</p> <p>Beyond the reuse potential, the act of opening up government data contributes to a higher efficiency of public administration, more transparency and a better interaction between citizens and the administration, as well as better policy making. The high priority of finalising the Digital Single Market was just reconfirmed in the 18-month Programme of the Council July 2017 – December 2018, published on 2 June 2017, and prepared by the future Estonian, Bulgarian and Austrian Presidencies⁵⁶.</p> <p>At Commission level, data visualisation and synergies in data management are key topics in the "Communication on Data, Information and Knowledge Management at the European Commission"⁵⁷.</p> <p>The project is partially linked to the proposal on Big Data for Public administrations namely in the activity for the evaluation of big data and data analytics needs which will be mostly based on the open data and can be used by European public administration to strengthen the capabilities of open data portals and foster reuse of data.</p> <p>Furthermore, the project will embed and feed-back all outputs of this ISA² project into the Commission internal initiative Data4Policy and action 2016.03 Big Data for Public Administrations..</p>
<p><i>How does the ISA2 scope and financial capacity better fit for the implementation of the proposal as opposed to other</i></p>	<p>The strong focus of ISA² on interoperability, standards, reuse and cross-service cooperation is especially propitious for the topics data visualisation, data management and linked open data. There are no alternative sources for carrying on this activity.</p>

⁵⁶ POLGEN 83, 9934/17, Note from the Secretariat General of the Council to the Permanent Representatives Committee/Council, 02/06/17

⁵⁷ [C\(2016\) 6626. The Communication underlines the need for a more strategic use of data for policy-making and how they can be gathered, managed, shared and preserved, and supported through new ways of collaborative working.](#)

<i>identified and currently available sources?</i>	
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3.3.5.5 Reusability of action's outputs

The re-usability of the action, measured by the extent to which its results can be re-used.

Name of reusable solution to be produced (for new proposals) or produced (for existing actions)	Phase 2 of the catalogue of data visualisation tools and solutions
Description	It will consist of improvement of catalogue features such as adding a wizard guiding the users in the choice of a tool or solution as well as curation and enrichment of the content (e.g. describing existing reusable solutions that can be shared within EU institutions and public administrations in Europe).
Reference	http://cpsv-ap.semic.eu/data_visualisation_catalogue/ (temporary location)
Target release date / Status	2019
Critical part of target user base	The catalogue itself as well as most of the content will be reusable.
For solutions already in operational phase - actual reuse level (as compared to the defined critical part)	The first stage of the catalogue (technical solution) is completed, available on line and can be reused. The whole content is published and can be freely used, too.

Name of reusable solution to be produced (for new proposals) or produced (for existing actions)	Development of corporate solutions in the domains data visualisation and reuse-oriented data
Description	The solutions for high value datasets lacking systematic data visualisation will be developed or adapted, e.g. maps for non-statistical data, dashboards for environmental reporting or internal indicators. Pilot projects will be run on textual data.
Reference	-
Target release date / Status	2019
Critical part of target user base	The collaboration with DG COMM, ENV, ESTAT will be essential
For solutions already in operational phase - actual reuse	Not applicable

level (as compared to the defined critical part)	
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Name of reusable solution to be produced (for new proposals) or produced (for existing actions)	Data visualisation and data literacy knowledge base to strengthen data visualisation community
Description	<p>The materials to achieve the goal will be collected internally, during workshops, webinars, trainings and the data visualisation conference.</p> <p>They will be reusable and published online. The intention is to add them to the knowledge centre of the catalogue of data visualisations.</p> <p>The topics that are already planned to be covered are:</p> <ul style="list-style-type: none"> • Data literacy and data quality guidelines (to complete the phase on data preparation essential in the data visualisation process), • interactive infographics, • accessibility, • cookies, • corporate glossaries.
Reference	http://cpsv-op.semic.eu/data_visualisation_catalogue/knowledge-center (temporary location)
Target release date / Status	2019
Critical part of target user base	The output can be re-used by a critical part of the target user base.
For solutions already in operational phase - actual reuse level (as compared to the defined critical part)	The knowledge centre is created (see URL above). It will be enriched and migrated together with the catalogue to the EU Open Data Portal.

Name of reusable solution to be produced (for new proposals) or produced (for existing actions)	Harvesting solution for open data based on DCAT-AP
Description	<p>Timely and systematic publishing of data is very important for reusers of open data. The data at the source are stored in a variety of databases describing data in different ways. A flexible harvester is needed to be able to deal with this situation.</p> <p>A harvesting solution will be developed to increase the level of automatization of the publishing process. It will be based on DCAT-AP⁵⁸ and will allow Member States to reuse it for their data portals compatible with DCAT-AP. The project will closely cooperate with the European Data Portal (EDP) in order to reuse, where possible, connectors already developed by them for harvesting existing and standard-driven data portals. The EU Open Data Portal in exchange will attempt to harvest repositories/databases of EU institutions with mostly proprietary and less documented data models.</p>
Reference	-
Target release date / Status	2019
Critical part of target user base	The output can be re-used by interested data portals.
For solutions already in operational phase - actual reuse level (as compared to the defined critical part)	Not applicable

3.3.5.6 Level of reuse of existing solutions

The re-use by the action (following this proposal) of existing common frameworks and interoperability solutions.

Question	Answer
<i>Does the proposal intend to make use of any ISA², ISA or other relevant interoperability solution(s)? Which ones?</i>	<p>The harvesting solution will be based on DCAT-AP⁵⁹.</p> <p>Controlled vocabularies will be integrated in some data visualisation solutions.</p>

⁵⁸ DCAT Application Profile for data portals in Europe, https://ec.europa.eu/isa2/solutions/dcat-application-profile-data-portals-europe_en

⁵⁹ https://joinup.ec.europa.eu/asset/dcat_application_profile/description

<i>For proposals completely or largely already in operational phase: has the action reused existing interoperability solutions? If yes, which ones and how?</i>	The tools listed in the catalogue of data visualisation are described using ADMS (Asset Description Metadata Schema) ⁶⁰ .

3.3.5.7 Interlinked

The extent to which the action (following this proposal) contributes to Union's initiatives such as the DSM.

Question	Answer
<i>Does the proposal directly contribute to at least one of the Union's high political priorities such as the DSM? If yes, which ones? What is the level of contribution?</i>	<p>(Open) government data is a core asset for the knowledge-based economy, since its reuse is a basis for innovative information products and services. It makes a significant contribution to the Digital Single Market and is a key enabler for transparency, evidence-based decision-making and a broader participation in the political discourse. As a by-product, it enhances administrative efficiency through streamlined data management.</p> <p>This package will enable administrations to enhance their data visualisation capacity, to further open up their data as well as to increase data quality and interoperability in view of better data reusability.</p>

⁶⁰ <https://joinup.ec.europa.eu/asset/adms/home>

3.3.6 PROBLEM STATEMENT

The problem of	A fast growing number of data (various types and formats) which require appropriate tools to be identified in order to make them understandable.
affects	EU Institutions, agencies and bodies and public administrations in Europe
the impact of which is	A difficulty to identify appropriate tools for visualising different types of data to create efficient data visualisation facilitating decision making, quick insight into the data and citizens engagement
a successful solution would be	Used for a variety of data published on the EU Open Data Portal for enhanced transparency and user experience through data visualisation

The problem of	Data visualisation is a complex topic requiring a set of different skills
affects	EU Institutions, agencies and bodies and public administrations in Europe.
the impact of which is	Difficulty to build upon existing resources to enhance the skills and capacities of public servants in the area of data visualisation and data preparation
a successful solution would be	An active community sharing proactively their knowledge, experience and solutions

The problem of	Data quality that is required to create reliable and trustful data visualisation
affects	EU Institutions, agencies and bodies and public administrations in Europe
the impact of which is	Impossibility to create data visualisation or very limited data visualisation
a successful solution would be	Guiding public administration in the data quality aspects.

The problem of	Need to publish metadata on EU Open Data Portal on a timely and regular basis thanks to automatization of the publishing process
affects	EU Institutions, agencies and bodies, reusers of open data
the impact of which is	Some data are not available on the EU ODP on time
a successful solution would be	An automatic metadata publishing chain with possibility of harvesting the source based on the metadata schema of DCAT-AP.

The problem of	Provision of open data in a way that would allow to foster the economic growth and data reuse for the benefit of citizens and SMEs
affects	EU Institutions, agencies and bodies and public administrations in Europe, reusers of open data
the impact of which is	Some data are not suitable for reuse due to technical or legal constraints, lack of context or quality issues
a successful solution would be	An active engagement with reusers e.g. through hackathons on public data

3.3.7 IMPACT OF THE ACTION

3.3.7.1 Main impact list

Impact	Why will this impact occur?	By when?	Beneficiaries
(+) Savings in money	The reuse of visualisation solutions and strengthening of skills will allow for creation of effective visualisations without duplication of effort	Progressively from 2018 on	EU Institutions, Member State administrations
(+) Savings in time	Data visualisation for some data can be created quicker and by linking to the data updated instantly	Progressively from 2018 on	EU Institutions, Member State administrations
(+) Better interoperability and quality of digital public service	Visualising data requires data of good quality, harmonized and interlinked.	Progressively from 2019 on	EU Institutions, Member State administrations
(-) Integration or usage cost	Some cost will be required to maintain the solutions and curate content	Progressively from 2018 on	EU Institutions
(+) Improved transparency	By visualising data citizens will get insight into a wide range of data	Progressively from 2018 on	Citizens, NGOs, journalists
(+) Improved data quality	Data visualisation allows for quick discovery of data quality issues, missing values and inconsistencies	Progressively from 2019 on	EU Institutions, data users
(+) Better regulation	Analysing and visualising data helps to determine what data is of sufficient quality allowing for successful comparative analysis	Progressively from 2020 on	EU institutions, Member State administrations

3.3.7.2 User-centricity

As stated under point 1.1.9.2 the end users of the solution are:

- The staff of the European institutions, agencies and bodies working on data and metadata management, data visualisation, data publishing and presentation.
- The staff of public administrations in Member States, especially in statistical institutes and national/regional data portals.
- The users of data portals: researchers, journalists, data reusers.

The design of the solution takes place in collaboration and strong interaction with the user groups (surveys, workshops, feedback). For instance will the catalogue and the knowledge base be fully geared towards the community needs and be driven by needs expressed via direct interaction between the developer team and the end users.

Multiple channels of knowledge transmission are foreseen (training, knowledge base, public webinars), and users will have the opportunity to provide feedback.

3.3.8 EXPECTED MAJOR OUTPUTS

Output name	A conference on data visualisation for public administrations in Europe
Description	The major high standing conferences on data visualisation are organized in the USA. The distance and participation costs are prohibitive for many public servants thus limiting their access to up-to-date knowledge in this quickly evolving and innovative domain. A (free of charge) conference on data visualisation will be organized where public servants will be able to listen to experts in the domain and attend workshops in their specific field of interest (e.g. geo-visualisation, infographics, data visualisation for decision making).
Reference	
Target release date / Status	2018 or 2019

Output name	Delivery of training data visualisation and data literacy
Description	The following training sessions are planned: <ul style="list-style-type: none"> ○ Data visualisations – essentials ○ Visualising data with selected tools ○ Data literacy ○ infographics
Reference	

Target release date / Status	2018-2019
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Output name	Webinars on data visualisations, data literacy and data quality
Description	<p>The sharing of knowledge on a regular basis is important for community building. The domain of data visualisation is broad. Therefore to cover the essential aspects several webinars will be envisaged. The topics will be selected together with the existing data visualisation community.</p> <p>They will also be useful for increasing knowledge about the data published by EU institutions and promote existing visualisation and data cleaning solutions.</p> <p>Webinars will be on different topics. Most of them will be available for all public administrations.</p>
Reference	
Target release date / Status	2018-2019

Output name	Hackathon results
Description	<p>Hackathons allow for direct interaction with reusers of open data and help to understand their needs, requirements with regards to the data formats, descriptions and other related aspects.</p> <p>They often result in innovative products and applications based on public data that can be further developed and possibly converted in a business model.</p>
Reference	
Target release date / Status	2018-2019

3.3.9 ORGANISATIONAL APPROACH

3.3.9.1 Expected stakeholders and their representatives

Stakeholders	Representatives	Involvement in the action
Publications Office of the European Union	Norbert Hohn, Agnieszka Zajac Promotion team	Supervising all activities Support in organization of a visualisation conference
DG ESTAT	Hannes Reuter (GISCO team)	Collaboration on visualisation on maps
DG COMM	Laurent Corvelyn, Jose Arcos	Collaboration on visualisation for the web
DG ENV	Joachim D'Eugenio	Project on visualising environmental reporting
JRC	Anders Friis Andersen, Andrea Perego, Lorenzino Vaccari	Collaboration on harvesting solution
DG CNECT	Daniele Rizzi	Collaboration with European Data Portal

3.3.9.2

3.3.9.3 Identified user groups

The following main user groups have been identified:

- The staff of the European Commission, institutions, agencies and other bodies working on data and metadata management, data visualisation, data publishing and presentation.
- The staff of public administration in Member States especially statistical institutes and national data portals.
- The users of data portals: researchers, journalists, data reusers.

3.3.9.4 Communication and dissemination plan

This is a continuation of activities of ISA² Action 18.2016. The communication will embrace the outcomes of 18.2016 that will be further improved in the scope of the new proposal.

It will target different types of audiences: staff of EU Institutions for the data visualisation catalogue and knowledge base, the multipliers for the new visualisations created, Member State administrations for the reusable visualisation solutions and the visualisation knowledge base as well as different profiles of the users of the EU Open Data Portal: research community, NGOs, citizens and businesses.

The communication of the project will be ensured through the following channels:

- The EU Open Data Portal network and the Publications Office's publishing officers network towards institutional data providers as well as its social media and other channels towards reuser communities
- European Data Portal towards affiliated Member State portals as well as networks of DGs in their domain of activity (e.g. ESTAT for Statistical Institutes).
- Data visualisation community

The main actions that will be envisaged are:

- Promotional materials, blog posts and tweets
- Presentations in interinstitutional meetings
- Data visualisation conference which is expected to have a big outreach in the domain
- Regular webinars on data visualisations
- Hackathons

3.3.9.5 Key Performance indicators

Description of the KPI	Target to achieve	Expected time for target
Number of corporate data visualisation solutions provided	4	2019
Number of data visualisations projects based on specific high value datasets	4	2019
Number of people who attended the trainings	100	2019
Number of people attending the webinars	200	2019
Number of people attending the conference on data visualisation	250	2019
Number of datasets harvested with DCAT-AP based harvester	100	2019
Number of raising awareness activities	10	2019

3.3.9.6 Governance approach

The Publications Office will ensure the chairmanship and the project management.

The key stakeholders will be involved in the evolution of the data visualisation catalogue and data visualisation community building, the organization of a data visualisation conference and webinars as well as the automatization of the publishing process of open data and the organization of a hackathon.

3.3.10 TECHNICAL APPROACH AND CURRENT STATUS

As described in the ISA² action 2016.18 the catalogue of data visualisations was created following a collaborative and iterative approach that engaged a number of key stakeholders from the EU Institutions. The prototype of the catalogue is almost finished and will be delivered to the Publications Office in July/August 2017. The catalogue can temporarily be accessed under the URL http://cpsv-ap.semic.eu/data_visualisation_catalogue/. Its integration into the EU Open Data Portal will be finalised by early 2018, in order to complete the offering for the open data users and data providers with data visualisations.

The ongoing project further delivered eight sample visualisations of three high-value datasets, namely CORDIS⁶¹, the Transparency Register and TED⁶². The data visualisations were built to look at the selected datasets from different perspectives. Each visualisation is supported by a short description which helps communicating its message to its target audience. Moreover, the Publications Office published the European Union budget as Linked Open Data (LOD).⁶³ Additionally, a series of questions about EU Budget together with accompanying Sparql queries have been elaborated. They allow to explore the EU Budget published on the EU Open Data Portal from different angles, namely via visualisations and an interactive dashboard.

Building upon those achievements, the project proposes working over the next two years on corporate solutions for groups of datasets (e.g. dashboards for reporting, visualisation of textual datasets), and on wizards in order to better guide the users.

In 2018 the catalogue of data visualisation will become part of EU Open Data Portal. Thus, new features and enrichment of the content will be continued in the EU ODP technical environment. The data visualisation catalogue module is based on Drupal which allows for internal handling of the content.

⁶¹ CORDIS data: <https://data.europa.eu/euodp/en/data/dataset/cordisref-data>

⁶² Tenders Electronic Daily data: <https://data.europa.eu/euodp/en/data/dataset/ted-1>

⁶³ It was a follow up of the development of conceptual data model of the EU Budget Vocabulary based on RDF (Resource Description Format) which defined the structure of the EU budget data

The visualisation solutions will be integrated into the catalogue and linked to the data published on the EU ODP.

The harvesting solution for the metadata based on DCAT-AP will be, as far as possible, based on open-source components that fit into the current architecture of the EU ODP. As stated previously, work done by the European Data Portal on connectors will be reused, whilst knowing that harvesting data repositories and other data bases will pose different technical challenges than the harvesting of standard-driven data portals.

The metadata associated with the description of data visualisation tools are described based on ADMS-AP⁶⁴ (a profile of DCAT-AP used to describe reusable solutions).

This will be accompanied by actions to:

- **build and strengthen the visualisation community** and the knowledge base through trainings, workshops, and regular webinars on specific visualisation topics (e.g. infographics, accessibility, cookies, data preparation, corporate glossaries).
- **enhance interoperability of metadata and datasets**, improve the data quality, increase data literacy and promote the systematic publishing of metadata on the EU Open Data Portal. For this purpose, the EU ODP will work on the development of harvesting solutions based on DCAT-AP⁶⁵.

The ISA² project 2016.18 was managed using internal resources. However, data visualisation is closely related to data science, and is multidimensional, complex and requiring a combination of different skills⁶⁶. Therefore in the new proposal Publications Office envisages to engage a technical project manager with expertise and experience in the domain of data visualisation, data science and programming in order to establish the needed bridges between different aspects of data visualisation, technical solutions and their deployment.

⁶⁴ ADMS-AP: https://joinup.ec.europa.eu/asset/adms/asset_release/adms-ap-joinup-version-20

⁶⁵ DCAT Application Profile for data portals in Europe, https://ec.europa.eu/isa2/solutions/dcat-application-profile-data-portals-europe_en

⁶⁶ See 8 hats of data visualisation by Andy Kirk <http://www.visualisingdata.com/2012/06/article-the-8-hats-of-data-visualisation-design/>

3.3.11 COSTS AND MILESTONES

3.3.11.1 Breakdown of anticipated costs and related milestones

Phase: Initiation Planning Execution Closing/Final evaluation	Description of milestones reached or to be reached	Anticipate d Allocation s (KEUR)	Budget line ISA/ others (specify)	Start date (Q2/2018)	End date (Q4/2019)
Not applicable for the whole column	Project Management	50	ISA2	Q2/2016	Q4/2017
	Development of catalogue of data visualisation tools and knowledge base	198	ISA2	Q2/2016	Q4/2017
	Support services for developing open data capabilities in the EU Institutions	110	ISA2	Q2/2016	Q4/2017
	Publishing and visualising EU budget and related data	40	ISA2	Q2/2016	Q4/2017
	Raising awareness and communication	20	ISA2	Q2/2016	Q4/2017
	Improvement of the catalogue of the visualisation tools features and maintenance of the content	60	ISA ²	Q2/2018	Q4/2019
	Working on corporate solutions for groups of datasets (e.g. dashboards for internal indicators allowing for business intelligence and monitoring, visualisation of non-statistical datasets e.g. ontologies, texts)	140	ISA ²	Q2/2018	Q4/2019
	Data quality guidelines	30	ISA ²	Q2/2018	Q4/2019
	Continuation of trainings on data visualisation and data quality	40	ISA ²	Q2/2018	Q4/2019
	Organize a conference on data visualisation	40	ISA ²	Q4/2018	Q4/2019
	Monthly or bi-monthly webinar on a specific visualisation topics (e.g. infographics, accessibility, cookies, data preparation, corporate glossaries, data quality)	30	ISA ²	Q3/2018	Q4/2019
	Harvesting solution for open data based on DCAT-AP	50	ISA ²	Q2/2018	Q4/2019
	Hackathon 2018, 2019 (awards)	20	ISA ²	Q2/2018	Q4/2019
	Project management (technical expertise of data visualisation and data science)	180	ISA ²	Q2/2018	Q4/2019

	Total	1008			
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3.3.11.2 Breakdown of ISA² funding per budget year

Budget Year	Phase	Anticipated allocations (in KEUR)	Executed budget (in KEUR)
2016		300	
2017		118	
2018	I	260	
2019	II	330	
2020			

3.3.12 ANNEX AND REFERENCES

Description	Reference link	Attached document
Report on reusable data visualisation tools to support data-driven policymaking (ISA.1.1)	https://publications.europa.eu/en/publication-detail/-/publication/16d868c4-7ef4-11e6-b076-01aa75ed71a1	
Workshop on Data visualisation tools in the EU institutions	https://joinup.ec.europa.eu/sites/default/files/isa_field_pat_h/presentation_workshop_data_visualisation.pdf	
Catalogue of data visualisation tools (including the inventory of tools)	<a href="http://cpsv-ap.semic.eu/data_visualisation_catalogue/<sup>67</sup/">http://cpsv-ap.semic.eu/data_visualisation_catalogue/⁶⁷/	
Knowledge centre of the catalogue	http://cpsv-ap.semic.eu/data_visualisation_catalogue/knowledge-center	
Report: Data visualisation service definition	http://52.50.205.146:8890/data_visualisation_catalogue/node/111	
Pilot data visualisation projects based on high value datasets published on the EU Open Data Portal	http://cpsv-ap.semic.eu/data-visualisation-pilot/CORDIS/ http://cpsv-ap.semic.eu/data-visualisation-pilot/TransparencyRegister/ http://cpsv-ap.semic.eu/data-visualisation-pilot/TED/map/ted_layout.html	

⁶⁷ Links to the visualisation catalogue and visualisation pilot projects are temporary (should be available only until January 2018).

Description of the project on Joinup	https://joinup.ec.europa.eu/asset/data_visualisation_and_open_data/description	
Training materials on Joinup	https://joinup.ec.europa.eu/asset/data_visualisation_and_open_data/og_page/workshop	
EU Budget as Linked Open Data report	https://joinup.ec.europa.eu/asset/data_visualisation_and_open_data/description	
Summary of the project (leaflet)	https://joinup.ec.europa.eu/sites/default/files/ckeditor_files/files/Open%20data%20publishing%20and%20visualisation.pdf	

3.4 AUTOMATIC BUSINESS REPORTING (2016.11) – FUNDING CONCLUDED

3.4.1 IDENTIFICATION OF THE ACTION

Type of Activity	Common Frameworks
Service in charge	FISMA B2
Associated Services	TAXUD, ECFIN

3.4.2 EXECUTIVE SUMMARY

Automation and data exchange between companies and authorities is relevant for many European countries as well to increase productivity. Thus for the European countries to become particularly strong in the digital area, there is a need for a good infrastructure, sound public data and a willingness to develop digital solutions that can create jobs and economic growth.

The project will work to investigate the potential of establishing ways of automating data exchange between companies and authorities in the European Union. The idea is that this project will help to strengthen the region as a digital forerunner and greatly improve the digital inner market in Europe.

Automatic business reporting is an ambitious vision that potentially can revolutionize the way companies do accounting. Key to fulfilling the vision is to replace the burden of reporting on companies with a digital infrastructure that involves a greater use of automation and data reuse between authorities and companies. Automatic business reporting is a paradigm shift from the current state of reporting where businesses report data to the authorities again and again, to a new state where the authorities can “pull” or “harvest” relevant data from the companies through the use of a central data repository. The goal is to harvest data at the lowest level possible in the companies to enable full automation of the reporting.

Automatic business reporting is a new concept where production data from the companies are stored in a central solution. The central infrastructure can be accessed by public institutions and private organizations. Access and privacy issues are managed by a user authentication system to regulate the distribution of data. The software needed to deliver the data is developed by private companies according to specific standards specified by the government. Once the standardized format is settled the market can develop and modify existing systems to the new standards.

Ideally, once the user authentication, the standardized format and the central repository is developed the following outputs will happen:

- Business reporting to public institutions will cease to exist. Instead public institutions will harvest the necessary data using the central repository
- Documentation requirements in the form of financial statements and budgets are replaced by granting access to the data in the repository

- Automatic business reporting facilitates new and innovative ways of linking sales, inventory management, supplier management and bookkeeping in the individual company
- The Danish government cut spending on controlling the companies for tax fraud and etc. as the quality of the data improves both by the increased mass of data and the level of detail.
- The individual companies will have much better business intelligence (BI) options as the general level of digitization is increased and systems providers can develop new BI solutions and improve the growth potential.

While Automatic business reporting is very advantageous for the government in terms of better control mechanisms and more accurate reports, the real benefits of Automatic business reporting are actually reaped in the companies. Fully implementing Automatic business reporting will eventually increase the digitization level in the companies by a large margin. Having better technologies and a more detailed insight in the company will strengthen the company's business intelligence and improve B2B-relations due to more accurate information about the individual companies as well as entire business sectors.

This project is a study of the potential of establishing Automatic business reporting in the European countries. The primary actions will be analysis and the outputs will be extensive knowledge about the subject at hand and executable results on how to proceed with the Automatic business reporting vision.

3.4.3 OBJECTIVES

- Investigate the potential of data sharing and reuse in the European region.
- Investigate the possibility of increased automatic and standardized reporting in the European countries.
- Investigate the potential and possibilities of efficient business intelligence and business-to-business relations for SME's in European countries.

3.4.4 SCOPE

The scope of the project is to:

- Define the vision and scope for an Automatic Business Reporting.
- Identify and analyse the potential of automatic business reporting in terms of public savings and benefits for private businesses. Deloitte has made a rough estimate of the potential savings of automated reporting in Denmark. The estimate concludes that automatic business reporting has the potential of saving businesses 5-7 billion DKK every year. This estimate has to be further qualified in a more detailed analysis. Similar analysis can be initiated in the other European countries
- Initiate a range of technical, legal, cultural, organizational and political analyses to evaluate the potential of automatic business reporting in the European countries and identify solutions to overcome these barriers in close coordination with the other two European case studies.

3.4.5 PROBLEM STATEMENT

Big data and data-driven companies will be essential if the European Union wants to maintain a key role in the global economy. Automatic business reporting incentivises SME's to become more data-driven and reduces the burdens of administrative reporting by introducing automatic data collection.

3.4.6 EXPECTED BENEFICIARIES AND ANTICIPATED BENEFITS

This initiative will strengthen the competitiveness and create growth for small and medium enterprises, which will be the expected beneficiaries. The companies spend a lot of time and resources on administrative reporting – a cost that is estimated to 1 billion euros in Denmark alone. Deloitte has made a rough estimate of the potential savings of automated reporting in Denmark. The estimate concludes that automatic business reporting has the potential of saving businesses 1 billion euros every year in Denmark. The potential savings in the European Union are not calculated, but similar results can be expected.

Beneficiaries	Anticipated benefits
Small and medium enterprises	1) Fewer administrative burdens 2) Higher degree of digitization in the individual companies 3) Increased business intelligence and easier business-to-business relations

3.4.7 RELATED EU ACTIONS / POLICIES

Action / Policy	Description of relation, inputs / outputs
ISA2: Specific activities in the field of financial reporting and auditing	In a global economy, there is a need for a global accounting language. Automatic business reporting requires a standardized accounting language to pull the data from the ERP-systems, so the two policies synergizes well.

3.4.8 REUSE OF SOLUTIONS DEVELOPED BY ISA, ISA² OR OTHER EU / NATIONAL INITIATIVES

Data standardization in the European union
Digitization strategies in the European countries

Development and use of digital reporting in other countries (Netherlands, Australia, etc.)

3.4.9 EXPECTED RE-USABLE OUTPUTS (solutions and instruments)

Output name	State of the art report
Description	The report will assess already existing building blocks, solutions, identify users, needs to assess the feasibility of the proposal.
Reference	To be published on Joinup
Target release date / Status	2016

3.4.10 ORGANISATIONAL APPROACH

3.4.10.1 Expected stakeholders and their representatives

Stakeholders	Representatives
The Danish Business Authority	Rasmus Eskild Jensen, Nils-Bro Müller
Agency for Digitisation in Denmark	n/a
Business authorities in MSs	The action will identify further stakeholders in the course of the project

3.4.10.2 Communication plan

The Automatic business reporting project requires legal adaption to become a success. As such the project is much more a political and administrative complex project rather than a technical issue. Thus, the communication plan will be built around this assumption and will rely heavily on gaining political support in the member states. Automatic business reporting can be introduced in different tempi and is thus flexible in the adaption phase.

3.4.11 TECHNICAL APPROACH

The action will first analyse the current state of affairs in the MS and on the EU level.

The report will serve as a basis for potential further actions.

3.4.12 COSTS AND MILESTONES

3.4.12.1 Breakdown of anticipated costs and related milestones

Phase: Inception Execution Operational	Description of milestones reached or to be reached	Anticipated Allocations (KEUR)	Budget line ISA/ others (specify)	Start date (QX/YYYY)	End date (QX/YYYY)
Inception	Analysis of the state of affairs in the MS and on the EU level (including existing accounting standards) and potential barriers	150		Q2/2016	Q4/2016
Inception	Creation of a data taxonomy for financial data	200		Q1/2017	Q3/2017
	Total	350			

3.4.12.2 Breakdown of ISA funding per budget year

Budget Year	Phase	Anticipated allocations (in KEUR)	Executed budget (in KEUR)
2016	Inception	150	
2017	Inception	200	
2018			
2019			
2020			

3.5 BIG DATA FOR PUBLIC ADMINISTRATIONS (2016.03)

3.5.1 IDENTIFICATION OF THE ACTION

Type of Activity	Study and reusable generic tools
Service in charge	DIGIT D.1
Associated Services	DIGIT.B.2, DIGIT.B.4, DG RTD.E2, DG CNECT.R3, DG CNECT.F4, CNECT.02, ESTAT

3.5.2 EXECUTIVE SUMMARY

The amount of data generated worldwide increases at an astounding pace - by 40% annually and will increase 30 fold between 2010-2020. Due to the segmentation of public services and due to using non-interoperable means to describe data, most of the data generated in the public sector is not available for re-use.

This action, titled 'Big Data for Public Administrations', aims at addressing the use of big data within public administrations' as a means for enabling wiser decision making. With recent technologies such as big data, data mining, social media, cloud etc. organisations have greater potentials in generating, creating and storing data, information and knowledge thus providing greater opportunities for wisdom. The previous phases of this action, started in 2015 aimed at:

- Carrying out a landscape analysis in order to identify the requirements and challenges of public administrations in Europe and the Commission in the context of big data and data analytics, as well as the on-going initiatives and best practices in these areas.
- Launching a number of pilot projects on big data and data analytics both with European Commission services and Member States public administrations. The output of these pilots (documentation, source code) has been published on the Joinup collaborative website⁶⁸..
- Identifying the requirements and designing the architecture of a big data test infrastructure. The big data test infrastructure will be an operational infrastructure with analytics services and supporting tools, which will allow Member States public administrations to experiment with big data and implement their own big Data pilots. The infrastructure has been designed in close cooperation with a working group composed (so far) of 8 MSs. The results will be published in Q4 2017. The actual implementation of the infrastructure has been proposed to be financed through the CEF programme, as part of the 2018 Work Programme. The proposal has been put forward as a joint effort with the European Data Portal project, already financed through the CEF programme. The European Data Portal will be one of the main sources of data to be processed and analysed on the infrastructure.

This action will continue to build upon the results of the previous phases. Specifically:

⁶⁸ https://joinup.ec.europa.eu/asset/isa_bigdata/home

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- Track 1: further identify big data and data analytics needs through cooperation with the Member States, with the aim of understanding the needed tools and services Member States' public administrations need in this domain. An additional objective is to enlarge the current working group of 8 Member States in 2018, in order to include more Member States interested in the action.
 - Track 2: develop re-usable tools, or generalise existing tools already in use in the EC services or in Member States, for big data processing and text/data analytics (e.g. analysis of open public consultations), to be used by Member States in different policy domains. The tools are meant to be shared on Joinup and re-used directly by public administrations, and/or deployed on the big data test infrastructure mentioned above.
 - Track 3: implement pilot projects, in cooperation with EC services or Member States public administrations, re-using the tools developed in track 2.

3.5.3 OBJECTIVES

- To further identify concrete opportunities and requirements in public administrations on big data analytics in different policy areas, especially supporting cross-border exchange of datasets and re-use of open data sets (e.g. open data published on the European Data Portal).
- To develop new tools supporting Member States' big data analytics needs and generalise and extend the solutions produced through the already launched pilots.
- To launch new co-operations with policy DGs and MSs through the launch of new pilots supported by the big data test infrastructure, designed in the previous phase of the action, in order to accelerate the data driven transformation.

3.5.4 SCOPE

This action includes in its scope activities related to the development of IT tools and the production of best practices and methodologies for gathering, processing and extracting knowledge from (big) data sources, with the aim of supporting decision-making processes in public administrations. Additionally, the action will include in its scope activities related to the sharing of knowledge, already available in Member States or EU Institutions, in this domain.

3.5.5 ACTION PRIORITY

This section is used to assess the priority of the proposal to become a programme's action according to Art. 7 of the ISA² decision⁶⁹.

⁶⁹ DECISION (EU) 2015/2240 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

3.5.5.1 Contribution to the interoperability landscape

Question	Answer
<p><i>How does the proposal contribute to improving interoperability among public administrations and with their citizens and businesses across borders or policy sectors in Europe?</i></p> <p><i>In particular, how does it contribute to the implementation of:</i></p> <ul style="list-style-type: none"> • <i>the new European Interoperability Framework (EIF),</i> • <i>the Interoperability Action Plan and/or</i> • <i>the Connecting European Facility (CEF) Telecom guidelines</i> • <i>any other EU policy/initiative having interoperability requirements?</i> 	<ul style="list-style-type: none"> • The European Commission has presented a Communication to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions titled 'Towards a thriving data-driven economy'. This communication focuses on the need for framework conditions that enable a single market for big data and cloud computing. The ability to handle and analyse big data is elementary in different areas particularly scientific research, public sector and innovation. • The EIF includes, as main underlying principles, the principles of "openness", "transparency", "reusability" and "technological neutrality". This action will, through the support to the execution of analytics projects on big data, facilitate the sharing of open data between public administrations; increase the transparency of decision-making in public administrations by supporting knowledge sharing on evidence-based policy-making practices; support the re-use of open-source data analytics tools developed by Member States of EU Institutions; and provide public administrations with the opportunity to test (open source) technologies in this domain before taking a decision on the technical way forward. • The action is also contributing to the objectives of the European Data Portal⁷⁰, funded by the CEF Telecom Programme, whose objective is to "harvest the metadata of Public Sector Information available on public data portals across European countries". The action will provide the tools to combine the data made available through the portal and to process it using analytical capabilities.
<p><i>Does the proposal fulfil an interoperability need for which no other alternative action/solution is available?</i></p>	<p>Multiple commercial and open-source products are available on the market to support (big) data analytics projects, and the market is rapidly evolving in this domain. However, the selection, set-up, configuration and implementation of such tools/products to cover</p>

⁷⁰ <https://www.europeandataportal.eu/>

	specific policy needs require significant resources and highly qualified data scientists, which are rarely available in public administrations. This action will contribute to fill in this gap by providing tools and support in this domain to public administrations, and by facilitating the sharing of already existing knowledge.
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3.5.5.2 Cross-sector

Question	Answer
<i>Will the proposal, once completed be useful, from the interoperability point of view and utilised in two (2) or more EU policy sectors? Detail your answer for each of the concerned sectors.</i>	<p>Potential areas of action, where big data could have a real and direct impact are:</p> <ul style="list-style-type: none"> • Foresight and agenda setting. The vast amount of data that is available to consider when developing a plan or taking an action is massive and in most instances, the limited human resources available do not provide enough manpower to execute such resource intensive work. • Improve evidence for evaluation assessments. In evaluation assessments, the use of big data could bring more accuracy by detecting complex and subtle patterns in bigger, all-encompassing datasets and by increasing the capability to analyse short term patterns. • Stakeholder consultations analysis. The action will provide a re-usable tool to facilitate the analysis of structured and unstructured (textual) feedback of citizens and other stakeholders, gathered in the context of public consultations. • Identification of unsafe/dangerous products on e-Commerce websites. A pilot has been launched in Q2 2017, aiming at using text mining techniques on users' feedback posted on e-Commerce website to spot potentially unsafe/dangerous products sold on the website.
<i>For proposals completely or largely already in operational phase, indicate whether and how they have been utilised in two (2) or more EU policy sectors.</i>	<ul style="list-style-type: none"> • Research and innovative medicine. The objective of the pilot was to identify the main trends in innovative medicine by analysing the content of the scientific publications coming from internal (e.g. CORDIS) and external (e.g. PubMed) sources. • Transposition of European Legislation. This pilot project aims at supporting the manual checks performed by staff members who need to verify whether a European directive is correctly and completely transposed in national legislation (in all 28 countries). • Social inclusion. A pilot project has been conducted in collaboration with the Comunidad de Madrid (Spain) in 2017 in this policy domain. The pilot aimed at identifying the impact of the social policies developed by the Madrid region the in different segments of

	the population.
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3.5.5.3 Cross-border

Question	Answer
Will the proposal, once completed , be useful from the interoperability point of view and used by public administrations of three (3) or more EU Members States? Detail your answer for each of the concerned Member State.	In 2017, a long list of requirements has been collected from different Member States to understand their needs in the area of (big) data analytics for policy making, especially with regards to analytics use cases and infrastructure needs. The needs have been collected through a consultation of the ISA network, through the creation of a working group. MSs on-board so far are: Czech Republic, Estonia, Hungary, Malta, Norway, Slovenia, Spain, and Portugal. The working group has shown significant interest in the action and its outputs. Additionally, the action has been presented to the ESS Big Data Task Force: the representatives have highlighted their interest in the action, and shown availability to (re-)use its outcomes.
For proposals completely or largely already in operational phase , indicate whether and how they have been utilised by public administrations of three (3) or more EU Members States.	A pilot has been conducted with the Comunidad de Madrid (Spain), as already mentioned in section 1.1.5.2. The outcome of the pilot has been presented during the SEMIC conference 2017 in Malta. The results of the Scientific Papers text mining pilot have been evaluated and re-used by the CSC of DG RTD, which deals with analysis of the output (deliverables and documents) of research programmes (e.g. Horizon 2020).

3.5.5.4 Urgency

Question	Answer
Is your action urgent? Is its implementation foreseen in an EU policy as priority, or in EU legislation?	The above-mentioned Communication from the Commission titled 'Towards a thriving data-driven economy', highlights that the annual growth of the big data sector is equivalent to 40%, making it one of the strongest assets for economy growth, posing substantial opportunities that have so far not been reaped by the European market players. It identifies a number of key actions for the EU to help seize the opportunities of this sector amongst which is the provision of the enabling technologies and underlying infrastructures and skills as well as the provisioning of public data resources and research data infrastructures.

How does the ISA ² scope and financial capacity better fit for the implementation of the proposal as opposed to other identified and currently available sources?	The only additional funding source covering the activities in this proposal could potentially come from DGs interested in participating in one or more pilots or in re-using the outcomes of the action. However, such additional budget has not yet been identified for 2018. In any case, this additional budget will only cover the specific needs of the participating DGs and will not be used to support wider re-use. ISA is the best fit to support knowledge sharing on IT tools and services with and among Member States, and to support development of tools that can be widely re-used by European public administrations.
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3.5.5.5 Reusability of action's outputs

Name of reusable solution to be produced (for new proposals) or produced (for existing actions)	Big data analytics for policy making
Description	The study investigates big data and data analytics initiatives launched by public authorities in Europe in order to provide insights. It analyses the potential or added value of big data analytics to help public administrations to reach their goals, and captures valuable lessons learnt and best practices.
Reference	https://joinup.ec.europa.eu/asset/isa_bigdata/document/big-data-analytics-policy-making-report
Target release date / Status	Published
Critical part of target user base	All staff in MSs public administrations willing to launch big data / data analytics projects to support policy-making.
For solutions already in operational phase - actual reuse level (as compared to the defined critical part)	Study has been distributed to a set of different stakeholders, both internal (e.g. data4policy group) and external (e.g. ISA Member State representatives).

Name of reusable solution to be produced (for new proposals) or produced (for existing actions)	Pilots Software Components
Description	The software components developed as part of the different pilots carried out under the ISA ² action: 1) Scientific papers analysis pilot (with DG RTD) - clustering of

	<p>scientific documents)</p> <p>2) National implementing measures pilot (with DG GROW) – comparison of EU Directives with National Implementing Measures using text analytics</p> <p>3) Social inclusion pilot (with Comunidad de Madrid – Spain) – segmentation of population for evaluation of social policies</p> <p>4) Identification of unsafe products on e-Commerce websites (with DG JUST) – use of webscraping and text analytics techniques to identify potentially unsafe products sold on e-Commerce websites.</p>
Reference	<p>1) https://joinup.ec.europa.eu/asset/isa_bigdata/asset_release/scientific-health-papers-text-mining-pilot</p> <p>2) https://joinup.ec.europa.eu/asset/isa_bigdata/asset_release/transpositions-big-data-pilot</p> <p>3) and 4) to be published</p>
Target release date / Status	Pilot 1) and 2) have been published. Pilot 3) completed and to be published in Q3 2017. Pilot 4) to be completed in Q4 2017.
Critical part of target user base	Member States and EU Institutions staff dealing with similar policy issues.
For solutions already in operational phase - actual reuse level (as compared to the defined critical part)	As explained in section 1.1.5.3.

Name of reusable solution to be produced (for new proposals) or produced (for existing actions)	Big Data Test Infrastructure study
Description	The purpose of this study is to identify the main key features of a “Big Data Test Infrastructure” and design its architecture. The infrastructure will be made available to any interested EC DGs, PAs and EUIs in Europe in order to facilitate the launch of pilot projects on Big Data, data analytics or text mining, and foster knowledge sharing in this area.
Reference	
Target release date / Status	Study to be completed and published in Q4 2017
Critical part of target user base	Member States public administrations and EC services needing and infrastructure to launch pilot projects on big data and data analytics.
For solutions already in	The intermediate deliverables of the study have been used as a

operational phase - actual reuse level (as compared to the defined critical part)	basis to propose the implementation of a big data and data analytics test infrastructure, currently proposed to be financed by the CEF programme, in combination with the European Data portal.
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Name of reusable solution to be produced (for new proposals) or produced (for existing actions)	DORIS – stakeholders' feedback analysis tool
Description	Nowadays, all public administrations are running public consultations to listen to their citizens. They are then confronted to the challenge of analysing the results, quickly and efficiently. The Doris Public Consultation Dashboard, originally developed by DG CNECT, has been proven to effectively address these needs within the European Commission. The objective is to continue the work started on the Doris tool by the ISA action 2016.04 – Participatory Knowledge for Decision Making, now concluded, and make it downloadable and usable by any public administration in Europe. The tool is originally designed to handle the answers received through EU-Survey, which is already available on Joinup. The Doris ISA2 system would be able to interface with other citizen engagement tools, including Futurium. The ISA2 version of Doris would therefore swiftly complement and inter-operate with the existing EU survey module and both tools would work together to deliver a great value to the interested public services and end-users.
Reference	
Target release date / Status	Q3 2018
Critical part of target user base	Member States public administrations and EC services staff dealing with analysis of stakeholder's feedback.
For solutions already in operational phase - actual reuse level (as compared to the defined critical part)	DORIS has been already used by several EC services to analyse the outcome of open public consultations.

3.5.5.6 Level of reuse of existing solutions

Question	Answer
<i>Does the proposal</i>	Action 2016.36 - Sharing and re-use: The reusable practices and

<p><i>intend to make use of any ISA², ISA or other relevant interoperability solution(s)? Which ones?</i></p>	<p>guidelines as well as the reusable software solutions delivered through this proposed action can adopt the strategy defined in Action 2016.36 in order to ensure that the outputs are shared and re-used with public administrations in Europe.</p> <p>Action 2016.20 – Joinup – European Collaborative Platform And Catalogue: The Joinup collaborative platform shall be used as a means for sharing the experiences as well as the deliverables of this action with the Member States' public administrations.</p> <p>Action 2016.07 – SEMIC: Reusable interoperability solutions, core vocabularies, the linked data pilots, studies (e.g. on the business value of linked data) and other resources made available through Joinup and which might be relevant to this action shall be explored and reused as much as possible in order to ensure interoperability as well as continuation of existing efforts.</p>
<p><i>For proposals completely or largely already in operational phase: has the action reused existing interoperability solutions? If yes, which ones and how?</i></p>	<p>To date, the Joinup platform has already been used to promote the action and publish some of its outputs.</p>

3.5.5.7 Interlinked

Question	Answer
<p><i>Does the proposal directly contribute to at least one of the Union's high political priorities such as the DSM? If yes, which ones? What is the level of contribution?</i></p>	<p>This action is linked to the following EU actions/policies:</p> <p>Digital Agenda</p> <ul style="list-style-type: none"> • Pillar I: Digital Single Market pillar. • Pillar II: Interoperability & Standards. <p>This action contributes to both pillars by providing methodologies, best practices, and solutions that allow processing and visualising of vast amounts of information, thus supporting re-usability of information and interoperability.</p> <p>COM(2014) 442: Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. This action addresses the need to provide the right framework conditions for a single market for big data and cloud computing as a means for helping accelerate the transition towards a data-driven economy.</p>

3.5.6 PROBLEM STATEMENT

The problem of	lack of skills, tools and methodologies to consume, process and extract relevant insights from large data sets, both external and internal, whose quantity, resolution and frequency is nowadays massively increasing thanks to digital technologies,
affects	European Institutions and public administrations in the Member States
the impact of which is	that, despite being at their disposal, this amount of information is not properly exploited to make evidence-based decisions
a successful solution would be	to provide administrations with tools, methodologies and good practises to properly gather, combine, and analyse data coming from different sources, and to support and help knowledge sharing between administrations in this domain.

3.5.7 IMPACT OF THE ACTION

3.5.7.1 Main impact list

Impact	Why will this impact occur?	By when?	Beneficiaries
(+) Savings in money	The availability of tools to be re-used by public administrations will save investment to be done in market studies or in buying commercial tools (where open source solutions are a valid alternative)	Tools have already been published on Joinup by this action. Additional tools will be published in 2018.	EU Institutions and Member States' Public Administrations
(+) Savings in time	Tools and methodologies for big data and data analytics can significantly increase the time spent by administrations' staff in data analysis, especially when the amount of information to be processed is large and the sources are diverse.	As above.	As above.
(+) Better interoperability and quality of digital public service	Tools to combine and analyse data, including data ingestion APIs, can facilitate data interoperability between different administrations. Tools to extract insights from (large amount of) data are key to increase the performance of public services and evaluate their impact.	As above.	As above.
(-) Integration	Integration and configuration costs need to be considered when integrating the	When the user decides to	As above.

costs	user's data sources (or other IT systems, if necessary) with the open source tools.	integrate the open source tools with other IT systems or data sources.	
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3.5.7.2 User-centricity

The previous phases of the action have been carried out in close cooperation with EC services Member States' representatives, both inside and outside the ISA² network (e.g. ESS Big Data Task Force, CEF expert group). Requirements, needs, use cases and priorities have been discussed and agreed upon with these stakeholders, through bilateral interviews and online workshops. Pilots carried out for EC services and Member States administrations have been implemented only after a detailed collection of requirements with relevant stakeholders. In 2018, the action will focus on widening the user base (including more Member States) and executing additional workshops.

3.5.8 EXPECTED MAJOR OUTPUTS

Outputs are described in section 1.1.5.5.

3.5.9 ORGANISATIONAL APPROACH

3.5.9.1 Expected stakeholders and their representatives

Stakeholders	Representatives	Involvement in the action
DIGIT.D1	HoU, Project officer	Unit in charge of the action
ISA Member States representatives	As appointed by members of ISA coordination group.	Provide needs and requirements, prioritise activities.
DG CNECT.R3	DORIS team	Contributes to the generalisation of the DORIS tool, originally developed by this unit.
DG CNECT.G1	European Data Portal responsible	This unit is in charge of the management and implementation of the European Data Portal. The European Data Portal project will provide requirements to this action and re-use its outputs.
ESS Big Data Task Force	ESTAT Big Data Task force members, representatives	The ESS Big Data Task Force has expressed interest in participating to the action, by providing requirements for tools to be developed and participating to pilot projects.

	appointed by National Statistical Institutes	
Data4Policy group (DIGIT, OP, CNECT, ESTAT, JRC, EPSC)	As appointed by the different DGs	The Data4Policy group is an internal EC group formed to implement a number of actions set out in the "Communication on Data, Information and Knowledge Management at the European Commission". The group will be consulted to prioritise the activities carried out by the present action.
CNECT.H4	CEF Programme Manager	Ensures alignment of the action's output with the objectives of the CEF programme.
DIGIT.D3	CEF PAO (project architecture office) responsible	Ensures architectural alignment of the action's output with CEF architectural principles.
Policy DGs	Policy officers appointed by policy DGs	Provide needs and requirements; prioritise activities, follow-up the business angle of the developed pilots.

3.5.9.2 Identified user groups

This action targets management and staff members of the European Union Institutions and Member States public administrations needing to leverage internal and external data to support decision-making. This includes both IT and non-technical users.

3.5.9.3 Communication and dissemination plan

Bilateral interviews and workshops with Member States representatives will be conducted to gather requirements and priorities the activities. This includes the organisations of webinars, as well as presentations during events and meetings, e.g. ISA² coordination group meetings, SEMIC conference, ESS Big Data Task Force meetings, internal EC workshops on data and data analytics, Data for Policy conference (international conference on data analytics for policy-making). The output of the action (studies, source code) will be published on joinup or other publicly accessible source code repositories (e.g. Github).

3.5.9.4 Key Performance indicators

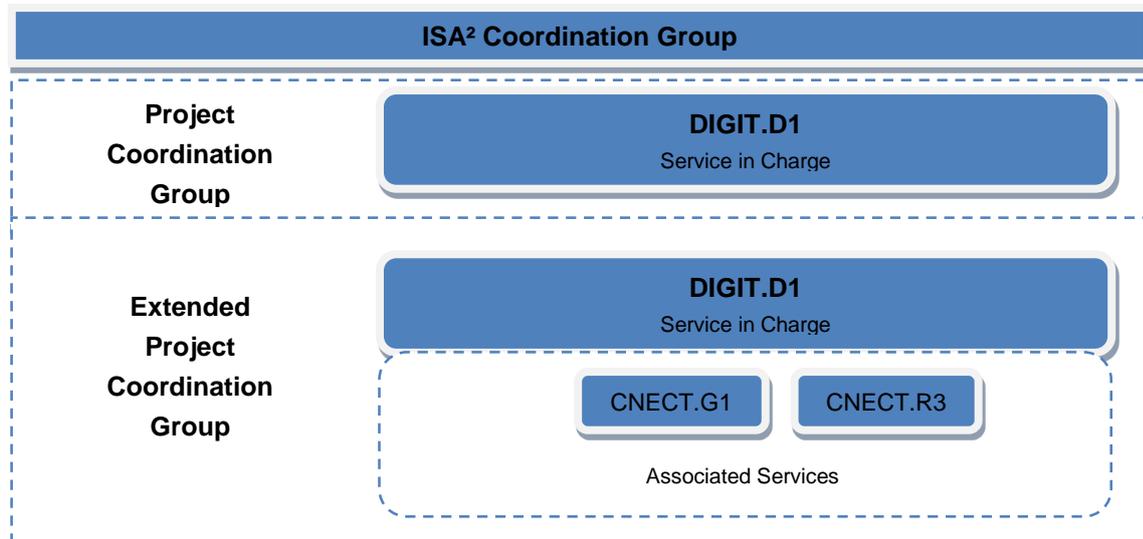
Description of the KPI	Target to achieve	Expected time for target
Number of MS involved in the working group	10	Q4 2018
Re-use of software components produced by the action in pilot or operational projects	10	Q4 2018

Number of pilots involving multiple MSs (at least 2)	2	Q4 2018
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3.5.9.5

3.5.9.6 Governance approach

This action is part of the ISA² programme and therefore it follows the ISA governance structure with the action reporting back to the Member States' representatives pertaining to the ISA² committee. This action will actively involve all associated services at each of the different stages. The governance structure for this action is depicted in the diagram below.



3.5.10 TECHNICAL APPROACH AND CURRENT STATUS

During the previous phases this action focused on the execution of a landscape analysis in Europe, in order to gather needs and best practices in the area of big data, and in the design of a big data test infrastructure, which can support the EC and Member States' public administrations in the execution of pilot projects on big data analytics. Additionally, the action has executed a set of pilots to demonstrate the capabilities of big data analytics for policy-making. In 2018, the action will be divided in 3 tracks:

- Track 1: further identify big data and data analytics needs through cooperation with the Member States, with the aim of understanding the needed tools and services Member States' public administrations need in this domain.
- Track 2: develop re-usable tools, or generalise existing tools, for big data processing and data analytics, to be used by Member States in different policy domains. The tools are meant to be shared on Joinup and re-used directly by public administrations, and/or deployed on the big data test infrastructure mentioned above.
- Track 3: implement a new wave of pilot projects (at least 3), in cooperation with EC services or Member States public administrations, re-using the developed tools.

3.5.11 COSTS AND MILESTONES

3.5.11.1 Breakdown of anticipated costs and related milestones

Phase: Initiation Planning Execution Closing/Final evaluation	Description of milestones reached or to be reached	Anticipated Allocations (KEUR)	Budget line ISA/ others (specify)	Start date (QX/YYYY)	End date (QX/YYYY)
Execution	Requirements assessment for new pilot projects and developments of tools	150	ISA ²	Q2 2018	Q4 2018
Execution	Implementation of tools and support in the execution of pilots	450	ISA ²	Q3 2018	Q3 2019
	Total	600			

3.5.11.2 Breakdown of ISA² funding per budget year

Budget Year	Phase	Anticipated allocations (in KEUR)	Executed budget (in KEUR)
2016	Execution	600	600
2017	Execution	591	
2018	Execution	600	
2019			
2020			

3.5.12 ANNEX AND REFERENCES

Description	Reference link	Attached document
A vision for Public Services	http://ec.europa.eu/digital-agenda/en/news/vision-public-services	
Data for Policy - A Study for big data and other innovative data-driven approaches for evidence-informed policy making	http://www.data4policy.eu/	

3.6 IMPROVING STATISTICAL DATA AND METADATA DISCOVERABILITY AND ANALYSIS (2018.03)

3.6.1 IDENTIFICATION OF THE ACTION

Service in charge	ESTAT B.1
Associated Services	ESTAT B.2 (LISO), ESTAT B.3, ESTAT B.5

3.6.2 EXECUTIVE SUMMARY

Semantic technologies have created new opportunities and expectations with respect to metadata and data discovery and analysis. In order to retain its position as leading providers of statistical information and to contribute to the modernisation of public administration by engaging more with citizen and businesses, National Statistical Institutes (NSIs) in charge of collecting and disseminating official statistics in the EU must uplift their data accessibility, discovery and analytics capabilities and follow a proactive approach in meeting the needs of their key users.

Firstly, end users of EU statistics are looking for better discoverability of open/public data. In this context, this action aims at improving discoverability and use of official statistics data through leveraging the rich European Statistical System (ESS) statistical metadata assets (concepts, codes, nomenclatures ...) using semantic technologies. To this end the project will built on existing and, where needed, develop semantic models for describing these statistical metadata assets. The statistical metadata will thus be made machine readable, discoverable and active in data querying and data integration jobs. This will contribute, on one side, to easing access to EU statistics and, on the other side, create the conditions for a wider semantic interoperability and accessibility of statistical data produced by public administrations in general. External data brokers (collecting and reusing data) will also benefit from well-established semantic metadata standards encouraging them to align with these standards and thus boosting the (re)use of statistics published by government agencies.

Secondly, policy analysts in charge of the design and evaluation of government policies have to embrace the complexity of societal and economic changes. This requires analysing always more detailed official statistics and enriching them with available external information. Currently the official data are publicly available but their usage is rather tedious as they require quite some technical skills to access and combine them and a good knowledge of the concepts involved. In this context, this action will provide an intuitive and integrated data analytics workbench and metadata driven services to explore, combine and analyse seamlessly a broad variety of data sources (potentially crossing borders) leveraging the wealth of official statistics and the richness of metadata assets compiled in the ESS. The technical infrastructure will be designed and built with a view to being shared across statistical organisations (common statistical metadata platform, reusable metadata services) but also to being reused by any public administration willing to improve the accessibility of its own data assets. The project will be based on business outcome driven pilots and on collaborative work.

The deployment of the enhanced capabilities in member states will build on the tied cooperation between statistical agencies and government service providers making use of data.

3.6.3 OBJECTIVES

The main objectives of the action are

- 1) to improve semantic interoperability and discoverability of official statistics produced by national statistical institutes by a) exposing as machine readable objects (semantic Web) the key ESS statistical metadata assets; b) packaging and deploying a set of services for statistical metadata management
- 2) to improve the accessibility of EU statistics and to provide data analytics capabilities to end users and policy analysts while ensuring adequate data protection.

The actions will benefit a wide range of stakeholders including end-users of statistics, policy analysts, citizen data scientist and NSI's statisticians and are aligned with the priorities of the eGovernment Action Plan by improving the conditions for accessing public sector data and services and facilitating their re-use by third parties not only confined to official statistical data but enhancing broader data use benefitting citizen.

3.6.4 SCOPE

The project will set up a statistical metadata platform based on semantic technologies and expose on there the existing ESS statistical metadata assets. It includes the identification of the relevant semantic technology standards and models and will build on the well-established Statistical Data Metadata Exchange (SDMX) standards. It will develop or reuse services for metadata management and metadata discovery and will put in place an appropriate governance. The project will also set up data analytics services and infrastructure that will use the existing metadata assets to support and streamline discovery and integration of open (and possibly confidential) data. As data access and data protection will be challenged by the newly offered capabilities, the project will also cover the data security aspects. The project is in synergy with the existing linked open data initiatives by contributing to the open data discovery by setting standard for and exposing statistical metadata assets. However, the project does not aim to expose new datasets as open data.

3.6.5 ACTION PRIORITY

3.6.5.1 Contribution to the interoperability landscape

3.6.5.2 Question	3.6.5.3 Answer
<p><i>How does the proposal contribute to improving interoperability among public administrations and with their citizens and businesses across borders or policy sectors in Europe? In particular, how does it contribute to the</i></p>	<p>The project will create and make available reference semantic resources to access and analyse official statistics. It will improve interoperability among public administrations that produce and exchange statistics (NSIs and beyond).</p>

<p><i>implementation of:</i></p> <ul style="list-style-type: none"> • <i>the new European Interoperability Framework (EIF),</i> • <i>the Interoperability Action Plan and/or</i> • <i>the Connecting European Facility (CEF) Telecom guidelines</i> • <i>any other EU policy/initiative having interoperability requirements?</i> 	<p>It contributes to boosting the use of open data and reinforcing open data initiatives at EC level.</p> <p>At ESS level, it contributes to the realisation of the ESS Vision 2020 objectives by supporting the Digital Communication project (DIGICOM) improving statistical information delivery by means of enhancing digital communication</p> <p>At EU level, it contributes to the implementation of the EC Communication on Data, Information and Knowledge Management in the European Commission⁷¹, in particular focusing on maximising the use of data for policy-making (Data4Policy)</p>

3.6.5.4 Cross-sector

Question	Answer
<p><i>Will the proposal, once completed be useful, from the interoperability point of view and utilised in two (2) or more EU policy sectors? Detail your answer for each of the concerned sectors.</i></p>	<p>The realisation of all Commission political priorities relies heavily on the quality and accessibility of the European statistics. The demand for information from various policy domains has evolved following the significant societal and economic changes. More and timely data and on the fly analysis based on different sources and across domains and borders are necessary for the EC and Public Administrations to achieve their overall policy objectives.</p> <p>This work will also contribute to the realisation of Data4Policy objectives in which ESTAT, CONNECT, JRC, DIGIT, OP and EPSC are collaborating</p>
<p><i>For proposals completely or largely already in operational phase, indicate whether and how they have been utilised in two (2) or more EU policy sectors.</i></p>	<p>N.A.</p>

⁷¹ https://myintracomm.ec.europa.eu/sg/info-management/Documents/communication_en.pdf

3.6.5.5 Cross-border

Question	Answer
<i>Will the proposal, once completed, be useful from the interoperability point of view and used by public administrations of three (3) or more EU Members States? Detail your answer for each of the concerned Member State.</i>	Yes, National Statistical Institutes (NSIs) from FR, IE, IT, NL are leveraging semantic web technologies to improve accessibility to the statistical products and to manage their increasingly large and diverse data assets. Eurostat in cooperation with these NSIs is currently realising proof of concepts in the domain. This proposal aims to develop standards, infrastructure and solutions that will certainly be (re)used by the forerunning NSIs in the first instance but most probably all the ESS and the surrounding statistical data ecosystem in the longer term.
<i>For proposals completely or largely already in operational phase, indicate whether and how they have been utilised by public administrations of three (3) or more EU Members States.</i>	N.A.

3.6.5.6 Urgency

Question	Answer
<i>Is your action urgent? Is its implementation foreseen in an EU policy as priority, or in EU legislation?</i>	On one side, "Data, Information and Knowledge Management" in the EC has received much attention in the last year and is calling for quick improvement in the years to come. In this context, this proposal will contribute to strengthen the EC open data initiatives by enhancing discoverability to open EU statistics. On the other side, many national statistical institutes and external data brokers are engaging in web technology to manage data and outputs and there is a risk of seeing similar but competing standard emerging in the statistical community. Joint developments and publication of standard reference semantic assets will avoid duplication of work and ensure better interoperability.
<i>How does the ISA² scope and financial capacity better fit for the implementation of the proposal as opposed to other identified and currently available sources?</i>	ISA2 financial capacity will allow to speed up building the capabilities and to keep the pace of evolving technology and emerging needs.

3.6.5.7 Reusability of action's outputs

Name of reusable solution to be produced (for new proposals) or produced (for existing actions)	Common ontology for official statistics
Description	<p>Common ontology for statistics will provide a reference conceptualization of official statistics establishing links between standard concepts, definitions and datasets. It aims at fostering semantic interoperability and comparability of statistics produced by public statistical agencies and public administrations in general. Common ontology enables to bridge data and concepts across statistical domains and across organisations. It will support statistical organisations to manage increasingly large amount of data assets and end-users discovering the large amount of open data.</p> <p>The ontology should not only cover the statistical products but also the production of these statistics. It can capitalise on the rich set of concepts, nomenclature and reference models already existing for official statistics. I will complement and boost the benefit of specifications like StatDCAT-AP.</p>
Reference	This will be based on establish statistical standard (e.g.: GSIM, GSBPM, the SDMX standard information model) and on established standard ontologies and specification (e.g. (Stat)DCAT-AP, SKOS/XKOS, Data Cube Vocabulary and PROV).
Target release date / Status	December 2019
Critical part of target user base	<p>32 National Statistical Institutes and other national authorities engaged in the production of EU statistics</p> <p>Public Administrations producing statistics</p> <p>EC DG's involved in open data initiatives</p> <p>Major commercial and non-commercial data brokers</p>
For solutions already in operational phase - actual reuse level	N.A.

Name of reusable solution to be produced (for new proposals) or produced (for existing actions)	Data analytics platform for user of EU statistics
Description	<p>Provide a platform accessible to policy analysts to analyse EU statistics in combination with other sources (including big data)</p> <p>The workbench builds on the ontology allowing cross-domain and possibly cross-database search.</p> <p>It provides a set of data analytics services that can be combined and reproduced.</p>
Reference	N.A.
Target release date / Status	December 2020 (beta release)
Critical part of target user base	<p>32 National Statistical Institutes and other national authorities engaged in the production of EU statistics</p> <p>EC DG's (policy analyst)</p>

	End users (in particular data scientist) of statistics
For solutions already in operational phase - actual reuse level (N.A.

Name of reusable solution to be produced (for new proposals) or produced (for existing actions)	Common ESS statistical metadata platform
Description	<p>A shared platform available for publishers and users to expose ESS metadata assets to be used as a reference by ESS partners and external data brokers. It would include for instance reference statistical classifications and statistical concepts and definitions and actionable representations of GSBPM and GSIM</p> <p>The shared platform should also allow for experimenting new data access and data sharing use cases benefiting from ESS metadata. In particular, it should provide sustainable hosting of the relevant metadata involved in the LOD pilots realised by the ESSNET ON LINKED OPEN STATISTICS (2017- 2019)</p> <p>The infrastructure will preferably be hosted on EC platform and based on existing and open source solutions fostering replication in MS. It provides basic utility service for metadata management: bridging with existing data resources, upload and visualisation of metadata ...</p>
Reference	ESSnet on Linked Open Statistics Existing EC platform and commercial/open source semantic technology products
Target release date / Status	December 2018
Critical part of target user base	32 National Statistical Institutes and other national authorities engaged in the production of EU statistics Other Public Administration producing statistics Major commercial and non-commercial data brokers
For solutions already in operational phase - actual reuse level	N.A.

Name of reusable solution to be produced (for new proposals) or produced (for existing actions)	Services for statistical metadata management and discovery
Description	<p>It will include</p> <ol style="list-style-type: none"> 1) Services for mapping data and concepts (ontology): It will in particular extend the SDMX-RI utility services for data mapping and develop new services to map new data sources (IoT, administrative and transactional data ..) 2) Advanced data and metadata search/discovery services : it will provide enhance functionalities for the

	ESS Metadata Handler (ESS MH), it will in particular provide a new integrated user interface to established reference metadata like the reference statistical classifications (RAMON) and concepts and definitions (CODED)
Reference	SDMX-RI – ESS Metadata Handler – RAMON and CODED reference metadata
Target release date / Status	December 2020
Critical part of target user base	32 National Statistical Institutes and other national authorities engaged in the production of EU statistics End users (in particular data scientist) of statistics
For solutions already in operational phase - actual reuse level	N.A.

Name of reusable solution to be produced (for new proposals) or produced (for existing actions)	Advanced ontology based interface to query EU statistics and other related sources
Description	Provide an intuitive (ontology based) interface to query EU and related statistics and possibly confidential data sets (remote execution).
Reference	N.A.
Target release date / Status	December 2020
Critical part of target user base	32 National Statistical Institutes and other national authorities engaged in the production of EU statistics EC DG's (policy analyst) End users (in particular data scientist) of statistics
For solutions already in operational phase - actual reuse level	N.A.

3.6.5.8 Level of reuse of existing solutions

Question	Answer
<i>Does the proposal intend to make use of any ISA², ISA or other relevant interoperability solution(s)? Which ones?</i>	Joinup The reusable semantic assets delivered by the project will be made available to anyone by means of Joinup, EIRA - European Interoperability Reference Architecture EIRA will be used to document the solutions for data analytic and semantic metadata services .

	<p>DCAT Application Profile for data portals in Europe in particular StatDCAT-AP</p> <p>The statistical ontology will seek full compatibility with StatDCAT-AP specification</p> <p>EIC - European Interoperability Cartography</p> <p>This tool will be use to look for existing building blocks and to inventorise new solutions</p> <p>Further synergies with existing ISA2 projects will be developed in particular "<i>Development of an open data service, support and training package in the area of linked open data, data visualisation and persistent identification</i>" and "<i>Big Data for Public Administration</i>"</p>
Has the action reused existing interoperability solutions?	N.A.

3.6.5.9 Interlinked

Question	Answer
<p><i>Does the proposal directly contribute to at least one of the Union's high political priorities such as the DSM? If yes, which ones? What is the level of contribution?</i></p>	<p>The proposal contributes to the priorities of the eGovernment Action Plan by improving the conditions for accessing public sector data and services and facilitating their re-use by third parties not only confined to official statistical data but enhancing broader data use benefitting citizen.</p> <p>The proposal contributes also to the Commission corporate strategy on maximising the use of data for policy-making (Data4Policy⁷²) coordinating the efforts of ESTAT, CONNECT, JRC, DIGIT, OP and EPSC in the domain of data analytics. By providing enhanced data discovery, integration and analytics capabilities to EU and related statistics, the proposal will facilitate policy making and evaluation.</p>

3.6.6 PROBLEM STATEMENT

Firstly, Web technologies have created new opportunities and expectations with respect to metadata and data discovery and analysis. In order to retain its position as a leading provider of statistical information in this rapidly evolving context, these agencies must upgrade their data integration capabilities and follow a more proactive approach in meeting the data needs of their key users. These technologies are not yet fully exploited by government statistical agencies.

Secondly, for a long time, statistical organisations in the ESS and beyond have been collaborating to harmonise concepts and definitions used in statistical production with a view to improving coherence

⁷² See COMMUNICATION TO THE COMMISSION

On Data, Information and Knowledge Management at the European Commission 18.10;2016

and comparability of statistics produced for the EU. Standards and infrastructure for the exchange of statistical data and metadata across the ESS have been developed and are operational. Despite the important metadata assets available their full potential to improve accessibility and boosting data analytics capabilities is not yet exploited.

The problem of	Still not satisfactory discoverability of open statistical data produced by government statistical agencies and capabilities for combining them with other sources
affects	End users and re-users of EU statistics
the impact of which is	Lowering value creation based on the existing data and difficulty to leverage new data sources ("big data")
a successful solution would be	Provide and expose the rich set of metadata available in the ESS as linked data to serve as reference for public administrations and external data brokers producing statistics

The problem of	Policy analysts that have assemble and analyse the statistical data to monitor and evaluate public policies requires technical skills to access official statistics and to combine them with other sources
affects	the depth and the timeliness of policy recommendations
the impact of which is	a risk to look for alternative data services and data brokers despite the inherent issues
a successful solution would be	Provide an intuitive and integrated data analytics workbench and services to combine and analyse seamlessly a broad variety of data sources and leveraging the wealth of official statistics produced in the ESS

The problem of	Increasing numbers of data sources coming from survey, public administrations and external sources generated by the digital world are still organised in silos making difficult to realise data integration
affects	NSIs statisticians that have to produce robust and high quality statistics combining these different sources
the impact of which is	difficulty for the industrialisation of the production of new statistics based on new information sources
a successful solution would be	To provide them with a rich metadata ecosystem and services that fosters the use of the various information sources available and provide capabilities to set up complex workflows combining different sources while ensuring traceability and reproducibility

3.6.7 IMPACT OF THE ACTION

3.6.7.1 Main impact list

Impact	Why will this impact occur?	By when?	Beneficiaries
(+) Savings in money	Avoid duplication of tasks in developing national centric ontologies for statistics	2019	NSIs and related public administration
(+) Savings in money	Economies of scale sharing a metadata platform in the ESS and reusing data/metadata platform building blocks and services	2019	NSIs and related public administration
(+) Savings in time	Straightforward and flexible access to ESS statistical data and resources	2020	External users and policy makers
(+) Savings in time	Speeding up uplifting of data architecture in MSs through reuse of semantic standards and building blocks	2019	NSIs
(+) Better interoperability and quality of digital public service	Reference ontology for statistics and related utility services to map data to reference concepts will boost cross domain and cross organisations data exchange and queries	2020	Public administration collecting and consuming data
(-) Integration or usage cost	Easier access and integration of official statistics data into analysis	2020	External data brokers and private companies

3.6.7.2 User-centricity

End user focus in the proposal is ensured by the close coupling of this initiative with the ESS Vision 2020 DIGICOM project that engaged proactively in a regular dialogue with end-users to understand deeper their needs. For instance, the LOD pilots to be carried out by a consortium of NSIs (ESSnet) funded by the DIGICOM project will right from the beginning engage with potential users to drive the benefits of LOD approaches for statistical dissemination.

NSIs which will be the main beneficiaries of reusable components will be associated to the project from the onset through the collaboration mechanisms put in place in the ESS (ESSnets projects, ESS Vision Implementation Network, ESS Enterprise Architecture Board).

EC policy DGs will be a central focus when developing the data analytic capabilities and will be actively involved during the collection of requirements. For this purpose, the project will benefit from the coordination mechanisms already in place at EC level for the implementation of the Data4policy strategy

3.6.8 EXPECTED MAJOR OUTPUTS

Output name	Enhanced governance for ESS statistical metadata
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Description	The current metadata governance will be upgraded to integrate new functions like URI management, versioning, more decentralised management, coordination with other standards (SDMX, DDI, INSPIRE, W3C, LOD – standard vocabulary – DCAT, upper level ontologies ...) Guidelines and policy for using and publishing on the shared platform will be provided.
Reference	
Target release date / Status	December 2019

Output name	Data protection and security
Description	Guidance and support for the handling and protection of confidential data (in the context of data analytics and remote execution) in line with ESS IT Security framework
Reference	ESS IT security framework
Target release date / Status	December 2018 and then continuous

3.6.9 ORGANISATIONAL APPROACH

3.6.9.1 Expected stakeholders and their representatives

Stakeholders	Representatives	Involvement in the action
ESTAT	Unit B1 – B2 (LISO) – B3 – B5	Co-project managers and solution providers
SEMIC community	StatDCAT-AP Working Group	Coordination and synergies
EC DGs (DG CONNET, JRC, DIGIT, PO)	EC DGs involved in EU open data policy and Data4policy	Coordination, feedback, reuse and integration with existing solutions
ESS NSI's	DIGICOM WP3 steering group and ESSnet Linked Open Data members	Expertise, consolidation of requirements
UNECE	Official statistics community involved in Modernisation of official statistics	Feedback, awareness, synergies

3.6.9.2 Identified user groups

Solution name	End users
Common ontology for official statistics	Data architects in 32 ESS NSIs (and potentially more, considering the role of the ESS in the global statistics environment) and in EU public administrations External data brokers (reusing EU statistics and producing statistics) (Citizen) Data Scientists

Common ESS statistical metadata platform	32 ESS NSIs and other (international) statistical organisations
Services for statistical metadata management and discovery	Users of EU statistics in general 32 ESS NSIs, EU public administrations and other (international) statistical organisations Any organisation dealing with data production
Enhanced governance for ESS statistical metadata	32 ESS NSIs and other international statistical organisations
Advanced ontology based interface to query EU statistics and other related sources	Users of EU statistics in general 32 ESS NSIs, EU public administrations and other (international) statistical organisations External data brokers (reusing EU statistics and producing statistics)

3.6.9.3 Communication and dissemination plan

The proposal contributing both to the ESS Vision 2020 implementation project on Digital Communication and to the Commission initiative on Data4policy it will benefit from well-established communication channels respectively, inside the ESS community, and, inside the EC Data information & knowledge management community

The main stakeholders and tentative related communication channels are:

European Commission	MyIntraComm Data4policy internal communication (share points) Ad hoc seminar and workshops in the framework of data4policy initiative Leaflets
Eurostat staff	Eurostat-Cybernews Eurostat-Infos Lunchtime presentations Ad hoc seminar and workshops
NSI staff	European Statistical Training Program (Linked Open Data course) Quarterly newsletter on Vision implementation Videos and webinars on the Vision implementation
NSI management	Regular presentation of project advances (Vision Implementation Group) ESS Website Circabc and CROS Portal Leaflets
General Public	Eurostat website (ESS vision dedicated section) Joinup
Official statistics Community	Conferences, Workshops at UN(ECE) level Leaflets

3.6.9.4 Key Performance indicators⁷³

Description of the KPI	Target to achieve	Expected time for target
Number of semantic assets	50% of ESS metadata assets are	By 2010

⁷³ KPI will be refined in the initiation phase of the project

(URIs) published on the ESS common metadata platform	published as LOD resources	
Number of members of the Join up community	At least 30 member increase per year	Till 2022
Number of NSIs and other public administrations reusing metadata management and query services	5 32+	By 2020 By 2025
Number of policy DG using data analytic workbench and service	8 All relevant DG's	By 2020 By 2025
Number of statistical domains providing advanced data analytics service to DG through the ISA2 solution	10	By 2020

3.6.9.5 Governance approach

Project owner: E. Baldacci, Director - Methodology; corporate statistical and IT services (ESTAT.B), chair of the Project Management Board (PMB).

The **PMB** will include the 4 Eurostat units (B1, B2, B3, B5) involved in the project, internal Eurostat stakeholders (e.g. geospatial unit, dissemination unit) and key EC stakeholders (OP , DIGIT ...)

The project will report/link to different governance/advisory body

In Eurostat

- Eurostat IT Advisory Committee
- Eurostat Director's Meeting

In the ESS

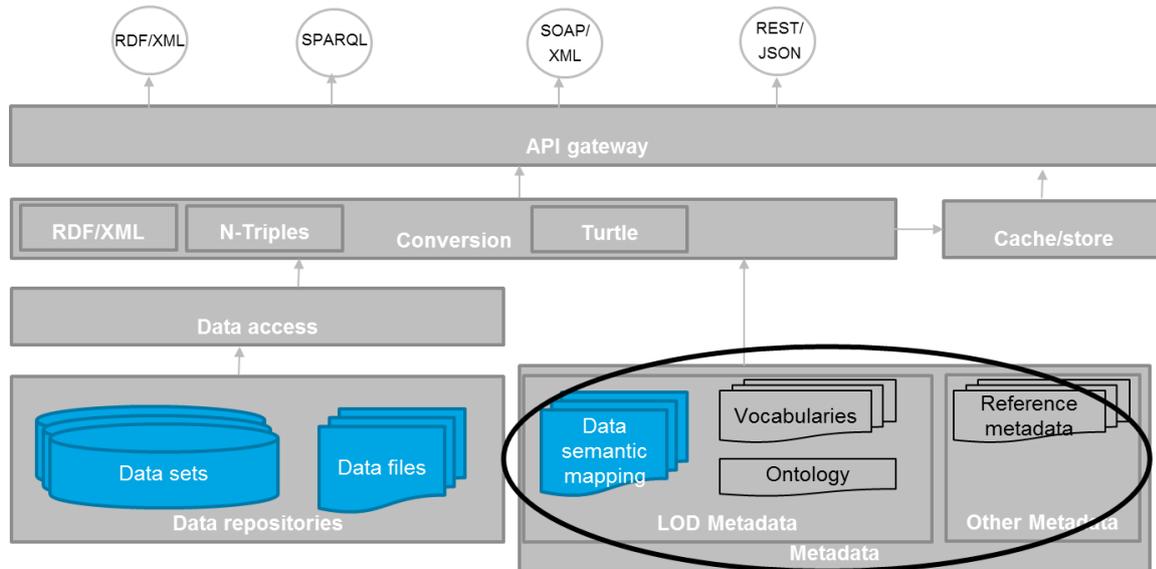
- The ESS Task Force on Digital Communication;
- The ESS Working Group on standards and IT;
- The ESS Expert Group on IT security
- ESS IT Director's Group (ITDG);

At EC level,

- IT Governance: the [IT Board for IT development](#)
- ISA2 Governance bodies (through monitoring & evaluation reports, reporting about sub-delegated credits usage)
- The Data4 policy steering/sherpa group and thereby to the EC Data, Information and Knowledge management stakeholders

3.6.10 TECHNICAL APPROACH AND CURRENT STATUS

The project will align with the Reference Data Architecture for Official Statistics that is being developed at UNECE level. It leans on standard reference architecture for LOD focusing on the metadata component (see below). Architecture design for data analytics workbench will aligned with EIRA recommendation and models.



Task 1: Develop reference ontologies for statistics

Activities: Stocktaking of existing LOD initiatives and resources (EC, ESS, WW), analysis and review of ESS metadata assets, identification, development and testing of relevant standard models, collection of requirements, ESS governance for the new artefacts and standards, hands-on and guidelines.

Deliverables: Documentation of ESS metadata assets including their structure and characteristics, user requirements for the target data model, implementation of actual data models and resources, linkage possibilities between ESS metadata assets and data assets and other Linked Open Data/Metadata sources; Guidelines and hands on; Governance document.

Current status: Not started

Task 2: Build a shared platform and services for ESS metadata

Activities: Definition of use case, collection of requirements, architecture design, review of existing infrastructure building blocks (EC, ESS), solution design, acquisition/resue of technology/products, service and UI development/tailoring, configuration and deployment, testing and training

Deliverables:

- Solution architecture for the shared platform
- Integrated solution for the ESS metadata platform and service
- Where relevant : open source code for services
- Guidelines for usage, training and on site coaching

Current status: Not started

Task 3: Expose and provide access to ESS metadata

Activities: Conversion of existing metadata assets into the target model/format, quality and consistency checks, mapping with data resources and URIs

Deliverables:

- Key metadata assets exposed as RDF
- Catalogue of metadata, user documentation, hands-on

Current status: Not started

Task 4: Build a metadata driven data analytics workbench

Activities: Definition and piloting of use cases, collection of data analytics requirement for policy DG's, architecture design, review of existing infrastructure building blocks and solutions (EC, ESS) and market (open source) solutions, solution design, acquisition of technology/products, service and UI development/tailoring, configuration and deployment, testing and training

Deliverables:

- Solution architecture for the data analytics workbench platform and technical documentation
- Integrated platform for data analytics services

-
- Where relevant : open source code for services (e.g. cross organisation queries)
 - User guidelines and hands-on, training and on site coaching

Current status: Not started

Task 5: Develop guidance and support for the security and management of confidential data in the context of data analytics

Activities: Define data classification scheme and the related risks. Analyse and develop guidance for required protection. Amend the ESS IT security framework to cover data analytic uses cases. Support to implementation including incident management

Deliverables:

- Risk analysis on data analytics services based on public and confidential datasets
- Updated ESS IT security framework and IT security policies
- Architecture patterns for "secured" data access and analytics

Current status: Not started

3.6.11 COSTS AND MILESTONES

3.6.11.1 Breakdown of anticipated costs and related milestones

Phase: Initiation Planning Execution Closing/Final evaluation	Description of milestones reached or to be reached	Anticipated Allocations (KEUR)	Budget line ISA/ others (specify)	Start date (QX/YYYY)	End date (QX/YYYY)
Inception	Project plan	0	ESTAT	Q4/2017	Q1/2018
Inception	Requirement and design for a shared metadata platform	100	ESTAT (ESSnet)	Q1/2018	Q2/2018
Execution	Reference ontology for statistics and metadadata asset release	600	ISA2	Q2/2018	Q4/2020
Execution	Shared ESS metadata platform with basic services	600	ESTAT 200 ISA2 400	Q3/2018	Q4/2019
Inception and Execution	Advanced metadata management and querying services for ESS	800	ISA2	Q1/2019	Q4/2020
Inception	Requirement and design for a data analytic platform and service	200	ESTAT	Q3/2018	Q4/2018
Execution	Data analytic platform and service	1200	ISA2	Q1/2019	Q4/2020
Execution	Security guidance, architecture	400	ISA2	Q3/2018	Q4/2019
	Total	3900	ISA2 3400 ESTAT 500		

3.6.11.2 Breakdown of ISA² funding per budget year

Budget Year	Phase	Anticipated allocations (in KEUR)	Executed budget (in KEUR)
2018	Execution	1000	
2019	Inception	300	
2019	Execution	1500	
2020	Execution	600	

3.6.12 Planning for the tendering procedures to be launched for the action

Call for tenders foreseen Global amount in KEUR	Call for Tenders Duration in years	Indicative planning of publication (QX/YYYY)
Call for tender: reference ontology for statistics (400k)	1,5 years	Q2 2018
Call for tender : security analysis, guideline and services (400k)	1 years	Q2 2018
Call for tender and/or specific contracts: advanced service for metadata query and management (1200k)	2 years	Q2 2019

3.6.13 ANNEX AND REFERENCES

Description	Reference link	Attached document
ESS Vision 2020	http://ec.europa.eu/eurostat/web/ess/about-us/ess-vision-2020	-
Digital Communication DIGICOM) project factsheet and business case	http://ec.europa.eu/eurostat/documents/7330775/7339647/DIGICOM+fact-sheet+04032016/5b61143f-ca4d-4983-9436-fa8b72956800 http://ec.europa.eu/eurostat/documents/7330775/7339647/DIGICOM+Business+Case+1.0/8a2f1b42-4101-4208-9c49-1d1819604047	
Call for proposal ESSnet Linked Open Data		 Annex I - Technical specifications.docx
ESS key metadata assets	http://ec.europa.eu/eurostat/data/metadata	
SDMX Standard	https://sdmx.org/	

SDMX Reference Infrastructure (SDMX-RI)	https://webgate.ec.europa.eu/fpfis/mwikis/sdmx/index.php/SDMX_Reference_Infrastructure_SDMX-RI	
Reference Data Architecture for Official Statistics	https://statswiki.unece.org/display/DA/Data+Architecture+Home	

3.7 COMPARED - Text mining solution to support the evaluation process of research grant applications (2018.07)

3.7.1 IDENTIFICATION OF THE ACTION

Service in charge	JRC.I.3
Associated Services	RTD

3.7.2 EXECUTIVE SUMMARY

Public funding agencies are investing billions of Euros in research and innovation (R&I) projects every year. Funding mechanisms can be improved to reach higher funding efficiency e.g. by aiming at the reduction of unnecessary duplication or overlaps between research proposals, increasing the quality of incoming proposals and decreasing the number of submitted R&I projects. There is also no doubt that the process of evaluating research proposals should be based as much as possible on scientific evidence. One way funding agencies could work towards this is by facilitating the sharing to other agencies of data related to public funding of research in Europe. But not all funding agencies have sufficient expertise in data analytics to act on this issue and the European context, with many funding mechanisms at regional, national, or European levels, does not help. This diversity of funding mechanisms is an asset but also a burden as it makes connecting funding schemes together difficult.

Through the development of a semantic similarity platform that would select documents relevant to the evaluation process, COMPARED aims at supporting evidence-based decision-making in the field of public funding of R&I. The project aims to achieve data interoperability but not interoperability of IT systems. Indeed, overall interoperability does not hinge on data availability of funded research alone and actually depends on systems design, processes and rules, which are context specific and therefore legitimately localised. By giving funding agencies, applicants and other stakeholders access to a semantic platform for the assessment of research proposals, the project aims to contribute at reducing unnecessary research duplication, reducing scientific overlap between funded projects, and at increasing the quality of R&I proposals while reducing the number of incoming proposals. Recent publications have identified these issues as key to maximise the impact of publicly-funded R&I^{74,75,76}. This was also confirmed in a recent report by an independent high-level group recommending the European Commission to align national and EU R&I investment schemes, establish synergies with other funding programmes in Europe, and increase the impact of publicly-funded research in Europe⁷⁷.

Applicants to publicly-funded research programmes could also benefit from means to verify how similar their proposal is to funded R&I projects and other documents (e.g. scientific publications or patents). This would help applicants submit more original projects or help justify why research has to be duplicated, and will contribute to increasing the quality of research proposals entering the evaluation process at public funding agencies. Another benefit of giving access to grant data to applicants would be to reduce the incoming number of grant applications for funding agencies, as applicants would receive indications on similar projects already funded. This reduction of incoming

⁷⁴ *Concentrating on the Fall of Labor Share; CEP Discussion Paper No. 1476; Grell, Kevin Berg – Marom, Dan – Swart, Richard (2015): Crowdfunding, The Corporate Era, Elliott and Thompson, London, 218 p.*

⁷⁵ *Funding agencies urged to check for duplicate grants, Nature, January 2013, volume 493.*

⁷⁶ *The Economic Rationale for Public R&I Funding and its Impact, European Commission DG Research & Innovation, ISBN: 978-92-79-65270-7*

⁷⁷ *"Lab-Fab-App, investing in the European future we want", Report of the independent high level group on maximising the impact of EU research & innovation programmes. European Commission DG Research & Innovation, ISBN: 978-92-79-70069-9*

proposals would have a significant added value for funding agencies as it could reduce operational costs related to grant evaluation. In addition, as most of R&I today is privately funded, making some parts of COMPARED publically accessible would also allow private actors of R&I (companies, investment firms) to use the platform to reduce duplication in R&I investments and overlap between research projects.

The deliverables of the COMPARED project will consist of a pilot web-based platform, the first version of the database containing grants data and the system for collecting data, and a set of recommendations for possible further extension and full deployment of the system. From the technical point of view, preliminary tests have been performed to assess the technical feasibility of such a semantic retrieval of documents, based on the text of an incoming R&I proposal. The results of these tests were positive. The pilot platform that will be developed during the project will be based on user requirements provided by experts involved in the project and by the advisory board. This key input will be collected at the beginning of the project to drive the design of the platform. This will maximise impact on the evaluation process and help customise the platform with relevant features and visualisations. During the pilot phase, legal issues related to data will be explored and various solutions for translation of research proposals into English will be tested. To prepare for a possible wide dissemination of the platform, contacts will also be made with additional member state funding agencies and associations. A panel of experts in grants evaluation will accompany the project. This panel will review the work accomplished and set a list of recommendations for further development and deployment.

The Joint Research Centre of the European Commission has a solid expertise in text and data mining in which it is active for more than 15 years⁷⁸. The present project will be located in the Text Mining Competence Centre recently launched by JRC to serve the Commission with text mining solutions.

3.7.3 OBJECTIVES

The overall objective is to confirm the feasibility and usefulness of a semantic platform for the evaluation of research proposals. Specific objectives are:

1. Develop a pilot web application that evaluators of R&I proposals can use to obtain similar documents relevant to the evaluation process. This platform would provide additional information useful for grant assessment but does not aim at replacing existing evaluation processes used by agencies.
2. Develop the first version of the database containing the corpus of data needed for the semantic comparison of research proposals and of the system to collect data. Data on research grants will be coming from European funding bodies (e.g. Commission or Eureka) and from national funding agencies. Additional data related to patents and to scientific literature will be considered as well.
3. Reach out to stakeholders and create a community of potential users to drive the development of the COMPARED platform.

3.7.4 SCOPE

This project aims to provide for the design, development, implementation, and operation of a semantic similarity pilot platform to support the process of evaluating research proposals. The end product will be a pilot web-based application, where users can retrieve documents semantically similar to the

⁷⁸ Check <http://emm.newsbrief.eu> and <http://www.timanalytics.eu> for concrete examples of IT solutions.

proposal they are evaluating at the time. The project will also deliver a recommendation report from a group of experts, confirming or disproving the usefulness of such a platform and a possible scale-up. It should be noted that the semantic similarity platform does not aim to replace IT systems used to perform evaluation of proposals, neither does it aim to harmonise evaluation processes for research proposals throughout Europe or data standards. Rather, it aims at complementing processes operated in Member States by creating a bridge between evaluation processes.

3.7.5 ACTION PRIORITY

3.7.5.1 Contribution to the interoperability landscape

Question	Answer
<p><i>How does the proposal contribute to improving interoperability among public administrations and with their citizens and businesses across borders or policy sectors in Europe?</i></p> <p><i>In particular, how does it contribute to the implementation of:</i></p> <ul style="list-style-type: none"> • <i>the new European Interoperability Framework (EIF),</i> • <i>the Interoperability Action Plan and/or</i> • <i>the Connecting European Facility (CEF) Telecom guidelines</i> • <i>any other EU policy/initiative having interoperability</i> 	<p>The project will ignite data interoperability in a field where a real need for more cross-border collaboration exists, but for which there are no IT solutions yet. Some initiatives like the Lead Agency Model offer models for cross-border collaboration but there exists today no means to compare R&I grants at a European scale. The first benefit of the project will be to establish data interoperability between funding agencies in different member states. This will be done with minimum disturbance to processes operated today by funding agencies: there will be no direct impact of the COMPARED platform on IT systems operated by public funding agencies. In addition the web application will be accessible through simple url links.</p> <p>The current project is in line with 2 ERA priorities⁷⁹ and with a recent report by an independent high-level group delivered to DG Research and innovation, which encourages the European Commission to align national and EU R&I investment schemes, to establish synergies with other funding programmes in Europe, and to increase the impact of publicly funded research in Europe⁸⁰. The project will also contribute to opening up access to grants data, which is common practice e.g. in the US and the UK. Opening access to grants data, however, can only be of real value if there is a single point of access to the data. Through the</p>

⁷⁹ "More effective national research systems that include increased competition within national borders and sustained investment in research" and "Transnational cooperation and competition which define and implement common research agendas on challenges, raise quality through Europe-wide open competition, and construct and run key research infrastructures on a pan-European basis".

⁸⁰ "Lab-Fab-App, investing in the European future we want", Report of the independent high level group on maximising the impact of EU research & innovation programmes. European Commission, DG Research & Innovation, ISBN: 978-92-79-70069-

<i>requirements?</i>	COMPARED platform data that are today not available would be made so in a common format. Openness will also apply to the project itself, which will involve real users from design to testing and validation. Dissemination and access to data will be royalty-free, but restricted to non-profit activities.
<i>Does the proposal fulfil an interoperability need for which no other alternative action/solution is available?</i>	There are today no IT solutions for addressing the lack of informed decision-making, when it comes to the evaluation of research project proposals. Some local solutions exist, however they cannot work in isolation. The real issue is related to the fragmentation of the funding mechanisms in Europe and the difficulty to gather the relevant corpus of data, combined to the possibility for project applicants, organised in consortia, to submit grant proposals across borders. An EU-wide approach including grant data from FP and ERC programmes would guarantee a meaningful volume of data.

3.7.5.2 Cross-sector

Question	Answer
<i>Will the proposal, once completed be useful, from the interoperability point of view and utilised in two (2) or more EU policy sectors? Detail your answer for each of the concerned sectors.</i>	Should the project be successful, it could contribute to enhanced evidence-based decision making and provide some elements for more cross-border collaborations in that field. Data interoperability (and not system interoperability) would be achieved through collecting data from the different funding mechanisms in Member States via the COMPARED platform. Funding of research projects by public organisations is a cross-sector activity. Once implemented, the IT solution proposed here will contribute to more informed decision-to-fund in various policy fields like energy, environment, ICT, health, transport, and many more.

3.7.5.3 Cross-border

Question	Answer
<i>Will the proposal, once completed, be useful from the interoperability point of view and used by public</i>	1) Administration to Administration. Once completed, the platform will be used by as many funding agencies of Member states as possible, ideally by agencies in all Member States, as well as in other countries. The project will establish close interaction with National funding agencies and with Science Europe (gathering funding agencies from many Members States), with

<p><i>administrations of three (3) or more EU Members States? Detail your answer for each of the concerned Member State.</i></p>	<p>the goal to involve the final users as soon as possible in the project. We will also aim for a maximum of these funding agencies to contribute to COMPARED with data about grants.</p> <p>For funding agencies that have strong expertise in evidence-based evaluation of research proposals, the main advantage in using the platform will be mainly to obtain information about research projects funded in other Member States. In addition to this, funding agencies less advanced in evidence-based decision-making will also be to share best practices in the evaluation of research proposals and of their impact.</p> <p>2) Administration to citizens & administration to business.</p> <p>Parts of COMPARED will be publically accessible allowing applicants to build more innovative proposals and investment funds or companies to better evaluate requests for R&I funding.</p>
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3.7.5.4 Urgency

Question	Answer
<p><i>Is your action urgent? Is its implementation foreseen in an EU policy as priority, or in EU legislation?</i></p>	<p>Although there is as such no urgency, evidence-based decision-making in the funding of R&I projects by public agencies is critically needed. Evaluators of grants have no means of knowing if a particular research project has already been funded elsewhere, or if the research has already been performed. Experts use their vast knowledge and experience to evaluate the originality of projects, but there are no actual systematic prior art searches being performed as part of the evaluation process. Knowing more about the past will help evaluators to assess the quality of research proposals and justify their decision on more factual elements. Ideally the platform should be fully operational for the start of FP9 in 2020.</p>
<p><i>How does the ISA² scope and financial capacity better fit for the implementation of the proposal as opposed to other identified and currently available sources?</i></p>	<p>This project fits with the ISA² interoperability goals. There are no other identified available sources of funding for this project.</p>

3.7.5.5 Reusability of action's outputs

<p>Name of reusable solution to be produced (for new proposals) or produced (for existing actions)</p>	<p>COMPARED platform</p>
<p>Description</p>	<p>The platform will be accessed through a web application and will therefore be re-usable by any additional funding agency or other entity wishing to use it, subject to certain limitations related to ownership of data. No personal data will be needed for the project.</p>

Reference	
Target release date / Status	Re-use is part of the project. Platform accessible and available as the project evolves and on request.
Critical part of target user base	Funding agencies.

Name of reusable solution to be produced (for new proposals) or produced (for existing actions)	COMPARED data
Description	To the extent that is possible, the dataset on which the platform will rely will be made available to funding agencies and possibly other stakeholders, with the condition that the data can be exclusively re-used for non-profit activities.
Reference	
Target release date / Status	Re-use is part of the project. Data will be made available from the onset, depending on specific legal or data protection issues.
Critical part of target user base	Funding agencies, scholars in the field of scientometrics, economics, innovation and research management.

Name of reusable solution to be produced (for new proposals) or produced (for existing actions)	COMPARED code
Description	Finally, the JRC code will be made available through licensing schemes without royalty compensations.
Reference	
Target release date / Status	Re-use is part of the project. JRC Code accessible will be made available as much as possible as the project evolves and on requests.
Critical part of target user base	Developers of text mining solutions.

3.7.5.6 Level of reuse of existing solutions

Question	Answer
<i>Does the proposal intend to make use of any ISA², ISA or other relevant interoperability solution(s)? Which ones?</i>	EUPL whenever possible. PM ² . Possibly DCAT-AP, but this will have to be analysed further.

3.7.5.7 Interlinked

Question	Answer
<i>Does the proposal directly contribute to at least one of the Union's high political priorities such as the DSM? If yes, which ones? What is the level of contribution?</i>	Contribution to "Boosting competitiveness through interoperability and standardisation". Less duplication of research means more original research funded, hence some impact on competitiveness.

3.7.6 PROBLEM STATEMENT

The problem of	The difficulty to perform prior art search before evaluation of grant proposals
affects	The amount of evidence useful to assess whether a particular proposal should be funded or not.
the impact of which is	No evidence-based decision-to-fund.
a successful solution would be	Provide a semantic similarity platform that will automatically deliver to the evaluator a set of documents similar to the proposal under evaluation.

The problem of	Variety of local IT legacy systems.
affects	Technical interoperability
the impact of which is	Difficult to link systems together and exchange data
a successful solution would be	A centralised repository for data on grants, accessible through a semantic web application easy to integrate or embed in existing processes, with data exchange using RSS format and specific semantics and syntactic.

The problem of	Heavy workload related to processing of research projects.
affects	Efficiency of funding agencies.
the impact of which is	Reduced capacity for sound decisions and to accompany applicants.
a successful solution would be	Give access to a semantic platform to applicants may help in reducing the number of proposals for funding.

The problem of	Limited access of applicants to data on previously funded research projects or to other relevant scientific documents.
affects	The quality and novelty of research projects.
the impact of which is	Proposals entering the evaluation process are of lower quality and novelty than expected, which has an impact on competitiveness and innovation potential.
a successful solution would be	Give access to a semantic platform to applicants may help in increasing the quality and novelty of proposals for funding.

The problem of	High fragmentation of many funding schemes operating in Europe.
affects	Cross-border collaboration, which is low, and exchange of data, which is rare, and therefore the capacity to detect multiple funding of research and overlap of research grants.
the impact of which is	Lack of novelty in proposals, overlap between research grants, and duplication of research.
a successful solution would be	Give access through a semantic platform to a corpus of data on research projects funded in EU Member States, at EU level, or outside.

3.7.7 IMPACT OF THE ACTION

3.7.7.1 Main impact list

Impact	Why will this impact occur?	By when?	Beneficiaries
(+) Savings in money	Detection of overlaps in research projects (scientific and financial) and subsequent reduction in overlaps and research duplication.	Q1 2020	Funding agencies (Member States and others)
(+) More innovation	More innovative R&I projects.	Q1 2020	Member States
(+) Interoperability	There is no interoperability in this field.	Q1 2020	Funding agencies (MS and others)
(-) Integration or usage cost	Any new tool is associated to some costs: training, integration in IT, licensing, data exchange... But costs will be limited, as the platform will consist in a web application. Impact on agencies will be minimal, in particular because the use of the platform will have no impact on the IT systems in operation locally.	Q1 2020	Funding agencies (MS and others)
(+) More evidence-based funding decisions	Evaluators would have access to prior art documents retrieved through a semantic process.	Q1 2020	Funding agencies (MS and others)
(+) Open access to data on research grants	Catalyse open access to grant data and provide a central access point	Q1 2020	All innovation stakeholders.

3.7.7.2 User-centricity

Users will accompany the project from the beginning. User requirements will be collected prior to starting the development, in order to customise the pilot platform and maximise its usefulness. A panel of experts, specialised in grants evaluation process will be put together to accompany the project (e.g. experts from Science Europe). A network of users/stakeholders will be put in place to ensure the future developments stay in line with user requirements and to coordinate issues related to the dissemination and use of the platform.

3.7.8 EXPECTED MAJOR OUTPUTS

3.7.9 ORGANISATIONAL APPROACH

3.7.9.1 Expected stakeholders and their representatives

Stakeholders	Representatives	Involvement in the action
Hungarian Innovation Agency (NKFIH)	Endre Spaller, vice-president	Member of the advisory board, providing expertise in the evaluation process of research proposals, test pilot platform, provide data.
Spanish foundation for science and technology (FECYT) + funding agencies	Cecilia Cabello, director S&T Indicators and R&D and Innovation Policy Monitoring	Member of the advisory board, providing expertise in the evaluation process of research proposals, test pilot platform, provide data.
Science Europe	Stephan Kuster, Acting Director	Member of the advisory board, providing expertise in the evaluation process of research proposals
Joint Research Centre	Olivier Eulaerts, team leader	Member of the advisory board, providing IT expertise (text mining, data, ...)
RTD	Common support Centre	Ensure alignment to RTD grant policies + provide data
ERCEA	Alexis Michel Mugabushaka, Head of Sector Monitoring & Evaluation.	Member of the advisory board, providing expertise in the evaluation process of research proposals, test pilot platform, provide data.

3.7.9.2 Identified user groups

Public R&I funding agencies in Member States
 Public R&I funding agencies in H2020 Associated States.
 R&I agencies at international level.
 Applicants to R&I grants.
 Private funding agencies.

3.7.9.3 Communication and dissemination plan

Dissemination activities for the pilot phase will focus on informing stakeholders of the existence and objectives of the project. This will be done via the funding agencies themselves and via Science Europe. The group of experts that will accompany the project will be asked to recommend the means of dissemination for a full COMPARED platform, should it go for full deployment. An exhaustive communication and dissemination plan will then be designed, if the pilot phase concludes positively and if the full deployment of the platform is launched. This plan will involve online presence and offline materials, but would probably focus on networking, presentation to dedicated workshops and conferences. Corporate dissemination via the ISA² network of Member States coordinators could also be an efficient means of dissemination.

3.7.9.4 Key Performance indicators

Description of the KPI	Target to achieve	Expected delivery (months after k-o)
Kick-off Workshop	At least 15 experts in evaluation processes for research proposals from public funding agencies from Member States.	+M1

User requirements documents	List of requirements for semantic platform for R&I proposals	+M2
COMPARED pilot platform and testing	Web application accessible + testing by experts from public funding agencies from Member States.	+M11
Closing workshop	At least 15 experts in evaluation processes for research proposals from public funding agencies from public funding agencies from Member States.	+M12
Recommendation report	Report by expert group on full deployment	+M12

3.7.9.5 Governance approach

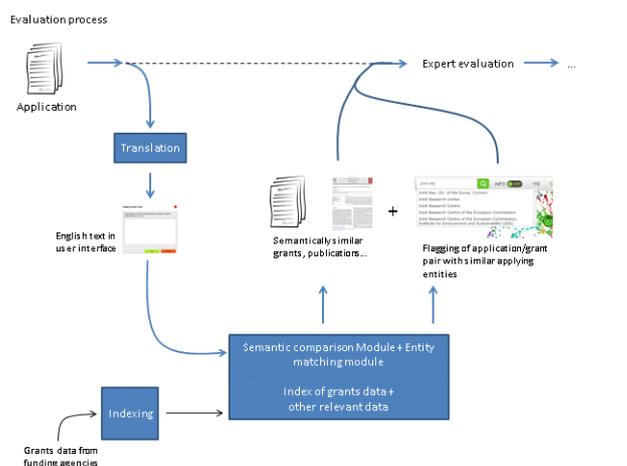
To limit the cost in case of project failure, COMPARED is designed as a two-phase project. At the end of the pilot phase the potentialities, added value and feasibility of scaling up the COMPARED platform will be analysed by a group of experts which will deliver a report containing recommendation for further development and scale-up.

Experts will be involved throughout the whole pilot project: they will set up the specifications for such a system and will evaluate the pilot platform and decide whether it brings sufficient added value for funding agencies to be pursued and scaled-up.

The project will be managed by JRC which will consult and rely on an advisory board composed of representatives from JRC, the Hungarian Innovation Agency (NKFIH), the Spanish foundation for science and technology (FECYT), and Science Europe.

3.7.10 TECHNICAL APPROACH AND CURRENT STATUS

Data used by the COMPARED platform will be indexed (grants, scientific publications, patents). This indexation allows for fast-response checking of incoming proposals against the data. Funding agencies will send their data (or part of it) prior to indexing. The system will be designed for a minimal impact on evaluation processes in Member States: the evaluator will insert the proposal text in an interface that will return a list of matching documents and raise alerts if similar documents are retrieved. Information about applicants will also be provided. In a first instance, proposal texts will be inserted in English. Various solutions for translation will be tested (e.g. MT@EC, Google translation, EMM translation) and offered to the users. The COMPARED platform will be based on text-mining techniques. A first process will measure semantic similarity between proposals for research and a reference dataset, using specific tagging software and cosine distance measurement techniques. A second process running subsequently will identify similar applicants in the submitted proposals and the similar grants that have been retrieved in the first process.



3.7.11 COSTS AND MILESTONES

3.7.11.1 Breakdown of anticipated costs and related milestones

Phase: Initiation Planning Execution Closing/Final evaluation	Description of milestones reached or to be reached	Anticipated Allocations (KEUR)	Bud get line	Start date	End date
Initiation and planning	- Kick off workshop - User requirements document	30k€ experts + 32k€ IT	ISA ² - JRC	April 2018	May 2018
Execution	- Logistics (meetings, missions) - Platform design, customisation, testing. - Data collection, gathering, formatting, storage, integration, indexing. - Setting up of a network of funding agencies from Member States - Setting up of network of expert evaluators - Interface with funding agencies and business analysis (IT requirements, data requirements, etc.) - Exploration of legal issues related to data access and sharing. - Hardware	339k€ IT +10k€ missions- logistics + 15k€ hardware	ISA ² - JRC	April 2018	May 2019
IT supervision	IT supervision and architecture	25k€	JRC	April 2018	May 2019
Closing and Final decision	- Testing of platform. - Closing meeting - Final go / no-go for full deployment.	30k€ experts + 32k€ IT	ISA ² - JRC	March 2018	May 2019
	Total	513k€			

3.7.11.2 Breakdown of ISA² funding per budget year

Budget Year	Phase	Anticipated allocations (in KEUR)	Executed budget (in KEUR)
2018	Pilot phase	250€	
2019	Pilot phase	160k€	

4 GEOSPATIAL SOLUTIONS

4.1 EUROPEAN LOCATION INTEROPERABILITY SOLUTIONS FOR E-GOVERNMENT (ELISE) (2016.10)

4.1.1 IDENTIFICATION OF THE ACTION

Type of Activity	Common Frameworks, Common Services, Reusable tools
Service in charge	JRC
Associated Services	DIGIT, CNECT, ENV, ENER, MOVE, ESTAT, AGRI, SANTE

4.1.2 EXECUTIVE SUMMARY

Location-enabled information underpins policy assessment, digital services and applications for public administrations, businesses and citizens. However, interoperability barriers hinder the optimal performance of underlying ICT ecosystems and obstruct the creation of economic value of location information. Although the PSI and INSPIRE Directives and ISA Programme have started to remove interoperability barriers, more needs to be done to reach the potential of location-enabled information, supporting Digital Single Market (DSM) Strategy goals. The European Location Interoperability Solutions for e-Government (ELISE) Action, therefore, is a package of solutions facilitating efficient and effective electronic cross-border or cross-sector interactions between European public administrations, citizens and businesses, in the domain of location information and services.

In 2018, ELISE will focus on location interoperability in the context of digital government transformation and will support improvements in key areas. It will consolidate its Geo Knowledge Base Service with reusable solutions, applications, pilots and a new series of studies on digital government transformation, thus building upon the action's 2016 and 2017 outputs.

Specifically, the Geo Knowledge Base Service will share best practices and respond to stakeholders' requests. It will be enriched by several ongoing and future studies, with pilots and applications helping to understand further the current enablers and barriers to location interoperability. The service will also include continuous monitoring, horizon-scanning and cataloguing of ICT practices and technical developments for the sharing and reuse of location-enabled data, information and services. In addition, stakeholders will also be consulted (e.g. through surveys, interviews and workshops) to ensure reusable solutions are user-centric and to explore digital transformation in practice.

Among other benefits, the Service will aid public administrations implementing the INSPIRE Directive, as well as policy makers and application developers interested in using its content and/or approach for environmental policy or other domains/initiatives. It will support DIGIT in their assessment of ICT implications of EU legislation (as part of EC Better Regulation objectives) where location information

and associated processes are relevant. It will also share evidence and best practices and benchmark developments across Europe by operating an observatory, complementing DIGIT's work on the National Interoperability Framework Observatory (NIFO) Action supported by a network of experts. The Service will also contain training packages to help the EC and Member States build capacity, alongside wider communication and engagement activities for awareness-raising and the uptake of results.

4.1.3 OBJECTIVES

ELISE aims to provide location-related solutions for all four levels of the EIF. It supports the ISA² Programme's basic objective to identify, create and operate interoperability solutions implementing Union policies. It will remove barriers to the sharing and reuse of location information in Europe, and build more effective interactions and online services between public administrations, citizens and businesses. ELISE will promote a holistic approach towards 'location interoperability' by contributing to the assessment of ICT implications of EU legislation; identifying legislation gaps, supporting stakeholders in all stages of the policy cycle and understanding the role of location information in the digital transformation of public administrations.

4.1.4 SCOPE

In scope:

- a) Evaluate the role of location information in the digital transformation of government;
- b) Establish a Geo Knowledge Base Service for ISA² Programme stakeholders;
- c) Provide guidance based on findings from different Action outputs, alongside inputs from stakeholders;
- d) Develop pre-operational 'common services' for decision-making and value-added applications;
- e) Develop and evolve reusable tools supporting location interoperability;
- f) Run pilots and applications covering different policies/sectors;
- g) Communicate effectively and disseminate the results by actively engaging stakeholders;

Out of scope:

Creating or developing solutions already in place or being produced by other initiatives. ELISE will reuse or promote them, where relevant.

4.1.5 ACTION PRIORITY

ELISE's contributes to the interoperability landscape by ensuring that the 'location' dimension has an impact, adds value and is appropriately addressed within solutions across borders and sectors, in line with DSM objectives. The ISA² Programme is uniquely placed to fund ELISE, given its close relationship to other Actions and its role to support both EC and Member State stakeholders, amongst others. Reuse and reusability of solutions is a core theme of the Action.

4.1.5.1 Contribution to the interoperability landscape

Question	Answer
<p><i>How does the proposal contribute to improving interoperability among public administrations and with their citizens and businesses across borders or policy sectors in Europe?</i></p> <p><i>In particular, how does it contribute to the implementation of:</i></p> <ul style="list-style-type: none"> • <i>the new European Interoperability Framework (EIF),</i> • <i>the Interoperability Action Plan and/or</i> • <i>the Connecting European Facility (CEF) Telecom guidelines</i> • <i>any other EU policy/initiative having interoperability requirements?</i> 	<p>In 2018, ELISE will deepen the understanding of location interoperability enablers and barriers related to the transition towards digital government. As such, it is intended to provide technical assessments and recommendations for the EIF and contribute to the implementation of the Interoperability Action Plan (e.g. Actions 4,6,17 & 19).</p> <p>ELISE pilots are designed to test cross-border and cross-sector interoperability and deliver pre-operational and reusable solutions. Their outputs contribute to different EU initiatives; including support to the implementation of the INSPIRE Directive 2007/2/EC, promoting the Once Only Principle (OOP, recommendation no.18 of the e-Government Action Plan) and the CEF by providing building blocks for Member State deployment.</p>
<p><i>Does the proposal fulfil an interoperability need for which no other alternative action/solution is available?</i></p>	<p>ELISE is the only action in ISA² focusing on location interoperability. It will promote widespread uptake and the reuse of good practices through the development its Geo Knowledge Base Service.</p>

4.1.5.2 Cross-sector

Question	Answer
<p><i>Will the proposal, once completed be useful, from the interoperability point of view and utilised in two (2) or more EU policy sectors? Detail your answer for each of the concerned sectors.</i></p>	<p>ELISE assesses the location interoperability aspects of digital transformation of government. Location interoperability is relevant to almost all EU policies. In particular, the ELISE pilots will be tested in domains such as environment, energy, transportation, statistics, health, agriculture and cultural</p>

	heritage.
<i>For proposals completely or largely already in operational phase, indicate whether and how they have been utilised in two (2) or more EU policy sectors.</i>	The Re3gistry and INSPIRE test framework / validator are available online for free for all Member States, as well as reusable software for others to explore.

4.1.5.3 Cross-border

Question	Answer
<i>Will the proposal, once completed, be useful from the interoperability point of view and used by public administrations of three (3) or more EU Members States? Detail your answer for each of the concerned Member State.</i>	The common services and tools will be designed to be reusable across Member States. The ELISE Geo Knowledge Base Service will offer guidance, advice and solutions for EU institutions and Member States.
<i>For proposals completely or largely already in operational phase, indicate whether and how they have been utilised by public administrations of three (3) or more EU Members States.</i>	Road safety data-exchange solutions piloted and implemented in Norway and Sweden are being rolled-out to 5 other Member States using CEF funds, with more rollouts planned. INSPIRE Registry services (see below) have 100k accesses per quarter.

4.1.5.4 Urgency

Question	Answer
<i>Is your action urgent? Is its implementation foreseen in an EU policy as priority, or in EU legislation?</i>	ELISE is active in supporting several EU policy initiatives, such as the EIF (Actions 4,6,17 & 19); the revision of the PSI Directive (spring 2018); INSPIRE Directive implementation (next deadlines 2017 and 2020); EU eGovernment Action Plan 2016-2020 (COM(2016) 179 final; Action 19).
<i>How does the ISA² scope and financial capacity better fit for the implementation of the proposal as opposed to other identified and currently available sources?</i>	The ISA ² Programme offers a unique opportunity to investigate how to reuse and build on the cross-sector/cross-border offerings of INSPIRE to create synergies between location and wider ICT interoperability solutions and frameworks.

	The ISA ² Programme is the only funding source to address interoperability issues in the scope of ELISE.
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4.1.5.5 Reusability of action's outputs

Name of reusable solution	Geo Knowledge Base Service
Description	The Service, itself, fosters the reusability of solutions in the context of location interoperability. Moreover, the underlying approach explores how knowledge about (location) interoperability can be represented and shared with different stakeholders, including the pilot/application methodologies.
Reference	
Target release date / Status	Q4/2020 (operational solution)
Critical part of target user base	Service: usage by 5 Member States and 3 EC DGs Approach: reuse of approach or basic 'knowledge elements' in 2 other initiatives
For solutions already in operational phase - actual reuse level (as compared to the defined critical part)	

Name of reusable solution to be produced (for new proposals) or produced (for existing actions)	'Location' Interoperability guidance
Description	Use of the Blueprint and associated guidance by public administrations and businesses, e.g. procurement, location privacy, service design guidance
Reference	https://joinup.ec.europa.eu/community/eulf/og_page/eulf-blueprint
Target release date / Status	Q4/2018 – Q4/2019 for new guidance
Critical part of target user base	Reuse by 5 public bodies
For solutions already in operational phase - actual reuse level (as compared to the defined critical part)	N/A

Name of reusable solution	Re ³ gistry software
Description	Maintenance and extension of the open source Re ³ gistry software to ensure support for the INSPIRE Registry and

	cross-sector register federations. Handover options will be assessed, such as release as a full open source project or as a DSI building block in the CEF.
Reference	https://joinup.ec.europa.eu/software/re3gistry/description http://inspire.ec.europa.eu/registry/ http://inspire-regadmin.jrc.ec.europa.eu/ror/
Target release date / Status	Q4/2018 operational solution
Critical part of target user base	Re-use of software by 5 public bodies and high levels of usage through the online INSPIRE Registry service.
For solutions already in operational phase - actual reuse level (as compared to the defined critical part)	Already re-used in several Member States and for managing ISA Core Vocabularies. Indicators are part of quarterly reporting on the ISA ² Dashboard

Name of reusable solution	Common services, pilots and applications
Description	These will help test the concepts developed in ELISE and provide reusable solutions, as well as outputs for operational activities.
Reference	https://www.youtube.com/watch?v=jnny5ATwTYE https://joinup.ec.europa.eu/community/eulf/og_page/eulf-energy-pilot
Target release date / Status	Q1/2018 – Q4/2021 ongoing programme of pilots
Critical part of target user base	Services: integration into applications/portals by 10 public bodies or businesses Pilots: Take up by public bodies and/or businesses in 10 Member States
For solutions already in operational phase - actual reuse level (as compared to the defined critical part)	Transportation pilot outputs already used in Norway, Sweden, United Kingdom, Flanders, Ireland.

Name of reusable solution	INSPIRE test framework
Description	Extended testing frameworks to ensure that reuse of INSPIRE and other geo-ICT data infrastructures provide reliable and appropriate content across INSPIRE's data themes, supporting public administrations in their implementation tasks.
Reference	https://github.com/inspire-eu-validation/

Target release date / Status	Q4/2018
Critical part of target user base	Re-use by 10 public bodies
For solutions already in operational phase - actual reuse level (as compared to the defined critical part)	

4.1.5.6 Level of reuse of existing solutions

Question	Answer
<i>Does the proposal intend to make use of any ISA², ISA or other relevant interoperability solution(s)? Which ones?</i>	<p>ELISE will promote re-use and build on EULF, ARe³NA and other ISA/ISA² solutions, including: publishing outputs on JoinUp and sharing solutions based on the EIF and EIRA; making 'location' contributions to the assessment of ICT implications of new legislation and to the NIFO; following recommendations/methods of the Sharing and Re-use strategy and the Interoperability Maturity Model; supporting SEMIC (including for vocabularies) and seeking stakeholder feedback through EUSurvey.</p> <p>ELISE will also reuse and promote solutions from other initiatives, including: the EU Open Data Portal; interoperability assets from INSPIRE; recent European projects (ELF and GeoSmartCity); Belgian and German approaches to OpenStreetMap; Danish and Czech Republic approaches to core registries; and will re-use relevant legal and organisational assets across its activities (e.g. business cases, licensing approaches, Public Private Partnership (PPP) models, training modules).</p>
<i>For proposals completely or largely already in operational phase: has the action reused existing interoperability solutions? If yes, which ones and how?</i>	<p>Examples include the Transportation pilot reusing the TN-ITS data specifications and the INSPIRE approach to location (linear) referencing. The INSPIRE test framework is partly based on the OGC CITE test engine for web services.</p>

4.1.5.7 Interlinked

Question	Answer
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<i>Does the proposal directly contribute to at least one of the Union's high political priorities such as the DSM? If yes, which ones? What is the level of contribution?</i>	ELISE contributes directly to the DSM Strategy, as it actively supports the EIF, the revision of PSI Directive and INSPIRE Directive implementation as requested by the EU eGovernment Action Plan 2016-2020. By assessing demand, opportunities and barriers through specific studies and thematic pilots, ELISE creates targeted guidance and (location) interoperability tools.
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4.1.6 PROBLEM STATEMENT

The problem of	barriers to location interoperability
affects	many policy areas and public services
the impact of which is	higher costs due to inefficiencies in current governmental processes and barriers in the creation of economic value. This data is undervalued, not managed efficiently or not interpreted correctly, impacting on various forms of decision-making
a successful solution would be	sharing best practices, guidelines and tools, supported through the ELISE Geo Knowledge Base Service, including training and pilots to demonstrate the feasibility and identify the benefits of solutions. For example, different data specifications are used in different contexts, whereas ELISE pilots use INSPIRE to have a harmonised approach.

The problem of	limited data-sharing of location data
affects	European data economy
the impact of which is	over-investments/spending using often poorer quality information and barriers to innovation, especially in the private sector
a successful solution would be	more collaborative approaches to the reuse of (location) data, in line with the PSI and INSPIRE Directives. This should go beyond interoperability technologies and common data formats to also have common approaches in areas such as data/service licensing (including Open Data), as well as capacity building in topics such as 'spatial literacy' (i.e. skills for handling spatial/map data) and other training for public administrations.

4.1.7 IMPACT OF THE ACTION

4.1.7.1 Main impact list

Impact	Why will this impact occur?	By when?	Beneficiaries
(+) Savings in money	Savings will occur thanks to avoiding duplicated efforts and reusing cost-efficient solutions in e.g.: data procurement, software development and service delivery	Once solutions are in an operational phase in Public Administrations	Public administrations, businesses and citizens
(+) Savings in time	Time savings will occur thanks to avoiding duplicated efforts and, again, reusing cost-efficient solutions	As above	Public administrations, businesses and citizens
(+) Better interoperability and quality of digital public service	Interoperability objectives will be realised through fostering collaboration between actors, sharing of best practices, highlighting optimal business processes and (user-centric) services	The duration of ELISE and the operation of its Geo Knowledge Base Service	All stakeholders
(-) Integration or usage cost	Effort will be needed to integrate 'location' in other initiatives, across all the EIF	ELISE supports such integration until 2021	EU and MS policy makers
(+) Improved policy-making where location plays a role (including cross policy alignment)	Considering location information at the early stages will provide a cohesive approach to analysing status/problems throughout the policy cycle	Within the timeframes of policy implementation and review (e.g. 5 years approx. for new policies)	EU and MS policy makers
(+) Effective skills	Organisations will improve their spatial literacy and other skills to make best use of available data	The ELISE duration and the operation of its Geo Knowledge Base Service	All
(+) Creation of a collaborative network	The Geo Knowledge Base Service is a focal point for facilitating partnerships between organisations/	Initial benefits will occur when partnerships are set up, such as via	Various stakeholder relationships, including with

Impact	Why will this impact occur?	By when?	Beneficiaries
	initiatives, offering expert advice about location data and services/ sources, reusable software etc.	pilots or the roll-out of interoperable services	research and businesses

4.1.7.2 User-centricity

Collaboration is core to ELISE's approach, where it fosters key stakeholder interaction through workshops, consultations and co-development of solutions, in particular within the ISA² Working Group on Geospatial Solutions. Interoperability solutions are developed based on stakeholder demand and priorities, are validated in the field to ensure they meet these needs in a practical way and are improved through feedback from users. Aligned with the direction of ISA², ELISE will also explore stakeholder relations with businesses and citizens, extending the existing group of EC Services, INSPIRE stakeholders, solution providers, thematic communities and standardisation bodies.

4.1.8 EXPECTED MAJOR OUTPUTS

ELISE work packages and outputs form a holistic proposal, including evaluating benefits, outcomes and impacts, with clear links to key ISA² selection criteria. It will act as a 'solution incubator' to develop and pilot solutions, a 'solution bridge' to bring them to maturity and a 'solution broker' to find new users. ELISE also involves a number of feasibility studies to scope and assess requirements/options for key topics before launching pilots, alongside engagement and knowledge-sharing activities. The major outputs for 2018 are summarised below.

Output name	Analysis of the role of location information in digital government transformation
Description	This set of studies will evaluate the role of location information in different dimensions such as data access and licensing, service integration, business processes innovation and access to innovative technologies.
Reference	https://joinup.ec.europa.eu/community/eulf/og_page/eulf-blueprint
Target release date / Status	Q4/2019

Output name	Geo Knowledge Base service
Description	The service will provide guidance and support to Commission policy DGs, public administrations, business and citizens in Member States on the optimal exploitation of interoperable location information. This includes a location interoperability observatory, support to the ICT assessments of new legislation (led by DIGIT), training

	and user support.
Reference	
Target release date / Status	Q4/2017 service definition Q1/2018 piloting and initial evidence sharing Q4/2021 operation of service

Output name	ELISE Observatory/ landscape analysis and technology watch
Description	Complementing NIFO, evidence will be gathered and shared about the uptake of Blueprint recommendations and the leading technological and organisational best practices across Europe. Initial evidence will be based on a pan-European survey supported with expert inputs
Reference	
Target release date / Status	Q3/2017 service definition and piloting completed Q1/2018 – Q4/2019 operation

Output name	Location interoperability tools
Description	The developments of tools for Spatial Data on the Web, including mechanisms to convert data from services (powered by geospatial standards) into websites and feedback on metadata by data users will be delivered and further tested in 2018.
Reference	http://www.ldproxy.net http://geonetwork-opensource.org/
Target release date / Status	Q4/2016 solution design Q4/2017 prototype Q4/2019 operation

Output name	ELISE Application Pilots
Description	The pilots test ELISE's guidelines and tools, while supporting INSPIRE reuse beyond the environmental domain, helping to improve e-government services in different sectors.
Reference	https://joinup.ec.europa.eu/community/eulf/og_page/eulf-energy-pilot
Target release date / Status	Q4/2017 Pilot definition and stakeholder engagement Q1/2018 Pilot launch and initial development Q4/2019 Operation

4.1.9 ORGANISATIONAL APPROACH

4.1.9.1 Expected stakeholders and their representatives

Stakeholders	Representatives	Involvement in the action
ISA ²	Member State representatives in the ISA ² Working Group on Geospatial Solutions and the ISA ² Committee. Plus, other ISA ² Actions	Inputs to Work Programme, governance, identifying best practices, partnerships and synergies with other activities
Commission Services	ENV, ESTAT, CNECT, DIGIT, MOVE, ENER, GROW. EC Inter service group on Geographic information (COGI)	Scoping solutions / pilots, including ICT Assessments
INSPIRE Governance	Maintenance and Implementation Group (MIG), National Contact Points (NCPs), Legally Mandated Organisations (LMOs), European Environment Agency (EEA)	Identifying needs, promoting reusable solutions, participating in pilots
Geospatial Solution providers	Businesses (including SMEs) and research bodies	Knowledge base content and solution development
Thematic Policy domains	Committees, working groups, including those related to location data, such as Copernicus (DG GROW) and GEO (RTD)	As relevant for application, solution or pilot activities
Standardisation Bodies	Coordination groups, for CEN, ISO, OGC, W3C, OASIS, etc.	Uptake of ELISE outputs as standards
UN-GGIM:Europe	ELISE will contribute to possible pilot activity in this area, taking into ISA ² 's Action on statistical information systems and inputs from EULF and ARE ³ NA and the work of ESTAT.	Uptake of results of work on geospatial data and statistics
Member State organisations, groups and projects	Location / e-Government coordination bodies, Government digital agencies, National mapping and cadastral agencies Private sector actors	Solution providers and users
Other pan-European interest groups, organisations and projects	Such as OSGeo and other FLOSS communities; open data communities, research / academic groups, European umbrella organisations	As data sources and pilot partners and inputs to feasibility studies
EEA/EIONET, National environment agencies	EEA/EIONET national focal points (NFPs), National Reference Centres for Information Systems.	As partners in potential INSPIRE environmental pilots
Network of businesses, or individual private companies	Smespire (and similar) networks of enterprises, private companies working in specific thematic domains	Pilot partners and stakeholders for scoping solutions

4.1.9.2 Identified user groups

Existing stakeholder groups are defined above but ELISE will also cover businesses and citizens by exploring successful models and solutions (e.g. to support innovation, provide funding, put PPPs into practice, take on board citizen inputs).

4.1.9.3 Communication and dissemination plan

Documentation will be published on the ISA² website and on JoinUp. Cross-references will be made to, for example, INSPIRE's knowledge base⁸¹ and relevant 'partner' websites. Training will be carried out in face-to-face events, webinars, and through access to online resources. Videos, brochures, and platforms, including social media will also be used. Engagement activities such as surveys will also help to raise awareness about the Action. Key events are summarised in the following table.

Event	Representatives	Frequency of meetings / absolute dates of meetings?
ISA ² Committee and Coordination Group Meetings	MS representatives	Twice yearly
ISA ² Working Group on Geospatial Solutions	MS and Commission representatives	1-2 times per year
ISA ² Geospatial Solutions Business Forum	Business community representatives (possibly divided into thematic streams)	1-2 times per year
ELISE workshops, partner events, webinars	MS and Commission representatives, thematic groups, invited experts, including training events	4-5 times per year
INSPIRE Conferences	INSPIRE stakeholders	Once per year
INSPIRE Maintenance and Implementation Group and Sub-Group meetings	MS representatives and invited experts	To be determined
Meetings of standardisation groups (CEN, ISO, OGC, W3C)	Standards experts	2 - 3 times per year
Business innovation events, e.g. apps incubators, hackathons, competitions	Web / mobile developers Geo ICT SMEs	Once per year
Other thematic conferences	Transport, energy as well as FOSS/ICT conferences, including ISA ² 's SEMIC and Sharing and Reuse Conferences	Once per year

4.1.9.4 Key Performance indicators

Description of the KPI	Target to achieve	Expected time for target
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⁸¹ <http://inspire.ec.europa.eu/>

Number of Commission services where ELISE has contributed advice or solutions to improve efficiency or effectiveness in location interoperability	5	2020
Number of MS public services where ELISE guidance, tools, support or pilots have helped them improve the integration of location information in their processes	5	2020
Number of cases where ELISE has received positive feedback from stakeholders on the information, awareness raising, training or other support provided by the Geo Knowledge Base Service	10	2020
Number of MS participating in the ELISE observatory as part of the Geo Knowledge Base Service	12	2020

4.1.9.5 Governance approach

The broad reach of ELISE involves engaging with work in the Member States and the EC. The ISA² WG on Geospatial Solutions⁸² will continue to play a vital advisory and facilitating role (e.g. for ELISE WP updates, Geo Knowledge Base Service content/scope, promoting take-up). In general, ELISE focusses on user-centricity, co-creation and shared ownership of results for wider reuse. These representatives are, therefore, encouraged to contact others (e.g. UN-GGIM: Europe, Group on Earth Observations, standards bodies and thematic actors) to aid communication/coordination/promotion of location interoperability. As JRC.B06 is the chair for the WG, ELISE can also fully connect with other groups, such as COGI and INSPIRE governance structures, including the MIG EC expert group, where ELISE helps to deliver some aspects of its work programme 2016-2020⁸³.

4.1.10 TECHNICAL APPROACH AND CURRENT STATUS

The focus of the ELISE work packages for 2018 is described in detail in **Error! Reference source not found.**

Table 1. Focus of ELISE work packages for 2018

Work package	2018 focus
1. STUDIES	
The role of location information in digital government transformation	Public administrations are, themselves, evolving as a consequence of ICT being adopted in their processes, across all aspects of the EIF. A set of studies will explore how location information is driving such 'digital transformation'. This includes exploring the current status across European of data access and sharing, service integration, innovative business processes and technologies; the conditions/main drivers to enable a data economy based on location information; and analysing the opportunities and risks of using location-information algorithms in decision-making.

⁸² The ISA² WG on Geospatial Solutions is the successor of the ISA WG on Spatial Information and Services (SIS), which was the governance group for the EULF and ARe3NA ISA actions.

⁸³ <https://ies-svn.jrc.ec.europa.eu/documents/58>

Work package	2018 focus
Supporting better uses of location data and statistics ⁸⁴	Continued assessment of links between location data and statistics, including identification of gaps and possible actions to make improvements (in collaboration with ESTAT) and building on ARE3NA/SEMIC outputs, such as GeoDCAT-AP and INSPIRE as Linked Data.
2. FRAMEWORKS AND SOLUTIONS	
Guidance	Maintenance of good practice Blueprint, associated guidance documents on emerging topics, to be agreed with stakeholders, and reference materials. Integration from ESTAT and UN-GGIM of good practices for statisticians and policy analysts in the use of location data in their work. Further work to improve usability of guidance, including online adaptation, cataloguing references identified in the observatory, and facilities for user feedback and co-creation.
Location Interoperability Tools ⁸⁵	User-centric approach for the evolution and sustainability of solutions, including the Re ³ gistry software; the INSPIRE test framework; and further developments for the Spatial Data on the Web tools and technical guidance for both data providers and data users. Continued contributions to SEMIC (building on the Core Location Vocabulary, GeoDCAT-AP, website annotation etc.), sharing of 'discovered' solutions on JoinUp based on the EIRA as a reference model; technical study to analyse data fusion in the context of global reference grid systems for big geospatial data, including address data.
3. APPLICATIONS	
ELISE Application Pilots	<p>ELISE pilots are applications designed to explore in practice the opportunities and barriers to the use of location information in different technological settings and for different purposes, cutting across different thematic domains and involving stakeholders from different European countries in the public and private sectors. For example:</p> <p><u>G2B/B2G</u>⁸⁶: Pilot in the Intelligent Transport Systems domain: follow-up of current pilot, possible focus on e.g. Digital maps for connected and autonomous transport and use of private sector data for improving accuracy of public road databases and for traffic management.</p> <p><u>G2G/G2B</u>: Energy Efficiency Pilot: Enabling the use of location-enabled technologies in Digital Government processes and services related to EU policies on energy efficiency.</p> <p><u>B2G, G2C</u>: Pilot in the eHealth domain, e.g. use of smart location-aware devices to improve healthcare management and policies; evaluation of the geographical spread of diseases in specific contexts- based on feasibility study funded in 2017.</p> <p><u>B2G</u>: Pilot on “reverse PSI”: concrete examples of use by public sector of privately held data- support to the revision of the PSI Directive, based on feasibility study funded in 2017. Feasibility studies of pilots in other domains, e.g. precision agriculture and cultural heritage.</p>

⁸⁴ Formerly entitled “Supporting better uses of geodata and statistics”

⁸⁵ Formerly entitled “Geospatial Interoperability Tools”

⁸⁶ **G2B**= Government to Business, **B2G**= Business to Government, **G2G**= Government to Government and **G2C**= Government to Citizens

Work package	2018 focus
Common services	EU Gazetteer pilot phase 1 (Geographical Names and Administrative Units): continued pilot development
4. GEO KNOWLEDGE BASE SERVICE	
Location interoperability observatory, landscape analysis and technology watch	<p>Using the ELISE observatory, set up in 2017, monitoring and analysis of EU and MS policies and MS implementations to assess demand and identify re-usable frameworks and solutions. This will also include piloting an approach to assess impacts and benefits.</p> <p>Horizon-scanning of new trends in location-based technologies that can be of relevance to the transformation to digital government including mobile, social, cloud and other information technologies, advanced data analytics and evaluation of impacts of the application and use of disruptive technologies (e.g. Blockchains, Internet of Things).</p> <p>The approach will include inputs from a network of experts from across Europe that ELISE will establish and activities to harmonise interoperability terminology across sectors.</p>
Location input to ICT assessment of new legislation	Support to policy makers and DIGIT in ICT assessments of new legislation, where there is a significant role for 'location'.
Training and user support	Training development and delivery; promotion, stakeholder engagement, awareness raising, web publication, support to users. Development of spatial literacy training packages and events.
Communication and stakeholder engagement	Proactive awareness-raising, dissemination of the Action's outputs, stakeholder engagement and online representation of the Action's knowledge, including exploring the role of a location interoperability 'Business Forum'.

4.1.11 COSTS AND MILESTONES

4.1.11.1 Breakdown of anticipated costs and related milestones

The proposed ELISE Work Programme spans five years and has three phases, with **Initiation** (year 1) completed in 2016/2017. **Execution** (years 2-4) contains activities and new studies and other outputs, with the maintenance of existing tools. A mid-term evaluation is also planned. **Closing** (year 5) will involve readying of solutions for operation/handover, final evaluation and transition of results to "operational governance". Precise details of the relevant costs and milestones are identified regularly, with anticipated costs for 2018 shown below.

Phase:	Description of milestones reached or to be reached	Anticipated Allocations (KEUR)	Budget line ISA/ others (specify)	Start date	End date
Initiation					
Planning					
Execution					
Closing/Final					
Evaluation					

Phase: Initiation Planning Execution Closing/Final Evaluation	Description of milestones reached or to be reached	Anticipated Allocations (KEUR)	Budget line ISA/ others (specify)	Start date	End date
1. STUDIES					
Initiation	1.1 Assessment of economic opportunities and barriers related to geospatial data in the context of the DSM	160 - -	ISA	Q3/2016	Q4/2017
Execution	1.2 INSPIRE and spatial data standards in support of EU-wide Multimodal Travel Information Services	- 100 -	ISA	Q3/2017	Q4/2018
Execution	1.3 Supporting better uses of location data and statistics	90 - -	ISA	Q4/2017	Q4/2018
Execution Execution	1.4 The role of location information in digital government transformation	- 230 400	ISA	Q4/2017 Q4/2018	Q3/2018 Q4/2019
Execution	1.5 Location-Enabled Digital Platforms Benchmark	- 260 -	ISA	Q3/2017	Q2/2018
2. FRAMEWORKS AND SOLUTIONS					
Initiation Execution Execution	2.1 Guidance	110 50 40	ISA	Q1/2017 Q3/2017 Q2/2018	Q2/2017 Q2/2018 Q4/2018
Initiation Execution Execution	2.2 Location Interoperability Tools	220 240 300	ISA	Q4/2016 Q4/2017 Q4/2018	Q4/2017 Q3/2018 Q3/2019
Initiation Execution	2.3 References and inventories	60 100 -	ISA	Q4/2016 Q2/2017	Q3/2017 Q4/2018
3. APPLICATIONS					
Initiation Execution Execution	3.1 ELISE Application Pilots	80 260 300	ISA	Q4/2016 Q3/2017 Q3/2018	Q4/2017 Q2/2018 Q4/2019
Initiation Execution Execution	3.2 Common services – EU Gazetteer	85 150 270	ISA	Q4/2016 Q3/2017 Q2/2018	Q3/2017 Q1/2018 Q4/2018
4. GEO KNOWLEDGE BASE SERVICE					
Initiation	4.1 Geo Knowledge Base	81	ISA	Q4/2016	Q4/2017

Phase: Initiation Planning Execution Closing/Final Evaluation	Description of milestones reached or to be reached	Anticipated Allocations (KEUR)	Budget line ISA/ others (specify)	Start date	End date
	service definition and piloting	- -			
Initiation Execution Execution	4.2 Location interoperability observatory, landscape analysis and technology watch	91 65 360	ISA	Q2/2016 Q4/2017 Q2/2018	Q3/2017 Q2/2018 Q1/2019
Initiation Execution	4.3 Location input to ICT assessment of new legislation	36 50 -	ISA	Q2/2016 Q4/2017	Q3/2017 Q4/2018
Execution Execution	4.4 Training and user support	- 120 80	ISA	Q2/2017 Q2/2018	Q1/2018 Q3/2019
Initiation Execution Execution	4.5 Communication and stakeholder engagement	60 120 150	ISA	Q3/2016 Q2/2017 Q3/2018	Q2/2017 Q2/2018 Q2/2019
	2016	983			
	2017	+1835			
	2018	+1900			
	Total	=4718			

The proposed work elements are also important to the JRC in supporting the evolution of INSPIRE and its wider scientific interests in data and technology. Consequently, ISA resources will be complemented by JRC institutional staff resources for management, ELISE governance support and technical support on INSPIRE issues.

4.1.11.2 Breakdown of ISA² funding per budget year

Budget Year	Phase	Anticipated allocations (in KEUR)	Executed budget (in KEUR)
2016	Initiation	983	983
2017	Execution	2240	1835
2018	Execution	1900	

4.1.12 Planning for the tendering procedures to be launched for the action

Call for tenders foreseen Global amount in KEUR	Call for Tenders Duration in years	Indicative planning of publication (QX/YYYY)
Open calls: 400k	1.5 years	Q2-Q4 2018

4.1.13 ANNEX AND REFERENCES

Description	Reference link	Attached document
INSPIRE resources	http://inspire.ec.europa.eu/	
EULF	https://joinup.ec.europa.eu/community/eulf/description	
ARE ³ NA	https://joinup.ec.europa.eu/community/are3na/description	
ELISE	https://joinup.ec.europa.eu/community/elise/home	

5 E-PROCUREMENT / E-INVOICING – SUPPORTING INSTRUMENTS

5.1 EUROPEAN PUBLIC PROCUREMENT INTEROPERABILITY INITIATIVE (2016.05)

5.1.1 IDENTIFICATION OF THE ACTION

Type of Activity	Reusable generic tools, common frameworks
Service in charge	Sub-action eProc-01: DIGIT.B1 Sub-action eProc-02: GROW.G4 Sub-action eProc-03: OP.C2
Associated Services	CNECT.H3, DIGIT.D2, GROW.F3, GROW.R3, OP C4, A2

This action is split into three sub-actions, the three DGs mentioned as services in charge have the overall responsibility for the sub-action accredited to them, however they will work in close collaboration with mutual consultation.

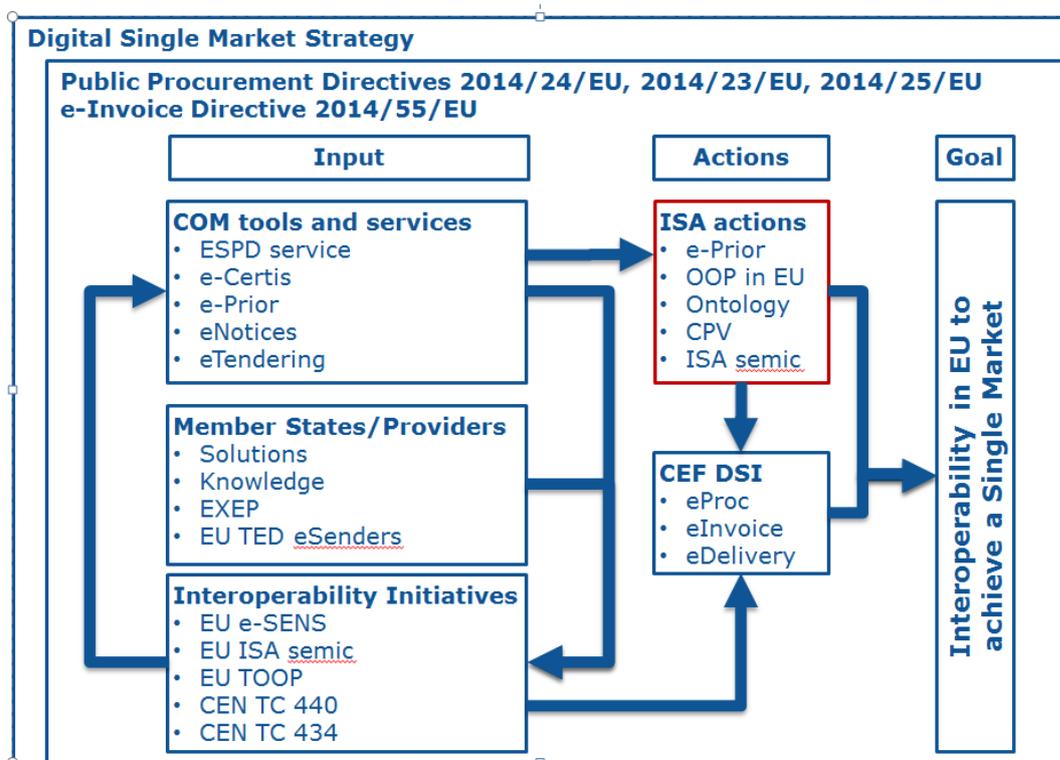
5.1.2 EXECUTIVE SUMMARY

The window of opportunity to achieve a true digital single market in Europe for public procurement within the next few years is within reach. By combining the different elements contributing to electronic public procurement a strong basis is formed to reach this goal:

- The Digital Single Market Strategy (DSM) recognizes that Information and Communications Technology (ICT) is the foundation of modern economic systems and that public procurement plays an important role in promoting standards and interoperability.
- The public procurement Directives [2014/23/EU](#), [2014/24/EU](#) and [2014/25/EU](#) specifically mention that tools and devices used for communicating electronically should be non-discriminatory, generally available, and interoperable. E-procurement will gradually become mandatory in the EU for all contracting authorities, by October 2018. In addition, e-Certis and the European Single Procurement Document will become mandatory from the time Member States have transposed the new directives. The eInvoicing Directive [2014/55/EU](#) makes the reception and processing of electronic invoices complying with the EU standard mandatory by 2020.
- The Connecting European Facility (CEF) is an important financial instrument to support interoperability in public procurement and other domains. The CEF eProcurement DSI (Digital Service Infrastructure) will be fed by the results from the ISA² programme and through interoperability initiatives. Beside the CEF eProc DSI, there is as well a separate DSI to support eInvoice. The CEF programme goes until 2020.
- There are several interoperability/standardisation initiatives in Europe that have been working in public procurement for several years, such as CEN BII which are reaching a high level of maturity, especially around post award. An important interoperability pilot on connecting e-tendering systems throughout Europe was worked on in the EU large scale pilot e-SENS and is now supported through the CEF eProc DSI. The governance of the e-tendering interface is done through OpenPEPPOL.

- The European Commission provides tools and services for public procurement. The Publications Office is mandated to publish notices about procurement procedures above certain thresholds⁸⁷. The eTendering application of the Publications Office publishes tendering documents from the Commission and the European Institutions and bodies. e-Certis and the ESPD will be a cornerstone to achieve the once-only principle in Europe and are supported through the CEF eProc DSI. e-PRIOR, a procurement tool, covering processes developed by DG DIGIT uses standards coming from for example CEN BII. It is an important potential asset to improve and support interoperability on a European scale..

The ISA² programme will not only help to update existing tools like e-PRIOR or e-Certis but it will also foster interoperability through a common public procurement ontology and will support the implementation of the once-only principle in Europe. ISA² lasts until 2020. The figure below shows the overall relationship of the ISA² actions in relation with the other points mentioned above.



Combining the legal backing, the technical experience and financial instruments we have now the possibility in the EU to achieve a true single market for public procurement. Therefore, action should be taken fast to make full use of this window of opportunity.

REMARK:

Open ePrior activities within this action have been reviewed at the light of:

- the issues experimented during the execution of 2016 budget for eSubmission,
- the decision to avoid risks of competition with market solutions (Front Office part)
- the internal decision by the European Commission to define a new Corporate Target Architecture combining the support of Grants and eProcurement and based on eGrants "proprietary" building blocks.

⁸⁷ https://ec.europa.eu/growth/single-market/public-procurement/rules-implementation/thresholds_en

This leads to the reduction of the scope and objectives of sub-action eProc01.

5.1.3 OBJECTIVES

This action has the following objectives:

1. contributing to the definition of standards for interoperability and supporting interoperability initiatives. Thus ensuring barriers are reduced in public procurement procedures, especially concerning SMEs and solutions implemented by big buyers;
2. facilitating the implementation of e-procurement for European Public Administrations by providing open source software solutions;
3. supporting the implementation e-procurement and especially tools necessary for the implementation of the once-only principle (OOP), that reduce the administrative burden and simplify procedures for buyers and suppliers. Hence encouraging cross border public procurement procedures and to enhance digital transparency in public procurement via contract registers;
4. improving the overall data quality and reusability in view of the European interoperability strategy via the ontology;
5. updating the Common Procurement Vocabulary (CPV), to make the CPV easier to use.

5.1.4 SCOPE

Following the defined objectives, the scope of this project is divided in activities grouped in 3 sub-actions:

Sub-action	Activity	Related Objectives
eProc-01 (DIGIT B1)	Provide an open source software solution to help Member States comply with the e-invoice and public procurement directives.	Objective 2
	Align solution produced by ISA action 1.7 to evolution of standards.	Objective 1 Objective 2
	Contribution to standards evolution by TC 440	Objective 1
	Share experience and lessons learnt with Member States in the context of e-invoice.	Objective 1
	Support and maintenance of the open source software provided to the Member States.	Objective 2
eProc-02 (GROW G4)	Further develop e-Certis and the ESPD data model to achieve OOP in public procurement	Objective 1 Objective 3
	Support and assess Member States in the implementation of e-procurement, namely taking into account the use of digital tools by big buyers	Objective 3

eProc-03 (OP C)	Development of a public procurement ontology	Objective 1 Objective 4
	Harmonisation of code lists in e-procurement systems	Objective 1 Objective 4
	Modernisation of the CPV	Objective 1 Objective 5

5.1.4.1 OUT OF SCOPE:

- Infrastructure elements/services (e.g.: communication services are provided by eTrustEx and/or e-Delivery, e-Signature services are provided by external services)
- Financial support for public and private entities (aggregators, service providers). CEF will be used to support aggregators, service providers and national registers to make their solutions interoperable

5.1.5 ACTION PRIORITY

This section is used to assess the priority of the proposal to become a programme's action according to Art. 7 of the ISA² decision⁸⁸.

5.1.5.1 Contribution to the interoperability landscape

The contribution of the action to the interoperability landscape, measured by the importance and necessity of the action to complete the interoperability landscape across the Union

Question	Answer
<p><i>How does the proposal contribute to improving interoperability among public administrations and with their citizens and businesses across borders or policy sectors in Europe?</i></p> <p><i>In particular, how does it contribute to the implementation of:</i></p> <ul style="list-style-type: none"> • <i>the new European Interoperability Framework (EIF),</i> • <i>the Interoperability Action Plan and/or</i> • <i>the Connecting European Facility (CEF) Telecom guidelines</i> • <i>any other EU policy/initiative having</i> 	<p>eProc-01</p> <ul style="list-style-type: none"> • DIGIT will lead by example in the implementation of the e-Invoice directive. The proposal includes activities that will allow the European Commission to achieve compliance with the Directive ahead of the compliance deadline. By doing so, possible barriers to interoperability may be detected and solved without hindering the compliance deadline set out by the e-Invoice directive. <p>eProc-02</p> <ul style="list-style-type: none"> • The Public Procurement Directive

⁸⁸ DECISION (EU) 2015/2240 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

<p><i>interoperability requirements?</i></p>	<p>2014/24/EU supports interoperability of eprocurement across the EU (article 22 (6)).</p> <ul style="list-style-type: none"> • The eGovernment Action Plan 2016-2020 asks the Commission to support Member States towards full e-procurement and the use of contract register (Action 1) • ISA² ensures coordination between e-Certis and ESPD and the EU large scale pilot "TOOP" (The Once-Only Principle) • Results of this action are used for the CEF eProc DSI to make procurement solutions interoperable across Europe <p>eProc-03</p> <ul style="list-style-type: none"> • The ontology will make available semantic definitions of the different concepts used in public procurement. It will also specify the relationships between the different concepts. The use of the OWL ontology will enable different systems throughout Europe to reuse and access data without needing complicated conversions. • The CPV codes are essential to categorise procedures and to support SMEs to find opportunities within Europe. They are also important for effective European policy making.
<p><i>Does the proposal fulfil an interoperability need for which no other alternative action/solution is available?</i></p>	<p>eProc-01</p> <ul style="list-style-type: none"> • e-procurement standards are maturing. The proposal participates in defining the standards and implements them. A two-way interaction is foreseen: <ul style="list-style-type: none"> ○ participation to standardisation technical committees (TC 440) to provide input ○ alignment to standards when it comes to cross-border interoperability of the software solutions produced by the Commission.

	<p>eProc-02</p> <ul style="list-style-type: none">• e-Certis: There is no alternative solution to e-Certis which is provided by the Commission only; Member States are mandated by the public procurement directives to update the information stored therein.• ESPD data model: The use of the ESPD is mandatory. The ESPD data model is a fundamental tool to ensure the interoperability of the national ESPDs; it is managed by the Commission and there is no alternative.• ESPD service: The ESPD service that was developed by DG GROW under this action and will be phased out in 2019 by DG GROW. It is a tool to help Member States to use the electronic ESPD in the initial phase of implementation. Member States have developed or are developing their own versions of the services (CEF supports MS in this regard).• OOP in public procurement specifications: The EU large scale pilot TOOP which started beginning 2017 is working on specifications that can be used also for public procurement. To avoid duplication of work, eProc-02 will not work on its own set of specifications but will leave this to TOOP. eProc-02 will support TOOP to make sure that TOOP's specifications build up on the tools and services which are used in public procurement (e-Certis, ESPD, eTendering, pre-qualification services). There is no alternative at Member State level ensuring EU wide interoperability of OOP. The results of TOOP could require further adjustments to e-Certis and the ESPD data model which will be implemented through this action. <p>eProc-03</p>
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	<ul style="list-style-type: none"> • Currently there is no common ontology covering pre-award and post-award. The ontology will provide links between the concepts to allow the efficient reuse and access to data across the procurement domain. • There is no alternative. The CPV codes are provided by the Commission. They have to be used in procedures in Europe above the threshold.
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5.1.5.2 Cross-sector

The scope of the action, measured by its horizontal impact, once completed, across the policy sectors concerned.

Question	Answer
<p><i>Will the proposal, once completed be useful, from the interoperability point of view and utilised in two (2) or more EU policy sectors? Detail your answer for each of the concerned sectors.</i></p>	<p>The results of this proposal will be used in more than one EU policy areas because of the spill over effects. Examples policies:</p> <ul style="list-style-type: none"> • Public Procurement Directives 2014/24/EU, 2014/23/EU, 2014/25/EU • Digital Single Market Strategy COM(2015) 192 • eIDAS Regulation (EU) No 910/2014 • e-Certis may be potentially extended to other areas in which requirements set up by public authorities are to be met by certificates (e.g. business mobility). It is already envisaged to extend e-Certis to Defense Procurement (directive 2009/81/EC). • In TOOP the ESPD/e-Certis will be piloted in the Business Mobility scenario. This is necessary as it could imply changes to e-Certis and the ESPD data model, to be implemented via ISA². • This action will also explore linking e-Certis to ECRIS, BRIS and the insolvency register provided by the

<p><i>For proposals, completely or largely already in operational phase, indicate whether and how they have been utilised in two (2) or more EU policy sectors.</i></p>	<p>Commission.</p> <p>eProc-01:</p> <ul style="list-style-type: none"> ePrior is used by several EU bodies and some components are used by the Belgian administration. As e-procurement is a domain supporting all sectors of activities, ePrior is de facto used in a cross sector context. <p>eProc-02</p> <ul style="list-style-type: none"> the ESPD service and e-Certis have not yet been used in two other policies. Nonetheless, e-certis will be extended to cover Defence Procurement (this is mentioned in the forthcoming Recommendation on Defence procurement). For the time being the extension of e-Certis to business mobility is being considered as the model is neutral to any specific area and may be extended to cover other sectors. <p>eProc-03: Not applicable</p>
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5.1.5.3 Cross-border

The geographical reach of the action, measured by the number of Member States and of European public administrations involved.

Question	Answer
<p><i>Will the proposal, once completed, be useful from the interoperability point of view and used by public administrations of three (3) or more EU Members States? Detail your answer for each of the concerned Member State.</i></p>	<p>The results of this proposal will have an effect on all Member States and in the EEA.</p>
<p><i>For proposals completely or largely already in operational phase, indicate whether and how they have been utilised by public administrations of three (3) or more EU Members States.</i></p>	<p>eProc-01:</p> <p>ePrior is used by several EU bodies and some components are used by the Belgian administration. In particular in the EU Bodies context, Economic Operators using the ePrior system are from various</p>

	<p>EU countries.</p> <p>eProc-02:</p> <ul style="list-style-type: none"> • For e-Certis: Services in 4 Member States (AT, PT, SK, UK) have already implemented the interface to e-Certis, using the CEF eProc DSI. Other MS have planned to do it. • For ESPD services: Private and public entities from 17 Member States have participated in the CEF eProc DSI 2016. They have or are implementing currently an ESPD service (incl. NO) using the ESPD data model. In some Member States, already at least one ESPD service is in place (DK, NL, SE, FI).
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5.1.5.4 Urgency

The urgency of the action, measured by its potential impact, taking into account the lack of other funding sources

Question	Answer
<p><i>Is your action urgent? Is its implementation foreseen in an EU policy as priority, or in EU legislation?</i></p>	<p>The implementation of eprocurement is foreseen by the Directive. The deadline for the transition to eproc is October 2018. To successfully implement this policy, it is essential to develop the actions indicated in ISA² (eprocurement, e-Certis, ESPD data model, contribution to OOP/TOOP) by this timeframe.</p> <p>By November 2019, e-Invoicing will be mandatory for contracting authorities in all Member States. Although standards (TC 434) and building blocks (e.g. Open PEPPOL) to enable e-Invoice at cross-border level are mature, significant investments are still required from Member States to integrate these solutions with their national infrastructure.</p>
<p><i>How does the ISA² scope and financial capacity</i></p>	<p>Because of the high volume needed</p>

<i>better fit for the implementation of the proposal as opposed to other identified and currently available sources?</i>	during the development, alternative financial options are not available or sufficient.
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5.1.5.5 Reusability of action's outputs

The re-usability of the action, measured by the extent to which its results can be re-used.

5.1.5.6 Related sub-action eProc-01

Name of reusable solution to be produced (for new proposals) or produced (for existing actions)	Software - Open e-PRIOR downloadable package
Description	<p>The downloadable package allows installing and configuring the e-PRIOR exchange platform implementing web services to exchange procurement documents. This allows setting-up, after tailoring and adaptations to the specific target environment (e.g.: interfaces with back-office systems of the contracting authorities), a node playing the role of intermediary between the back-office applications of the public administration and system connected to the PEPPOL network or between the back-office applications of the public administration and Economic Operators/Service Providers systems.</p> <p>The e-PRIOR package includes a component (a.k.a. Adapter) to connect e-PRIOR to the PEPPOL network, allowing the reception of e-invoicing business documents using the UBL 2.1 syntax. It also includes a sample back-office web-based application to consult electronic invoices received through the PEPPOL network. The software package can be used by contracting authorities as a transitional solution to comply with the e-invoice Directive, or, simply, to test the reception of PEPPOL invoices.</p>
Reference	https://joinup.ec.europa.eu/software/openeprior/home
Target release date / Status	New versions of e-PRIOR progressively available thanks to ISA ² funding starting from end of STAGE 1. Updates available as results of sub-action eProc-01 STAGE 2.
Critical part of target user base	Public or private entities providing services in MS around e-procurement
For solutions already in operational phase - actual reuse level (as compared to the defined critical part)	ePrior is used by several EU bodies and some components are used by the Belgian administration. The ePrior solution provides an Open Source alternative solution that can help Public Administrations of any Member State in switching to e-procurement / evaluating

	the benefits of e-procurement
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5.1.5.7 Related sub-action eProc-02

Name of reusable solution to be produced (for new proposals) or produced (for existing actions)	e-Certis
Description	e-Certis is provided by the European Commission as a service to Member States, buyers and sellers. The service provides a web service which can be accessed from solutions to offer added value for end users.
Reference	http://ec.europa.eu/isa/actions/02-interoperability-architecture/2-17action_en.htm
Target release date / Status	Q2/2016 – e-Certis is operational
Critical part of target user base	Public or private entities providing services in MS making use of the web service
For solutions already in operational phase - actual reuse level (as compared to the defined critical part)	As it is online since Q2/2016 MS have currently started their development to link their systems to e-Certis. Services from AT, PT, SK and UK have already implemented the interface to link. This ensures reuse of e-Certis data.

Name of reusable solution to be produced (for new proposals) or produced (for existing actions)	ESPD exchange data model
Description	The ESPD exchange data model is essential to ensure interoperability of the ESPD services developed at national level and their technical compliance with the ESPD form set out by the Regulation
Reference	https://github.com/ESPD/ESPD-EDM
Target release date / Status	Q2/2016 operational Currently a major revision is underway of the data model to improve the usability of the ESPD.
Critical part of target user base	Public or private entities providing services in MS around e-procurement.
For solutions already in operational phase - actual reuse level (as compared to the defined critical part)	The reuse level of the data model is very high. Services operating in more than 15 countries are based on the data model.

Name of reusable solution to be produced (for new proposals) or	ESPD service
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produced (for existing actions)	
Description	The ESPD service is provided by the European Commission. The source code is being made available under the European Union Public License v 1.1. Additional artefacts like the exchange data model or the results developed under Action 1.1 have been made available
Reference	Service run by Commission: http://ec.europa.eu/isa/ready-to-use-solutions/espd_en.htm Source code: https://github.com/ESPD/ESPD-Service
Target release date / Status	Q2/2016 – The ESPD service is operational and updated on a regular basis. It is planned to be phased out by DG GROW in April 2019.
Critical part of target user base	Public or private entities providing services in MS around e-procurement
For solutions already in operational phase - actual reuse level (as compared to the defined critical part)	The open source version of the ESPD is used by some MS TenderNed since August 2016. At the adoption of this work programme there will be further ESPD services reusing the open source code.

5.1.5.8 Related to sub-action eProc-03

Name of reusable solution to be produced (for new proposals) or produced (for existing actions)	Public procurement conceptual data model of the ontology
Description	The conceptual data model will illustrate all data relations from pre-award to post-award. This model would provide a backbone of information when conceptualising platforms, systems and data exchange.
Reference	Not available so far
Target release date / Status	Q3/2018
Critical part of target user base	Public or private entities providing services in MS around e-procurement. Public buyers and economic operators
For solutions already in operational phase - actual reuse level (as compared to the defined critical part)	Not applicable

Name of reusable solution to be	Formalised public procurement ontology and vocabularies
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produced (for new proposals) or produced (for existing actions)	and codes in OWL
Description	The public procurement ontology and codes will be the basis of creating linked data for the public procurement domain. It is envisaged to use this ontology for diffusing the data available on TED and could also be implemented across Europe by tendering platforms and governments.
Reference	Not available so far
Target release date / Status	Q3/2018
Critical part of target user base	Public or private entities providing services in MS around e-procurement. Public buyers and economic operators
For solutions already in operational phase - actual reuse level (as compared to the defined critical part)	Not applicable

Name of reusable solution to be produced (for new proposals) or produced (for existing actions)	Specifications on how to implement the ontology within different systems
Description	This output will provide the specifications for implementing the ontology by tendering platforms across Europe.
Reference	Not available so far
Target release date / Status	Q2/2019
Critical part of target user base	Public or private platforms providing e-procurement services to Member States and/or the European Institutions.
For solutions already in operational phase - actual reuse level (as compared to the defined critical part)	Not applicable

Name of reusable solution	Updated and modernised Common Procurement Vocabulary (CPV)
Description	The CPV establishes a single classification system for public procurement aimed at standardising the references used by contracting authorities and entities to describe the subject of the procurement contracts.
Reference	Not available so far
Target release date / Status	Q2/2019

Critical part of target user base	Public buyers
For solutions already in operational phase - actual reuse level (as compared to the defined critical part)	The current CPV codes are already used by public buyers in Europe.

Name of reusable solution to be produced (for new proposals) or produced (for existing actions)	Provision of harmonised code lists used in e-procurement including the CPV codes within the Metadata Registry (MDR).
Description	Many code lists used in e-procurement are used by different platforms and do not necessarily use the same versions nor sources. It is foreseen to integrate the CPV and other e-procurement code lists in the Metadata Registry (MDR) which will provide reusable access to the CPV and other codes for tendering platforms and any system that wants to integrate the codes.
Reference	Not available so far
Target release date / Status	Q3/2018
Critical part of target user base	Public or private entities providing services in MS around e-procurement. Public buyers and economic operators
For solutions already in operational phase - actual reuse level (as compared to the defined critical part)	Not applicable.

5.1.5.9 Level of reuse of existing solutions

The re-use by the action (following this proposal) of existing common frameworks and interoperability solutions.

Question	Answer
<i>Does the proposal intend to make use of any ISA², ISA or other relevant interoperability solution(s)? Which ones?</i>	<ul style="list-style-type: none"> • eTrustex 2016.19 • European Interoperability Architecture (EIA) 2016.32 • SEMIC 2016.07 • Joinup 2016.20 • Test bed 2016.25 • CEF eDelivery • CEF eSignature • Interoperability Maturity Model (IMM)

	2016.37 <ul style="list-style-type: none"> • Metadata registry (MDR)
<i>For proposals completely or largely already in operational phase: has the action reused existing interoperability solutions? If yes, which ones and how?</i>	<ul style="list-style-type: none"> • eTrustex 2016.19: Used in e-PRIOR • Joinup 2016.20: Used for the sub-actions • SEMIC 2016.07: A core criterion/evidence vocabulary was created (based on the ESPD data model) • Test bed 2016.25: A test bed for the ESPD service is provided. The same test bed is used for eTendering as well as e-invoicing

5.1.5.10 Interlinked

The extent to which the action (following this proposal) contributes to Union's initiatives such as the DSM.

Question	Answer
<i>Does the proposal directly contribute to at least one of the Union's high political priorities such as the DSM? If yes, which ones? What is the level of contribution?</i>	<ul style="list-style-type: none"> • As mentioned above, the Digital Single Market Strategy (DSM) recognises that Information and Communications Technology (ICT) is the foundation of modern economic systems and that public procurement plays an important role in promoting standards and interoperability. The activities supported by this proposal will help to further create or improve standards. The ISA2 programme together with the CEF are a perfect instrument to pave the way to interoperability. • As mentioned above, the eGovernment Action Plan 2016-2020 asks the Commission to support Member States towards full e-procurement and the use of contract register (Action 1). Here we use this action to directly engage with Member

	States through workshops to give advice and learn from them. A first round of workshops was done around the ESPD which proved to be very successful.
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5.1.6 PROBLEM STATEMENT

The problem of	the evolution of many different systems within the public procurement
Affects	the possibility of reusing data across the different public procurement platforms within Europe
the impact of which is	economic operators especially SMEs are not fully exploiting the benefits of the Single Market in the field of public procurement. Member States use different eprocurement systems, different certificates, set different requirements, etc. The administrative burden could be worsened if solutions put in place are not interoperable.
a successful solution would be	one that allows the effective reuse of data throughout the procurement chain to improve cross-border participation (such as the ESPD), from SMEs and all suitable economic operators and clarifies the equivalence of certificates in use across the EU (e-Certis). Such solutions combined with the use of the e-procurement ontology would ensure that data is of quality and unambiguous transparency to the citizen. The physical transparency to citizens being provided by contract registers.

5.1.7 IMPACT OF THE ACTION

5.1.7.1 Main impact list

5.1.7.2 Sub-action eProc-01

Impact	Why will this impact occur?	By when?	Beneficiaries
(+) Savings in money	MSs will be able to adopt a production-ready solution (Open e-PRIOR) already	Q2/2018	National public administrations and economic

	connected to PEPPOL for the reception of electronic invoices. This will allow savings when it comes to integrating the national infrastructure with Open PEPPOL		operators
(+) Savings in time	By adopting Open e-PRIOR, MSs will save time in implementing the connection of national infrastructure to Open PEPPOL.	Q2/2018	National public administrations and economic operators
(+) Better interoperability and quality of digital public service	Open e-PRIOR is fully aligned with the latest version of the standards for the exchange of electronic invoices. This will guarantee interoperability at the national level, as well as across borders.	Q2/2018	National public administrations and economic operators
(-) Integration or usage cost	The integration of national systems to the Open PEPPOL network will entail several investments for Member States. By adopting Open e-PRIOR, Member States will be able to rely on a production-ready solution, already connected to Open PEPPOL for the reception and consultation of e-Invoices.	Already happening	National public administrations

5.1.7.3 Sub-action eProc-02

Impact	Why will this impact occur?	By when?	Beneficiaries
(+) Savings in money	The transition to eprocurement and the implementation of the ESPD can reduce process cost and increase competition. According to a study from the Commission about	In a first phase, once eprocurement and the ESPD are fully implemented in all Member States (October	Hundred thousands of authorities and millions of businesses

	eGovernment and the Reduction of Administrative Burden 5 billion Euro could be saved through OOP in Europe ⁸⁹ .	2018). At full level, with the implementation of OOP and digital transformation	
(+) Savings in time	According to a study from Finland a well implemented ESPD service could save suppliers for each proposal 2 to 3 hours' time.	Depending on the implementation in Member States.	Public administration, SMEs
(+) Better interoperability and quality of digital public service	Interoperability will be significantly increased by the use of the ESPD and the transition to eprocurement as long as the actions planned in ISA ² are fully implemented. Interoperability is key to the internal market.	For ESPD services this is already the case, if it is provided in a Member State. For OOP once Member States have implemented this.	Hundreds of thousands of authorities and millions of businesses
(-) Integration or usage cost	The integration of an ESPD service, the e-Certis interface or in the future OOP, will of course cost implementers. Through the CEF eProc DSI up to 75% of the costs can be supported. The usage cost depends very much of the business model of the providers.	Already happening.	Public/private entities who are implementing the an ESPD service or the e-Certis interface.
(+) Moving towards digital processes supporting the digital transformation	At present still a lot of processes in the domain of Public Procurement are done manually losing a lot of benefits that ICT could bring. The transition to eprocurement, including the the availability of e-Certis, ESPD and in the future OOP digital processes will be supported which will reap a lot of benefits on both sides.	This very much depends on the implementation status and the governance of each Member State. It is not only about using electronic tools but also for Member States to provide an environment which allows	Hundreds thousands of authorities and millions of businesses

⁸⁹ http://ec.europa.eu/information_society/newsroom/cf/dae/document.cfm?doc_id=5155

		digital transformation.	
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5.1.7.4 Sub-action eProc-03

Impact	Why will this impact occur?	By when?	Beneficiaries
(+) Savings in money	Easier reusability of data and reduction of manual interventions in workflows and exchange of data	2019	All stakeholders
(+) Savings in time	Easier reusability of data and reduction of manual interventions in workflows and exchange of data	2019	All stakeholders
(+) Better interoperability and quality of digital public service	Easier reusability of data via automatic workflows and data exchange. Improvement of data quality. The ontology will create a common semantic base for different platforms to work from.	2019	All Stakeholders
(-) Integration or usage cost	The uptake and use of the ontology in all areas of e-procurement as linked open data may not be immediate in all areas of e-procurement (e.g. data protection rules in certain areas, high number of systems required to implement the ontology).	2019	All Stakeholders

5.1.7.5 User-centricity

One of the conditions for maximizing the impact of the ISA² actions is by ensuring that they meet users' needs. For this to happen, users' engagement and involvement is needed before and during solutions' implementation, and users' feedback is sought after solutions are in operation. Explain how you intend to achieve the above.

5.1.7.6 Sub-action eProc-01

The work on Open e-PRIOR is carried out in very close collaboration with the Member States, which expressed their interest in adopting the solution. DIGIT established bilateral exchanges with several Member States (e.g. Belgium, Luxembourg), to which it provides technical support when it comes to setting up and operating the Open e-PRIOR solution. In addition, DIGIT is leading by example in the implementation of end-to-end e-Procurement, and provides invaluable input for the definition and evolution of standards that will eventually be adopted at cross-border level.

5.1.7.7 Sub-action eProc-02

The work on e-Certis, the ESPD, OOP, contract registers, e-tendering is done on many different levels with Member States. At EU level, the multi-stakeholder expert group on e-procurement (EXEP) ensures the exchange of practices and policies. There are subgroups to discuss individual topics like e-Certis, ESPD or contract register. In addition, through this ISA2 action workshops are done on an individual basis to discuss specific topics. This has proved to be a very efficient approach not only to provide information to Member States but also to learn from them.

5.1.7.8 Sub-action eProc-03

The work of the ontology is carried out within a working group with representatives of all stakeholders. Consensus is built on the work prepared by editors working for the group and a public review will be held before publication of the ontology.

5.1.8 EXPECTED MAJOR OUTPUTS

Sub-action eProc-01

Output name	Contribution to standards activity report
Description	Activity report of the contribution to TC 440
Reference	
Target release date / Status	Stage 2 Q2/2018

Output name	Compliance with the -invoice directive – lessons learnt
Description	Formalisation of findings resulting from the actions that will be undertaken by the European Commission to comply with the e-invoice directive.
Reference	
Target release date / Status	Stage 2 Q2/2018

Sub-action eProc-02

Output name	e-Certis and ESPD
Description	Development and operation of e-Certis, maintenance and development of the ESPD data model, phasing out of the ESPD service
Reference	
Target release date / Status	Q4/2018

Output name	Transition to e-procurement
Description	Support to MS in the transition, including e-submission, implementation of the ESPD, development of contract registries
Reference	
Target release date / Status	Q3/2018

Output name	Development of OOP
Description	Support to MS in achieving OOP, adjustment to e-Certis and the ESPD to ensure readiness for OOP
Reference	
Target release date / Status	Q4/2018

5.1.9 ORGANISATIONAL APPROACH

All three sub-actions will be carried out in parallel by three distinct Services (DIGIT B4, GROW G4, OP C2) with mutual consultation.

5.1.9.1 Expected stakeholders and their representatives

Stakeholders	Representatives	Involvement in the action
ISA ²	ISA ² Committee/ Coordination Group/ ISA ² expert group	ISA ²
Member States	EXEP (Multi-stakeholder Expert Group on e-procurement), European Multi-Stakeholder Forum on eInvoicing (EMSFEI), e-Certis editorial team,	Member States

	ISA ² expert group (or ISA ² equivalent)	
Aggregators	Established aggregators in several Member States	Aggregators
Standardisation initiatives	CEN TC 440, CEN TC 434, ISA ² Team	Standardisation initiatives
European projects	e-SENS, CEF	European projects

5.1.9.2 Identified user groups

List the main group of end-users of your solutions.

- Central Purchasing Bodies (CPBs)
- SMEs
- ERP Software Vendors
- Service Providers and other procurement data users like EUPLAT (European Association of public eTendering providers) or organisations identified in the TED LOD project, eSenders
- European Public Administrations

5.1.9.3 Communication and dissemination plan

Provide information about how you plan to communicate with the identified stakeholders and your users (see section above) and also dissemination beyond during the lifetime of the proposed action. In particular explain user engagement activities. (See explanatory notes for more details)

Event	Representatives	Frequency of meetings/absolute dates of meetings
Multi-stakeholder forum on e-procurement (EXEP)	Member States representatives, Standardisation initiatives, users, etc.	2 times a year
EXEP subgroup meetings	EXEP representatives	As necessary
General events	For all stakeholders	Constantly
e-Certis editorial team Meeting	e-Certis editorial team	2 times a year
eSender meetings	eSenders	Min 1 a year
ISA ² expert group	Meeting	2 times a year
e-SENS	Meeting	3 times a year
TC 440	Member States representatives	2 times a year
TC 434	Member States representatives	2 times a year
Workshops	Service Providers, Standardisation initiatives, EC	As necessary
EC Multi-Stakeholder Forum on e-invoicing	Service Providers, Standardisation initiatives, EC	2 times a year
Conferences on e-procurement, e-invoicing or e-government	Depending on conference, EC	+/- Monthly

Websites of DG DIGIT, DG GROW, OP	For all stakeholders	Online
eProc Wiki	For all stakeholders	Online
e-practice	For all stakeholders	Online
Joinup	For all stakeholders	Online
LinkedIn e-PRIOR Group	For all stakeholders	Online

5.1.9.4 Key Performance indicators

5.1.9.5 Sub-action eProc-01

Description of the KPI	Target to achieve	Expected time for target
Number of Public Administrations using e-PRIOR (EU Institutions/Bodies + Member States)	45	Q2/2018
% of eInvoices senders via OpenPeppol vs via ePrior WS by end 2017	5% of invoices	Q2/2018
Re-use of Architectural / Solution building block by Member State public administrations (measure based on meetings/interactions with interested entities).	3	Q2/2018
Help Desk efficiency: tickets solved in < 1 week	90%	Q2/2018
Number of significant interventions to upgrade the norm=> (eg: number of architecture documents produced for TC 440, change requests to UBL standards)	3	Q2/2018

5.1.9.6 Sub-action eProc-02

Description of the KPI	Target to achieve	Expected time for target
e-Certis: Number of Member States who have implemented the e-Certis interface (at least one service per Member State)	All Member States	Q2/2020

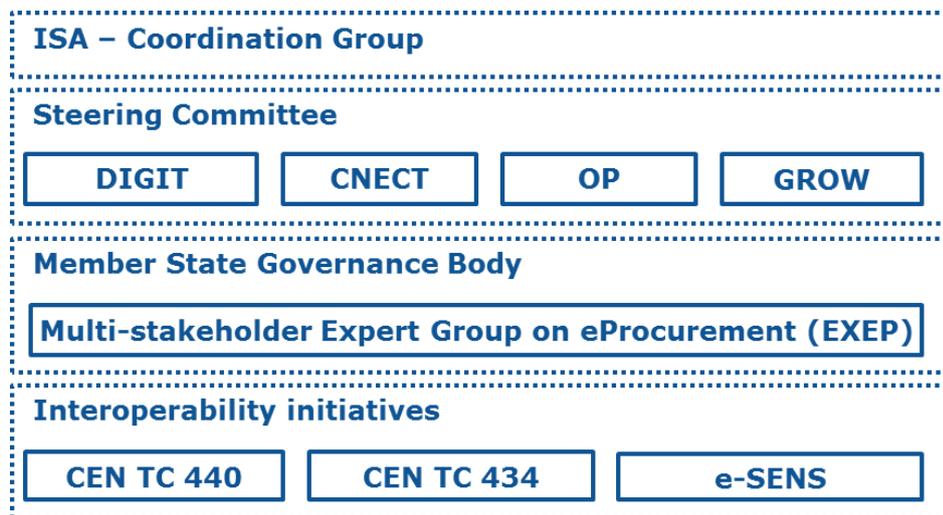
ESPD service: Number of Member States who are providing at least one ESPD service	All Member States	Q2/2019
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5.1.9.7 Sub-action eProc-03

Description of the KPI	Target to achieve	Expected time for target
Number of use cases used to update the conceptual data model	19	Q3/2018
Number of code lists reviewed	74	Q3/2018
Number of code lists put on-site	70	Q3/2018

5.1.9.8 Governance approach

A working group with members from DG DIGIT, OP, DG GROW and DG CNECT, will discuss all ISA² and CEF e-procurement actions to make sure that the objectives are met. The main Member State governance body who will provide advice to the Commission will be the Multi-stakeholder Expert group on e-procurement (EXEP). The European Public Procurement Interoperability Initiative (this action) will work closely with the relevant interoperability initiatives to assure coherence. In addition, the communication and development of this project will be done in an open and transparent way with all stakeholders and at all possible events.



5.1.10 TECHNICAL APPROACH AND CURRENT STATUS

5.1.10.1 Sub-action eProc-01

The Sub-action ePROC-01 will create an open source solution of the e-PRIOR platform to help Member States implement end-to-end e-Procurement, with a focus on the legal obligations set out by the e-invoice and public procurement Directives. DIGIT will lead by example in implementing e-Procurement in the European Commission ecosystem, using the internally developed e-PRIOR platform, when it comes to enabling cross-border interoperability. On the one hand, DIGIT will share reusable and interoperable software solutions that could be adopted by Member States to implement e-Procurement at the national level. On the other hand, DIGIT will provide contribution to standardisation bodies to increase the maturity of standards around e-Procurement.

Current status

Since 2009, DIGIT is providing a freely downloadable software package of the e-PRIOR platform (a.k.a. Open e-PRIOR). In Q2/2017, Open e-PRIOR has been upgraded to support the UBL 2.1 syntax for e-invoices. The solution is now fully integrated with the PEPPOL network for the reception of e-invoices.

Activities about eSubmission have been affected by issues in the EC Pilot Production environment which led to the impossibility to deliver a new Open Source version of ePrior/eSubmission. In particular the Front Office module migrated from Applet to WebStart showed to be sensitive to the local environment of the Economic Operators and in several cases was not usable because of the existence of "local" security policies. This caused the failure of offering an Open Source version of the application (the one in place was not actually "supportable") and obliged to heavily invest in support and fixes which absorbed a lot of budget. Finally a totally new Front Office had to be developed and deployed in the EC Production environment. This caused putting aside other planned activities (provision of Open Source with support of Restricted Procedures, initial alignment to eSens, upgrade to latest version of UBL 2.1, improved support of CPBs).

Next steps

As next steps, DIGIT will provide a basic back-office system connected to Open e-PRIOR/PEPPOL, which Member States can adopt to consult e-invoices received through the PEPPOL network. At the same time, DIGIT will keep contributing to the definition of standards around e-Procurement.

The risk of creating a solution competing with the market for what concerns the Front Office has led to the decision to abandon the provision of Open Source Front Offices modules for ePrior.

Moreover, the decision taken by the European Commission to define a new internal Corporate Target Architecture combining the support of Grants and eProcurement has affected the continuation of the development of the eSubmission solution, as part of Open Source version of ePrior included in this action. In fact, the definition and implementation of the new architecture will last at least two years with risk of unstable solutions. Additionally the new architecture will be based on eGrants "proprietary" building blocks, which will not allow the provision in Open Source of the developed solutions. This breaks the main assumption that was at the source of the ePrior initiative and that consisted in providing in Open Source, the solution developed and piloted at the Commission. At the same time, the experience acquired by DIGIT over the last years on e-Submission, including the technical barriers that were faced, will be formalised and made available to the Member States. This will be of invaluable input when it comes to complying with the public procurement directive. The technical issues faced in e-Submission were mainly related to ensuring confidentiality of tenders, which every MSs implementing an e-Tendering solution will face. Sharing good practices deriving from DIGIT's

experience will help MSs choose the right technical approach to guarantee a stable, interoperable and secure e-Tendering solution.

As a consequence the scope Stage 2, whose activities and budget are reduced and lead to drop Stage 3 activities. For this reason, no budget will be requested for 2018. Stage 2 activities will be executed with a reduced 2017 budget.

5.1.10.2 Sub-action eProc-02

Technical approach

e-Certis and ESPD play an integral part of the activity on OOP. For the work on OOP this action will work together with TOOP to ensure that due consideration is given to the tools and services already used for public procurement will be included in the results of this EU large scale pilot building up on the experience developed in the public procurement domain. The results will have an impact on e-Certis and ESPD which will be updated through this ISA² action. A consultation of the TOOP findings with the Public Procurement community will be carried out to ensure its applicability. Beside this, individual workshops are done with Member States to support, assess and learn from them.

Current status

Since Q2/2016, the ESPD service is online, the ESPD exchange data model has been published; e-Certis is on line since April 2016. The ESPD data model has seen a major update in 2017 to make it easier to apply.

Next steps

The new ESPD data model will be communicated to Member States. The joint work with TOOP will be continued. The use of the CEF eProc DSI and new activities will be explored. We will continue the successful workshops with Member States around e-procurement.

5.1.10.3 Sub-action eProc-03

The inception phase of the ontology has been concluded and a working group of stakeholders has been set up. During the inception phase, use cases have been defined and preliminary work on three use cases has begun. Editors will develop the ontology following discussions within the working group both in meetings and online using such tools as Github. The working group will guide the editors so as to ensure that consensus is met on the output.

The user group has decided that the best way to update the current CPV codes was a complete revision and restructuring. The conceptual data model, the OWL ontology and the code lists used in e-procurement will be disseminated on the Metadata Registry (MDR) at the Publications Office. Preliminary work is underway to ensure the appropriate code lists are available.

Further work will provide specifications for using the ontology, maintaining the ontology taking into consideration stakeholders needs and promoting the reuse of the ontology throughout Europe.

5.1.11 COSTS AND MILESTONES

5.1.11.1 Breakdown of anticipated costs and related milestones

5.1.11.2 Sub-action eProc-01

Phase: Initiation Planning Execution Closing/Final evaluation	Description of milestones reached or to be reached	Anticipated Allocations (KEUR)	Budget line ISA/ others (specify)	Start date (QX/YYYY)	End date (QX/YYYY)
Stage 0: Initiation	<ul style="list-style-type: none"> Project charter First step of activity in eSubmission Back Office in EC environment to support Restricted Procedures Activity Report for Standards Contribution 	150	ISA ²	Q2/2016	Q3/2016
Stage 1: Execution	<ul style="list-style-type: none"> Upgrade eSubmission in EC Pilot environment to support Restricted Procedures [not delivered because of issues in Front Office] Replace Applet in eSubmission Front Office in EC Pilot environment [not delivered because of issues in Front Office] Open Source version of eInvoicing solution integrated with OpenPeppol (UBL 2.1) Start set-up in EC Pilot Environment of eInvoicing solution integrated with OpenPeppol Activity Report for Standards Contribution STAGE 1 	1100	ISA ²	Q3/2016	Q2/2017
Operational	<ul style="list-style-type: none"> Support Maintenance and fixing 	250	ISA ²	Q2/2016	Q1/2017

	<ul style="list-style-type: none"> Pilot Deployment Publication in JoinUp 				
Stage 2 Execution	<ul style="list-style-type: none"> Open Src Basic Back Office solution for administrations to receive and view eInvoices Complete set-up of EC Pilot Environment of eInvoicing solution integrated with OpenPeppol Compliance with the e-invoice directive – lessons learnt Activity Report for Standards Contribution STAGE 2 	300	ISA ²	Q3/2017	Q2/2018
Operational	<ul style="list-style-type: none"> Support Maintenance and fixing Pilot Deployment Refresh Publication in JoinUp 	150	ISA ²	Q2/2017	Q2/2018
	Total:	1950			

5.1.11.3 Sub-action eProc-02

Phase: Initiation Planning Execution Closing/Final evaluation	Description of milestones reached or to be reached	Anticipated Allocations (KEUR)	Budget line ISA/ others (specify)	Start date (QX/YYYY)	End date (QX/YYYY)
Operational	Maintenance and helpdesk for e-Certis and the ESPD service	250	GROW G4	Q1/2017	Q4/2017
Operational	Further development e-Certis; maintenance of the ESPD service, operation of e-Certis	1000	ISA ²	Q3/2016	Q2/2020
Operational	Support and assess situation in MS to check ESPD compliance and interoperability	400	ISA ²	Q3/2016	Q2/2017
Inception	OOP in PP	300	ISA ²	Q4/2016	Q3/2017

	<ul style="list-style-type: none"> Project initiation Drafting concept 				
Execution	<ul style="list-style-type: none"> OOP development and implementation Input to TOOP for public procurement Implementation of results in e-Certis and in ESPD service Dissemination and communication 	685	ISA ²	Q3/2017	Q2/2020
	Total	2635			

IMPORTANT: Closing phase not yet planned since additional Execution Phases will be described in future update of the Proposal

5.1.11.4 Sub-action eProc-03

Phase: Initiation Planning Execution Closing/Final evaluation	Description of milestones reached or to be reached	Anticipated Allocations (KEUR)	Budget line ISA/ others (specify)	Start date (QX/YYYY)	End date (QX/YYYY)
Inception/ planning phase	<ul style="list-style-type: none"> Definition of the methodology Analysis of available information Project Charter 	50	ISA2	Q4/2016	Q3/2017
Execution	Ontology: <ul style="list-style-type: none"> Requirements and design. Conceptual model Definition / creation/ adaptation of vocabularies and code lists Presentation in OWL 	280	ISA2	Q4/2016	Q3/2018
Execution	Ontology:	100	ISA2	Q3/2018	Q2/2019

	<ul style="list-style-type: none"> • Development of implementation specifications • Maintenance via working group consensus • Promotion training 				
Execution	CPV: Updating the CPV codes	300	ISA2	Q4/2016	Q2/2019
	Total	730			

5.1.11.5 Breakdown of ISA² funding per budget year

Budget Year	Phase	Anticipated allocations (in KEUR)	Executed budget (in KEUR)
2016	Inception eProc-01	150	150
	Execution eProc-01	1100	1100
	Operational eProc-01	250	250
	Inception eProc-02	300	275
	Operational eProc-02	350	350
	Inception eProc-03	50	50
	Execution eProc-03	200	150
2017			
	Execution eProc-01	300	0
	Operational eProc-01	150	0
	Execution eProc-02	392	
	Operational eProc-02	343	
	Execution eProc-03	260	
2018			
	Execution eProc-01	0	
	Operational eProc-01	0	
	Execution eProc-02	193	
	Operational eProc-02	650	
	Execution eProc-03	220	
2019			
	eProc-01	0	
	Execution eProc-02	100	

	Operational eProc-02	307	
	Execution eProc-03		
2020			
	eProc-01	0	
	eProc-02		
	Execution eProc-03		

5.1.12 ANNEX AND REFERENCES

Description	Reference link	Attached document
Directive 2014/24/EC	http://ec.europa.eu/growth/single-market/public-procurement/modernising-rules/reform-proposals/index_en.htm	Directive 2014/24/EC
eIDAS Regulation	http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.L_.2014.257.01.0073.01.ENG	eIDAS Regulation
Digital Single Market	http://ec.europa.eu/priorities/digital-single-market/docs/dsm-communication_en.pdf	Digital Single Market
Digital Agenda	http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2010:0245:FIN:EN:PDF	Digital Agenda
CEF	https://ec.europa.eu/digital-agenda/en/connecting-europe-facility	CEF

6 DECISION MAKING AND LEGISLATION – SUPPORTING INSTRUMENTS

6.1 PARTICIPATORY KNOWLEDGE FOR SUPPORTING DECISION MAKING (2016.04) – FUNDING CONCLUDED

6.1.1 IDENTIFICATION OF THE ACTION

Type of Activity	Reusable generic tools
Service in charge	DG DIGIT B4
Associated Services	DG CNECT.R3, H3, DIGIT.01, SG.C4, Latvian Ministry of Environmental Protection and Regional Development, Parliament, Council, Publications Office

6.1.2 EXECUTIVE SUMMARY

Despite the large amount of opinions, needs and preferences expressed by citizens, governments' decision making processes are so far still not able to consume this unstructured and dispersed knowledge in order to extract meaningful knowledge and use it as input to decision making. Within this context, this action, titled 'Participatory Knowledge for supporting Decision Making Processes', aims at consolidating and integrating existing reusable tools that allow the electronic participation of stakeholders, the analysis of the captured opinions and the discovery and generation of knowledge. This knowledge will in turn be used to provide insights on existing decision making, making them data-driven processes.

In phase 1 of this action, executed in 2015, activities were focused on the identification of the requirements stemming from the public administrations in the different Member States in order to provide a panoramic view of the needs within the Member States and Commission Services. With a better visibility of these needs this action started exploring and assessing existing assets, reusable software solutions, standards and vocabularies that can address the identified needs. This action intends to consolidate and generalise the identified solutions in order to allow them to be used in different areas that aim to address a common challenge. The development effort shall focus on the generalisation of components or integration of components as well as the assessment of modular generic components and the subsequent consolidation into a framework of software solutions. Such modular generic components shall include, as an example, components for sentiment analysis techniques, data analytics, data mining techniques, opinion modelling, text mining techniques and components for visual analytics techniques and reporting (dashboards).

Within phase 1 of this action the above technologies shall be applied in three specific business contexts whereby for each business context a proof of concept will be executed and subsequently further elaborations shall be performed in phase 2 of this action. The three business contexts are (i) the improvement of services through the consumption of citizens' feedback in collaboration with the State Chancellery of Latvia who has developed a leading mobile application called 'Football' (ii) the open participation through perception and opinion elicitation in collaboration with DIGIT IT Governance and Communications Unit and (iii) the execution of policy making through participatory knowledge through the reuse and further extension of the Futurium platform in collaboration with DG CONNECT Support Systems and Tools Unit.

A continuation of such exploratory activities, which were kicked off in phase 1 of this action, shall be continued throughout phase 2, to be executed in 2016. Phase 2 shall be composed of 3 tracks as follows: (i) continue with the further identification of the requirements stemming from the public administrations in the different Member States as well as Commission services (ii) continue the implementation of already identified pilots, details in the 3 business contexts of phase 1, through the development of further functionality as well as the generalisation of the developed functionalities, and (iii) launch a new wave of pilots in specific domains which hold a potential of later being generalised and scaled-up to be made available to different services agnostic of their specific policy area.

Through these efforts this action shall aim at contributing to making governments throughout Europe open and participatory through the implementation of a number of practical activities. These activities shall strive to make better use of data which is already being collected either internally or externally, thus making it the basis for generating knowledge that brings value to business contexts and contribute towards data-driven decision making processes.

6.1.3 OBJECTIVES

Citizens' participation in governments' decision making processes, through the ability to express their opinions, needs and preferences, is a valuable asset since it brings **insights** and additional **knowledge** to public administrations. Using this knowledge, public administrations can become **more efficient and effective**, offer **user-friendly services**, whilst **reducing costs and administrative burden**; resulting in a **positive impact** on individuals, society, economy, environment etc.

Within this context, the **main objective** of this action is **to consolidate and integrate existing reusable tools that allow the electronic participation of stakeholders, the analysis of the captured opinions and the discovery and generation of knowledge. This knowledge will in turn be used to provide insights on existing decision making, making them data-driven processes. It is not the objective of this action to replace existing stakeholder consultation tools, but to give additional value to them by providing further capabilities for gathering, integrating and analysing big quantities of semi-structured or unstructured information.** The proposed capabilities will in particular cross-fertilise with other existing tools such as EU Survey, Your Voice in Europe or the similar tools in the Member States.

To realise the proposed action the following specific objectives are set out:

- To **cooperate with Member States and related networks**, for instance EUPAN⁹⁰, in order to better **identify the technology needs of public administrations** when acquiring stakeholders' opinions as a driving force for open governments. Similarly, this action shall also **cooperate with Policy DGs in defining their needs** in shifting towards data-driven decision making processes;
- To **assess different assets that are currently available** for making them accessible, thus allowing for collaboration, transparency and participation;
- To **consolidate and integrate open and reusable software solutions** that will support the interactive knowledge sharing and will allow the elicitation of citizens' opinions and perceptions which is hidden in tacit knowledge. By leveraging on participation and motivation

⁹⁰ <http://eupan.eu/>

of citizens, such tools can contribute to better informed decisions and improved legitimacy of the policy making.

6.1.4 SCOPE

By enhancing the participation of stakeholders in decision making we enable governments to make more informed policies, legislative acts and internal decisions. This leads to a participatory type of government that relies strongly on the evidence and the collective knowledge that the various stakeholders bring in. This shall also contribute to inter-administration cooperation and better decision making processes taking into consideration different perspectives coming from different domains and Member States.

The proposed action has a clear focus on using, further extending and mainstreaming **reusable software solutions** to facilitate the capturing of elicited knowledge from unstructured content.

6.1.5 PROBLEM STATEMENT

Society is demanding public administrations in Europe to become more open, transparent, collaborative and participatory in their pre-legislative consultations, internal decisions and policy-making processes. Citizens, businesses and other key stakeholders expect their voice to be heard and taken into account. Decision makers on the other hand do not always have the means to reach out and listen to the opinions and perceptions of people. More specifically, acquiring the plethora of citizens' opinions is a challenging task since they are often expressed in an unstructured way on different platforms. It is even more difficult and expensive to extract meaningful knowledge that can be used as input to decision making. Data must be gathered, measured and analysed through discovery and analytics tools, which makes it possible to identify trends, issues and challenges. For instance, data coming from interactions on social media contribute towards factors other than evidence. Information that may be captured include personal opinions, corporate interests, lobbying, ideological values and other 'non-measurable' factors that cannot be easily sensed and automatically captured⁹¹. The collected information provides information that stakeholders and policymakers can use to reshape decisions. Decisions may also be inspired by desirable visions and aspirations that are not necessarily in line with current, short-term trends.

Although European institutions and Member States' public administrations have launched several initiatives to collect citizens' opinions when consulting stakeholders, these activities are often fragmented and developed in "isolation" with limited cross-organisational or cross-border cooperation.

There is a strong link between open government and knowledge - open knowledge that can be shared and reused in different context by different stakeholders and across public administrations. However, a number of roadblocks are currently preventing the opening up of knowledge namely at organisational, semantic, technical and legal level. This action aims to address the challenges around opinion elicitation in particular at the **semantic and technical implementation levels** with a main focus on **reuse of existing assets**.

⁹¹ See: [The Futurium—a Foresight Platform for Evidence-Based and Participatory Policymaking](#), Springer, 2013

6.1.6 EXPECTED BENEFICIARIES AND ANTICIPATED BENEFITS

Beneficiaries	Anticipated benefits
<ul style="list-style-type: none"> - EU institutions - Member States public administrations (national, regional, local levels) 	<p>The development of a toolbox will allow the collection of opinions from various digital sources in a standardised manner and support informed decision making. This will provide DGs at the European Commission, EU institutions, European agencies and Member States public administrations at all levels with the following benefits:</p> <ul style="list-style-type: none"> • A coherent way to manage open knowledge. • Support public administrations to become more modern, adaptive, responsive, dynamic, flexible organisations to better address the expectations of their stakeholders, • Reach out to citizens through e-participation and open knowledge sharing. This will ensure higher rates of collaboration as compared, for instance, to traditional expert consultations, thus resulting in more effective processes • An increase of the efficiency, e.g. by: <ul style="list-style-type: none"> ○ Reducing time to make the right decisions; ○ Getting the right knowledge/people as needed ○ Harnessing tacit knowledge to support policy making. • A major involvement of the users resulting in: <ul style="list-style-type: none"> ○ An increased generation of knowledge. ○ Maximum re-use of the knowledge. ○ Higher quality of the activities carried out through the sharing of the knowledge. ○ An easy clustering of the expertise of the users.
<ul style="list-style-type: none"> - Citizens, organisations and business in Europe 	<ul style="list-style-type: none"> • Voice their opinion and influence the decisions of governments (supporting e-participation). • Innovate through the reuse of open knowledge and reusable open source software for knowledge discovery. • Empowerment of individuals who have the possibility to build consensus around their own ideas and influence decision makers through a transparent process. • Support to civil organisations, including associations of citizens, youth, unions, and non-governmental organisations, etc. facilitating their open, transparent and efficient collaboration with governments in policy making matters.

6.1.7 RELATED EU ACTIONS / POLICIES

Action / Policy	Description of relation, inputs / outputs

Digital Agenda	<p>Action 3: Open data and re-use of public sector information</p> <p>This action promotes government bodies at all levels: local, regional, national, European and international, to disseminate and reuse the vast amounts of information that is collected as part of their tasks. Activity 5 of this action promotes the dissemination and reuse of information as a means for improving transparency of organisations.</p>
Better regulation policy	<p>One of the Smart Regulation's policy goals is to remove bottlenecks and streamline the Commission's policy making processes as well as to promote open participation through public consultations.</p>
ISA Action 4.2.5.- Sharing and reuse strategy	<p>The reusable practices and guidelines as well as the reusable software solutions delivered through this proposed action can adopt the strategy defined in Action4.2.5 in order to ensure that the outputs are shared and re-used with public administrations in Europe.</p>
ISA Action 4.2.1.- Bringing together the eGovernment platforms (Integrated collaborative platform – Joinup)	<p>The Joinup collaborative platform shall be used as a means for sharing the experiences as well as the deliverables of this action with the Member States' public administrations.</p>
EuroVoc	<p>EuroVoc can be assessed as a potential multilingual, multidisciplinary thesaurus covering the activities of the EU to be used as a basis for the vocabulary used in “Futurium” model (see below).</p>
ISA Action 1.1.- Improving semantic interoperability in European eGovernment systems (SEMIC)	<p>Reusable interoperability solutions, core vocabularies, studies and other resources made available through SEMIC and which might be relevant to this action shall be explored and reused as much as possible in order to ensure interoperability as well as continuation of existing efforts.</p>
Your Voice in Europe ⁹²	<p>'Your Voice in Europe' is an existing platform that allows for public consultations to be carried out in order to collect structured data in the form of questionnaires. This platform will be explored as a data source of stakeholders' opinions.</p>
EU Survey ⁹³	<p>EU Survey is a platform provided by the European Commission under the ISA Funding programme with the intention of allowing Commission Services to easily create online surveys as a means of stakeholder opinion or other data collection for potentially any domain. This is also considered to be of potential interest to this action as an existing and complimentary source of data that could be consumed by certain business contexts.</p>

⁹² http://ec.europa.eu/yourvoice/index_en.htm

⁹³ <http://ec.europa.eu/eusurvey/>

'ISA ² Action ICT implications of EU legislation'	Results and conclusions related with the properly preparation and evaluation regarding the ICT implications will be taken into account for developing reusable solutions that allow the electronic participation of stakeholders, the analysis of the captured opinions and the discovery and generation of knowledge.
ISA ² Action 'Interinstitutional framework for digital OLP management'	The proposed interoperable ways of structuring the content of the documents that need to be exchanged between the institutions for the purposes of the ordinary legislative procedure will be taken into account for developing reusable solutions that allow the electronic participation of stakeholders, the analysis of the captured opinions and the discovery and generation of knowledge.
ISA ² Action 'Legislation interoperability tools (LEGIT)'	Existing or under development building blocks (i.e. software, tools etc.) that support and improve the electronic exchange of documents and metadata in the context of the legislative process and the transformation between different formats will be taken into account for developing reusable solutions that allow the electronic participation of stakeholders, the analysis of the captured opinions and the discovery and generation of knowledge.
ISA ² Action 'European Legislation Identifier (ELI)'	The proposed approach for identifying legislation documents and the supporting assets and solutions will provide input for developing reusable solutions that allow the electronic participation of stakeholders, the analysis of the captured opinions and the discovery and generation of knowledge.
ISA ² Action 'Application of EU law: provision of cross-sector communication and problem solving tools (THEMIS)'	Reusable tools and the underlying semantic structures and data standards for monitoring the application of EU law will be taken into account for developing reusable solutions that allow the electronic participation of stakeholders, the analysis of the captured opinions and the discovery and generation of knowledge.

6.1.8 REUSE OF SOLUTIONS DEVELOPED BY ISA, ISA² OR OTHER EU / NATIONAL INITIATIVES

The final output of phase 1, which shall amongst other things explore what tools are available for reuse by public administrations, will greatly impact the choice of solutions that might be reused by this action. Currently, the reuse of the following initiatives can be identified:

- The Football mobile application developed by the Latvian government shall be generalised in order to be made available for re-use by other Member States as well as extended with additional components to provide additional functionality.
- The Futurium platform, developed by DG CNECT.R3 and currently used by Commission's services, shall be further extended and generalised within the scope of this action in order to embed further data analytics as well as user interface and gamification capabilities and make them customisable for the governments.

6.1.9 EXPECTED RE-USABLE OUTPUTS (solutions and instruments)

All outputs generated by each of the pilots shall be provided in a re-usable format. The following are concrete re-usable outputs that can be identified at this stage:

Output name	Football Application and complimentary components
Description	The Football Application together with a set of optional and complimentary components that enhance the functionality of the software package shall be made available for reuse to other Member States' public administrations as well as Commission services.
Reference	
Target release date / Status	Q2 2016 / project currently being kicked-off

Output name	Futurium
Description	The Futurium Application shall be generalised and extended further with additional functionality and subsequently made available for re-use by other public administrations and Commission services.
Reference	
Target release date / Status	Q2 2016 / project currently being kicked-off

6.1.10 ORGANISATIONAL APPROACH

6.1.10.1 Expected stakeholders and their representatives

Stakeholders	Representatives
ISA ²	The ISA ² Committee will oversee the project, with the assistance of the ISA ² Coordination Group.
DIGIT.B4 Digital Business Solutions – Corporate Financial Procurement & Policy Solutions Unit	This unit is the service in charge of this action. It will coordinate the interaction between the different stakeholders within the European Commission.
DG CNECT.R3	This unit is an associated service of this project and will take part in

Support Systems and Tools Unit	the definition of the requirements, the performance and the guidance of this proposal and will ensure collaboration with other units, such as F4, O2, H3, G3, D3, D4, etc. that have developed important policies or R&I related to this proposal.
DIGIT.01 Governance and Communication Unit	This unit is an associated service of this project and will take part in the definition of the requirements, the guidance and providing lessons learnt of this proposal.
Latvian Ministry of Environmental Protection and Regional Development	Latvia has developed the application "Football", whose aim is to collect citizen's feedback on the quality of the services provided by Latvian public institutions. The application allows citizens to locate the closest public institution, to find the related contact information and to provide comments about the quality of the service they received. Latvia is an associated Member State of this action.
SG.C4	This unit is an associated service of this project and will take part in the definition of the requirements, the guidance and providing lessons learnt of this proposal.

6.1.10.2 Communication plan

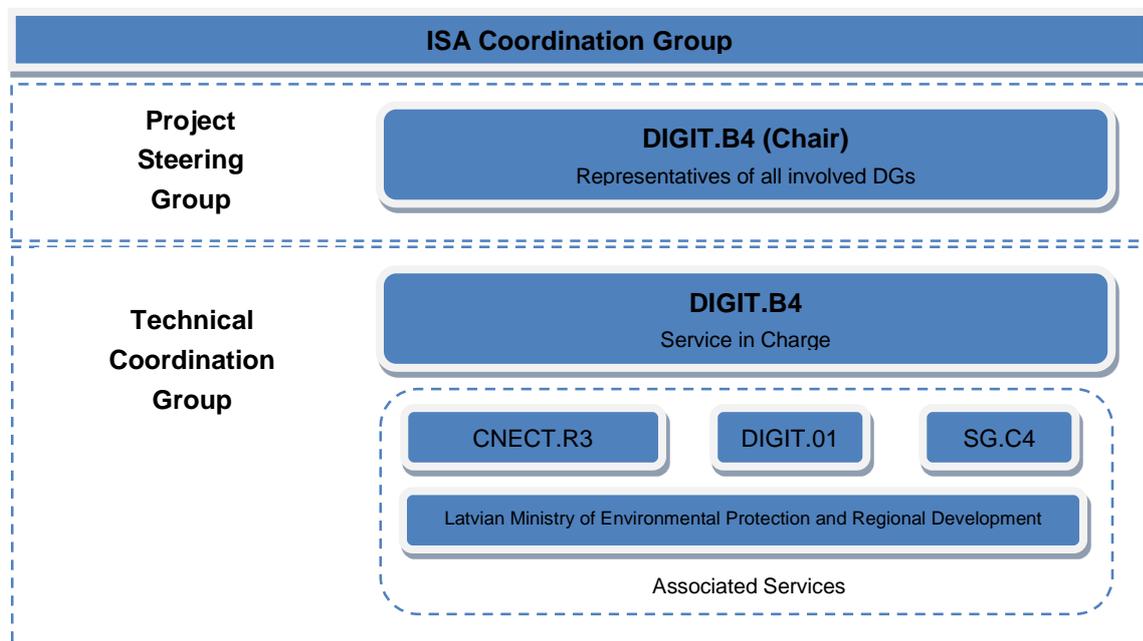
Event	Representatives	Frequency of meetings / absolute dates of meetings?
Project kick-off meeting	DIGIT.B4, CNECT, DIGIT.01	Once at the beginning of the project
Technical Coordination Group	Team leader and team members of DIGIT.B4 and CNECT.R3 technical teams	Bi-weekly
Project Steering Group	Team leader and HoU of DIGIT.B4 and team leaders and HoUs of associated services of each of the activities	Bi-monthly
Bilateral meeting with Member States	DIGIT.B4 representatives, Member States representatives	These are arranged by DIGIT B4 on ad hoc basis.
Bilateral meetings with Policy DGs	DIGIT.B4 representatives, Policy DGs representatives	These are arranged by DIGIT B4 on ad hoc basis.
Relevant conferences and events	DIGIT.B4 representatives with any other project stakeholder	On occasions whereby DIGIT is invited to participate in meetings organised by Member States, policy DGs etc.

Dedicated ISA ² group	DIGIT.B4 team members, Stakeholder's representatives, ISA unit	These meetings are arranged by the ISA unit.
Joinup	(online)	

6.1.10.3 Governance approach

This action is part of the ISA programme and therefore it follows the ISA governance structure with the action reporting back to the Member States' representatives pertaining to the ISA working groups.

This action will actively involve all associated services at each of the different stages. The governance structure for this action is depicted in the following diagram.



In order to achieve its objectives this project will work closely together with primarily identified associated DGs to better define the business needs and challenges, bearing in mind the need of potentially other services in order to come up with generic and extendable software solutions. Particular attention will be given to the coordination activities in order to ensure a successful undertaking of the different activities.

6.1.11 TECHNICAL APPROACH

This action shall aim at contributing to making governments throughout Europe open and participatory through the implementation of a number of practical activities. These activities shall strive to make better use of data which is already being collected either through existing internally provided platforms or else through external data collection sources. This data shall be the basis for generating knowledge that brings value to business contexts and contribute towards decision making processes which are more strongly data-driven.

In **phase 1** of this action, executed in 2015, activities were focused on the **identification of the requirements stemming from the public administrations in the different Member States**. The requirements were captured through a field exercise, primarily in cooperation with relevant networks such as the European Network of Public Administrations (EUPAN) and the results of which have provided a panoramic view of the needs within the Member States. In addition, this action also cooperates with a number of Commission Services in order to identify the concrete needs and value added that the open and participatory government practices would bring to decision making processes.

With a better visibility of the needs of the Member States and the Commission Services this action started exploring and assessing **existing assets, reusable software solutions, standards and vocabularies** that can address the identified needs. The identified reusable software solutions shall be classified according to the type of participation platform that it belongs to in order to make it easier for public administrations and Commission services to identify which reusable software might be relevant for them to consider according to the type of challenge they wish to address.

The above mentioned activities are complemented by further activities within this action with the intention of consolidating and generalising the identified solutions in order to allow them to be used in different areas that aim to address a common challenge. These are subsequently integrated in a way that they can consume existing data sources, generate knowledge and present outputs. The **provision of a number of generic and customisable reusable software solutions** shall drive forward stakeholder engagement, enable perception and opinion elicitation and facilitate the generation of participatory knowledge in decision making processes.

The development effort for delivering a number of **software solutions** is foreseen to produce two main streams:

Generalisation of components or integration of components:

- In the context of policy making the existing **participatory platform Futurium** (developed by CNECT) will be further generalised and extended with functionalities such as more customisable **workflows, group/community management, access rights as well as user experiences**. The platform is currently used by DG CNECT and other DGs to support stakeholder engagement and evidence based policy for the Digital Single Market. Furthermore, several local governments and non-governmental organisations have shown interest or are willing to adopt the Futurium model to support their policy making processes⁹⁴. The extended platform should build on and extend the generalisation of the existing open source assets which needs to be consolidated to allow customisability as well as extensibility through the plug in of modular generic components, e.g. by adding graphical, ease-to-use configuration editors.

⁹⁴ The Futurium will be discussed in several events where current and perspective users will be invited. This includes a networking session in the context of the annual [ICT2015 events in Lisbon](#).

- **Link to social media and other collaborative work environments** in order to be able to explore different sources of information containing scientific evidence, users' perceptions, expectations and opinions.

Modular generic components to be assessed and consolidated into a framework of software solutions, in accordance with the requirements identified during phase 1 and phase 2 – track 1 (see below) of the action. Potential software components include:

- Components for **sentiment analysis techniques** in order to analyse the comments and co-created content posted by users on the platform and decide whether an input is pro or contra the topic/vision/idea discussed. Such techniques will also provide a means to calculate the overall sentiment of participants with regards to a topic debated on the core platform or other social media, thus building further upon the "likelihood", "feasibility" and "desirability" features that already exist in Futurium. Components to debate and analyse likely impacts of the proposed topics/visions/ideas will be added.
- Components for **data analytics**, in order to be able to classify the different topics discussed and establish some figures about them such as: relevance, periodicity, degree of participation, activity etc.
- Components for **data mining techniques** - in collaboration with action nr. 1.22 Big Data and Open Knowledge - to understand the correlations between variables, cluster data, detect hidden patterns in data, perform trend analysis (including time series), extract facts from evidence, link evidence to the other content types according to relevance, etc. This part of the work should re-use as much as possible existing components and data mining tools, possibly available as open source.
- Components for **opinion modelling and text mining techniques** in order to extract from the posts of users, on the core platform or other existing collaborative tools and/or social networking tools, the main topics of interest, the key opinions discussed and also the popularity (strength) of each one. Combined with social network analysis (e.g. types and number of connections, number and popularity of posts), this can also help identify the opinion leaders on the platform. Re-use and adaptation of open source Natural Language Processing (NLP) software will be explored, such as GATE⁹⁵, Apache OpenNLP⁹⁶, Apache Mahout⁹⁷ or UIMA⁹⁸.
- Components for **visual analytics techniques** for presenting opinions, sentiment or any other type of data in formats which can be understood both by participants but also by decision makers, who can then use them as input to legal, organisational or political decision making processes. This will include the graphical representation of various types of user inputs and their inter-relations (e.g. structuring topics/visions/ideas).

⁹⁵ <https://gate.ac.uk/>

⁹⁶ <https://opennlp.apache.org/>

⁹⁷ <https://mahout.apache.org/>

⁹⁸ <https://uima.apache.org/>

- Components for **reporting (dashboards)** will allow to build a more flexible and adaptable solution, since from the reporting area it is possible to focus on the interested domains (or dimensions for analysis) of the organisation. A multi-layer reporting involving different stakeholders will make it easier the decision making resulting in a more efficient organisation.

Within **phase 1** of this action the above technologies shall be applied in **three specific business contexts** whereby for each business context a proof of concept will be executed and subsequently further elaborations shall be performed in phase 2 of this action.

Business context 1: Improving services through the consumption of citizens' feedback

The analysis of citizens' feedback through data mining and visualisation tools allows for public administrations to **capture trends and knowledge that are able to provide insights** that would otherwise be difficult to obtain if analysis is only performed manually by individuals. Such tools allow the generation of knowledge that could provide an edge over manually generated knowledge.

The State Chancellery of Latvia has developed a leading mobile application called 'Football' that not only provides useful information to citizens on the services offered by public administrations but also allows the citizens to in turn provide feedback on the services received. The purpose of this application is to promote 'good football' which in Latvian terms reference to the provision of good and effective public services without bouncing citizens around different public administrations. The feedback captured through this mobile application is currently processed and analysed manually and this action therefore aims at providing data mining and visualisation tools that can digest the free-text form comments provided by citizens in order to complement the existing functionalities of this mobile application.

Business context 2: Open participation through perception and opinion elicitation

This activity will look into the provision of tools that make use of existing and well established collaborative tools within a public administration in order to elicit users' and staff members' perceptions, expectations and opinions as a means of influencing internal decision making processes related to different domains such as human resources, service provisions as well as internal procedures. Through this influencing mechanism the public administration would be allowing open participation for users and staff members without the need to introduce a new platform to which the participants need to be accustomed to or forced to use in order to communicate their opinions.

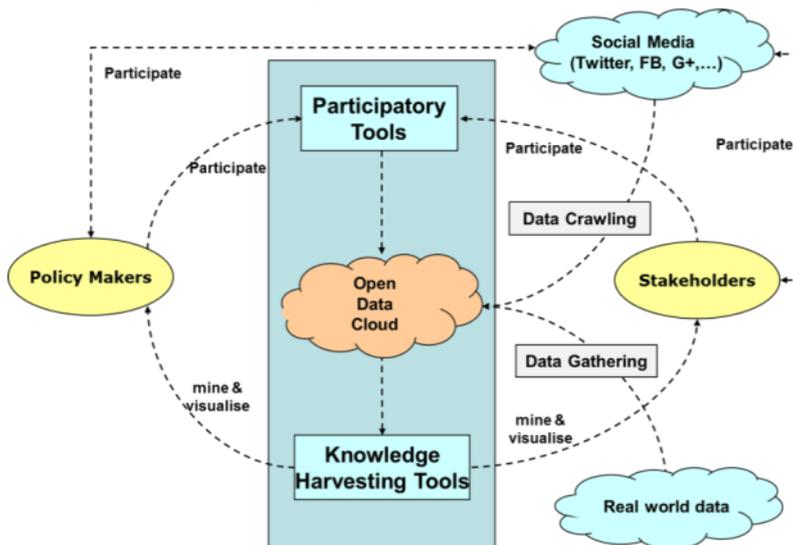
Business context 3: Policy making through participatory knowledge

This activity will reuse and extend Futurium in order to develop a **platform for open government through participatory knowledge combining people's opinions with scientific evidence**. [Futurium](#) was initially developed with the primary purpose of hosting and curating visions and policy ideas to support a participatory foresight project, Digital Futures. However, it has turned into a general platform on which to experiment with new **policy-making models** based on **foresight methodology, scientific evidence and participation**. Futurium is based on the open source content management system **Drupal**. The platform implements a data model that maps and co-relates typical policy making concepts (e.g. 'vision', 'desirability', 'evidence', 'impact', 'challenge', etc.) into Drupal content types and

allows users to co-create visions and policies and their inter-relations as well as to provide scientific evidences and organise participatory events, just like popular social networks. Extending Futurium, as outlined above, will allow platform users (e.g. local governments, NGOs, Unions etc.) to capture explicit knowledge, but also make use of latent knowledge by employing sentiment and text analysis and opinion modelling techniques.

The Futurium is meant to provide a credible response to the need of running structured conversations with stakeholders and making sense of their input. This is currently difficult to achieve in popular social media because of their unstructured and uncontrolled approach vis-à-vis user's inputs. Conversely, traditional stakeholder surveys provide a fully framed approach to gather data but are usually less usable and attractive than social media. Futurium provides an optimal trade-off between the informal, unstructured and uncontrolled social media approach and the formal, structured and more traditional approach of surveys. This allows broadening participation while providing more accurate and cost-effective feedback to policy makers.

By applying the extended Futurium platform to a policy making context, the knowledge generator will result in better decisions leading to improved accuracy and legitimacy of public administration actions particularly for actions involving multiple administrations. The interaction between the different entities in this action is as per the following diagram:



A continuation of such exploratory activities, which were kicked off in phase 1 of this action, shall be continued throughout **phase 2**, to be executed in 2016. Phase 2 shall be composed of **3 tracks** as follows:

- **Track 1:** continue with the further **identification of the requirements** stemming from the public administrations in the different Member States as well as Commission services. In addition this track shall also continue the exploration and assessment of **existing assets, reusable software solutions, standards and vocabularies** that can address the identified needs; inputs from early usages of the Futurium platform will be taken into account (we expect that by the time the new project will be launched we will benefit from the input of at least five Futurium instances).

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- **Track 2:** continue the implementation of already identified pilots, details in the 3 business contexts of phase 1, through the **generalisation of the Futurium functionalities** and thus the **extension** of their use to **policy agnostic contexts** in order to maximise the benefit and return on investment of the proposed solution. Furthermore, this track shall also ensure that the software components developed for these pilots are extended further through new functionality, new user experience contexts (e.g. gamification, interactive and mobile use,...) which shall be driven by the needs identified;
 - **Track 3:** launch a **new wave of pilots** in specific domains which hold a **potential** of later being **generalised** and **scaled-up** to be made available to different services **agnostic of their specific policy area**. One potential area of interest could be the **pre-legislative consultations through stakeholder engagement**. The consolidation and integration of different software solutions shall enable the generation of participatory knowledge through the digestion of data coming from sources that are both internal and external to the public service/organisation.

Pre-legislative consultations will be more information-led by better exploiting evidence/data and opinions collected through existing platforms in a way that give a more accurate and wider consideration of stakeholder perceptions and opinions as well as to scientific evidence. Better digestion of feedback received through the **Better Regulation** initiative can also be considered as a new source of citizen participation that will require better analysis of the feedback received. The aim of this initiative is to ensure that policy is prepared, implemented and reviewed in an open, transparent manner and to ensure that the full process is fed with the best available evidence and as well as stakeholders' feedback. For this reason, after better analysis of the Member States' and the Commission's common needs through the activities defined in track 1 above, some reuse of existing software components, particularly those provided by the Futurium platform, will be pursued in this context.

The software solutions to be considered in this context would support the analytics and discovery of knowledge through methods such as automatic clustering based on the evaluation of structured or non-structured data sources. This is considered to be particularly key in policy areas where large number of consultation feedbacks are received and are required to be analysed and digested. Techniques to be used could include analytics and discovery as well as reporting and visualisation methods.

NOTE relevant to all activities - Personal Data Privacy

In this process, privacy and data protection rules will be respected and carefully analysed before implementing a solution. Data anonymisation practices, such as data scrambling will be applied if necessary.

6.1.12 COSTS AND MILESTONES

6.1.12.1 Breakdown of anticipated costs and related milestones

Phase: Inception Execution Operational	Description of milestones reached or to be reached	Anticipated Allocations (KEUR)	Budget line ISA ² / others (specify)	Start date (QX/YYYY)	End date (QX/YYYY)
Execution	<u>Phase 2.1</u> D.1.- MS and EC requirements assessment D.2.- Inventory of reusable software solutions, standards and vocabularies	80	ISA ²	Q2/2016	Q1/2017
	<u>Phase 2.2</u> D.3.- Specification definition D.4.- Generalisation of core platform and modular components D.5.- Extension of core and modular components in the context of the pilots	160	ISA ²	Q2/2016	Q1/2017
	<u>Phase 2.3</u> D.6.- Pilot requirements assessment D.7.- Specification definition D.8.- Implementation of core and modular components in the context of the pilots	200	ISA ²	Q3/2016	Q1/2017
Operational					
	Total	440			

6.1.12.2 Breakdown of ISA² funding per budget year

Budget Year	Phase	Anticipated allocations (in KEUR)	Executed budget (in KEUR)

2016	Execution – Phase 2	440	
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6.1.13 ANNEX AND REFERENCES

Description	Reference link	Attached document
A vision for Public Services	http://ec.europa.eu/digital-agenda/en/news/vision-public-services	
The Futurium—a Foresight Platform for Evidence-Based and Participatory Policymaking	http://download.springer.com/static/pdf/620/art%253A10.1007%252Fs13347-013-0108-9.pdf?auth66=1410041623_02c8d634d5b06ca384c1cf468537d06d&ext=.pdf	

6.2 LEGISLATION INTEROPERABILITY TOOLS – LEGIT (2016.38)

Service in charge	SG.A1, Legal Service
Associated Services	DIGIT.B2, Council GSC, Parliament, Publications Office of the EU

6.2.1 EXECUTIVE SUMMARY

This action aims specifically at modernising and improving the efficiency and quality of the legislative process across the Union, promoting interoperability between the systems of the different actors of the process. It seeks to facilitate the cooperation between public administrations at EU, national, regional and local levels.

Given the high diversity of legislative traditions encountered across the Union and the different levels of modernisation, it would be extremely difficult to provide a universal single turnkey ICT solution that adapts to each specific context.

Instead, this action proposes an optimal solution based on reusable fundamental building blocks.

The activities covered by this action have been organised in four distinct and complementary clusters.

Cluster A: Development of a web-based legislation editor – Continuation of LEOS

The LEOS project stressed that drafting legislation in an open and standard XML format would pave the way to efficient interoperability between the different actors of the EU legislative process. After a study on tools currently used by EU and MS public administrations to write their legislation, a need for a new generation of authoring tools was raised and the LEOS prototype was released.

This prototype is a web-based authoring tool providing drafting features that enable to easily write legal texts in a controlled WYSIWYG environment, organise it in divisions (articles, chapters, sections...), compare versions, generate printable views, insert comments, highlight some parts of the texts, ... Stakeholders and key users evaluated the prototype, praised the achievements and highlighted incomplete or missing capabilities.

This action allows development activities necessary to make evolve the existing prototype into a stable, complete and mature product enabling users to draft EU legislation in XML.

Cluster B: Interoperable and re-usable independent products (components, services or applications)

The LEOS project and the web-based Editor prototype appeared very interesting to a diversified audience that is facing some common problems. The cluster B would allow development activities necessary to refactor the existing software prototype into more complete and re-usable building blocks released under open source licence. The development of software components or services for the validation and transformation of semantic elements defined and documented by the IFC are also contained in Cluster B.

Cluster C: Realizing the vision of the legislative process landscaping study

In September 2015 the ISA unit of the European Commission launched a study to draw a comprehensive view of the EU legislative IT environment. This study is made of:

- A description of the overall lifecycle of the inter-institutional legislative process (AS-IS), including the business processes, the systems used in each major legislative step by each of the institutions, the specifications used to exchange information, etc.
- Identification of a first set of areas where intervention is considered beneficial (TO-BE). These include areas where there are opportunities for synergies and efficiency gains, for harmonization of existing standards and specifications, for reuse or extension of tools to cover new needs. Missing pieces and solutions to create a rationalised domain are also identified and proposed for further development.

This action, via its cluster C, is funding the development of parts of the missing software components detected and highlighted in the TO-BE vision defined in the study.

Cluster D: propose a multi-purpose text-mining component based on pattern recognition designed to detect EU references or citations in unstructured text and value them further

In the course of their interactions with the EU, citizens, businesses and national administrations face vast amount of online content filled with EU legal references. These legal references are potential direct gateways to full legal texts available on reference databases. However, they do not systematically translate into direct web links, as the process of creating these links for digital service providers can be extremely tedious despite the fact that references are designed as unique identifiers. Ref2Link – for 'Reference to Link' - aims to fill this gap. Ref2Link can fit in any use case where references that comply with a normalised format have to be processed for domain specific purposes. It can also provide added-value for Web editors or developers who can delegate this processing logic to a specialised component.

It had been initially developed as a building block by EC Legal Service IT for its Knowledge Management system, its own information systems and Intranet and is now registered as a candidate building block @EC by DIGIT.

The purpose of this cluster is to enhance the current Ref2Link package to offer it as a service to other EU institutions, member states and ultimately to citizens who will benefit from a more straightforward navigation in EU-related online content.

6.2.2 OBJECTIVES

The objectives of this action are:

- making the legislation process more efficient, proposing new interoperability solutions and replacing repetitive manual tasks at the different actors by automatic processing and reuse wherever possible;
- develop solutions for common needs, and make them available for reuse under EUPL licence;

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- support the work of inter-institutional committees (e.g. IMMC and IFC), providing reference implementations after publication of their specifications;
 - ensure the consistency of different initiatives in the area of the EU decision making process, providing pieces of software necessary for better convergence and efficiency;
 - promote the usage of interoperability standards by proposing technical analysis, architecture designs, reference implementations and tools..

 - to value the references contained in EU related content by automating the creation of clickable links they may contain. Hyperlinks are the core interoperability mechanism of the Web, they are typical silo-breaking gateways fostering navigation across domains.
 - propose a component (Ref2link) that could be used in any given country, policy, administrative level or business domain and can act as the glue that binds them all together.

6.2.3 SCOPE

This action delivers software implementing specifications and standards defined by other bodies active in the legislation domain (e.g. standardisation committees,...).

In scope:

- Development of software supporting interoperability of the legislation process:
 - tools for drafting legislation in a structured format (XML)
 - tools for providing structured feedback on proposed legislation
 - tools for the transformation of legislation between different structured formats
 - tools supporting the electronic exchange of documents and metadata in the context of the legislative process, containing workflow information
 - a configurable tool released with a default 'lowest common denominator' detection scheme pointing to the common public EU law or generic repositories such as EUR-Lex, Curia, Europa, e-Justice Portal, Council register or Europa.

Not in scope:

- semantic assets for the legislative process; the definition of common vocabularies and reference tables remains under the responsibility of existing committees or initiatives (SEMIC, ELI, IMMC, IFC...)
- definition of new standard formats for supporting the legislation process interoperability; the action will propose tools supporting the agreed common formats.
- for Ref2link, the configuration of detection rules for national or specific domain-related repositories, although the documentation necessary to do so will be available.

6.2.4 ACTION PRIORITY

This section is used to assess the priority of the proposal to become a programme's action according to Art. 7 of the ISA² decision⁹⁹.

6.2.4.1 Contribution to the interoperability landscape

Question	Answer
<p><i>How does the proposal contribute to improving interoperability among public administrations and with their citizens and businesses across borders or policy sectors in Europe?</i></p> <p><i>In particular, how does it contribute to the implementation of:</i></p> <ul style="list-style-type: none"> • <i>the new European Interoperability Framework (EIF),</i> • <i>the Interoperability Action Plan and/or</i> • <i>the Connecting European Facility (CEF) Telecom guidelines</i> • <i>any other EU policy/initiative having interoperability requirements?</i> 	<p>The development of a tool for drafting legislation in a structured format will facilitate the electronic exchange of documents and metadata in the context of the legislative process and thus improve interoperability between all actors in Europe.</p> <p>The reusable software solutions delivered through the action contribute to the implementation of the <i>European Interoperability Strategy</i> by ensuring that the outputs are shared and re-used by public administrations in Europe. The Joinup collaborative platform is used as a means for sharing the experiences as well as the deliverables of this action with the Member States' public administrations.</p> <p>Ref2Link complies from the outset with the principles of openness, transparency, reusability and neutrality. It comes as a building block by design and fosters linking to EU information sources. It adds immediate value to EU repositories, especially when these repositories have implemented and published a systematic semantic interoperability scheme. Such schemes rely on normative and open systems for referencing resources addressable by URIs or linked data technologies. The package will also potentially fit in national or domain interoperability frameworks</p>

⁹⁹ DECISION (EU) 2015/2240 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

	requirements by allowing the tailoring of detections to these contexts.
<i>Does the proposal fulfil an interoperability need for which no other alternative action/solution is available?</i>	Yes. This action is driven by the "landscaping exercise on initiatives in the area of the legislative process", avoiding overlaps with any other solution or project on going. To our knowledge, there is no alternative solution to Ref2link covering the same functional scope and implemented as a configurable building block from the outset

6.2.4.2 Cross-sector

Question	Answer
<i>Will the proposal, once completed be useful, from the interoperability point of view and utilised in two (2) or more EU policy sectors? Detail your answer for each of the concerned sectors.</i>	The proposal will allow interoperability of the systems supporting EU decision making process and therefore will enable to improve the quality of EU legislation across all EU policy areas.
<i>For proposals completely or largely already in operational phase, indicate whether and how they have been utilised in two (2) or more EU policy sectors.</i>	Ref2Link is already on operational at EC Legal Service. Several EC DGs or EU institutions have expressed their interest in re-using the Ref2Link building block. Because of its core missions, the EC Legal Service has to deal with multiple policy sectors. As a consequence, Ref2Link detection rules have already been configured for domains which are not strictly limited to EU law e.g. competition, trade or financial management.

6.2.4.3 Cross-border

Question	Answer
<p><i>Will the proposal, once completed, be useful from the interoperability point of view and used by public administrations of three (3) or more EU Members States? Detail your answer for each of the concerned Member State.</i></p>	<p>Public administrations from Greece, France and Spain have already shown their interest in LEOS development activities. Also the Slovenian government is currently reusing LEOS components as part of their own IT projects.</p> <p>According to the Legislation Editing Open Software (LEOS) Perceived Quality and Perceived Utility Report July 2016, issued as part of the execution of the ISA programme monitoring, the LEOS tool received a positive Perceived Utility assessment (4.07/5). According to the respondents, the LEOS tool allows its users to save costs, improve efficiency and transparency and also allows to facilitate the interconnection of legal databases. Also, the standardisation of the format and the ability to control the workflow are key benefits. The demographic profile of the respondents comes from 6 different Member States. The implementation of a common drafting tool with the Council will further extend the use of the tool to public administrations in EU Member States.</p> <p>Ref2Link is ready to be used by all national administrations when addressing EU law public repositories.</p> <p>They will also be able to tailor it for their own needs.</p>
<p><i>For proposals completely or largely already in operational phase, indicate whether and how they have been utilised by public administrations of three (3) or more EU Members States.</i></p>	<p>N/A</p>

6.2.4.4 Urgency

Question	Answer
<i>Is your action urgent? Is its implementation foreseen in an EU policy as priority, or in EU legislation?</i>	<p>Yes. As announced in the DSM strategy, the Commission will support the take-up of the new European Interoperability Framework (EIF) by national administrations with the aim to strengthen the interoperability of public services in the EU.</p> <p>In order to comply with the legal obligations set out for EU public administrations and in view of its own digital transformation, the European Commission has decided to undertake a number of concrete actions. One of these actions is the launch of the pilot phase for drafting legislation in the Ordinary Legislative Procedure using a web-editor based on LEOS in 2017/2018.</p> <p>In order to foster better cooperation and break down organisational and digital silos, the Commission and the Council have decided to collaborate closely and share the same web-editor. The European Parliament is closely associated to the works.</p>
<i>How does the ISA² scope and financial capacity better fit for the implementation of the proposal as opposed to other identified and currently available sources?</i>	<p>The proposed action is fully in scope of ISA² and builds on existing results from the ISA programme (LEOS action). It will support the interactions between European Public Administrations, Businesses and Citizens and contribute to the implementation of the EIF and DSM.</p>

6.2.4.5 Reusability of action's outputs

Name of reusable solution to be produced (for new proposals) or produced (for existing actions)	LEOS software components (under EUPL)
Description	Set of software components supporting the edition, the review, the transformation and the validation of legislation
Reference	https://joinup.ec.europa.eu/software/leos/release/all

	A Github repository might follow.
Target release date / Status	Ad-hoc deliveries
Critical part of target user base	N/A
For solutions already in operational phase - actual reuse level (as compared to the defined critical part)	N/A

Name of reusable solution to be produced (for new proposals) or produced (for existing actions)	Ref2link package, reusable by EU institutions and Member States
Description	<p>The package includes a text processing service available for integration as a client library and a web service.</p> <p>The rules for detection of main EU law repositories are set by default, with the possibility to extend the rules digital services providers.</p> <p>The package includes supporting material (Web site, documentation, sample application)</p>
Reference	https://webgate.ec.europa.eu/fpfis/wikis/pages/viewpage.action?spaceKey=DAMSP&title=Ref2Link
Target release date / Status	Q4 2019
Critical part of target user base	EU institutions and Member States
For solutions already in operational phase - actual reuse level (as compared to the defined critical part)	Legal Service EC

6.2.4.6 Level of reuse of existing solutions

Question	Answer
<i>Does the proposal intend to make use of any ISA², ISA or other relevant interoperability solution(s)? Which ones?</i>	<p>The proposal is reusing the OASIS standard for legislative and Judiciary documents (Akoma Ntoso, aka LegaldocMI)</p> <p>Ref2Link makes use of any solution where semantic and technical interoperability is</p>

	promoted and/or implemented. This covers many pending ISA ² actions under the umbrella of SEMIC.
<i>For proposals completely or largely already in operational phase: has the action reused existing interoperability solutions? If yes, which ones and how?</i>	Currently, Ref2Link can process ECLI or ELI identifiers and produce links to corresponding EU repositories such as EUR-Lex, Curia or the ECLI Search Engine on the European e-Justice Portal.

6.2.4.7 Interlinked

Question	Answer
<i>Does the proposal directly contribute to at least one of the Union's high political priorities such as the DSM? If yes, which ones? What is the level of contribution?</i>	The action contributes to the Commission priority n°2: A Digital Single Market for Europe and priority n°10 Democratic change, as the development of legislation interoperability tools is bringing down barriers to unlock online opportunities for stakeholders to participate in the law-making process.

6.2.5 PROBLEM STATEMENT

The problem of	The lack of interoperability in the EU legislative process
affects	All stakeholders participating in the EU decision making process, mainly the Commission, the Council, the Parliament, the Publication Office and the Member States
the impact of which is	That several tasks are carried out manually at each institution, affecting efficiency and sometimes creating quality issues
a successful solution would be	Automatic processing of these tasks, increasing the efficiency of the process and the quality of EU legislation

The problem of	Non-clickable references in EU-related online content
Affects	Users of digital services in the public, businesses and public administrations
the impact of which is	Lack of awareness by failing to consult detailed content. Loss of time by having to navigate to home page of various EU repositories and look up through search forms.
a successful solution would be	Ref2link that translates references to direct links to corresponding resources.

The problem of	Broken links on references in EU related online content
Affects	Users of digital services in the public, businesses or public administrations, editors of Web content.
the impact of which is	A loss of time for Web editors who have to regularly review the links.
a successful solution would be	Ref2link that centrally manages the way links are built and continuously adapts to changes that occur in target repositories in a sustainable way.

The problem of	Manually or specifically building links on references in EU related online content
Affects	Web editors or developers.
the impact of which is	Loss of time when vast amounts of content are involved. The requirement for specific management of the logic for constructing links. Time lost in reviewing content over time. A duplication of efforts.
a successful solution would be	The implementation of Ref2link which automates the creation of links and continuously adapts to changes in target repositories in a sustainable way.

The problem of	The lack of quality, and in particular the lack of proper formats, in the encoding of references in EU-related online content
Affects	Users of digital services in the public, businesses or public administrations.
the impact of which is	Users unable to reach the online resources.
a successful solution would be	Ref2link that will trigger whenever a valid format is detected.

6.2.6 IMPACT OF THE ACTION

6.2.6.1 Main impact list

List the impacts of the action's outputs (following the proposal) on the beneficiaries to the extent possible. Some impacts are listed below – add others as needed.

Impact	Why will this impact occur?	By when?	Beneficiaries
(+) Savings in money	Tasks carried out manually at each institution and public administrations could be automated. Limit specific development solutions for web links.	By the end of ISA ² Program	EU institutions; Public administrations
(+) Savings in time	Tasks carried out manually at each institution and public administrations will be automated Productivity gain by speeding up navigation and online content creation	By the end of ISA ² Program	EU institutions Public administrations
(+) Better interoperability and quality of digital public service	Legislation will be generated in a format readable by computers Improving content quality thanks to a general silo-breaking effect brought by more links available	By the end of ISA ² Program	EU institutions Public administrations, other stakeholders including citizens
(-) Integration or	The legislative process of the	By the end of ISA ²	EU institutions

usage cost	different institutions will be automatically interconnected, without manual transformation being required anymore Based on W3C standards (SOA or Web client integration). Will be supported by online documentation.	Program	and Public Administrations
(+) Increase on quality of EU legislation	Tasks carried out manually at each institution will be automated, reducing human mistakes	By the end of ISA ² Program	EU institutions

6.2.6.2 User-centricity

The LEOS system has been designed with the goal of improving user experience. The main goal is to provide a tool that can, at the same time, facilitate automation by structuring content, and ensure a good user experience. To ensure these main goals are met, key users from the Commission services (drafters, lawyers...) are regularly consulted to provide feedback on features being developed in the web-editor based on LEOS, by means of several hands-on sessions during which these users can test the real system and share their feeling about its completeness, efficiency and user friendliness. The collected feedback is analysed and areas for improvement are identified and prioritised. The close collaboration which is now developed with the Council will allow to take on board needs of Council users as well as Member States.

Ref2Link has been developed from the beginning with user-centricity in view since its default usage is to generate links for the benefit of users.

6.2.7 EXPECTED MAJOR OUTPUTS

[Include here only additional major outputs which were not already mentioned under section 1.1.5.5]

Output name	Technical analysis
Description	Research activities, feasibility study, conclusions driving solutions' implementation
Reference	N/A
Target release date / Status	Adhoc updates, depending on research activities on the agenda

Output name	Architecture design
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Description	Based on the conclusions of the technical analysis, architecture guidelines driving the implementation
Reference	N/A
Target release date / Status	Adhoc updates, accompanying open source release

A notable side-effect of wide use of a tool like Ref2Link is that it can raise awareness of system owners and suppliers about the importance of providing stable referencing and simple first level linking capacities within their systems. It contributes to the overall semantic and technical interoperability landscape.

Our experience with some EC internal systems is that much focus has been set on SOA interoperability which is already an advanced mechanism. On the other hand, mechanisms for building simple links have not always been implemented and/or openly published.

6.2.8 ORGANISATIONAL APPROACH

6.2.8.1 Expected stakeholders and their representatives

Stakeholders	Representatives
IMMC	Inter-institutional Metadata Maintenance Committee
IFC	Inter-institutional Formats Committee
Akoma Ntoso/LegalDocML Oasis Technical Committee	https://www.oasis-open.org/committees/tc_home.php?wg_abbrev=legaldocml
ISA ² Coordination Group (or ISA CG equivalent)	The group assists the Commission in translating priorities into actions and to ensure continuity and consistency in their implementation.
Secretariat-General of the European Commission	Unit SG.A1 (Advice and Development)
Legal Service of the European Commission	LEG Team (Quality of Legislation) Unit SJ.RHIF.IT (Informatics)
Directorate-General for Translation of the European Commission	DGT.C (Translation) and DGT.S (Customer relations) Unit DGT R3 (Informatics)
Directorate General for Informatics of the European Commission	Unit DIGIT.B.2 (Solutions for Legislation, Policy & HR)
Organisations in Member States	Members States representatives of administrations either working on similar initiatives or interested in using produced software.
General-Secretariat of the Council of the European Union (GSC)	DGF2 DGA CIS

Stakeholders	Representatives	Involvement in the action
EC LEGAL SERVICE	brigitte.arnold-woertz@ec.europa.eu	Business manager

INFODOC		
EC LEGAL SERVICE IT	pascal.gineste@ec.europa.eu Laurent.vinasse@ec.europa.eu	IT System supplier
DIGIT		Supplier for EC catalog of building blocks
EU institutions		Integration with default or tailored rules
National administrations		Integration with default or tailored rules

6.2.8.2 Identified user groups

- Legislation drafters (Commission services): these people will use the editor for their day-to-day work. They participate to workshops organised by the Secretariat- General of the Commission in order to provide feedback on features.
- Users from EU institutions, especially of the Council considering the close collaboration, and Member States involved in EU law-making.
- Any public administration and EU citizen using digital services adopting Ref2link

6.2.8.3 Communication and dissemination plan

The project team will systematically drive development activities after consultation of interested parties. As example, committees like the IMMC and the IFC will be consulted before launching any development activities in the area of transformation between formats or the implementation of new metadata extension. The communication with these committees will be handled during the respective meetings (plenary or working group meetings) in which presentations for information or for discussion will be put on the agenda.

As regards the development activities related to the LEOS drafting tool, the Joinup platform will be used to support the communication and the dissemination of material (software, documents...) between interested stakeholders. In case a community of interest is emerging (made of representatives of some national organisations and Institutions working on similar projects) some workshops could be organised in order to share experiences (lessons learnt, technical issues, change management strategies...) and also to identify and plan development synergies, the Joinup platform being also able to support collaborative development activities.

For Ref2Link, it will focus at business and IT technical level. As Ref2Link is potentially a multi-domain tool, it is difficult to estimate the number of integrations amongst EU institutions and members states. For this reason, all the material and supporting technical documentation related to the use and integration of Ref2Link will be made available through Joinup.

6.2.8.4 Key Performance indicators

Provide a list of KPIs allowing the measurement of the progress and completions of milestones and the action. In case of an on-going action with already identified metrics¹⁰⁰ indicate the current values.

Description of the KPI	Target to achieve	Expected time for target
Number of drafted acts	All proposals in the Ordinary Legislative Procedure	2019/2020
Number of transmitted acts to other Institutions	All proposals in the Ordinary Legislative Procedure	2019/2020

Description of the KPI	Target to achieve	Expected time for target
Number of Digital services or IT systems – outside of EC Legal Service - using Ref2Link.	10	Q4 2020

6.2.8.5 Governance approach

In 2017 the European Commission and the General Secretariat of the Council signed a Memorandum of Understanding outlining their collaboration on a common solution for legislation drafting. Following this signature, the governance of the action has been updated as following:

A **Steering Committee (SC)**, organised at director level meets at least every 3 months and is chaired and hosted alternatively by business representatives of the Commission and the GSC. The SC's main responsibilities is to guide and promote the project, to take stock of its progression, to ensure that the outcome meets the business expectations, to agree on yearly work plans during the life of the project, including budgetary planning and to arbitrate on development priorities, depending on the budget available and each party's specific needs.

The permanent members of the Steering Committee shall be:

- the System/Business Owner (SO/BO) of the Commission, the Business Owner (BO) of the GSC at director level;
- the System Suppliers (SSs) of the Commission and GSC at directors' level, who assume the overall accountability for IT deliverables and services requested by the System Owner (SO) and Business Owners (BO);

Under the guidance of their respective System Owner (SO) and Business Owner (BO) at director level, the Heads of unit of the services involved ensure management and follow-up of the advancement of the project. They prepare the meetings of the Steering Committee based on the input provided by the Project Management Team (PMT).

¹⁰⁰ For examples see the ISA2 dashboard <https://ec.europa.eu/isa2/dashboard/isadashboard> , effectiveness tab.

The Business Managers (BM) and Project Managers of the Commission and the GSC regularly participate at the Steering Committee meetings.

The European Parliament participates to the SC as an observer.

The **Project Management Team (PMT)** consists of the Business Managers (BM) and Project Managers of the Commission and the GSC and is chaired by the Project Manager of the Commission. The PMT is in charge of the development of the tool and the implementation of its functionalities, taking into account the needs of the end users and following the guidance of the Steering Committee, to which it reports.

The PMT shall organise, as necessary, technical meetings, so as to discuss, inter alia, technical specifications, development needs, developments completed and ensure convergence on the common needs for legislative drafting.

	Project Roles	European Commission	General Secretariat of the Council	European Parliament
	System Owner (SO)	Director SG.A (alternate Head of Unit SG.A.1)	N/A	
Business representatives	Business Owner (BO)	Director SG.A (alternate Head of Unit SG.A.1)	Director DGF2 (alternate Head of Unit DGF.2C)	
	Business Manager (BM)	Business manager in SG.A.1	Business manager in DGF2C	
IT representatives	System Supplier (SS)	Director DIGIT.B (alternate Head of Unit DIGIT.B.2)	Director DGA CIS (alternate Head of BUILD Design and Development Unit)	
	Project Manager (PM)	Project manager in DIGIT.B.2	Project manager DGA CIS BUILD	
	Observers			Director (DG PRES - Directorate for Legislative Acts) Head of Unit (DG IPOL - Conciliation and Codecision Unit)

The involvement of key services (legal services, translation services...) is also a key for the success of the project. They will be regularly invited to meetings where their expertise might be required.

For Ref2link during the course of this ISA² action, the current IT governance internal structures of EC Legal Service will be responsible for the ISA² action and act as a gateway to the ISA² corresponding governance body.

The business owner will be the head of Information and Documentation whereas the IT sector will be the supplier.

6.2.9 TECHNICAL APPROACH AND CURRENT STATUS

6.2.9.1 Technical strategy

The swift implementation and deployment of complementary, standardised and interoperable ICT solutions is a critical element to drive innovation, ensure sustainability, increase re-usability, reduce fragmentation and avoid duplication of efforts.

This action is driven by an agile, efficient and pragmatic technical approach by combining established and emerging standards, industry best practices and state of the art technologies to empower the delivery of high quality and highly reusable software products that can either be used in isolation or composed together to implement interoperable ICT solutions. Reliable and sound ICT solutions are essentially achieved by composing independent products (components, services and even applications), leading to strong architectures and resilient systems. These are better prepared to deal with failures by providing graceful degradation of the affected capabilities and guaranteeing overall system availability.

Independent products, complying with the principle of single responsibility, translate to sustainable evolution in both business and technical perspectives. Independent teams are masters of their own business specificities. Usually they are focused on a particular business domain inside an organization, easily coping with business changes, able to avoid the barriers and coordination overhead of dealing with a large and complex organizational structure, inevitable when addressing a wider business domain. Independent products are supported by independent teams, which are establishing well-defined boundaries and focusing on contracts, interfaces, communication and data. These are key concepts to achieve unconstrained product evolution, responding to business changes by incorporating new features and capabilities or deprecating obsolete ones, but still maintaining backwards compatibility. Single responsibility products have clearly defined behaviour and are designed to be easy to understand, to test and to validate against predefined key metrics. Each product should be enriched with instrumentation capabilities to report meaningful usage and performance statistics as an added value.

Software components (frameworks or utility libraries) should be implemented at least in one mainstream programming language (e.g. Java), with the possibility to provide bridge application programming interfaces (APIs) for other languages. This strategy ensures sustainable development of a main reference implementation, high re-usability through thin bridge APIs and lower maintenance efforts.

Software services (SOAP web services, RESTful services or micro-services) should exchange data in well-defined open formats. The focus is on the exchange of rich data structures where data, together

with its schema, is fully self-describing. Such principle is the strongest foundation to build reliable data exchange and processing systems where producers and consumers can exchange data schemas, facilitating the understanding of the exchanged data and enabling seamless data adaptation to comply with divergent schema versions or even disparate schemas altogether. This strategy ensures easier consumption and flexible composition of services, independently of programming languages and execution platforms.

Ref2Link is a text mining tool: it provides the detection and extraction of useful references from unstructured text on the basis of declarative rules in XML driven by pattern recognition.

A typical front-end usage is the automatic generation of web links within a web page. Back-end usage is also possible in the form of a service based on SOAP for the automation of data processing.

It can be integrated as a web 'fat-client' in a JavaScript library or called through web services.

6.2.9.2 Current status

Report on activities carried out in 2016 and 2017

In June 2016, the Secretariat-General of the European Commission decided to plan a pilot for the Commission services drafting legislation with the LEOS tool. The scope of this pilot is the Ordinary Legislative Procedure, the main legislative process enabling the Commission to propose to co-legislators proposals for Directives, Regulations and Decisions.

Cluster A

The first phase of this pilot, planned for July 2017, covers the initial drafting of these proposals and a second phase planned for June 2018 will address the various review phases taking place inside the Commission before final adoption of the proposals.

In order to achieve the first phase of the pilot, the LEOS editor had to be extended to the drafting of all types of proposals, to their annexes and to the explanatory memorandum accompanying each proposal. These 2016 and 2017 activities development activities, delivered in July 2017, were reported under Cluster A.

To achieve the second phase of the pilot, different elements are required:

- a user interface dedicated to the review of documents (for comments and suggestions)
- some technical services enabling to integrate the drafting tool with the IT ecosystem supporting the workflows of decision making.

These 2017 and 2018 activities, to be delivered in July 2018, will be reported under Cluster A too.

Cluster B

In order to assure a smooth transition to the new XML format, a module enabling to export these XML Proposals in the previous format (LegisWrite) had to be developed.

Moreover, the Commission took advantage of this action to release open source its CMIS implementation, developed by DG TRADE, used internally to provide back-end document

management services. This implementation is fully compatible with LEOS and could have high added values for public administration looking for an efficient and robust CMIS implementation.

The development of the conversion service, delivered in July 2017, and the adaptation required to make this CMIS implementation an open source solution have been reported under package B.

Despite a strong interest of some member States in LEOS development activities (Greece, France, Slovenia, Finland...) no other request for exposing some LEOS code in more independent libraries were expressed, so no other activities are reported in Cluster B for 2016 and 2017.

Cluster C

In the context of the landscaping exercise it was decided that the "TO BE" vision would be defined in the context of the ISA² action *Interinstitutional framework for digital OLP management (2016.17)*. Therefore in 2016 all activities covered by Cluster C have all been put on hold as long as the TO BE model had not been defined and validated.

Cluster D

Ref2Link is currently in use in the EC Legal Service business applications and Intranet since 2015. Following its promotion as EC building block since beginning of 2017, Ref2Link has been further improved and the Legal Service has established contacts with several DGs and institutions for possible integration.

Activities planned for 2018

In 2017 the European Commission and the General Secretariat of the Council signed a Memorandum of Understanding outlining their collaboration on a common solution for legislation drafting. Therefore, 2018 activities will focus on new needs coming from the Commission and the Council services and their exchanges with the Member States :

- For the drafting of legislation itself;
- For improving the services enabling the integration in each institution infrastructure.

6.2.10 COSTS AND MILESTONES

6.2.10.1 Breakdown of anticipated costs and related milestones

Phase: Inception Execution Operational	Description of milestones reached or to be reached	Anticipated Allocations (KEUR)	Budget line ISA ² / others (specif y)	Start date (QX/YYYY)	End date (QX/YYYY)
Inception	Project charter	100	ISA ²	Q2/2016	Q3/2016

Execution 1	Technical analysis 1.0 Architecture design 1.0 Reference Implementation V1.0	400	ISA ²	Q3/2016	Q3/2017
Execution 2	Technical analysis 2.0 Architecture design 2.0 Reference Implementation V2.0	661	ISA ²	Q3/2017	Q3/2018
Execution 3	Reference Implementation V2.1 <i>First release focusing both Commission and Council needs</i>	290	ISA ²	Q3/2018	Q1/2019
		100	Headin gV	Q3/2018	Q1/2019
	Reference Implementation V3.0	690	ISA ²	Q1/2019	Q3/2019
		100	Headin gV	Q1/2019	Q3/2019
Execution 4	Technical analysis 4.0 Architecture design 4.0	240	ISA ²	Q3/2019	Q3/2020
	Reference Implementation V4.0	740	ISA ²	Q3/2019	Q3/2020
Execution 5	Technical analysis 5.0 Architecture design 5.0	240	ISA ²	Q3/2020	Q3/2021
	Reference Implementation V5.0	840	ISA ²	Q3/2020	Q3/2021
Initiation (Ref2link)	Project Charter	20	DG SJ	Q1 2018	Q1 2018
Execution (Ref2link)	Functional specification	30	DG SJ	Q1 2018	Q1 2018
Execution (Ref2link)	Architecture specification	30	DG SJ	Q2 2018	Q2 2018
Execution (Ref2link)	Development	150	ISA ²	Q2 2018	Q3 2019
Execution (Ref2link)	Execution report	15	ISA ²	Q4 2019	Q4 2019
Execution (Ref2link)	Support and maintenance	80	ISA ²	Q1 2020	Q4 2020
Closing		10	ISA ²	Q4 2020	Q4 2020
	Total	4836 (ISA²:4556)			

The governance board of the action is regularly reviewing the allocation of funds, following the agreed business priorities.

6.2.10.2 Breakdown of ISA² funding per budget year

Budget Year	Phase	Anticipated allocations (in KEUR)	Executed budget (in KEUR)
2016	Inception	100	100
2016	Execution 1	400	400
2017	Execution 2	661	661
2018	Execution 3	1055	
2019	Execution 4	1170	
2020	Execution 5	1170	

6.2.11 ANNEX AND REFERENCES

Description	Reference link	Attached document
LEOS as-is study	https://joinup.ec.europa.eu/elibrary/document/isa-leos-final-results	
LEOS editor release	https://joinup.ec.europa.eu/software/leos/release/all	

6.3 LEGAL INTEROPERABILITY (EX- ICT IMPLICATIONS OF EU LEGISLATION) (2016.23)

6.3.1 IDENTIFICATION OF THE ACTION

Service in charge	DIGIT.D2
Associated Services	DG SG and any Commission DG wishing to assess the ICT impact of its legislation, especially those performing Impact Assessments and Evaluations, Parliament, Council, Publications Office

6.3.2 EXECUTIVE SUMMARY

This action is meant to serve the 'legal interoperability' part of the new European Interoperability Framework (EIF). It has to put in place the mechanism and means necessary to ensure that EU legislation applies equally to the digital and physical world and that ICT implications of new or revised legislation are well assessed the earliest possible. This need has been also recognised by the ministers in charge of eGovernment policy across the European Union, who called upon the Commission in their recent Tallinn declaration *"to fully integrate digital considerations into existing and future policy and regulatory initiatives"*¹⁰¹.

The problem of not considering interoperability and/or underestimating ICT impacts when EU legislation is prepared or evaluated results into legislation that does not take advantage of new digital technologies, may impose unrealistic deadlines and be more costly in its implementation. Also the lack of a mechanism to prove the value of interoperability may slow down or undermine investments on interoperability.

The action has succeeded as part of the ISA programme to promote the concept of 'digital checks' within the Commission and produced the supporting tools (ICT assessment method) necessary for ICT impacts to be well analysed as part of the Impact Assessment and Evaluation process. It has also produced a draft mechanism to allow measuring the costs and benefits of interoperability, still pending testing.

The scope of the action includes:

- All EU legislation under preparation or evaluation:
 - Digital checks are made for all new EU legislation;
 - Interoperability checks are made for all new EU legislation and for legislation under evaluation;
 - Common business processes are identified in EU legislation and described in a harmonised way.

¹⁰¹ Tallinn Declaration on eGovernment at the ministerial meeting during Estonian Presidency of the Council of the EU on 6 October 2017. Link: <https://ec.europa.eu/digital-single-market/en/news/ministerial-declaration-egovernment-tallinn-declaration>

Beneficiaries are the Commission DGs that will prepare coherent and interoperable ICT based legislation, as well as the legislation stakeholders, namely Member States, business and citizens. Member States public authorities involved in similar ICT and interoperability assessments of national legislation could also use the proposed methods (possibly) refined to fit their specific needs.

6.3.3 OBJECTIVES

The objective is to ensure that the EIF recommendation on legal interoperability is well served when EU legislation is prepared. This involves that legislation undergoes a), a 'digital check' to assess the ICT impact it may produce and b) an 'interoperability check' to identify possible lack of coherence with other similar legislation. The first is linked with the ISA² decision activity related to the 'assessment of ICT implications' (Article 3.c) and the second with the ISA² decision activities related to the 'identification of legislation gaps' (Article 3.d) and the 'development of a mechanism to measure the cost and benefit or interoperability' (Article 3.e).

6.3.4 SCOPE

In scope:

- All new EU legislation and all legislation under evaluation of the Commission Work Programme (CWP) 2017 and 2018;
- Perform digital checks: Monitor and report ICT implications of new Commission initiatives;
- Perform interoperability checks: Identify interoperability gaps in EU legislation;
- Screen EU legal bases to identify common business processes and harmonise the way they are described in legislation;
- Assist, coordinate, communicate with and report to the stakeholders within the Commission and the Member States.

Out of scope:

- Member States administrations should use by themselves the methods produced as tools for their own needs

6.3.5 ACTION PRIORITY

6.3.5.1 Contribution to the interoperability landscape

The contribution of the action to the interoperability landscape, measured by the importance and necessity of the action to complete the interoperability landscape across the Union

Question	Answer
<p><i>How does the proposal contribute to improving interoperability among public administrations and with their citizens and businesses across borders or policy sectors in Europe?</i></p> <p><i>In particular, how does it contribute to the implementation of:</i></p> <ul style="list-style-type: none"> • <i>the new European Interoperability Framework (EIF),</i> • <i>the Interoperability Action Plan and/or</i> • <i>the Connecting European Facility (CEF) Telecom guidelines</i> • <i>any other EU policy/initiative having interoperability requirements?</i> 	<p>The action contributes to all EU policies, as it is about ensuring that EU legislation, no matter the policy area, takes into account interoperability, ICT aspects and related impacts.</p> <p>The proposal:</p> <ul style="list-style-type: none"> • Implements recommendation 27 on legal interoperability of the EIF. • Implements the interoperability action plan action 3 of focus area 1 and actions 19 and 20 of focus area 5. • Implements 3 activities mentioned in the ISA² decision under Article 3.
<p><i>Does the proposal fulfil an interoperability need for which no other alternative action/solution is available?</i></p>	<p>The action is aligned with and serves the Better Regulation Guidelines which is considered to be the only guiding method for Impact Assessments and Evaluation of EU legislation. There is no other known action to fulfil such an interoperability need.</p>

6.3.5.2 Cross-sector

The scope of the action, measured by its horizontal impact, once completed, across the policy sectors concerned.

Question	Answer
<p><i>Will the proposal, once completed be useful, from the interoperability point of view and utilised in two (2) or more EU policy sectors? Detail your answer for each of the concerned sectors.</i></p>	
<p><i>For proposals completely or largely already in operational phase, indicate whether and how they have been utilised in two (2) or more EU</i></p>	<p>The action has been used for Impact Assessments and Evaluations in many different sectors, i.e. HOME, JUST, OLAF,</p>

<i>policy sectors.</i>	CLIMA and MOVE, which proves its cross-sector nature.
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6.3.5.3 Cross-border

The geographical reach of the action, measured by the number of Member States and of European public administrations involved.

Question	Answer
<i>Will the proposal, once completed, be useful from the interoperability point of view and used by public administrations of three (3) or more EU Members States? Detail your answer for each of the concerned Member State.</i>	The final ICT assessment method will be released in November 2017, while the method to perform interoperability checks on EU legislation is planned to be ready by July 2018. Both will focus on EU legislation prepared by the EU institutions. Member States will have to take them and adapt them to their national needs.
<i>For proposals completely or largely already in operational phase, indicate whether and how they have been utilised by public administrations of three (3) or more EU Members States.</i>	

6.3.5.4 Urgency

The urgency of the action, measured by its potential impact, taking into account the lack of other funding sources

Question	Answer
<i>Is your action urgent? Is its implementation foreseen in an EU policy as priority, or in EU legislation?</i>	The action is urgent in the sense that it serves an actual/running need, which is law-making and evaluation.
<i>How does the ISA² scope and financial capacity better fit for the implementation of the proposal as opposed to other identified and currently</i>	There is no other known instrument or funding mechanism to support the action.

<i>available sources?</i>	
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6.3.5.5 Reusability of action's outputs

Name of reusable solution to be produced (for new proposals) or produced (for existing actions)	ICT Register of roadmaps
Description	Repository of inception impact assessments (formerly known as roadmaps) assessed from the ICT point of view
Reference	https://webgate.ec.europa.eu/CITnet/confluence/x/PgXcHw (access is restricted to the Commission departments involved in new EU legislative initiatives)
Target release date / Status	Available since January 2016
Critical part of target user base	
For solutions already in operational phase - actual reuse level (as compared to the defined critical part)	The register of roadmaps is used by the IT Governance of the Commission to identify upcoming initiatives critical from the ICT point of view. In July 2017 the register of roadmaps contained 239 entries, 56 of which presented an ICT impact.

Name of reusable solution to be produced (for new proposals) or produced (for existing actions)	Method to assess ICT implications of EU legislation
Description	Method to perform assess ICT implications of EU legislation
Reference	http://ec.europa.eu/isa/documents/actions/ks-sc9-d04-03-ict-assessment-method_v5.00.pdf
Target release date / Status	Currently draft method of Q2/ 2015. A final release will be available as from November 2017.
Critical part of target user base	
For solutions already in operational phase - actual reuse level (as compared to the defined critical part)	The method has been used so far in about 10 concrete cases.

Name of reusable solution to be produced (for new proposals) or	Method to perform interoperability checks on EU legislation
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produced (for existing actions)	
Description	Methodology to explain the process to follow, to define the exact scope and the tools to use in order to ensure that EU legislation fulfils the interoperability criteria of the EIF.
Reference	not yet available
Target release date / Status	July 2018
Critical part of target user base	
For solutions already in operational phase - actual reuse level (as compared to the defined critical part)	

6.3.5.6 Level of reuse of existing solutions

The re-use by the action (following this proposal) of existing common frameworks and interoperability solutions.

Question	Answer
<i>Does the proposal intend to make use of any ISA², ISA or other relevant interoperability solution(s)? Which ones?</i>	
<i>For proposals completely or largely already in operational phase: has the action reused existing interoperability solutions? If yes, which ones and how?</i>	The action proposes on an ad-hoc basis interoperability solutions (ISA and other) that can be used as needed, subject to screened legislation.

6.3.5.7 Interlinked

The extent to which the action (following this proposal) contributes to Union's initiatives such as the DSM.

Question	Answer
<i>Does the proposal directly contribute to at least</i>	The action has a horizontal value as it can

<p><i>one of the Union's high political priorities such as the DSM? If yes, which ones? What is the level of contribution?</i></p>	<p>be used for the law-making/evaluation of every EU policy. Special contribution is indirectly made to the DSM, as the more the action is assessing EU legislations the more digital and interoperable they become.</p>
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6.3.6 PROBLEM STATEMENT

The problem of	not taking into account ICT implications of EU legislation during the legislative proposals' preparation stage or at legislation evaluation
affects	the Commission services involved in the preparation, adoption, implementation and evaluation of the concerned legislation and the legislation's target audience, usually EU Public Administrations, citizens and businesses
the impact of which is	moderate ICT implementation quality, at higher cost, unmet deadlines, lack of interoperability, possible sub-optimal implementation of the legislation due to insufficient ICT support, etc.
a successful solution would be	the early consideration of ICT impacts when EU legislation is prepared or evaluated to allow for efficient use of ICT technologies, timely identification of synergies with other IT systems, reusability and interoperability, provide guaranties of timely implementation and decrease the administrative burden/cost.

The problem of	not performing interoperability checks on EU legislation
affects	the Commission services involved in the preparation, adoption, implementation and evaluation of the concerned legislation and the legislation's target audience, usually EU Public Administrations, citizens and businesses
the impact of which is	to have EU legislation that is not coherent and may impose requirements which do not facilitate interoperability
a successful solution would be	to identify interoperability gaps in existing EU legislation and propose remediation.

The problem of	not having tangible means to assess costs and benefits of interoperability
affects	the Commission and the MS wishing to invest on interoperability initiatives
the impact of which is	hesitation to make proper interoperability investments etc.
a successful solution would be	to develop such a mechanism and make it publicly available

6.3.7 IMPACT OF THE ACTION

6.3.7.1 Main impact list

Impact	Why will this impact occur?	By when?	Beneficiaries
(+) Savings in money	Having assessed EU legislation at an early stage allows a proper technical evaluation and to identify reusable building blocks (software, specifications, services), thus saving cost. Also lifting interoperability gaps in EU legislation saves money from implementing technical work-arounds	Recurrent, this is not an one-off action	EU departments involved in law-making, Member States administrations and stakeholders impacted by EU legislation
(+) Savings in time	Having assessed EU legislation at an early stage allows for better planning and saves time due to reuse	Recurrent, this is not an one-off action	EU departments involved in law-making, Member States administrations and stakeholders impacted by EU legislation
(+) Better interoperability and quality of digital public service	Having assessed EU legislation at an early stage and – consequently – having identified and resolved interoperability gaps promotes a proper implementation of legal interoperability, the top layer	Recurrent, this is not an one-off action	EU departments involved in law-making, Member States administrations and stakeholders impacted by EU legislation

	of the EIF model, and safeguards that interoperability can be more easily applied at the layers below.		
(-) Integration or usage cost	Not foreseen		

6.3.7.2 User-centricity

The action has involved all related stakeholders from the Commission DGs and from the Member States representatives to ISA². Whenever the ICT implications method applied in practise, a report was produced to assess its effectiveness and results are all put together to conduct the final release in November 2017.

6.3.8 ORGANISATIONAL APPROACH

6.3.8.1 Expected stakeholders and their representatives

Stakeholders	Representatives	Involvement in the action
European Commission services	The Secretary General and any Commission DG in charge of preparing new or evaluating existing legislation.	Contribute to the register of roadmaps through reviewing ICT assessments and contributing domain specific knowledge. Also use the service and the method and give feedback for improvement.
Member States	MS representations to the ISA ² Committee and Coordination group.	Comment and give feedback from national experiences

6.3.8.2 Identified user groups

Impact Assessment Working Group (IAWG): It is a forum of exchange of best practises and experiences in Impact Assessments under the chairmanship of the Secretariat General, which can benefit from the results and evolution of the action.

6.3.8.3 Communication and dissemination plan

The communication plan includes:

- Promotion/consultation rounds with the Commission stakeholders namely, the IT heads, the Impact Assessment units and the concerned policy units of the Commission DGs;
- Communication with the Secretary General services responsible for Impact Assessment and Evaluations. The methods and outputs of screenings of EU legislation, interoperability checks and common descriptions of core business processes in EU legislation will be presented with the purpose of being integrated into the law-making process of the EU;
- Communication with the ICT Governance of the Commission to better align the law-making and the ICT development processes within the Commission thus ensuring policy coherence and maximising ICT rationalisation effects;
- Active participation to the Impact Assessment Working Group and communication of the benefits resulting from the assessment of the ICT impacts;
- Communication with the MS representatives through the regular ISA² management meetings and through webinars and dedicated workshops.

6.3.8.4 Key Performance indicators

Provide a list of KPIs allowing the measurement of the progress and completions of milestones and the action. In case of an on-going action with already identified metrics¹⁰² indicate the current values.

Description of the KPI	Target to achieve	Expected time for target
% of EU legislation to screen from the ICT point of view (digital checks)	100	Reached in 2016 and 2017, target remains the same for 2018
% of EU legislation under evaluation (REFIT) screened to identify common/core businesses processes	100	Reached in 2017, target remains the same for 2018
% of EU legislation under evaluation (REFIT) to screen for interoperability gaps (interoperability checks)	100	July 2018

6.3.8.5 Governance approach

The action will be managed by DIGIT with the support of an external contractor. Whenever major deliverables are to be published, the validation of the MS representatives will be sought.

¹⁰² For examples see the ISA2 dashboard <https://ec.europa.eu/isa2/dashboard/isadashboard> , effectiveness tab.

6.3.9 TECHNICAL APPROACH AND CURRENT STATUS

State-of-play:

- Since January 2016, all published Inception Impact Assessments and Roadmaps have been screened for possible ICT impacts and results have been communicated to the IT Governance of the Commission.
- A (draft) method on ICT implications of EU legislation has been used in a number of cases of Impact Assessments and Evaluations in the Commission. A final method will be made public by November 2017.
- By the end of 2017 core business processes will have been identified in EU legislation under evaluation and templates will be created to help legislator describe these processes in revised or new legislation.

Future development (Q2/2018 – Q1/2019):

- All new EU legislation in the CWP 2018 will undergo a digital check;
- All new EU legislation in the CWP 2018 will undergo an interoperability check to ensure coherence and compliance with the EIF;
- Results of the above tests will be maintained in electronic registers;
- DIGIT will offer a service to the Commission DGs to help them perform Impact Assessments and Evaluations;
- One of the above evaluations will that of the EIF foreseen to be completed by end 2019 that will be performed in the scope of EIF Implementation action (2016.33).
- The mechanism to measure costs and benefits of interoperability will be used more intensively to assess impact of interoperability on different occasions, included to assess the interoperability benefits of the ISA² actions.

6.3.10 COSTS AND MILESTONES

6.3.10.1 Breakdown of anticipated costs and related milestones

Phase: Initiation Planning Execution Closing/Final evaluation	Description of milestones reached or to be reached	Anticipated Allocations (KEUR)	Budget line ISA/ others (specify)	Start date (QX/YYYY)	End date (QX/YYYY)

	<ul style="list-style-type: none"> • Screen/Monitor all published Inception Impact Assessments and Roadmaps of the Commission to identify the need of ICT impact analysis; • Assess ICT implications of Impact Assessments and Evaluations as needed through a service provided by DG DIGIT; • Update the method as needed; • Pilot and finalise a measurement mechanism for costs and benefits of interoperability and make it available as a service 	745	ISA ²	Q2/2016	Q2/2018
	<ul style="list-style-type: none"> • Run digital checks to identify ICT implications of EU legislation • Run interoperability checks on EU legislation, identify interoperability gaps and propose measure to ensure compliance with the EIF for legislation relevant to interoperability • Support the application of and optimise the 	300		Q2/2018	Q2/2019

	mechanism to measure costs and benefits of interoperability				
	Total	1045			

6.3.10.2 Breakdown of ISA² funding per budget year

Budget Year	Phase	Anticipated allocations (in KEUR)	Executed budget (in KEUR)
2016		450	
2017		295	
2018		300	

6.3.11 ANNEX AND REFERENCES

Description	Reference link	Attached document
IDABC existing method and Draft updated method	http://ec.europa.eu/isa/actions/documents/isa_3.1_description_of_the_method.pdf http://ec.europa.eu/isa/documents/actions/ks-sc9-d04-03-ict-assessment-method_v5.00.pdf	

6.4 EUROPEAN LEGISLATION IDENTIFIER (2016.08)

6.4.1 IDENTIFICATION OF THE ACTION

Service in charge	Publications Office, B1 Unit
Associated Services	Luxembourg, France, United Kingdom, Ireland, Denmark, Council of the EU, e-Law working group (e-law), Parliament, Council

6.4.2 EXECUTIVE SUMMARY

The European Legislation Identifier (ELI) is an initiative of the Member States to identify and describe law in a harmonised way across national legislation systems. ELI is a basic building block for the interoperability and exchange of legislation data in Europe. It provides a practical and flexible system for naming legislation documents and for sharing metadata that is sufficiently standardised to realise the benefits of interoperable legislative data, while respecting each Member State's unique legislative and legal traditions.

The present funding request aims to pursue the efforts started in the context of ISA Action 1.21 (2014-2015) and ISA² Action 6.4 (2016-2017) and leverage the potential of ELI to drive forward interoperability between national and EU legislation.

6.4.3 OBJECTIVES

ELI comes as a response to the problem of not being able to refer in a unique and commonly acceptable way to EU and national legislation, thus hindering the exchange and sharing thereof, although it is at large available in electronic format.

ELI proposes a unique identifier (HTTP URI), which should be recognisable, readable and understandable by both humans and computers. In addition, ELI proposes a set of metadata elements to describe legislation in compliance with a recommended ontology. ELI aims to take into account not only the complexity and specificity of regional, national and European legislative systems, but also changes in legal resources (e.g. consolidations, repealed acts, codes etc.). ELI has been carefully constructed to respect the legal and constitutional differences between Member States.

With funding received in the frame of ISA and ISA² since 2014, a number of assets were developed in view of facilitating the implementation of ELI by Member States. Since the beginning of this initiative, ELI has been adopted by a growing number of national legislation publishers, who want to build on the potential of the semantic web to improve access to legal information and interoperability between systems.

The focus of the ELI action in 2018 will be to leverage the potential of ELI, building on existing national implementations and develop interoperability solutions between national and EU legislation.

6.4.4 SCOPE

Tasks to be conducted in the scope of the proposed action:

1. Provide assistance to Member States in implementing ELI

This task foresees delivering technical and organisational assistance to Member States who are interested in implementing ELI; assistance can be delivered in the form of workshops, trainings, technical meetings, consultancy, etc.

2. Leverage ELI by developing integrated reusable solutions

As the number of governmental legislation publishers who have adopted the ELI convention is growing, the focus of the ELI action in 2018 is turned towards developing integrated reusable solutions building on existing ELI implementations (i.e. cross-border search functions, solutions for thematic legislation bundling, etc.). This involves analysing, studying and building services and tools to foster interoperability and create added-value between stakeholders and systems. This may involve surveying stakeholders in order to identify which services/ tools would best respond to their actual needs. Prospection and analysis of solutions in view of conceiving and deploying tools and services for legislation publishers are also foreseen (i.e. mutualisation of systems and resources, RDF transformations, visualisations, increased linking granularity, editing/ annotating semantic metadata, preparing and converting legacy data, searching across semantic metadata and full text of legal publications ...). This also includes development, deployment, testing, hosting and related tasks to ensure the functioning of the needed services/tools. Investigation on legal requirements as to licensing/reuse can also be foreseen.

3. Maintenance and evolution of existing ELI assets and knowledge base

It is important to update existing technical and general documentation to take on board the knowledge and expertise acquired by new ELI implementers (update of implementation guide, good practices, technical guidelines, etc.). Facilitating information exchange and peer review exercises via appropriate fora is also foreseen.

For the maintenance of the knowledge base, editorial content about ELI will be prepared for various dissemination channels. Reporting about progress on ELI and presenting the ELI project to various types of audiences is also to be covered. Editorial content will be in various languages which includes translation and editing activities;

A number of generic assets have been developed since the beginning of the ELI initiative. These assets must be maintained to adapt to new requirements. This can include the adaptation to changes in formats, standards or platforms. It can also mean further evolutions of the CELLAR, the content and metadata repository of the Publications Office of the EU. This also includes possible adaptations/configurations of developed solutions with the objective of making them more easily reusable by Member States or other stakeholders;

4. Promotion of ELI and participation in groups working in areas related to ELI

This includes driving ELI forward as a standard in the EU and internationally as well as engaging with groups and communities working in areas that relate to ELI. Reaching out to commercial and non-commercial re-users as well as to the academic community is also to be foreseen. The action will support the organisation of events to promote ELI (conference/hackaton) including the direct funding of a prize/award in the frame of an event to support ELI.

6.4.5 ACTION PRIORITY

The ELI action strongly contributes to the interoperability landscape by enabling the exchange of legislation at EU level and beyond. Its results and outputs are reusable and are effectively being used by a growing number of governmental legislation publishers. By mid-2017, 12 governmental legislation publishers had effectively deployed the European Legislation Identifier, while others were in the process of doing so. The adoption of ELI in the European Union relies on the financial support provided via the ISA² programme, as no other funding is available.

6.4.5.1 Contribution to the interoperability landscape

Question	Answer
<p><i>How does the proposal contribute to improving interoperability among public administrations and with their citizens and businesses across borders or policy sectors in Europe?</i></p> <p><i>In particular, how does it contribute to the implementation of:</i></p> <ul style="list-style-type: none"> • <i>the new European Interoperability Framework (EIF),</i> • <i>the Interoperability Action Plan and/or</i> • <i>the Connecting European Facility (CEF) Telecom guidelines</i> • <i>any other EU policy/initiative having interoperability requirements?</i> 	<p>The proposed ELI action meets the recommendations included in the new European Interoperability Framework (EIF) as it contributes to improving interoperability within the EU and across borders and sectors. By making legislation available on the web in a structured way, it will be easier to find, share and reuse legislation, in line with the public sector information (PSI) directive.</p>
<p><i>Does the proposal fulfil an interoperability need for which no other alternative action/solution is available?</i></p>	<p>ELI comes as a response to the problem of not being able to refer in a unique and commonly acceptable way to EU and national legislation, thus hindering the exchange and sharing thereof .</p>

6.4.5.2 Cross-sector

Question	Answer
<p><i>Will the proposal, once completed be useful, from the interoperability point of view and utilised in two (2) or more EU policy sectors? Detail your answer for each of the concerned sectors.</i></p>	<p>It is also in line with the European Union's commitment to open up legislation as part of the implementation of the G8 Open Data Charter which aims to promote, amongst other things, transparency and government accountability.</p> <p>It also contributes to the re-use of public sector information and is thus in line with Directive 2013/37/EC.</p>
<p><i>For proposals completely or largely already in operational phase, indicate whether and how they have been utilised in two (2) or more EU policy sectors.</i></p>	<p>The ELI initiative is bearing fruit in the policy areas listed above as, by mid-2017, 12 governmental legislation publishers had deployed ELI in their systems thus enabling the improved exchange of legislation at EU level and beyond. Moreover, ELI is also a tool to facilitate reporting about the transposition process of EU legislation into national legislation.</p>

6.4.5.3 Cross-border

Question	Answer
<p><i>Will the proposal, once completed, be useful from the interoperability point of view and used by public administrations of three (3) or more EU Members States? Detail your answer for each of the concerned Member State.</i></p>	<p>The European Legislation Identifier is useful from an interoperability point of view inasmuch as it aims at promoting access and exchange of legal information within and across borders. As such, it contributes to the development of a common area of freedom, security and justice.</p> <p>Out of 21 Member States/candidate countries and Lugano States who have expressed their interest in the ELI action at the time of drafting of the present request (participation in studies, trainings, requests or other) 12 have, by mid-2017, effectively implemented ELI in their</p>

	<p>legislation publishing systems.</p> <p>The 12 legislation publishers are at this stage in addition to the Publications Office of the European Union, Austria, Belgium, Denmark, Finland, France, Ireland, Italy, Luxembourg, Norway, Portugal, and the United Kingdom.</p>
<p><i>For proposals completely or largely already in operational phase, indicate whether and how they have been utilised by public administrations of three (3) or more EU Members States.</i></p>	<p>12 governmental legislation publishers¹⁰³ have effectively implemented ELI in their legislation publishing systems.</p>

6.4.5.4 Urgency

Question	Answer
<p><i>Is your action urgent? Is its implementation foreseen in an EU policy as priority, or in EU legislation?</i></p>	<p>This action is not urgent. The present request aims to pursue the efforts conducted in the context of ISA Action 1.21 (2014-2015) and ISA Action 6.4 (2016-2017).</p>
<p><i>How does the ISA² scope and financial capacity better fit for the implementation of the proposal as opposed to other identified and currently available sources?</i></p>	<p>No other financial sources are available.</p>

6.4.5.5 Reusability of action's outputs

<p>Name of reusable solution to be produced (for new proposals) or produced (for existing actions)</p>	<p>ELI specifications</p>
<p>Description</p>	<p>These are the ELI ontology and the technical conventions specified to uniquely identify structure and enrich legal acts.</p> <p>For more information, please refer to the ELI ontology repository on: http://publications.europa.eu/mdr/eli/</p> <p>The ELI ontology needs to be maintained and evolve. Its evolution is essential to cater for the needs of implementing governmental legislation publishers.</p>

¹⁰³ Cf. ELI registry for list of legislation publishers who have implemented ELI: <http://www.eur-lex.europa.eu/eli>

Reference	http://publications.europa.eu/mdr/eli/
Target release date / Status	Available
Critical part of target user base	Yes
For solutions already in operational phase - actual reuse level (as compared to the defined critical part)	By mid-2017 12 governmental legislation publishers base themselves on the ELI ontology.

Name of reusable solution to be produced (for new proposals) or produced (for existing actions)	Open Source ELI Cellar
Description	Source code of Cellar available under EUPL licence for possible reuse by interested third parties. System made available to legislation publishers interested in an advanced system that can be configured with ELI ontology
Reference	https://joinup.ec.europa.eu/software/cellar/description
Target release date / Status	Available since 2015
Critical part of target user base	No
For solutions already in operational phase - actual reuse level (as compared to the defined critical part)	N/A

Name of reusable solution	RDFEdit
Description	RDFEdit is a tool to search, display and edit the metadata of legal resources for users of the Publications Office's Open Source Cellar.
Reference	https://joinup.ec.europa.eu/svn/rdfedit/
Target release date / Status	Available
Critical part of target user base	No
For solutions already in operational phase - actual reuse level (as compared to the defined critical part)	N/A

Name of reusable solution	ELI annotation tool
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Description	Application allowing official journals and/or other organisations in charge of the official publication of legal resources, to identify and describe legal resources in compliance with the ELI convention and publish this description on the web using structured data embedded in HTML pages.
Reference	http://eur-lex.europa.eu/eli-register/resources.html
Target release date / Status	Q4 2017
Critical part of target user base	
For solutions already in operational phase - actual reuse level (as compared to the defined critical part)	

Name of reusable solution	ELI XML serialisation
Description	ELI/XML is an encoding of ELI metadata in an XML schema (XSD). It can be used standalone or imported into other XML documents, typically in a metadata header. The ELI/XML schema is provided with a set of XML transformations to generate ELI in RDF/XML, RDFa header or HTML+RDFa. It is meant to facilitate the integration of ELI in XML-based document workflows.
Reference	http://eur-lex.europa.eu/eli-register/resources.html
Target release date / Status	Available
Critical part of target user base	
For solutions already in operational phase - actual reuse level (as compared to the defined critical part)	

Name of reusable solution	List of solutions to be developed
Description	<ul style="list-style-type: none"> - Solutions for data visualisation - RDF transformations/metadata retrieval - Solutions for processing legacy data - 'Elification' of Cellar repository - Tools for searching semantic data
Reference	
Target release date / Status	
Critical part of target user base	
For solutions already in operational phase - actual reuse	

level (as compared to the defined critical part)

6.4.5.6 Level of reuse of existing solutions

Question	Answer
<i>Does the proposal intend to make use of any ISA², ISA or other relevant interoperability solution(s)? Which ones?</i>	<p>ISA² Action 1.13 LEOS – the Leos editor is an asset which could integrate the ELI standard</p> <p>ISA Action 1.1. Improving semantic interoperability in European eGovernment systems</p>
<i>For proposals completely or largely already in operational phase: has the action reused existing interoperability solutions? If yes, which ones and how?</i>	<ul style="list-style-type: none"> - The ELI deployment at the Publications Office uses persistent URIs under the data.europa.eu domain - The Joinup platform to disseminate the ELI Open Source developments - CIRCABC is used as a document exchange platform with the Members of the ELI Taskforce

6.4.5.7 Interlinked

Question	Answer
<i>Does the proposal directly contribute to at least one of the Union's high political priorities such as the DSM? If yes, which ones? What is the level of contribution?</i>	<p>The proposal directly contributes to building bridges between the different national legal systems across the EU. As such it directly contributes to the priority https://ec.europa.eu/priorities/justice-and-fundamental-rights_en</p> <p>The ELI initiative allows the reuse of data and thereby creates the opportunity of texts being reused and new added-value services to be developed. As such it contributes to priority: https://ec.europa.eu/priorities/digital-single-market_en</p>

6.4.6 PROBLEM STATEMENT

The problem of	Not being able to refer in a unique and common way to EU and national legislation resources
affects	Interoperability between legislation systems
the impact of which is	Hinders access and exchange of legal information between legislation systems at EU level and beyond
a successful solution would be	To use the ELI convention as a way to streamline digital structuring and interconnecting of legislation

6.4.7 IMPACT OF THE ACTION

6.4.7.1 Main impact list

A Member State having implemented ELI will be able to exchange legislative information more quickly, efficiently and reliably. ELI also facilitates efficient searching of legislation of other jurisdictions with cross border searches. It also enables a more precise investigation and understanding of the transposition of directives. A concrete example thereof is France. It successfully implemented in July 2015 a mechanism to link ELI references from <http://data.europa.eu/eli> and display them on Légifrance: <http://www.legifrance.gouv.fr/>. The implementation of this interoperability feature by France demonstrates a concrete benefit of the ELI system.

ELI is cost-effective because it is merely a specialisation of how resources are generally identified on the web. As ELI is designed as an extension to existing systems, the initiative can be implemented by Member States at a reasonable cost.

Finally, it is important to note that the approach to ELI benefits from the work that goes into technologies and standards for Linked Open Data and the semantic web.

Impact	Why will this impact occur?	By when?	Beneficiaries
(+) Savings in money	Improved quality of legislation through use of common IT standards	Following implementation of ELI	Legislation publishers
(+) Savings in time	Advanced publishing workflows Faster access to legal information	Following implementation of ELI	Legislation publishers Legal practitioners
(+) Better interoperability and	Improved cooperation at legal level	Following implementation	European administrations,

quality of digital public service	Improved circulation of legal information at EU level and beyond Potential for third parties to develop services building on a standard shared by European Legislation Publishers	of ELI	businesses and citizens
(-) Integration or usage cost		Following implementation of ELI	
<i>[add other impacts as needed]</i>			

6.4.7.2 User-centricity

The ELI initiative is governed by a Taskforce made up of governmental legislation publishers who have implemented ELI. The action holder, the Publications Office of the European Union, is a member of this Taskforce. The Members of the ELI Taskforce are in a position to relay to the rest of the group the needs of their respective national legislation users. Ad-hoc meetings/workshops with national legislation publishers are organised to take stock of their needs and take these requirements into account during the revision of the ELI specifications. Likewise, requirements expressed by users have led to the development of reusable tools funded under ISA² (ex. ELI validator, ELI annotations tool, etc.).

This organisational structure allows the action holder to gather direct feedback from the users, in this case the national legislation publishers, to make decisions on projects and solutions to be developed based on ISA² funding and to gather subsequent feedback on the outcome as well.

6.4.8 EXPECTED MAJOR OUTPUTS

Output name	Updates to the ELI methodology and technical guide
Description	These are implementation guides covering both general and technical aspects of the ELI implementation. They are an essential resource for interested implementers.
Reference	http://data.europa.eu/doi/10.2830/813167 and http://data.europa.eu/doi/10.2830/74251
Target release date / Status	Q4/2018

Output name	ELI subdivisions
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Description	Access to lower granularities (articles, paragraphs...) in acts
Reference	
Target release date / Status	Q4/2018

Output name	ELI workshops
Description	Workshops with Member States and stakeholders inside the European Institutions
Reference	
	Q4 2017

6.4.9 ORGANISATIONAL APPROACH

6.4.9.1 Expected stakeholders and their representatives

Stakeholders	Representatives	Involvement in the action
Publications Office of the European Union	Valeria Sciarrino Head of Unit Official Journals and Case-law production valeria.sciarrino@publications.europa.eu www.publications.europa.eu	ELI implementation @OP Budgetary and contractual questions
Member States	Luxembourg John Dann - Chair of the ELI Task Force Directeur Ministère d'État Service central de législation john.dann@scl.etat.lu www.legilux.public.lu	ELI implementation in Luxembourg Chairman of the ELI Task Force
	France Jean-Michel Thivel – Chair of the Council expert group on ELI Chef du service Administration générale, documentation et informatique Premier ministre Secrétariat général des affaires européennes jean-michel.thivel@sgae.gouv.fr	ELI implementation in France Chairman of the ELI Expert Group

	<p>United Kingdom Matthew Bell Head of Legislation Services The National Archives matthew.bell@nationalarchives.gsi.gov.uk</p>	<p>ELI implementation in the United Kingdom</p>
	<p>Denmark Nina Koch Director Ministry of Justice civilstyrelsen@civilstyrelsen.dk www.civilstyrelsen.dk</p>	<p>ELI implementation in Denmark</p>
	<p>Ireland Gerry Matthews eISB Project team - electronic Irish Statute Book (eISB) Office of the Attorney General gerry_matthews@ag.irlgov.ie www.irishstatutebook.ie</p>	<p>ELI implementation in Ireland</p>
	<p>Italy Antonio Antetomaso Ingegn. e Industrializzazione progetti Sviluppo Business e Solutions Istituto Poligrafico e Zecca dello Stato S.p.A. a.antetomaso@ipzs.it</p>	<p>ELI implementation in Italy</p>
	<p>Finland Aki Hietanen Chief of Information Services Ministry of Justice Finland aki.hietanen@om.fi</p>	<p>ELI implementation in Finland</p>
	<p>Portugal Helder de Sousa Santos Legal expert at the Office for Official Publications, National Printing Office and Mint / Imprensa Nacional- Casa da Moeda (INCM). Helder.Santos@incm.pt</p>	<p>ELI implementation in Portugal</p>
	<p>Norway Managing Director Odd Storm-Paulsen The Lovdata Foundation eli@Lovdata.no.</p>	<p>ELI implementation in Norway</p>

6.4.9.2 Identified user groups

List the main group of end-users of your solutions.

Member States	Facilitating access to legislation reduces burden for public administrations. Structuring data and optimisation of production flows can lead to reduction of production costs for legal information publishers. Improved transparency
Member States - implementers	Member States can draw on the knowledge base which has been acquired based on the experience of the pioneering implementers to adopt the ELI standard. Technical documentation as well as training and assistance can be offered to facilitate the implementation of ELI by future implementers.
European Commission	Improved transparency and better integration and efficient exchange of information, e.g. transposition of Directives. Increased quality and reliability of data. Greater interoperability and improved cooperation.
Citizens and businesses	Effective, user-friendly and faster access to legislation as well as exchange of information between heterogeneous systems for citizens and legal professionals (legislators, judges ...). Improved discoverability of legal data, reducing costs for businesses. Smart use of data allowing the development of new value-added services on existing data. An improvement of metadata, through the ELI ontology could lead to more informative summaries of legislation, especially for non-legal professionals.
Candidate countries, EFTA and other countries	Better integration and efficient exchange of legal information with the European Union.

6.4.9.3 Communication and dissemination plan

The following regular communication events with our stakeholders are planned for 2018:

e-Law group of the EU Council	EU e-Law working party members	Twice a year (one per Presidency)
ELI expert group of the Council	EU e-Law working party members	Specific meetings to be organised
Promote and share the work on ELI	National/International community	Specific events to be organised
ELI Taskforce meetings	ELI Taskforce members	Specific meetings to be organised
Stakeholders interested in ELI	ELI website published on EUR-Lex	Regular updates

6.4.9.4 Key Performance indicators

Provide a list of KPIs allowing the measurement of the progress and completions of milestones and the action. In case of an on-going action with already identified metrics¹⁰⁴ indicate the current values.

Description of the KPI	Target to achieve	Expected time for target
Number of ELI implementers	13	2018
Number of participants in ELI discussion/review fora:	22	2018
Total number of ELI assigned to legal resources (i.e work-level)	3,2 million	2018

6.4.9.5 Governance approach

The ELI work programme actions are implemented by the Publications Office which, as action holder, is in charge of budgetary and contractual management.

The ELI Task Force (ELI TF) defines ELI-related specifications and ensures their evolution and maintenance in a structured framework. The ELI TF drafts the specifications of the ELI standard and defines the processes to change and maintain the ELI specifications foreseeing the involvement of interested ELI stakeholders. The Taskforce develops guidelines and resources aimed at helping legislation publishers adopt ELI. Governance rules of the ELI TF: http://eur-lex.europa.eu/content/eli-register/governance_rules.pdf.

A Council expert group on ELI has been created in 2017 in the framework of the working party on e-law of the Council of the European Union where all Member States are represented in order to allow exchanging experiences and good practice on the deployment of the European Legislation Identifier.

The Council Conclusions on the European legislation Identifier of 26 October 2012 (2012/C 325/02) [http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52012XG1026\(01\)](http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52012XG1026(01)) state that apart from Member States, candidate countries, Lugano States and others are encouraged to use the ELI-system.

6.4.10 TECHNICAL APPROACH AND CURRENT STATUS

ELI is based on a gradual three-step approach defined as follows:

- uniform rules governing the identification and designation of and access to national and European legislation (URI: Uniform Resource Identifiers),
- metadata describing the legislative resources,

¹⁰⁴ For examples see the ISA² dashboard <https://ec.europa.eu/isa2/dashboard/isadashboard>, effectiveness tab.

- ontology - information exchange format - describing the properties of the legislative texts and their relationship with other concepts or legislation.

Currently ELI is implemented by 12 governmental legislation publishers. See most recent implementation status of the ELI initiative on the ELI registry site: <http://eurlex.europa.eu/eli>.

6.4.11 COSTS AND MILESTONES

6.4.11.1 Breakdown of anticipated costs and related milestones

Phase: Initiation Planning Execution Closing/Final evaluation	Description of milestones reached or to be reached	Anticipated Allocations (KEUR)	Budget line ISA ² / others (specify)	Start date (QX/YYYY)	End date (QX/YYYY)
Execution	Assist Member States in ELI adoption	30		2018	
Execution	Leverage ELI by developing integrated reusable solutions	50		2018	
Execution	Maintenance of existing assets and knowledge base	20		2018	
Execution	Promotion of ELI and participation in groups and communities working in areas that relate to ELI	50		2018	

6.4.11.2 Breakdown of ISA² funding per budget year

Budget Year	Phase	Anticipated allocations (in KEUR)	Executed budget (in KEUR)
2016		400	314
2017		295	
2018		150	
2019			

2020			
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6.4.12 ANNEX AND REFERENCES

description	Reference link	Attached document
Conclusions of the Council of the European Union on the European Legislation Identifier (ELI) 2012/C 325/02	http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2012:325:0003:0011:EN:PDF	
Report on the introduction of the ELI	9922/13 Jurinfo 25 28 May 2013	
Website informing on the progress of ELI in France	http://www.eli.fr	
Letters of support from Taskforce members		4

6.5 THEMIS - APPLICATION OF EU LAW: PROVISION OF CROSS SECTOR COMMUNICATION AND PROBLEM SOLVING TOOLS (2016.01) – FUNDING CONCLUDED

6.5.1 IDENTIFICATION OF THE ACTION

Type of Activity	Common Services
Service in charge	SG.C.3
Associated Services	SG.R.3, EU Publications Office , DG CONNECT, Parliament, Council

6.5.2 EXECUTIVE SUMMARY

The Commission's Decide project, currently under development, has a substantial impact on the scope of THEMIS, directly affecting the original ISA proposal for action 1.20 – funded under the ISA work programme during the period 2013-2015 - specifically with regards to the infringements management process. The objective of Decide is to streamline and harmonise the Commission's decision-making procedures and to consolidate the existing applications into one integrated system (“Decide”), supporting the whole workflow from programming to adoption (planning, consultation and decision)planning to dissemination, across all types of documents.

THEMIS needs to be integrated as much as possible with Decide in order to make use of Decide's inter-service consultation functionality and its adoption module, including all decision-making related functionalities.

The alignment of THEMIS and Decide is still an on-going task, to be completed during Q4 2015/Q1 2016. Therefore it has not been possible to progress with the work on the infringements management related web services, in scope of the original ISA action 1.20 proposal, during 2015 as initially planned.

In this respect, this new proposal for the ISA² Work Programme is a continuation of the original ISA action 1.20, taking over the non-accomplished work on infringements management related web services.

Context

Under article 17 TUE, the Commission shall oversee the application of EU law under the control of the Court of Justice of the EU. This monitoring task is entrusted to the Commission in its exclusive role as “guardian of the Treaty”.

The monitoring of the application of EU law is a complex task, involving a number of steps and specific rules which are inter alia provided for by article 258 TFUE (Treaty on the Functioning of the European Union). The cooperation between the Commission and the Member States through the whole process remains a crucial element in the effective monitoring of the application of EU law. The structural dialogue before opening formal proceedings contributes to the resolution of a high percentage of possible breaches of EU law (EU Pilot).

Problem statement

The facilities to assist Commission staff in this task are currently provided by a series of EU-LAW applications (CHAP, EU-PILOT, MNE, NIF) covering – partially - different phases of the overall process for the adoption of an infringement decision (complaint handling, pre-infringement phase, transposition of directives, and infringements proceedings).

All these applications, even though they provide the basic needs for the management of the day-to-day activities for the above-mentioned process, have gradually become inadequate to comprehensively provide the functionalities corresponding to the evolving business requirements.

Therefore, to comply with current needs, major evolutive evolutionary development is necessary. However, given the underlying technologies and the state of the existing applications, which have already undergone a series of enhancements since 2004 (production date of the current NIF application, the first application from the EU law family to be released), taking this approach would be extremely costly due to their instability, limitations, lack of flexibility to incorporate advanced and/or new functionalities, lack of common methods of operation, different interaction patterns and limited inter-operability.

Proposed solution

The proposed approach towards a new solution, aligned with the requirements of the on-going IT governance and rationalisation efforts within the "Legislative Lifecycle" domain being currently fostered across the SG and the Commission as a whole, will have a significant impact to overcome the above-mentioned deficiencies.

THEMIS – as the envisaged solution – will enhance the execution of the fundamental task of the Commission in monitoring EU law implementation and its application by Member States by providing an end-to-end management of the full inherent life-cycle of EU-LAW processes, exposing one single, usable and coherent point of access - both for the Commission and the Member States - improving the efficiency and transparency of reporting and monitoring of Member States' implementation and application of EU law.

In essence, THEMIS aims at improving inter-operability of the tools to manage complaint, pre-infringement and infringement handling. Integration with Decide will ensure mainstreaming the phases of inter-service consultation and Commission decision-taking processes. This integration aims at simplifying working methods and avoiding data inconsistencies and duplication. THEMIS includes a set of cross-sector interest web services to be consumed by in-house applications of the Member States.

6.5.3 OBJECTIVES

Better and more efficiently managed application of EU law involves both the European Commission and the Member States, working in close partnership. Member States are responsible for the timely and correct implementation and application of EU law while the Commission's responsibility is to ensure that EU law is applied consistently. To this end the Commission works in partnership with Member States via EU Pilot and launches, if necessary, formal infringement procedures.

The specific objective of this action is to identify and implement common web services of interest that can support this. The project will analyse, design and develop or implement services to manage and support the exchange of information between Member States and the Commission during all phases of infringement proceedings.

All these web services are to be integrated into THEMIS, the central Commission IT application which will provide a one-stop solution for Commission services and Member States' administrations with regard to all aspects of the application of EU law; starting from the transposition process of directives into national legislation and the notification of the corresponding legal acts to the Commission, through dialogue based problem resolution triggered either by complaints or own-initiative of the Commission, onto the full bi-directional flow of information in the context of infringement proceedings.

In detail, this action aims at:

- Providing a single point of access for Member States as regards to application of EU law.
- Reducing administrative burden of the Member States and of the Commission.
- Enhancing efficiency and transparency of reporting and monitoring of EU law application.
- Improving statistical tools to simplify the gathering of information, its dissemination and reporting.

6.5.4 SCOPE

The scope of this action can be summarised as follows:

- Better integration between Commission and national IT tools:

Thanks to improved interoperability, national IT tools should be able to connect and interact easily and automatically with Commission systems.

This is becoming increasingly important as the national administrations are developing more and more in-house IT applications and online services managing EU legislative work, in particular for infringement proceedings.

- Management of infringement proceedings through a modern workflow system:

The need to speed up procedures and rationalise the decision-taking process makes it necessary to use advanced technologies for workflow management. Commission services and Member States should be able to work in a system, which allows a complete follow up of infringement procedures, from the creation to the final closing of the case, including any attendant communication and publication of information.

- Statistical facilities and search tools

There is need for more elaborated reporting and statistical tools to facilitate overall reporting on the application of Union law, including for the purpose of preparing the Annual Report on monitoring the application of EU Law and the publication of other information.

Deliverables covered under this proposal will include both web-services and their corresponding backend services, providing for bi-directional data and document exchange facilities for the infringements proceedings domain¹⁰⁵.

The Commission offers the deliverables as a service to Member States, developing the required application and interfaces and hosting the computing infrastructure.

This will be accompanied by technical documentation detailing the interfaces to be used. Furthermore, on request, the Commission will provide assistance to Member States, in order to ensure correct and reliable interconnection between Member States' system and THEMIS.

6.5.5 PROBLEM/OPPORTUNITY STATEMENT

The monitoring of the application of EU Law is a complex task, involving a number of steps and very specific rules. Currently, this task is only partially supported by a family of old information systems that are technologically obsolete and lack interoperability amongst them.

Even though these applications fulfil the basic needs for the management of the day-to-day activities for the above-mentioned process, they have gradually become inadequate to comprehensively cover the evolving business requirements.

To comply with current needs, the largely outdated systems in operation today need to be replaced by a modern, well performing system, which is built on a sound technological platform and offers the required interoperability.

6.5.6 EXPECTED BENEFICIARIES AND ANTICIPATED BENEFITS

Beneficiaries	Anticipated benefits
Member States and European Commission	<p>Security, rapidity and privacy, preservation of information:</p> <p>The service dedicated to the communication of infringement notifications will guarantee the information exchange system providing:</p> <ul style="list-style-type: none"> - immediate transmission (MS are required to respect deadlines), - secure transmission with acknowledgement of receipt (high level of trust); and - secure data preservation (legal security for both MS and the EC).
Member States and	Data quality

¹⁰⁵ The underlying principle is that public authorities responsible for implementing and ensuring compliance with EU legislation should not be presented with a proliferation of different information systems but rather a single interface in the form of the future THEMIS system and its externally accessible interfaces, thus ensuring that information existing in Member States own system(s) need not be re-encoded.

European Commission	THEMIS external services will improve data quality, integrity and preservation of information by implementing a state-of-the-art user interface and interoperability to back-office and by using reliable and trusted data transfer. Search and statistics retrieval will be also improved.
Member States and European Commission	Better cooperation THEMIS external services will improve the transparency and openness of data exchange between Commission and MS by developing/adapting and using a component to share case/project related data.
Member States	Administrative simplification, effectiveness and efficiency, data quality THEMIS external services will increase efficiency and data quality by implementing state-of-the-art user interface and interoperability (system-to-system) for the transmission of replies and prolongation of deadline requests in the matter of infringement proceedings.
European Commission	Efficient management of infringements THEMIS external services will provide data quality, efficient and secure data dissemination among services and will be the basis of the decision making process in matter of infringements.
European Commission	Efficient IT development and evolution, flexibility, scalability, adaptability to legislation change THEMIS external services will be flexible, scalable and adaptable by being developed as a service and component oriented IT architecture.

6.5.7 RELATED EU ACTIONS / POLICIES

Action / Policy	Description of relation, inputs / outputs
Communication "Towards interoperability for European public services" COM(2010) 744 final	This Communication introduces European Interoperability Strategy (EIS) and the European Interoperability Framework (EIF) for European public services, being part of the Digital Agenda, focusing on interoperability.
eGovernment Action – Plan 2011 -2015	Reducing administrative burden by horizontal integration of processes across administrative authorities.
ISA ² Action 'Participatory	Reusable solutions that allow the electronic participation of stakeholders, the analysis of the captured opinions and the discovery and generation of

knowledge for supporting decision making'	knowledge will be taken into account for enhancing the monitoring of EU law implementation and its application by Member States.
ISA ² Action 'Legislation interoperability tools (LEGIT)'	Existing or under development building blocks (i.e. software, tools etc.) that support and improve the electronic exchange of documents and metadata in the context of the legislative process and the transformation between different formats will be taken into account for enhancing the monitoring of EU law implementation and its application by Member States.
'ISA ² Action ICT implications of EU legislation'	Results and conclusions related with the properly preparation and evaluation of EU legislation regarding the ICT implications will be taken into account for enhancing the monitoring of EU law implementation and its application by Member States.
ISA ² Action 'European Legislation Identifier (ELI)'	The proposed approach for identifying legislation documents and the supporting assets and solutions will be taken into account for enhancing the monitoring of EU law implementation and its application by Member States.
ISA ² Action 'Interinstitutional framework for digital OLP management'	The proposed interoperable ways of structuring the content of the documents that need to be exchanged between the institutions for the purposes of the ordinary legislative procedure will be taken into account for enhancing the monitoring of EU law implementation and its application by Member States.

6.5.8 REUSE OF SOLUTIONS DEVELOPED BY ISA, ISA² OR OTHER EU / NATIONAL INITIATIVES

THEMIS will assess the feasibility of re-using solutions and/or results outcome of other ISA, ISA² or EU / National initiatives, specifically ISA Action 1.8, ISA Action 1.11, ISA Action 1.14, ISA Action 1.18 and ISA Action 1.21.

Action / Policy	Description of relation, inputs / outputs
ISA Action 1.8 – Trusted Information Exchange Platform	THEMIS will develop the future Infringement (INFR) service as a single exchange platform and repository of all official infringement documents exchanged between Member States and the Commission (by using the eTrustEx platform for the transmission of official documents to the Member States and reception of acknowledgement from them), mainly in legislation and competition policy areas.
ISA Action 1.11 – Interoperable and generic notification services.	THEMIS will assess the feasibility of re-using the results of ISA Action 1.11 in relation to the notification services developed within the scope of this action.
ISA Action 1.18 – Federated Managed	THEMIS will assess the feasibility of re-using the results of ISA Action 1.18 in relation to its outcome web services interfaces developed.

Authentication Services for ECAS	
ISA Action 1.21 – European Legislation Identifier	ISA Action 1.21 will provide input to this action.

6.5.9 EXPECTED RE-USABLE OUTPUTS (solutions and instruments)

Output name	Web services tailored to infringement management processes
Description	The web services in scope to develop as part of this proposal are tailored to infringement management processes. Nevertheless, there may be possibilities to reuse/apply certain outputs to other purposes
Reference	
Target release date / Status	2018

6.5.10 ORGANISATIONAL APPROACH

6.5.10.1 Expected stakeholders and their representatives

Stakeholders	Representatives
European Commission – administrator	Unit SG C.3 of the Secretariat General administrating the application, providing policy guidance on its use.
Project Owner	Unit SG.C.3 of the Secretariat General responsible to coordinate the Commission's actions as guardian of the Treaties.
Solution Provider	Unit SG R.3 (Information Technology) responsible for the development of THEMIS.
End users – Commission Services	Infringement correspondents and infringements case handlers in all Commission services.
End users - Member States authorities	Current MNE/INFR end users (various national administrations in all Member States) and Central Managers in the Member States represented in the EU Law Network.

6.5.10.2 Communication plan

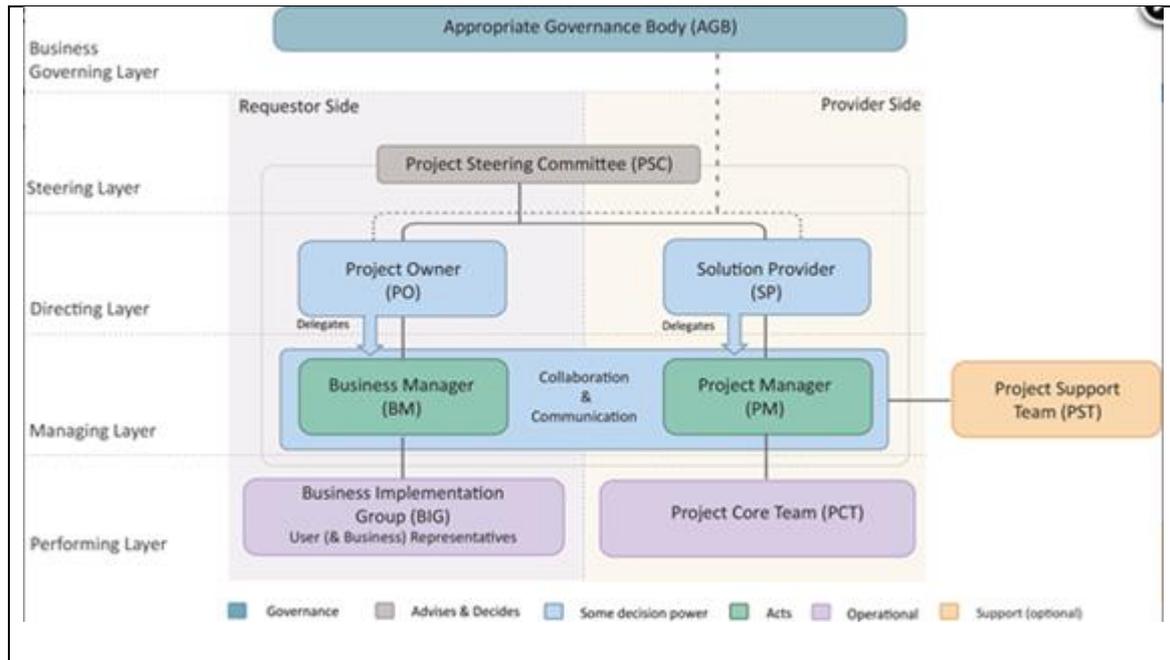
The main communication actions are described next:

- Written communication, both to internal and external stakeholders (newsletter via e-mail).
- Awareness sessions – 1 with MSs representatives and 1 with DGs representatives – to present the project.
- Dissemination material for all relevant stakeholders:
 - o DGs: Leaflets, posters and a quick-start guide.
 - o MSs: Quick start guide.
- Meetings:
 - o With external stakeholders, once a year, in the frame of the EU Law Network meetings, to provide status and recollect feedback.
 - o With internal stakeholders, twice a year, as part of the DGs infringement correspondents meeting, to provide status and recollect feedback.
- First-line support: The Project Support Team will help users through the change and collecting feedback.
- CIRCABC group of interest on "Implementation and application of EU law", members of which are MS representatives.

Event	Representatives	Frequency of meetings / absolute dates of meetings
EU Law Network	All Member States	Normally, once or twice a year
Infringement correspondents meetings	Representatives from all DGs	Once or twice a year
Directors network	Representatives from all DGs	Once or twice a year
Project owner/System supplier	SG.C.3/SG.R.3	Quarterly reporting using PM ² methodology

6.5.10.3 Governance approach

This project will follow the standard PM2 project governance structure.



Project Owner: Mr. SLOOTJES, Rene (SG.C3)

Solution Provider: Mr. GRITSCH, Martin (SG.R3)

Project Manager: Mr. BLAZQUEZ DE MIGUEL, Víctor (SG.C3)

Business Manager: Mrs. GROCHOWIAK, Elzbieta

Project Support Team (PST): To be appointed.

Project Core Team (PCT): To be appointed.

Business Implementation Group (BIG): 1 representative per DG and 1 representative per MS. To be appointed at a later stage.

The governance approach has established weekly coordination meetings between SG.C.3 (project owner) and SG.R.3 (solution provider). In addition, this action will respect the general ISA Governance under the supervision of the ISA Coordination Group inside the cluster "Trusted Information Exchange".

The governance of this action project is set up in the vision document for NIF2 (renamed later as "THEMIS"). According to this document, the Steering Committee monitors completion of the project phases; sets project requirements, objectives and outcomes, validates project deliverables, tests activities and disseminates information about the project to the Commission services. It is composed of members from Units C.3, R.2 and R.3 of the Secretariat General and representatives of those services which manage complaints and infringement procedures (DG AGRI, DG CLIMA, DG CNECT, DG EMPL, DG ENER, DG GROW, DG ENV, DG FISMA, GROW, HOME, DG JUST, Legal Service, DG MOVE, DG SANCO and TAXUD).

In parallel, Member States are participating in THEMIS work through the EU Law Network. Tests and feedback can be submitted to the functional mailbox SG-THEMIS-FEEDBACK@ec.europa.eu.

6.5.11 TECHNICAL APPROACH AND CURRENT STATUS

The services in scope of this proposal will represent the common future external module of the THEMIS system, providing a reliable, robust and secure mechanism to connect to systems in Member States' public authorities (existing or under development).

System-to-system data exchanges between the national administrations and the Commission will reduce extra manual data encoding. This will allow Member States to transmit data directly from their back-office systems in respect of the following principles of the European Interoperability Framework: security and privacy, multilingualism, administrative simplification, transparency, preservation of information, openness, reusability, effectiveness and efficiency. History of all data exchanges with the Member States' administrations should be accessible to either party.

All services will be strongly integrated to ensure a consistent and reliable workflow.

The technical implementation of the proposed data-exchange services has the following requirements:

- State of the art secure web services allowing for the exchange of meta-data for confidential (official notification of infringements and MS replies to those notifications) dossiers; these services should permit uploading such information from MS systems into the Commission system.
- Non-repudiation for official notifications of infringements.
- Legally binding electronic signature for official notification of infringements and transmission of the corresponding MS replies (explicit requests by Spain and Germany). To be checked if this can be covered by the eTrustEx platform.
- A transfer mechanism allowing for highly reliable exchange of documents, including very large documents if needed (electronic transmission should be the unique notification mechanism). To be checked if this can be covered by the eTrustEx platform.
- A publishing service allowing MS to 'pull' information accessible to them in a format compliant with open government publication standards, allowing them to integrate the extracted information into their own IT systems.
- A notification service which will inform the concerned parties that new tasks/data are available in the system, allowing either for specific action in the external interface, or automated download procedures for available data.
- A reporting and statistics service which will allow Member States to retrieve, at any time, different sets of statistics and historical data of EU-LAW proceedings they are / have been involved in.

Backwards compatibility with the current basic web services used by MS needs to be ensured for an initial length of time (6-12 months), since often MS have out-sourced IT developments and any changes on our side will have a non-negligible impact for them.

By the same token, it is imperative to involve MS in order to ascertain that current and future MS requirements are met. The Commission will inform Member States at an early stage of the projected developments and collect feed-back from them. This will be channelled through the existing EU Law Network, with regular coordination meetings in Brussels.

Current status of the action

The services in scope of this action will be delivered embedded within the THEMIS / Infringements module of the THEMIS application, which is expected to be rolled-out in Q4 2018.

The project team is currently working on the first functional version of the services in scope of this action, expected to be ready by the end of Q4 2017. This first functional version of the services will be exposed for testing purposes to the Member States. Feedback gathered during this testing phase, to be kicked-off immediately after the finalisation of the above-mentioned first functional version, will be used to refine the services in subsequent releases.

6.5.12 COSTS AND MILESTONES

6.5.12.1 List of use cases identified: 10 use cases

- *ISA1 Submit reply to infringement notification:* This technical use case describes the required actions, associated data and the web-service call structure to correctly upload meta-data and associated documents for the reply by a MS to an official infringement notification.
- *ISA² Request an extension of deadline for a reply to an infringement:* This technical use case describes the required actions, associated data and the web-service call structure to correctly upload a meta-data and associated documents with regards to a request for an extension of deadline to reply to an infringement case.
- *ISA3 Retrieve reply:* This technical use case describes the required actions and the web-service call structure to retrieve all meta-data and documents associated with a reply to an infringement notification in a machine-readable format (XML).
- *ISA4 Retrieve infringement notification:* This technical use case describes the required actions and the web-service call structure to retrieve all meta-data and documents associated with a given dossier and accessible to a MS in a machine-readable format (XML).

- *ISA5 Retrieve infringement dossier:* This technical use case describes the required actions and the web-service call structure to retrieve all meta-data and associated documents accessible to a MS for an entire infringement dossier in a machine-readable format (XML).
- *ISA 6 Communication of additional information:* This technical use case describes the mechanism and web-service structure to provide additional information to on-going infringement cases at any time during their life-cycle.
- *ISA 7 User management:* This technical use case describes the mechanism and web-service structure to manage Member States users. Add, delete or update users, define roles and rights, or re-assign / delegate cases are actions to be supported by this web-service. As part of this use case, feasibility of re-using the results of ISA Action 1.18 (Federated Authentication Action) will be checked.
- *ISA 8 Notifications and Alerts:* This use case describes the mechanism and web-service structure to retrieve new tasks/data available in the system, allowing either for specific action in the external interface, or automated download procedures for available data. As part of this use case, feasibility of re-using the results of ISA Action 1.11 (Interoperable and generic notification services) will be checked.
- *ISA 9 Statistics and reporting – Infringement cases:* This technical use case describes the mechanism and web service structure to retrieve different reporting and statistics related to infringement cases, from the Member State perspective.
- *ISA 10 Statistics and reporting – EU-LAW proceedings life-cycle:* This technical use case describes the mechanism and web service structure to retrieve different reporting and statistics throughout the whole life cycle of EU-LAW proceedings, from the Member State perspective.

The following table summarises the scope of the identified use cases.

Use case	Name	Release	Scope
ISA 1	Submit reply to infringement notification	V1	Infringements management
ISA 2	Request an extension of deadline for a reply to an infringement	V1	Infringements management
ISA 3	Retrieve reply	V1	Infringements management
ISA 4	Retrieve infringement notification	V1	Infringements management

Use case	Name	Release	Scope
ISA 5	Retrieve infringement dossier	V1	Infringements management
ISA 6	Communication of additional information	V1	Common services
ISA 7	User management	V1	Common services
ISA 8	Notifications and Alerts	V1	Common services
ISA 9	Statistics and reporting – Infringement Cases	V1	Statistics and Reporting
ISA 10	Statistics and reporting – EU-LAW proceedings life-cycle	V1	Statistics and Reporting

6.5.12.2 Breakdown of anticipated costs and related milestones

Phase: Inception Execution Operational	Description of milestones reached or to be reached	Anticipated Allocations (KEUR)	Budget line ISA/ others (specify)	Start date (QX/YYYY)	End date (QX/YYYY)
Planning	Requirements gathering, assuring alignment with Decide's scope.	30	ISA ²	Q4/2016	Q1/2017
Planning	Detailed formal (technical use cases) of the in scope identified business services and their exposure through web services. Validation of the proposal by all actors.	60	ISA ²	Q1/2017	Q2/2017
Executing	Development of 'in/out' web services and their correspondent backend business services.	190	ISA ²	Q3/2017	Q3/2018
Executing	Testing and training; updated technical documentation for Member States to allow them to integrate their systems with the new	30	ISA ²	Q4/2018	Q4/2018

	services.				
Closing	Roll-out V1	30	ISA ²	Q4/2018	Q4/2018
Monitor & Control	Monitor and report on on-going project activities and project performance, planning and implementing corrective actions in case of need.	30	ISA ²	Q4/2016	Q4/2018
	Total	370	ISA ²		

6.5.12.3 Breakdown of ISA funding per budget year

Budget Year	Phase	Anticipated allocations (in KEUR)	Executed budget (in KEUR)
2016	Planning	90	
2016	Executing	220	
2016	Closing	30	
2017 ¹⁰⁶	Monitor & Control	30	

6.5.13 ANNEX AND REFERENCES

Description	Reference link
Articles 4 and 17 TEU	http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2010:083:0013:0046:EN:PDF
Articles 258 and 260 TFEU	http://eur-lex.europa.eu/JOHtml.do?uri=OJ:C:2010:083:SOM:EN:HTML
Decision 2002/47/CE, CECA, Euratom for document management rules	OJ L 21, 24.1.2002, p. 23–27
Annual Reports on monitoring the application of Community law	http://ec.europa.eu/eu_law/infringements/infringements_annual_report_en.htm
Communication 'A Europe of results – Applying Community law' (the 2007 Communication)	COM (2007) 502
Communication on the application of	http://ec.europa.eu/eu_law/infringements/infringements_2

¹⁰⁶ Budget received on 2016

Article 260 (3) TFEU	60_en.htm
Framework Agreement between the Commission and the European Parliament (Section on 'Monitoring the application of Community law')	http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2010:304:0047:0062:EN:PDF
Public access to documents relating to infringement proceedings	SEC(2003)260/3 http://www.cc.cec/sg_vista/cgi-bin/repository/getdoc/COMM_PDF_SEC_2003_0260_3_EN.pdf
Monitoring the application of community law: manual of procedures	SEC(2005)254/5 http://www.cc.cec/sg_vista/cgi-bin/repository/getdoc/COMM_PDF_SEC_2005_0254_5_EN.pdf

6.6 INTERINSTITUTIONAL FRAMEWORK FOR DIGITAL OLP MANAGEMENT (2016.17)

6.6.1 Identification of the action

Service in charge	Publications Office of the European Union, Unit A2
Associated services	Parliament, Council, Commission

6.6.2 EXECUTIVE SUMMARY

This action contributes to the overall objective of modernising and improving the efficiency and quality of the legislative process across the European Union by facilitating interoperability between the different actors of the process.

It comprises the definition of common standards for the exchange of data in the scope of the EU law-making process, in particular for the structuring of the exchanged documents.

The purpose is to define a "Common Exchange Model", i.e. the specifications that are needed for the implementation of the future document exchange between the different actors. This will allow for a transparent access to the public information by interested third parties and re-users.

The "Common Exchange Model" is based on LegalDocML, a standardisation initiative of OASIS that supports the use of XML in the domain of legislation in general. LegalDocML is based on the Akoma Ntoso-UN project¹⁰⁷.

In this context the "Common Exchange Model" defines the application profile (or localisation) of LegalDocML for documents that are exchanged in the scope of the law-making process of the EU.

The action is in line with the recent ISA² supported landscaping studies that aim at developing a common vision for the future organisation of the legislative process. Thus it underpins the recommendation to base the exchanges on machine-readable, structured formats.

The action also supports the ongoing development of an Open Source Software for editing legislation (LEOS, ISA² action 2016.38 Legislation Interoperability Tools – LegIT).

6.6.3 OBJECTIVES

The overall objective of the action is to contribute to the implementation of a seamless, fully interoperable end-to-end document exchange for the legislative process of the European Union, in order to increase efficiency, performance and quality of the process.

¹⁰⁷ See https://www.oasis-open.org/committees/tc_home.php?wg_abbrev=legaldocml

In the current stage, the focus is on documents exchanged in the scope of the ordinary legislative procedure (OLP) and on delegated acts (DAs).

The Member States' document exchanges with the EU Institutions in the context of legislative processes at EU level can also benefit from the application of the agreed standards and solutions.

6.6.4 SCOPE

The current work of the Interinstitutional Formats Committee (IFC) (s. <http://publications.europa.eu/mdr/ifc/index.html>) focuses on the Common Vocabulary (CoV), a business level description of semantic and structural concepts for the documents that are exchanged in the scope of the ordinary legislative procedure (OLP) and for delegated acts (DAs), and on the Common Exchange Model (CEM), comprising the definition of a representation of the concepts in a machine readable format..

In 2018 the main activities will comprise the further extension of the coverage of the Common Exchange Model (CEM), i.e. the coverage of supplementary document types and variants of already integrated document types. The specification work will be accompanied by the enrichment of a library of examples (real documents that have been marked-up according to the CEM specifications) and a prototype of a validation framework, in order to be able to formally check the compliance of a document to the CEM.

Furthermore, a prototype for the conversion of existing XML legacy data into Akoma Ntoso (FMX2AN) will be extended.

6.6.5 ACTION PRIORITY

The vision of a seamless, fully interoperable end-to-end document exchange for the production of multilingual EU laws across the Institutions, and even with the Member States, matches the current Commission's explicit commitment to improve the quality of EU policy- and law-making. This is contributing directly to a Better Regulation in the context of President Juncker's "Democratic change" target. It is in the nature of the action that it will contribute to all the Commission's priorities as soon as legislative procedures come into play.

Consequently the impact will be across all fields of policies and activities of the EU Institutions. It will be beneficial to all players involved in legislative procedures at EU level, including Member States and interested third parties (businesses, lobby organisations, academics, etc.).

6.6.5.1 Contribution to the interoperability landscape

Question	Answer
<i>How does the proposal contribute to improving interoperability among public administrations</i>	An improved document exchange between the EU Institutions, and between

<p><i>and with their citizens and businesses across borders or policy sectors in Europe?</i> <i>In particular, how does it contribute to the implementation of:</i></p> <ul style="list-style-type: none"> • <i>the new European Interoperability Framework (EIF),</i> • <i>the Interoperability Action Plan and/or</i> • <i>the Connecting European Facility (CEF) Telecom guidelines</i> • <i>any other EU policy/initiative having interoperability requirements?</i> 	<p>EU Institutions and Member States, results necessarily in increased interoperability.</p> <p>As such, it meets the requirements of the European Interoperability Framework.</p> <p>In addition, it directly contributes to the European Interoperability Strategy and has an immediate impact on the interaction, exchange and cooperation between European public administrations for their legislative activity (as a delivery of public service).</p>
<p><i>Does the proposal fulfil an interoperability need for which no other alternative action/solution is available?</i></p>	<p>Yes: The EU Institutions agree that they will widely benefit from the application of agreed standards, and are thus contributing to the preparatory work done in the context of the Interinstitutional Formats Committee (IFC).</p>

6.6.5.2 Cross-sector

Question	Answer
<p><i>Will the proposal, once completed be useful, from the interoperability point of view and utilised in two (2) or more EU policy sectors? Detail your answer for each of the concerned sectors.</i></p>	<p>By its nature, the action will impact, once completed, all EU policy areas and all EU Institutions.</p>
<p><i>For proposals completely or largely already in operational phase, indicate whether and how they have been utilised in two (2) or more EU policy sectors.</i></p>	<p>This proposal is not yet in an operational phase.</p>

6.6.5.3 Cross-border

Question	Answer
<p><i>Will the proposal, once completed, be useful from the interoperability point of view and used by public administrations of three (3) or more</i></p>	<p>The proposal involves the EU Institutions, but its geographical reach aims at covering all Member States:</p>

<i>EU Members States? Detail your answer for each of the concerned Member State.</i>	Once completed the national public administrations will benefit when exchanging documents with the EU Institutions.
<i>For proposals completely or largely already in operational phase, indicate whether and how they have been utilised by public administrations of three (3) or more EU Members States.</i>	This proposal is not yet in an operational phase.

6.6.5.4 Urgency

Question	Answer
<i>Is your action urgent? Is its implementation foreseen in an EU policy as priority, or in EU legislation?</i>	There is no explicit mentioning of the action in an EU policy or legislation, but the proposal addresses directly and exclusively interoperability. In addition, an implicit urgency has to be assumed due to its impact on the majority of legislative activity in all policy fields. The action directly contributes to the commitment of the Institutions to facilitate traceability of the various steps in the legislative process and to increase transparency and efficiency that has been formalised by the "Interinstitutional Agreement on better law-making" ¹⁰⁸ .
<i>How does the ISA² scope and financial capacity better fit for the implementation of the proposal as opposed to other identified and currently available sources?</i>	Interoperability is at the very core of the action. Furthermore the overall project is across policy sectors and Institutions, and of multiannual nature. The action will produce re-usable results along the way.

6.6.5.5 Reusability of action's outputs

Name of reusable solution to be produced (for new proposals) or produced (for existing actions)	Common Vocabulary (CoV)
Description	Business level description of the semantic and structural concepts that are present in the documents that are

¹⁰⁸ OJ L132, 12.5.2016, p. 1-14

	exchanged in the scope of the OLP and in the scope of the consultation process for delegated acts.
Reference	IFC_CoV
Target release date / Status	12/2016: CoV version 1 released (see http://publications.europa.eu/mdr/ifc/index.html), work to continue
Critical part of target user base	n/a
For solutions already in operational phase - actual reuse level (as compared to the defined critical part)	n/a

Name of reusable solution to be produced (for new proposals) or produced (for existing actions)	Common Exchange Model (CEM)
Description	Formal specification for the machine readable representation of the documents that are exchanged in the scope of the OLP and in the context of the delegated acts, based on LegalDocML and the semantic and structural concepts of the Common Vocabulary.
Reference	IFC_CEM
Target release date / Status	12/2017: CEM version 1 released, work to continue
Critical part of target user base	n/a
For solutions already in operational phase - actual reuse level (as compared to the defined critical part)	First exchanges are foreseen based on CEM version 1 as part of a pilot project run by the Commission. This is particularly important because the Commission and the Council have agreed to use a common editing tool (LEOS).

Name of reusable solution to be produced (for new proposals) or produced (for existing actions)	CEM business rules
Description	Definition in a human readable way of the business rules that are relevant for the elaboration of the CEM
Reference	IFC_CEM_BR
Target release date / Status	12/2017, first release (together with the CEM), work to continue
Critical part of target user base	n/a

For solutions already in operational phase - actual reuse level (as compared to the defined critical part)	See "Common Exchange Model (CEM)".
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Name of reusable solution to be produced (for new proposals) or produced (for existing actions)	CEM technical validation rules
Description	Definition of technical validation rules, in particular to be able to verify the compliance with the CEM business rules. In addition there will also be technical validation rules for the validation of purely technical aspects, e.g. checking the conformance to agreed file naming conventions.
Reference	IFC_CEM_TR
Target release date / Status	12/2017, first release (together with the CEM), work to continue
Critical part of target user base	n/a
For solutions already in operational phase - actual reuse level (as compared to the defined critical part)	See "Common Exchange Model (CEM)".

Name of reusable solution to be produced (for new proposals) or produced (for existing actions)	Examples
Description	Demonstrate the application of the CEM by the elaboration of a representative set of examples based on real documents.
Reference	IFC_CEM_EXA
Target release date / Status	12/2017 first release (together with the CEM), work to continue
Critical part of target user base	n/a
For solutions already in operational phase - actual reuse level (as compared to the defined critical part)	See "Common Exchange Model (CEM)".

Name of reusable solution to be produced (for new proposals) or produced (for existing actions)	Validation Framework (operational prototype)
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Description	Elaboration and maintenance of the technical specifications, which should serve for the implementation of the technical validations on the side of each implementing service. This comprises the development of an operational, reusable prototype that will be used to verify the correctness of the CEM and that could be reused (Open source software).
Reference	IFC_CEM_VAF
Target release date / Status	12/2017 first release (together with the CEM), work to continue
Critical part of target user base	n/a
For solutions already in operational phase - actual reuse level (as compared to the defined critical part)	See "Common Exchange Model (CEM)".

Name of reusable solution to be produced (for new proposals) or produced (for existing actions)	Legacy Data Converter for XML
Description	Elaboration and maintenance of a converter of XML legacy data (EU legislation that is available in XML format) to LegalDocML documents that are compliant with the CEM. The major objective of the converter is to enable the reuse of existing documents by drafters, translators and any other interested party. End of 2018, the converter will be made available either as Open Source Software or as public service.
Reference	IFC_CEM_CONV
Target release date / Status	12/2017 first release (together with the CEM), work to continue
Critical part of target user base	n/a
For solutions already in operational phase - actual reuse level (as compared to the defined critical part)	n/a

6.6.5.6 Level of reuse of existing solutions

Question	Answer
<i>Does the proposal intend to make use of any</i>	Yes, the proposal is built on the re-use of

<i>ISA², ISA or other relevant interoperability solution(s)? Which ones?</i>	the Common Vocabulary defined by the IFC and supported by ISA ² . In addition, the action is based on the results of the ISA ² "AS-IS" and "TO-BE" landscaping exercises (in the context of ISA ² Action 2016.38 Legislation Interoperability Tools – LegIT).
<i>For proposals completely or largely already in operational phase: has the action reused existing interoperability solutions? If yes, which ones and how?</i>	This proposal is not yet in an operational phase.

6.6.5.7 Interlinked

Question	Answer
<i>Does the proposal directly contribute to at least one of the Union's high political priorities such as the DSM? If yes, which ones? What is the level of contribution?</i>	Yes, the proposal directly contributes to the high political priority of "Democratic change", and more specifically fosters better regulation ¹⁰⁹ : it aims at improving the Ordinary Legislative Procedure by facilitating the EU Institutions' document exchange, and provides a basis for making the processes more transparent.

6.6.6 PROBLEM STATEMENT

The problem of	the Institutions' current implementations for the management of the legislative process (lacking interoperability and being not always per se aligned)
affects	Institutions involved in legislative processes and delegated acts (for the former: also Member States),
the impact of which is	that the Institutions generally agree that they will widely benefit from applying agreed standards to increase interoperability and to allow for automated processing and quality control
a successful solution would be	based on the results of the landscaping exercises and coordinated with ISA ² Action 2016.38 (Legislation Interoperability Tools – LegIT) to apply agreed standards

¹⁰⁹ See: Commission and its priorities - Priority **Democratic change**: Making the EU more democratic (https://ec.europa.eu/commission/priorities/democratic-change_en)

like the CEM in the context of the digital OLP for the legislative process to become more efficient, more performant and less error prone.

6.6.7 IMPACT OF THE ACTION

6.6.7.1 Main impact list

Impact	Why will this impact occur?	By when?	Beneficiaries
(+) Savings in resources (when drafting, proofreading, translating, amending or publishing)	Reduced manual intervention, increasing automatized processing and enabling automated quality control	2019/22	All Institutions involved in OLP and DAs
(+) Savings in time (when drafting, proofreading, translating, amending or publishing)	Reduced manual intervention, increasing automatized processing and enabling automated quality control	2019/22	All Institutions involved in OLP and DAs
(+) Better interoperability and increased transparency of digital public service	The common standards used by the Institutions for the exchange will be available for all other interested parties.	2019/22	All Institutions involved in OLP and DAs; citizens; businesses facilitating reuse of EU legislation for economic operators.
(-) Implementation cost	The implementation will require change in existing systems or even new developments. I.e. during the transition phase, there will be supplementary costs.	2019/22	All Institutions involved in OLP and DAs

6.6.7.2 User-centricity

The Institutions involved in the OLP and DAs are working collaboratively on the IFC's Common Vocabulary and on the Common Exchange Model. As agreed common standards, these tools reflect the Institutions' needs and requirements. During and after implementation the collaboration will need to continue.

6.6.8 EXPECTED MAJOR OUTPUTS

The objective for 2018 is to further extend and improve the reusable solutions that are listed in 6.6.5.5. This comprises the elaboration of version 2 of the Common Exchange Model, and the Common Vocabulary respectively, complemented by a validation framework and a converter for XML legacy documents (and both to be extended to support version 2 of the Common Exchange Model). For the end of 2018 the first transmission based on the Common Exchange Model of legal texts from the Commission to the other institutions is envisaged.

6.6.9 ORGANISATIONAL APPROACH

6.6.9.1 Expected stakeholders and their representatives

Stakeholders	Representatives	Involvement in the action
Publications Office	Members of OP Management Committee and IFC Plenary	Action management
Parliament	Members of OP Management Committee and IFC Plenary	Providing business and technical expertise
Council	Members of OP Management Committee and IFC Plenary	Providing business and technical expertise
Commission	Members of OP Management Committee and IFC Plenary	Providing business and technical expertise
Court of Justice	Members of OP Management Committee and IFC Plenary	Observing & providing where applicable business and technical expertise
European Economic and Social Committee	Members of OP Management Committee and IFC Plenary	Observing & providing where applicable business and technical expertise
Committee of the Regions	Members of OP Management Committee and IFC Plenary	Observing & Providing where applicable business and technical expertise
Court of Auditors	Members of OP Management Committee and IFC Plenary	Observing & Providing where applicable business and technical expertise
European Central Bank	Members of OP Management Committee and IFC Plenary	Observing & Providing where applicable business and technical expertise
Member States	Technical experts on interoperability in the public sector	Observing
Legal information industry	For example companies providing added-value information services in the context of EU law	Observing

6.6.9.2 Identified user groups

Expert teams in the EU Institutions and in all Member States participating in the legislative procedures at EU level and any third party re-using documents pertaining to EU legislative procedures, including delegated acts.

6.6.9.3 Communication and dissemination plan

The Interinstitutional Formats Committee was set up in 2014 and its two subgroups *Common Vocabulary* and *Formats Guidelines* are bringing together expert representatives of all institutions involved. The IFC governance assures the coordination with other bodies (IMMC and CII) as well as a bi-annual exchange on IFC plenary level.

In addition, the regular meetings ensure the communication with stakeholders at the appropriate level even beyond the lifetime of the action, because the collaboration in the IFC context will continue.

The public at large will be informed in a non-technical manner to explain the relevance of improving the legislative process.

All results of the activity will be made publically available and would also be available for reuse.

6.6.9.4 Key Performance indicators

6.6.9.5 The activity for KPIs k.2016.17-1 and k.2016.17-2 is ongoing.

Description of the KPI	Target to achieve	Expected time for target
k.2016.17-1 Alignment of the Common Exchange Model (CEM) with the business specifications	<p>The mapping of 6 representative documents of 4 different types (directive, regulation, proposal for a regulation, decision) to LegalDocML has been accomplished.</p> <p>The standardisation work that is done in the scope of ISA² Action 2016.17 is based on business specifications that are elaborated by a group of experts from the different EU Institutions. In order to be efficient, the business specifications have to be transposed into the CEM.</p> <p>The business group works on the basis of example documents. The proposed measure is the number of example documents analysed by the business side with the respective</p>	Q4-2017

	results integrated into the CEM.	
k.2016.17-2 Major releases of the CEM	The target is to adopt and to publish at least one major release of the CEM per year.	Q4-2017
k.2016.18-1 Alignment of the Common Exchange Model (CEM) with the business specifications	The mapping of example documents representing 8 different types of document to LegalDocML has been accomplished.	Q4-2018
k.2016.18-2 Major releases of the CEM	(s. k.2016.17-2)	Q4-2018

6.6.9.6 Governance approach

Coordinated by the Publications Office the action will be implemented in close collaboration with and the support of the Parliament, the Council, the Commission and other Institutions that are represented in the Interinstitutional Formats Committee (IFC).

The IFC, gathering representatives from all EU Institutions as stakeholders of the action, will supervise the execution of the work and will formally approve the results.

The action also contributes to the achievement of one of the Publications Office's Strategic Objectives 2017-25 (see annex: Publications Office: Strategic Objectives 2017-25): the exchange of all legal data with institutions in a secure and automated way based on common standards (metadata and content in structured format). The Strategic Objectives 2017-2025 have been adopted by the Publications Office's Management Committee where all Institutions are represented and that governs its operation. In consequence, a regular reporting on the progress of the work to the Management Committee has to be ensured.

6.6.10 TECHNICAL APPROACH AND CURRENT STATUS

The following core tasks (CT) defined for the IFC subgroup *Formats Guidelines* will produce the respective deliverables (FoG_DLV) that serve as a basis for the tasks and progress envisaged for 2018:

- CT 1 Elaboration of a Common Exchange Model (CEM)
 - o CT 1.1 Design principles: FoG_DLV 1
 - o CT 1.2 Correspondence between CoV and CEM, and
 - o CT 1.3 Extending the scope of CoV: FoG_DLV 2
 - o CT 1.4 Examples: FoG_DLV 3
 - o CT 1.5 Physical specifications: FoG_DLV 4
 - o CT 1.6 Documentation: FoG_DLV 5
- CT 2 Definition of the related business validation rules: FoG_DLV 6
- CT 3 Definition of the related technical validation rules: FoG_DLV 7
 - o Validation framework – Technical specifications: FoG_DLV 8
 - o Technical validation rules – Documentation: FoG_DLV 9

The above mentioned deliverables, for which the work is ongoing, are extracted from the work plan of the IFC *Format Guidelines* subgroup for the year 2017 (see annex: IFC subgroup format guidelines – work plan 2017).

6.6.11 COSTS AND MILESTONES

6.6.11.1 Breakdown of anticipated costs and related milestones

Phase: Initiation Planning Execution Closing/Final evaluation	Description of milestones reached or to be reached	Anticipated Allocations (KEUR)	Budget line ISA/ others (specify)	Start date (QX/YYYY)	End date (QX/YYYY)
Inception	CEM version 1	35	ISA	Q3/2016	Q4/2016
Execution	CEM version 1; CEM business rules; CEM technical validation rules; Examples; Validation framework (operational prototype); Legacy data converter for XML (first prototype)	78	ISA	Q1/2017	Q4/2017
Execution	CEM version 2; CEM business rules; CEM technical validation rules; Examples; Validation framework (operational prototype); Legacy data converter for XML (first release) Project management support	100	ISA	Q1/2018	Q4/2018
	Total	213			

6.6.11.2 Breakdown of ISA² funding per budget year

Budget Year	Phase	Anticipated allocations (in KEUR)	Executed budget (in KEUR)
2016	Execution	100 ¹¹⁰	35
2017	Execution	78	78

¹¹⁰ Including 65KEUR that have been made available for the support of the continuation of the landscaping exercises (TO-BE landscaping exercise).

2018	Execution	100	
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6.6.12 ANNEX AND REFERENCES

Description	Reference link	Attached document
IFC subgroup Format Guidelines – 2017 Work Plan		IFC Formats Guidelines Work Plan 2017_rev1.pdf
IFC subgroup Format Guidelines – Conclusions of the first Workshop		99 Adopted conclusions IFC Formats Guidelines 1st Workshop 20170407.pdf
Publications Office Strategic Objectives 2017-2025 Delivering services to EU institutions, for citizens and businesses		Publications_Office_Strategic_Objectives_2017-2025.pdf

6.7 ELI@EULAW - INTEGRATION OF THE RETRIEVAL OF LEGISLATIVE DATA COMPLIANT WITH THE EUROPEAN LEGISLATIVE IDENTIFIER WITH THE INFORMATION SYSTEMS FOR MONITORING THE APPLICATION OF EU LAW (2017.02) - FUNDING CONCLUDED

6.7.1 IDENTIFICATION OF THE ACTION

Service in charge	SG.C.3 (Project Owner)
Associated Services	SG.R.3 (Solution Provider), OP

6.7.2 EXECUTIVE SUMMARY

Context

Under article 17 TEU, the Commission shall oversee the application of Union law under the control of the Court of Justice of the EU. This monitoring task is entrusted to the Commission in its exclusive role as "guardian of the Treaties".

The monitoring of the application of Union law is a challenging task, involving several services at various stages and specific rules to be followed. The cooperation between the Commission and the Member States is a crucial element in the effective monitoring of the application of EU Law.

Adopted legislative acts setting up the goals that all EU countries must achieve, when coming into force, require Member States to communicate their national transposition measures to the Commission by strict given deadlines.

Current situation

The exchange of data relating to legislation has grown considerably at EU level. These data originate from regional, national and EU bodies. However, the exchange of data is hindered by disparities between legal systems at country and EU level.

Within the context of EU Law, transposition of adopted directives implies national legislative changes which are currently notified to the Commission via filling in a form and attaching all relevant legislative texts sustaining the transposition within an existing IT system (currently MNE, future THEMIS).

This method of notification is tedious and leads to inefficiencies and discrepancies as the notified information is duplicated (at Member State and Commission databases), not necessarily up to date, forcing Member States to further notify as their national legislation evolves.

As of the 1st of October 2016, Member States can elect to have their national transposition measures published on EUR-Lex. These issues will be then further propagated once these measures are transmitted from the Commission's internal application (MNE, future THEMIS) to Eur-Lex in order to be published.

Proposed solution

The European Council conclusions¹¹¹ foster for the introduction of a European Legislation Identifier (ELI), aimed at providing simple access to information relating to EU and EU countries' national legislation.

¹¹¹ <http://eur-lex.europa.eu/legal-content/EN/TEXT/?uri=URISERV:j10068>

The adoption of ELI enables EU and national legislation to be referenced in a harmonised and stable way, resulting in a faster and more efficient search and data exchange system which is accessible to citizens or specific users such as legislators, judges and legal professionals.

The outcome of this proposal will be a solution which enhances and simplifies the transmission and dissemination of legislation related data, within the context of EU Law proceedings, by integrating the ELI link within notifications, aiming at simplifying working methods and avoiding data inconsistencies and duplication.

6.7.3 OBJECTIVES

Better and more efficiently managed application of EU law involves both the European Commission and the Member States, working in close partnership. Member States are responsible for the timely and correct implementation and application of EU law while the Commission's responsibility is to ensure that EU law is applied consistently.

The specific objective of this action is to identify and implement common web services of interest aimed at improving communication and information exchange between Commission services and Member States. The project will analyse, design and develop services to manage and support the exchange and dissemination of data relating to legislation, via the adoption of the ELI link, between Member States and the Commission whenever needed through the lifecycle of an infringement proceeding.

These services will become part of the catalogue of existing services developed within the scope of ISA Action 1.20, "Application of EU Law: Provision of cross-sector communication and problem solving tools", which have been integrated into THEMIS. THEMIS is the central Commission IT application which will provide a one-stop solution for Commission services and Member States' administrations with regard to all aspects of the application of EU law; starting from the transposition process of directives into national legislation and the notification of the corresponding legal acts to the Commission, through dialogue based problem resolution triggered either by complaints or own-initiative of the Commission, onto the full bi-directional flow of information in the context of infringement proceedings.

6.7.4 SCOPE

The scope of this action can be summarised as follows:

- Guidelines on the implementation of ELI within the context of EU Law proceedings

The introduction of ELI is optional. EU countries and the European Union can decide to introduce this identifier on a voluntary and gradual basis. Some countries (i.e. France and Luxembourg) have already developed solutions to comply with ELI. However, we have detected inconsistencies in how the solutions from the different countries have addressed the support of ELI.

In this respect, an initial work in scope of this action is focused on defining guidelines to determine how ELI should be addressed, within the context of EU Law proceedings, ensuring

that system-to-system communication can be achieved in a harmonised way and that legislation related data can be inter-exchanged easily regardless of its source.

These guidelines will also help other Member States to adopt ELI in a much faster and reliable way.

- Common web services to improve inter-exchange and dissemination of legislation related data

Design and develop services – and the underlying back-end infrastructure - to manage and support the exchange and dissemination of data relating to legislation, via the adoption of the ELI link, between Member States and the Commission whenever needed through the lifecycle of an infringement proceeding.

The proposed services will provide a reliable, robust and secure mechanism to inter-exchange data in an ELI compliant data structure.

The new services in scope of this proposal will be added to the catalogue of existing ones developed within the scope of ISA Action 1.20 and its continuation ISA² Action 2016.01, "Application of EU Law: Provision of cross-sector communication and problem solving tools", which will be integrated into THEMIS.

In particular, the following web services have already been identified:

- ELI data retrieval: Receives as input an ELI link, identifies and establishes a connection with the source system – Member State's or Commission's – from where the service retrieves the related meta-data and documents for the specific legislation and returns such data and documents in a standard format.
- ELI transmission: Transmits the meta-data and documents of a specific legislation received from the ELI data retrieval web service to EUR-Lex for publication.
- ELI measure notification: Adaptation of the existing web service, part of the THEMIS catalogue, Member States use to notify on transposition measures, to incorporate the possibility to add the ELI link (which will be read and decoded by the ELI data retrieval web service).

- Integrated approach to national IT tools

Interoperability between THEMIS and national IT tools will be supported. The identified web services will allow for a seamless system-to-system exchange of data related to legislation between Member States and the Commission wherever needed within the lifecycle of an infringement procedure.

The European Commission offers the deliverables output of this proposal as a service to Member States and hosting the computing infrastructure. This will be accompanied by technical documentation detailing the interfaces to be used.

Furthermore the Commission will provide assistance to Member States, in order to ensure correct and reliable interconnection between Commission's and Member States' systems.

6.7.5 ACTION PRIORITY

The proposed action complies with the following prioritisation criteria listed in art 7 of the ISA² Decision¹¹², as follows:

(a) the contribution of the action to the interoperability landscape, measured by the importance and necessity of the action to complete the interoperability landscape across the Union;

Interoperability between Commission's and national IT tools so as to support the inter-exchange and transmission of data related to legislation.

(b) the scope of the action, measured by its horizontal impact, once completed, across the sectors concerned;

National legislation transposing EU directives and notified by Member States to the Commission cover all sectors of EU activity.

(c) the geographical reach of the action, measured by the number of Member States and of European public administrations involved;

The geographical reach of this action covers all Member States which either have already adopted ELI or will do so in the future, as they will have the possibility to choose whether to notify national legislation complying with EU directives via ELI links or following the standard existing approach (which all Member States are currently using).

Moreover, the Publications Office will be closely associated to the work, as they are also an actor within infringement proceedings (they will need to publish in EUR-Lex the notified transposition measures of those Member States who decide to do so).

(d) the urgency of the action, measured by its potential impact, taking into account the lack of other funding sources;

As of the 1st of October 2016, Member States can elect to have their national transposition measures published on EUR-Lex for which the ELI support within infringement proceedings must be provided as soon as possible.

(e) the re-usability of the action, measured by the extent to which its results can be re-used;

Even though the web services in scope to develop as part of this proposal are tailored to infringement management processes, particularly the ELI data retrieval web service could potentially be provided as a general service for initiatives where legislation data needs to be inter-exchanged.

(f) the re-use by the action of existing common frameworks and elements of interoperability solutions;

- The IMMC Core Metadata exchange protocol will be used to ensure a good understanding between the different systems involved.

¹¹² DECISION (EU) 2015/2240 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

- Transmission to EUR-Lex, for publication, of national legislation transposing EU directives notified by Member States.

(g) the link of the action with Union initiatives to be measured by the collaboration and contribution level of the action to Union initiatives such as the DSM.

The Commission, as "Guardian of the Treaties", is required to monitor the correct application of Union Law by Member States. This proposal has a link with the 'democratic change' priority of the Juncker Commission and addresses several objectives of the Digital Single Market initiative.

6.7.5.1 Contribution to the interoperability landscape

The contribution of the action to the interoperability landscape, measured by the importance and necessity of the action to complete the interoperability landscape across the Union

Question	Answer
<p><i>Does the proposal directly contribute to implementing the European Interoperability Strategy, the European Interoperability Framework, or other EU policies with interoperability requirements, or needed cross-border or cross-sector interoperability initiatives? If yes, please indicate the EU initiative / policy and the nature of contribution.</i></p>	<p>Yes. The proposal will allow the exchange of legislative information in a standardised format between Commission services and Member State administrations. It will make the notification and publication process of National measures more efficient and will avoid re-encoding of data that already resides in other systems.</p>
<p><i>Does the proposal fulfil an interoperability need for which no other alternative solution is available?</i></p>	<p>Yes. There is no other current alternative other than THEMIS to notify to the Commission national legislation which transposes Union Law.</p>

6.7.5.2 Cross-sector

The scope of the action, measured by its horizontal impact, once completed, across the sectors concerned

Question	Answer
<p><i>Will the proposal, once completed be useful, from the interoperability point of view, and utilised in two (2) or more EU policy areas? If yes, which are those?</i></p>	<p>Yes. Union Law adopted by the Commission, which Member States need to comply with, covers all EU policy areas. The proposal will improve the interoperability of systems supporting the EU Law domain both Commission's and Member states. It will improve the notification process, making it more efficient, the quality of the data and its publication.</p>
<p><i>For proposals or their parts already in operational phase: have they been utilised in two (2) or more EU policy areas? Which are they?</i></p>	<p>N/A</p>

6.7.5.3 Cross-border

The geographical reach of the action, measured by the number of Member States and of European public administrations involved.

Question	Answer
<p><i>Will the proposal, once completed be useful, from the interoperability point of view, and used by public administrations of three (3) or more EU Members States?</i></p>	<p>Yes. All Member States are required to notify on their national legislation transposing adopted EU Law. As the introduction of ELI is voluntary, not all Member States will make use of the output of this proposal at first, but it is probable that they will join at a later stage. One of the key parts of this proposal is to define guidelines on how to use ELI within the context of infringement proceedings. These guidelines will ease transition for Member States towards ELI. As of today, public administrations from</p>

	France and Luxembourg already provide support for ELI – to some extent – while other like Austria and Italy are in the process.
<i>For proposals or their parts already in operational phase: have they been utilised by public administrations of three (3) or more EU Members States?</i>	N/A

6.7.5.4 Urgency

The urgency of the action, measured by its potential impact, taking into account the lack of other funding sources

Question	Answer
<i>Is your action urgent? Is its implementation foreseen in an EU policy as priority, or in EU legislation?</i>	Yes. As of the 1 st of October 2016, Member States can elect to have their national transposition measures published on EUR-Lex. As the publication of measures is triggered from THEMIS, the services in-scope of this proposal, providing support for ELI, must be ready as soon as possible.
<i>Does the ISA² scope and financial capacity better fit for the implementation of the proposal as opposed to other identified and currently available sources?</i>	Yes. We believe that this action perfectly aligns with the scope of ISA ² .

6.7.5.5 Reusability of action outputs

The web services in scope to develop as part of this proposal are tailored to infringement management processes. Nevertheless, there may be possibilities to reuse/apply certain outputs to other purposes – to be explored during the Planning phase of this action.

The following output of this proposal has already been identified as perfect candidate for re-usability purposes:

Name of reusable solution	ELI data retrieval services
Description	A set of services that will allow other Information systems to retrieve and display the metadata and documents from the systems in the Member states.
Reference	

Target release date / Status	Q4 2018
Critical part of target user base	
For solutions already in operational phase - actual reuse level (as compared to the defined critical part)	N/A

6.7.5.6 Level of reuse by the proposal

The re-use by the action of existing common frameworks and elements of interoperability solutions.

Question	Answer
Does the proposal intend to make use of any ISA ² , ISA or other relevant interoperability solution(s)? Which ones?	Yes. The proposed solution will be based on the results of the ELI ISA action. Additionally, the proposed solution will use the eTrustEx platform for the secure exchange of information between the Commission and the Member states.
For proposals or their parts already in operational phase: has the action reused existing interoperability solutions? If yes, which ones?	N/A

6.7.5.7 Interlinked

The link of the action with Union initiatives to be measured by the collaboration and contribution level of the action to Union initiatives such as the DSM.

Question	Answer
Does the proposal directly contribute to at least one of the Union's high political priorities such as the DSM? If yes, which ones? What is the level of contribution?	Yes. This proposal has a link with the 'democratic change' priority of the Juncker Commission and the Digital Single Market initiative.

6.7.6 PROBLEM STATEMENT

The exchange of data relating to legislation has grown considerably at EU level. These data originate from regional, national and EU bodies. However, the exchange of data is hindered by disparities between legal systems at country and EU level.

Within the context of EU Law, transposition of adopted directives implies national legislative changes which are currently notified to the Commission via filling in a form and attaching all relevant legislative texts sustaining the transposition within an existing IT system (currently MNE, future THEMIS).

This method of notification is tedious and leads to inefficiencies and discrepancies as the notified information is duplicated (at Member State and Commission databases), not necessarily up to date, forcing Member States to further notify as their national legislation evolves.

As of the 1st of October 2016, Member States can elect to have their national transposition measures published on EUR-Lex. These issues will be then further propagated once these measures are transmitted from the Commission's internal application (MNE, future THEMIS) to Eur-Lex in order to be published.

6.7.7 EXPECTED BENEFICIARIES AND ANTICIPATED BENEFITS

Beneficiaries	Anticipated benefits
Member States and European Commission	<p>Security, rapidity and privacy, preservation of information.</p> <p>The facilitation of structured data exchange between Member States and the Commission via application interfaces and web-services in the domain of the notification of transposition measures in the form of national legislative acts, as well as their subsequent transmission to the Publications Office and their publication on the EUR-Lex web site.</p> <p>Reduction of administrative burden of the Member States who have already implemented ELI.</p> <p>The service dedicated to the communication of transposition measures will guarantee the information exchange system providing:</p> <ul style="list-style-type: none"> - Immediate transmission (MS are required to respect deadlines). - Secure transmission with acknowledgement of receipt (high level of trust). - Secure data preservation (legal security for both MS and the EC).
European Commission	<p>Efficient IT development and evolution, flexibility, scalability, adaptability to legislation change.</p> <p>When further Member states adopt ELI, use by these MS of ELI in</p>

	THEMIS will be transparent.
Citizens and businesses	<p>Transparency and openness through efficient interoperability with Eur-Lex .</p> <p>Greater transparency by making the national transposition measures available to the general public on EUR-Lex.</p>

6.7.8 EXPECTED MAJOR OUTPUTS

Output name	ELI guidelines
Description	<p>Guidelines to determine how ELI should be addressed, within the context of EU Law proceedings, ensuring that system-to-system communication can be achieved in a harmonised way and that legislation related data can be inter-exchanged easily regardless of its source.</p> <p>These guidelines will also help other Member States to adopt ELI in a much faster and reliable way.</p>
Reference	
Target release date / Status	Q4 2018

Output name	ELI data retrieval
Description	<p>A service that will allow other Information systems to retrieve and display the metadata and documents from the systems in the Member states.</p>
Reference	
Target release date / Status	Q4 2018

Output name	ELI transmission
Description	<p>A service to transmit the meta-data and documents of a specific legislation received from the ELI data retrieval web service to EUR-Lex for publication.</p>
Reference	
Target release date / Status	Q4 2018

Output name	ELI measure notification
Description	<p>Adaptation of the existing web service, part of the THEMIS catalogue, Member States use to notify on transposition measures, to incorporate the possibility to add the ELI link (which will be read and decoded by the ELI data retrieval web service).</p>

Reference	
Target release date / Status	Q4 2018

6.7.9 ORGANISATIONAL APPROACH

6.7.9.1 Expected stakeholders and their representatives

Stakeholders	Representatives
European Commission – administrator	Unit SG C.3 of the Secretariat General administrating the application, providing policy guidance on its use.
Project Owner	Unit SG. C.3 of the Secretariat General responsible for application of the EU law.
Solution Provider	Unit SG R.3 (Information Technology) responsible for THEMIS.
End users - Commission	Infringement correspondents and case handlers in all Commission services.
End users - Member States authorities	Infringement correspondents and case handlers in all Member States (various national administrations in all Member States) and Member States Central Managers (Ministry of Foreign Affairs).
End users – citizens and businesses	Persons and entities which would like to have easy access to updated national legislation texts and national measures notified by Member States transposing adopted Union Law.

6.7.9.2 Identified user groups

Commission infringement correspondents and case handlers, Member states infringement correspondents and case handlers, European Commission and the public at large.

6.7.9.3 Communication plan

The main communication actions are described next:

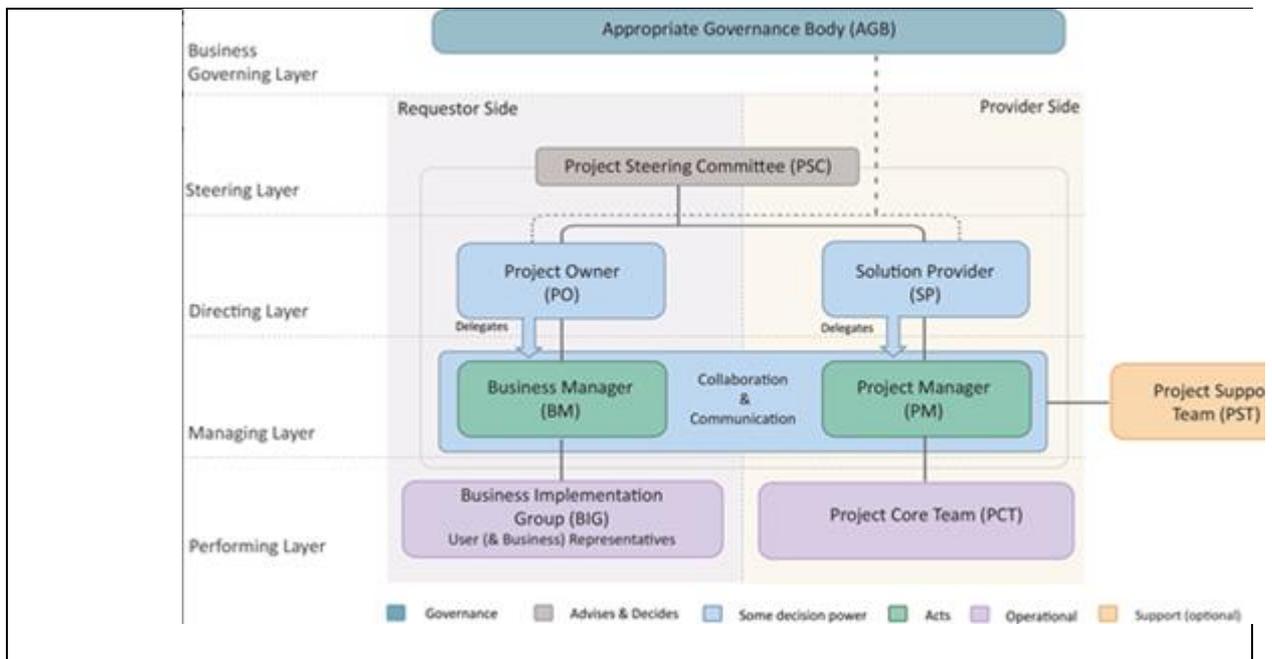
- Written communication, both to internal and external stakeholders (newsletter via e-mail).
- Awareness sessions – 1 with MSs representatives and 1 with DGs representatives – to present the project.
- Dissemination material for all relevant stakeholders:
 - o DGs: Leaflets, posters and a quick-start guide.
 - o MSs: Quick start guide.
- Meetings:

- With external stakeholders, once a year, in the frame of the EU Law Network meetings, to provide status and recollect feedback.
- With internal stakeholders, twice a year, as part of the DGs infringement correspondents meeting, to provide status and recollect feedback.
- First-line support: The Project Support Team will help users through the change and collecting feedback.
- CIRCABC group of interest on "Implementation and application of EU law", members of which are MS representatives.

Event	Representatives	Frequency of meetings / absolute dates of meetings
EU Law Network	All Member States	Normally, once or twice a year
Infringement correspondents meetings	Representatives from all DGs	Once or twice a year
Directors network	Representatives from all DGs	Once or twice a year
Project owner/System supplier	SG.C.3/SG.R.3	Quarterly reporting using PM ² methodology

6.7.9.4 Governance approach

This project will follow the standard PM² project governance structure.



Project Owner: Mr. SLOOTJES, Rene (SG.C3)

Solution Provider: Mr. GRITSCH, Martin (SG.R3)

Project Manager: Mr. BLÁZQUEZ DE MIGUEL, Víctor (SG.R3)

Business Manager: Mrs. GROCHOWIAK, Elzbieta (SG.C3)

Project Support Team (PST): To be appointed.

Project Core Team (PCT): To be appointed.

Business Implementation Group (BIG): 1 representative per MS. To be appointed at a later stage.

The governance approach has established weekly coordination meetings between SG.C.3 (project owner) and SG.R.3 (solution provider). In addition, this action will respect the general ISA² Governance under the supervision of the ISA² Coordination Group.

The governance of this action project is set up in the vision document for THEMIS. According to this document, the Steering Committee monitors completion of the project phases; sets project requirements, objectives and outcomes, validates project deliverables, tests activities and disseminates information about the project to the relevant stakeholders.

6.7.10 TECHNICAL APPROACH AND CURRENT STATUS

The services in scope of this proposal will extend the common external module of the THEMIS system, providing a reliable, robust and secure mechanism to provide system-to-system connectivity between in Member States public authorities' and Commission's (existing or under development).

System-to-system data exchanges between the national administrations and the Commission will reduce extra manual data encoding. This will allow Member States to transmit data directly from their back-office systems in respect of the following principles of the European Interoperability Framework: security and privacy, multilingualism, administrative simplification, transparency, preservation of information, openness, reusability, effectiveness and efficiency. History of all data exchanges with the Member States' administrations should be accessible to either party.

All services will be strongly integrated to ensure a consistent and reliable workflow.

The technical implementation of the proposed data-exchange services has the following requirements:

- State of the art secure web services allowing for the inter-exchange of meta-data and documents related to national or EU legislation.
- A transfer mechanism allowing for highly reliable exchange of documents, including very large documents if needed (electronic transmission should be the unique notification mechanism). To be checked if this can be covered by the eTrustEx platform.
- Legally binding electronic signature for official notification of infringements and transmission of the corresponding MS replies (explicit requests by Spain and Germany). Here we see a potential to leverage the eTrustEx platform.

- A publishing service allowing THEMIS to 'push' legislation related information to EUR-Lex, making the actual transmission of the corresponding document representing the national legislative act obsolete.

It is imperative to involve Member States in order to ascertain that compliance with ELI is achieved in a transparent and homogeneous way, within the scope of infringements proceedings. This will be channelled through the existing EU Law Network, with regular coordination meetings in Brussels.

Current status of the action

The services in scope of this action will be delivered embedded within the THEMIS / Infringements module of the THEMIS application, which is expected to be rolled-out in Q4 2018.

The work on this action has been officially kicked-off on Q3 2017. The project team has just finalised the specification of the requirements, which have been validated by all relevant stakeholders, and is currently working on the analysis of the in-scope services.

6.7.11 COSTS AND MILESTONES

6.7.11.1 Breakdown of anticipated costs and related milestones

Phase: Initiation Planning Execution Closing/Final evaluation	Description of milestones reached or to be reached	Anticipated Allocations (KEUR)	Budget line ISA/ others (specify)	Start date (QX/YYYY)	End date (QX/YYYY)
	Implemented solution	128	ISA2	Q3/2017	Q4/2018

6.7.11.2 Breakdown of ISA funding per budget year

Budget Year	Phase	Anticipated allocations (in KEUR)	Executed budget (in KEUR)
2017	Initiating	128 ¹¹³	
2017	Planning		
2018	Executing		
2018	Closing		
2017-2018	Monitor & Control		

¹¹³ Allocation received in 2017

6.7.12 ANNEX AND REFERENCES

Description	Reference link	Attached document
Articles 4 and 17 TEU	http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2010:083:0013:0046:EN:PDF	
Articles 258 and 260 TFEU	http://eur-lex.europa.eu/JOHtml.do?uri=OJ:C:2010:083:SOM:EN:HTML	
Decision 2002/47/CE, CECA, Euratom for document management rules	OJ L 21, 24.1.2002, p. 23–27	
Annual Reports on monitoring the application of Community law	http://ec.europa.eu/eu_law/infringements/infringements_annual_report_en.htm	
Communication 'A Europe of results – Applying Community law' (the 2007 Communication)	COM (2007) 502	
Communication on the application of Article 260 (3) TFEU	http://ec.europa.eu/eu_law/infringements/infringements_260_en.htm	
Framework Agreement between the Commission and the European Parliament (Section on 'Monitoring the application of Community law')	http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2010:304:0047:0062:EN:PDF	
Public access to documents relating to infringement proceedings	SEC(2003)260/3 http://www.cc.cec/sg_vista/cgi-bin/repository/getdoc/COMM_PDF_SEC_2003_0260_3_EN.pdf	
Monitoring the application of community law: manual of procedures	SEC(2005)254/5 http://www.cc.cec/sg_vista/cgi-bin/repository/getdoc/COMM_PDF_SEC_2005_0254_5_EN.pdf	

6.8 REFIT PLATFORM (2017.03) – FUNDING CONCLUDED

6.8.1 IDENTIFICATION OF THE ACTION

Service in charge	SG C1 Evaluation, Regulatory Fitness and Performance, Directorate Smart Regulation and Work Programme Secretariat-General
Associated Services	DIGIT.D1, SG.R3

6.8.2 EXECUTIVE SUMMARY

The REFIT Platform was set up by the May 2015 Better Regulation Communication to advise the Commission on how to make EU regulation more efficient and effective while reducing burden and without undermining policy objectives. It consists of a Government Group, with one seat per Member State and a Stakeholder Group with 18 members and two representatives from the European Social and Economic Committee and the Committee of the Regions. Platform members work includes reviewing suggestions received via the online Better Regulation Portal 'Lighten the load - Have your say' and making recommendations to the Commission..

The Platform is therefore designed to play an important role in the development of the work programme of the Commission and therefore also the EU agenda and to improve the coherence and efficiency of the EU and Member State regulatory environment.

Since its start several hundred suggestions have come in to the Platform from government authorities, stakeholders and other interested parties. Managing this workload requires a new IT tool to support the process. The current IT infrastructure does not satisfy the needs and ensure the success of the REFIT Platform which is central to EU policy-making, the development of EU and Member State regulation as well as for the policy on Better regulation.

This application concerns a project on developing an IT tool that facilitates smarter cooperation by a large number of Commission officials, Member State government ministries and other experts in managing incoming suggestions and preparing positions on a high number of suggestions within a reasonable timeframe. The IT tool should enable multiple external users to work on the same document, avoid document down- and uploads and serve as a repository for all in-coming suggestions. The proposal meets in particular with ISA Article 7 priorities (b), (c) and (d).

6.8.3 OBJECTIVES

The expected outcomes would have to include:

- Development of a user-friendly, interactive web-based application (IT tool) to serve the REFIT Platform to be used by the REFIT Platform members comprising Member State administrations and stakeholder members, the Secretariat (SG), the Directorate Generals (DGs) in charge of files being handled by the REFIT Platform;

- The application should be able to manage each suggestion coming in, each work-step of developing an opinion including adding up-to-date background information through-out to the adoption of the opinion with a view to:
 - Significantly enhance the active contributions of the 48 platform members leading to better and inclusive opinions of the platform. Positive impact on platform members' satisfaction with and readiness to contribute to the process.
 - Reduce workload related to the preparation and publication of suggestions in the form of 'Assessment Sheets' (AS) (a burden both on SG and DGs)
 - More timely production of AS with more up-to-date information
 - Better and more reliable storage and classification of suggestions and ASs allowing for a smarter use of information (once only) already received
 - Greater DGs buy-in and a more positive approach towards the platform process

6.8.4 SCOPE

To replace the current use of CircaBC, emails, Collaborative Workspace and the Europa website, the scope of the project is to develop an IT tool facilitating the participation of all 48 REFIT Platform members in developing opinions on a broad array of subject matters based on hundreds of suggestions.

The IT tool needs are:

- Two separate 'channels' with the same functionalities, one for all with different access rights, one for Commission internal.
- Automatic generation of an Assessment Sheet when a suggestion is introduced via the website 'Lighten the load...' and notification to relevant Commission services requesting contributions.
- When the Assessment Sheet is available on the 'external channel' it should allow the 48 members to indicate their interest in leading the work; entitlements to fill-in their contribution to the opinion in predetermined boxes and enable a pre-set sequence of input; initiation of formal 'written adoption' where relevant; availability of each opinion-document with all changes visible and clean version.
- The IT tool should support a single, shared document on which several members can work simultaneously (no down- and upload of documents)
- Authorised Members (or their assistant) entitled to edit documents in the IT tool but delegation only based on prior approval by the Secretariat.
- Automatic follow up of the work following the meetings of Stakeholder group and Government group and the adoption of the finalised opinions in the Joint meetings of both groups. The documents to be work on should follow the pre defined schedule of the meetings to be sure that (1) the Stakeholder group reporters work on the assessment sheet automatically created, (2) the adoption by the other members of the Stakeholder group of the same assessment sheets, then (3) the Government group members to work on the assessment sheets prepared by the Stakeholder groups and finally (4) adoption of the opinions at the joint meeting by both groups.

- Automatic reminders sent to the relevant persons working on the document via the tasks overview in sharepoint.

The Better Regulation Portal and the 'Lighten the load – Have your say' are not within the scope of this project, but appropriate alignment with these is required.

6.8.5 ACTION PRIORITY

The proposal for a REFIT Platform IT tool is important for the success of the REFIT Platform, which is one of the flagship actions in the May 2015 Better regulation agenda¹¹⁴ of the European Commission and one of the 10 Juncker priorities. The action will therefore make an important contribution to EU and Member State cooperation and responses to suggestions from citizens, businesses and local and national authorities with on-the-ground experience with application of the EU law.

The IT tool will significantly help the geographical reach of the Platform so as to ensure equal and inter-active engagement of all Member States and of European public administrations involved, stakeholder members based in various parts of Europe and between the different Commission Directorates General and Secretariat-General because all sectors / EU policies are involved.

The proposal will facilitate cooperation between the Commission, Member States and stakeholders by supporting cross-border and cross-sector exchanges of information that will enable more efficient, secure and collaborative public services.

This interoperability solution will facilitate successful implementation of policies and offers great potential to overcome cross-border electronic barriers, further securing the emergence of new, or the consolidation of developing, higher quality and more coherent public services at Union level.

6.8.5.1 Contribution to the interoperability landscape

The contribution of the action to the interoperability landscape, measured by the importance and necessity of the action to complete the interoperability landscape across the Union

Question	Answer
<i>Does the proposal directly contribute to implementing the European Interoperability Strategy, the European Interoperability Framework, or other EU policies with interoperability requirements, or needed cross-border or cross-sector interoperability</i>	Yes, It helps to elaborate the better regulation agenda of the European Commission and to efficiently and effectively improve electronic cross-border and sector interaction between Commission and the members of the REFIT platform (Member

¹¹⁴ See: http://ec.europa.eu/info/files/better-regulation-better-results-eu-agenda-0_en

<p><i>initiatives? If yes, please indicate the EU initiative / policy and the nature of contribution.</i></p>	<p>States and stakeholders) and between the members of the Platform supporting the implementation of Union policies and activities.</p> <p>More efficient use of reported data is a key area of work for the REFIT Platform.</p>
<p><i>Does the proposal fulfil an interoperability need for which no other alternative solution is available?</i></p>	<p>Other solutions (CIRCA BC and a collaborative workspace) are available but they are not user-friendly for the REFIT platform members.</p> <p>The CIRCA BC is used to distribute documents to the REFIT platform members. There is no online collaboration between platform members through CIRCA BC as it does not allow for a simultaneous collaboration on word documents.</p> <p>The newsgroup option is not used, as it is considered not to be particularly user friendly.</p>

6.8.5.2 Cross-sector

The scope of the action, measured by its horizontal impact, once completed, across the sectors concerned

Question	Answer
<p><i>Will the proposal, once completed be useful, from the interoperability point of view, and utilised in two (2) or more EU policy areas? If yes, which are those?</i></p>	<p>The REFIT Platform covers all EU policy areas where suggestions from citizens, businesses, stakeholders and public authorities are made. Once completed the IT tool will increase the speed with which the Platform works and thus help the Platform to cope with the high and diverse work load covering the whole EU regulatory acquis across all policy areas.</p>
<p><i>For proposals or their parts already in operational phase: have they been utilised in two (2) or more EU policy areas? Which are</i></p>	<p>N/A</p>

they?	
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6.8.5.3 Cross-border

The geographical reach of the action, measured by the number of Member States and of European public administrations involved.

Question	Answer
<i>Will the proposal, once completed be useful, from the interoperability point of view, and used by public administrations of three (3) or more EU Members States?</i>	Yes. The REFIT Platform consists of two Commission expert groups. A Government group in which all Member States are represented. And a Stakeholder group with representatives of businesses, social partners, civil society organisations in various member states, the Economic and Social Committee and the European Committee of the Regions.
<i>For proposals or their parts already in operational phase: have they been utilised by public administrations of three (3) or more EU Members States?</i>	N/A

6.8.5.4 Urgency

The urgency of the action, measured by its potential impact, taking into account the lack of other funding sources

Question	Answer
<i>Is your action urgent? Is its implementation foreseen in an EU policy as priority, or in EU legislation?</i>	Better regulation is one of the 10 Commission Juncker priorities. The REFIT Platform is one of the key new developments in the Commission May 2015 Better regulation package. The Platform started its work in January 2016 offering a dialogue between all relevant

	actors (EC, MS and stakeholders). It is urgent to ensure the efficient functioning of the Platform within the mandate of this Commission.
<i>Does the ISA² scope and financial capacity better fit for the implementation of the proposal as opposed to other identified and currently available sources?</i>	Yes, the ISA scope and conditions fits well with the objective and scope of the REFIT Platform. Other resources are not available.

6.8.5.5 Reusability of action outputs

The proposed IT tool is tailored to the needs of the REFIT Platform. Nevertheless, there may be possibilities to reuse / apply certain or even major outputs to other Commission expert groups – to be explored during the Planning phase of the project.

6.8.5.6 Level of reuse by the proposal

The re-use by the action of existing common frameworks and elements of interoperability solutions.

Question	Answer
Does the proposal intend to make use of any ISA ² , ISA or other relevant interoperability solution(s)? Which ones?	Yes. REFIT intends to make use of the e-TrustEx platform for the secure exchange of documents amongst Member States' representatives and the Commission. Additionally, REFIT will make use of the MT@EC translation service for working documents.
For proposals or their parts already in operational phase: has the action reused existing interoperability solutions? If yes, which ones?	N/A

6.8.5.7 Interlinked

The link of the action with Union initiatives to be measured by the collaboration and contribution level of the action to Union initiatives such as the DSM.

Question	Answer
Does the proposal directly contribute to at least one of the Union's high political priorities such as the DSM? If yes, which ones? What is the level of contribution?	Better Regulation is priority 10 of the Juncker Commission. The work of the Platform potentially contributes to all Union priorities dependent on the issues sent in to and taken up by the Platform.

6.8.6 PROBLEM STATEMENT

Collaborative Workspace, ordinary emails and CIRCABC are used to prepare documents internally in the commission and to share documents with the Platform members. Combing these tools is inefficient, been criticized by the external members and do not meet all the needs. The main problems identified include:

- Commission services are reluctant to use Collaborative workspace when preparing the Assessment Sheets. It has no workflow management (including validation), no tracking of progress and no effective storage and classification of documents,
- The CIRCABC newsgroup is not user-friendly; does not allow for a simultaneous collaboration on documents and its user-interface is archaic resulting in little use and extra work when email distribution is required.

6.8.7 EXPECTED BENEFICIARIES AND ANTICIPATED BENEFITS

The IT tool will be tailor-made to the needs of an effectively managed REFIT Platform. Those involved with the REFIT Platform work will be the immediate beneficiaries of an IT tool that will reduce the current administration and document handling.

In a wider sense a more productive and inclusive REFIT Platform process will enhance the chances of success for the 'Better regulation' agenda which is seen as critical to revitalise European cooperation based on policies and laws that are responsive to the citizens and businesses directly affected.

Beneficiaries	Anticipated benefits
REFIT Platform members	Greater online interaction of platform members leading to better cooperation and more inclusive opinions of the platform, increased commitment to the work of the Platform and enhanced productivity. Positive impact on platform members' satisfaction with the process.
Platform members and EC (SG and DG's)	Better storage and classification of suggestions and Assessment Sheets allowing for a smarter use of information already received, time and resources saved.
EC (SG and DGs)	Reduced workload related to the preparation and publication of

	Assessment Sheets Significant reduction in potential for mistakes or incoherent documents
EC (SG and DGs)	More transparency throughout the process leading to greater DGs buy-in and a more positive approach towards the platform process

6.8.8 ORGANISATIONAL APPROACH

6.8.8.1 Expected stakeholders and their representatives

Stakeholders	Representatives
European Commission	CAB Timmermans, the Secretariat General, concerned DG's
Refit Platform	Stakeholder members and Member State authorities and their assistants

6.8.8.2 Identified user groups

Everyone involved with the REFIT Platform either in general or in specific cases. These are typically the experts in European Commission services; the cabinet of the FVP, the Secretariat General in its capacity as Secretariat. Externally the users will be the 48 members of the REFIT Platform and their 1-2 assistants i.e. the stakeholder group members and Member State authorities.

6.8.8.3 Communication plan

The main communication actions are:

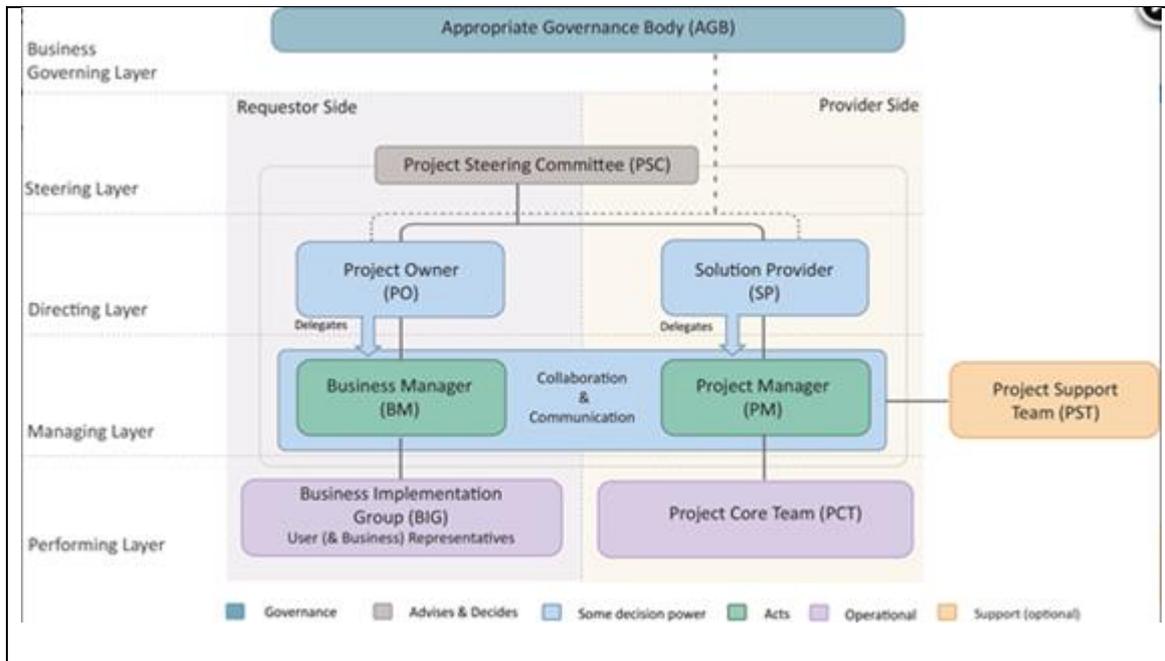
- Written communication, both to internal and external parties involved with the REFIT Platform and its activities (e-mail). + Business architecture document to be provided to the testers (SG.C1) + regular updates/minutes of the meetings
- 'Hands-on' awareness sessions – One with all the members of the REFIT Platform and one with the DGs 'Better regulation' representatives – to present the project.
- Dissemination material for all relevant stakeholders:
 - DGs: a quick-start guide.
 - MSs: a quick start guide.
- Meetings:
 - With external stakeholders, the REFIT Platform meets every 2 - 3 months and will continuously be provided with status and given the opportunity to provide feedback.
 - With internal stakeholders, twice a year, as part of the regular DGs 'Better regulation' correspondents meeting, to provide status and receive feedback.

- First-line support: The Project Support Team will help users through the change and collecting feedback.

Event	Representatives	Frequency of meetings / absolute dates of meetings
REFIT Platform group meetings	All Member States and all Stakeholder group members	Meetings every 2 -3 months
Better regulation correspondents meetings	Representatives from all DGs	Once or twice a year
Directors network	Representatives from all DGs	Once or twice a year
Project owner/System supplier	SG.C.1/SG.R.3 and DIGIT.D1	Quarterly reporting using PM ² methodology

6.8.8.4 Governance approach

This project will follow the standard PM2 project governance structure.



Project Owner: Ms CIPOLLONE, Antonina (SG.C1)

Solution Provider: Mr. BARCELLAN Roberto (DIGIT.D.1), Mr. GRITSCH, Martin (SG.R3)

Project Manager: Mr. BOTA Florin Mircea (DIGIT.D.1); Mr. COZMA Michael (DIGIT.D.1); Mr. GUIOT Frederic (SG.R.3)

Business Manager: Mr. SAGSTETTER, Norbert (SG.C1), Ms. GEROLYMATOU Maria (SG.C.1) (back up Julie Guermonprez)

Project Support Team (PST): Appointed.

Project Core Team (PCT): Appointed.

Business Implementation Group (BIG): 1 representative per interested DG and 3 representatives from the REFIT Platform Government group and 3 from the Stakeholder group. To be appointed at a later stage.

The governance approach has established regular coordination meetings between SG.C.1 (project owner), DIGIT.D.1 and SG.R.3 (solution providers). In addition, this action will respect the general ISA Governance under the supervision of the ISA Coordination Group inside the cluster "Trusted Information Exchange".

A Steering Committee will monitor completion of the project phases; set project requirements, objectives and outcomes, validate project deliverables, test activities and disseminate information about the project to the Commission services. It will be composed of members from Units C.1 and R.3 of the Secretariat General and Unit D.1 of DIGIT and representatives of those services who have been most involved with REFIT Platform suggestions (DG AGRI, DG GROW, DG ENV, DG FISMA, DG SANTE and DG TAXUD).

6.8.9 TECHNICAL APPROACH AND CURRENT STATUS

The Platform is composed of two groups, one for Member State experts ("Government group") and one for representatives of the Economic and Social Committee and the Committee of the Regions, business, social partners and civil society organisations having direct experience in the application of Union legislation ("Stakeholder group").

The task of the Platform is to invite and collect suggestions on regulatory and administrative burden reduction, to assess the merits of these suggestions, to forward for comment those suggestions considered to merit most attention to the Commission services or to the Member State concerned and to respond to each suggestion and publish the response. This means that altogether 48 experts are involved and are supposed to actively contribute to preparation of the opinions to be adopted. Unlike other Commission expert groups, the Commission (SG.C1) acts as Secretariat, but the active opinion formulation is the responsibility of the members.

Currently a Collaborative Workspace and CIRCABC are used to prepare and share documents with the Platform members. The suggested IT tool should be developed separate from but compatible with the development of the Better Regulation portal (BRP). The primary objective of the IT tool is to manage the preparation and publication of ASs as part of the development of the new "lighten the load" phase.

The technical implementation of the IT tool has the following requirements:

-
- Two separate 'channels' with the same functionalities, but one dedicated strictly to Commission-internal document preparations and another one open to all 48 members and the Commission (with different access rights concerning each of the REFIT Platform groups).
 - The 'internal channel' should enable automatic generation of an Assessment Sheet when a suggestion is introduced via the website 'Lighten the load...' with the functionality that SG.C1 can quality control before notifying the relevant services that a new Assessment Sheet needs input. The approved Assessment Sheet should automatically be available in the 'external channel' with notification to (1) the relevant reporters of the Stakeholder groups, (2) the other members of the Stakeholders group and then (3) the Government group.
 - The 'external channel' should allow Members to indicate their interest in leading the work so it is visible who is in charge of a file.
 - Each of the two Platform groups should have unique entitlements to fill-in their contribution to the opinion in a dedicated box in the document. The box should be visible and open for editing to all members of the specific group, with clear indication of who has made what changes. This box should only be visible to the other group once the lead member has verified that the document is ready to be shared. Once both groups have verified that their box have been filled-in (including the option of not having any opinion) both groups should have access to and editing-rights to draft a joint summary opinion.
 - The leaders from both groups are entitled to sign-off the joint summary opinion indicating that the opinion is ready for 'written adoption' whereby it automatically notifies all members of the time they have to react or the conclusion that the draft opinion will need to be discussed at a meeting.
 - The IT tool should automatically make available both a version with all the individual contributions / comments and a clean version, which is the basis for adoption (which consists in an anonymised version for the Government group members e.g. Member State 1 instead of Spain).
 - In the 'external channel' only SG.C1 should have editing rights in the entire document while other Commission services should have continuous access to edit their own contribution only.
 - The IT tool should support a single, shared document on which several members can work simultaneously (and avoid down- and upload of documents)
 - Members must be able to download documents for internal coordination. However, only authorised Members (or their assistant) must be entitled to edit documents in the IT tool and delegation of that right should not be possible without prior approval by SG.C1.

To address these needs, this action will provide a collaborative workspace with a restricted area for working group members and an integrated workflow system.

Version 1: Specifically, a workspace for members will be developed allowing them to exchange ideas and suggestions, draft working papers, etc. in an interactive way. Workflows will be designed to cover the entire cycle from the submission of comments by stakeholders, to exchanges with lead DGs, to consultation and publication of results (including the tracking of follow up actions if relevant).

Version 2: Additionally, a middleware component will be developed that will interconnect the collaborative workspace, an off-the-shelf solution hosted in the cloud, with Commission systems, and more particularly the Better Regulation Portal (BRP). This middleware component should be reusable by any other Commission system that should be linked to a cloud collaborative solution.

While the off-the-shelf solution hosted in the cloud has already been set-up and the workflow has already been implemented, the design and development of the middleware component is ongoing. The completed solution will be available for use in Q2 2018.

The middleware component will also be added to the Commission's corporate IT catalogue, so that it will be available for reuse by any DG/Service across the European Commission.

6.8.10 COSTS AND MILESTONES

6.8.10.1 Breakdown of anticipated costs and related milestones

Phase: Inception Execution Operational	Description of milestones reached or to be reached	Anticipated Allocations (KEUR)	Budget line ISA/ others (specify)	Start date (QX/YYYY)	End date (QX/YYYY)
Planning	Requirements gathering, assuring alignment with scope of the Better Regulation Portal and existing 'Lighten the load – Have your say'.	30	ISA ²	Q2/2017	Product delivery - Q1/2018 as announced at the ISA2 meeting of 14/12/2017
Planning	Detailed format (business use cases) of the in-scope identified business services. Planning of the version 1: the collaborative workspace and the related workflows. Planning of the version 2: middleware component and the communication between BRP and the collaborative workspace via the middleware. Validation by all actors of the business use cases.	50	ISA ²	Q2/2017	Q3/2017
Executing	Implementation of the collaborative workspace and the related workflows, version 1.	100	ISA ²	Q3/2017	Q4/2017
Executing	Implementation of the REFIT related functionalities in the Better Regulation Portal	40	Others COSME	Q2/2017	Q4/2017

	- BRP (extension of the BRP to cover the internal workflow from the reception of the 'Lighten the load' proposals to their submission to the REFIT platform)				
Executing	Testing and training; updated the documentation for Platform members, version 1.	35	ISA ²	Q4/2017	Q4/2017 – for version 1. System will be fully operational once the middleware between BRP and Sharepoint is implemented (foreseen in March 2018)
Infrastructure	Infrastructure costs covering the virtual machines in the cloud for the collaborative off-the-shelf platform	22	Others COSME	Q2/2017	Q4/2017
Closing	Roll-out Version 1	25	ISA ²	Q4/2017	Q4/2017
Monitor & Control	Monitor and report on on-going project activities and project performance, planning and implementing corrective actions in case of need, Version 1.	25	ISA ²	Q2/2017	Q4/2017 for version 1 - (final deployment 2018)
Executing	Detailed format (technical use cases) of the 'in/out' web services and their correspondent backend business services. System architecture and system core implementation.	117	ISA ²	Q4/2017	Q1/2018

	Development of 'in/out' web services and their correspondent backend business services, development of the middleware for the communication between BRP and the collaborative workspace, version 2.				
Executing	Testing and training; updated technical documentation, version 2.	30	ISA2	Q1/2018	Q2/2018
Infrastructure (will continue the following years)	Infrastructure costs covering the virtual machines in the cloud for the collaborative off-the-shelf platform	22	Others COSME	Q1/2018	Q4/2018
Closing	Roll-out version 2	25	ISA2	Q2/2018	Q2/2018
Monitor & Control	Monitor and report on on-going project activities and project performance, planning and implementing corrective actions in case of need.	25	ISA2	Q4/2017	Q2/2018
Maintenance (will continue the following years)	Costs for the maintenance of the solution in production	40	Others COSME	Q1/2018	Q4/2018
	Total	462	ISA ²	Q2/2017	Q2/2018
	Total	124	Others COSME	Q2/2017	Q4/2018
	Grand Total	586	ISA2 + Others (COSME)	Q2/2017	Q4/2018

6.8.10.2 Breakdown of ISA funding per budget year

Budget Year	Phase	Anticipated allocations (in KEUR)	Executed budget (in KEUR)
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2017	Planning, executing, closing, monitoring and control, version 1	462	
2018	Planning, executing, closing, monitoring and control, version 2	0	



6.9 INTER-INSTITUTIONAL REGISTER OF DELEGATED ACTS (2017.04)

6.9.1 IDENTIFICATION OF THE ACTION

Service in charge	European Commission, SG
Associated Services	European Parliament, Council, DIGIT

6.9.2 EXECUTIVE SUMMARY

Delegated acts are acts adopted by the Commission in order to amend or supplement non-essential elements of basic acts, on the basis of empowerments given by the legislator (European Parliament and Council) in the basic acts themselves¹¹⁵. The Commission adopts around 130 such acts per year, across quasi all policy areas.

Delegated acts are planned, prepared by the Commission with the help of expert groups, adopted by the College and then subject to an objection period by the legislator. During this scrutiny period, the European Parliament and the Council can each decide to tacitly agree, to object the act, to extend the objection period or to express its early non-objection to the act. Should no objection be raised, the act is then published in the Official Journal and enters into force. Several documents can be produced during the lifecycle of delegated acts. Prior to the set-up of the Inter-institutional Register of Delegated Acts¹¹⁶, there was no system allowing for an integrated view. Moreover, there was also no inter-institutional working tool allowing for a smooth communication and interaction between the three institutions around such acts.

That is why the three institutions decided, in the Inter-Institutional Agreement on Better Law-Making of 13 April 2016, to jointly set up and manage a joint dedicated Register for Delegated Acts. This Register, due to go live at the end of 2017, would allow an integrated view over the full life-cycle of delegated acts and related documents, including the actions taken by the Institutions, in addition to serving as a transmission tool between the three Institutions for all exchanges related to such acts. It is currently being built on the basis of existing tools, reusing as much as possible from what has already been implemented in other projects and acting mainly as an information aggregator, avoiding information duplication. Also, it is built with future inter-operability in mind, in order to allow its evolution towards increased inter-connectivity in the future.

6.9.3 OBJECTIVES

The objective of this action is to continue and finalize the developments for the Inter-institutional Register of Delegated Acts, that both responds to the needs of the three Institutions (Commission, European Parliament, Council) and increases the transparency of the preparation and adoption of

¹¹⁵ See art. 290 TEU and the Common Understanding on Delegated Acts annexed to the Inter-Institutional Agreement on Better Law-Making of 13 April 2016.

¹¹⁶ The set-up of the Register is financed under the ISA2 2017 Work Programme (Action 2017.14)

delegated acts, so that the Institutions, the Member States and the public at large have a better view of the full life-cycle of delegated acts, from planning to entry into force. As such, the Register complies with the objectives of the ISA2 programme of increasing interoperability (given that it is designed to be an inter-institutional interoperable tool), of facilitating electronic cross-sector interactions (given that delegated acts are adopted in all policy areas) and of promoting reuse of interoperability solutions by European public administrations (by heavily relying on already existing solutions).

6.9.4 SCOPE

The Register covers the entirety of the lifecycle of a delegated act, from planning and preparation down to adoption and entry into force, including revocation/tacit renewal of the empowerment. It offers a timeline view of all the relevant documents with the focus being on every individual delegated act. Also, it allows searching for the different delegated acts adopted (or under preparation) on the basis of the same basic act and for delegated acts adopted linked to the different expert groups.

The scope of the second phase of the project includes supporting procedures linked to delegated acts that were not covered in phase I (notably revocation of delegation, refusal to extend the delegation and corrigenda after the publication of a delegated act in the Official Journal). It will also include additional application management tools (such as enhanced user management and reporting functionalities), as well as machine-to-machine communication channels to set the basis of further interoperability.

6.9.5 ACTION PRIORITY

6.9.5.1 Contribution to the interoperability landscape

The contribution of the action to the interoperability landscape, measured by the importance and necessity of the action to complete the interoperability landscape across the Union

Question	Answer
<p><i>How does the proposal contribute to improving interoperability among public administrations and with their citizens and businesses across borders or policy sectors in Europe?</i></p> <p><i>In particular, how does it contribute to the implementation of:</i></p> <ul style="list-style-type: none"> • <i>the new European Interoperability Framework (EIF),</i> • <i>the Interoperability Action Plan and/or</i> • <i>the Connecting European Facility (CEF) Telecom guidelines</i> • <i>any other EU policy/initiative having</i> 	<p>This Register is a clear example of interoperability between the Commission, EP and Council, being the first true joint interinstitutional tool, across policy areas.</p>

<i>interoperability requirements?</i>	
<i>Does the proposal fulfil an interoperability need for which no other alternative action/solution is available?</i>	There is currently no structured exchange of documents/information between the three institutions as regards the preparation and post-adoption treatment of delegated acts. The creation of the Register is therefore seen as the best solution, given the business workflows it needs to support.

6.9.5.2 Cross-sector

The scope of the action, measured by its horizontal impact, once completed, across the policy sectors concerned.

Question	Answer
<i>Will the proposal, once completed be useful, from the interoperability point of view and utilised in two (2) or more EU policy sectors? Detail your answer for each of the concerned sectors.</i>	The Register will be used in all policy area, see annex II for an overview (using the DGs as proxy).
<i>For proposals completely or largely already in operational phase, indicate whether and how they have been utilised in two (2) or more EU policy sectors.</i>	

6.9.5.3 Cross-border

The geographical reach of the action, measured by the number of Member States and of European public administrations involved.

Question	Answer
<i>Will the proposal, once completed, be useful from the interoperability point of view and used by public administrations of three (3) or more EU Members States? Detail your answer for</i>	Although the use of the inter-operability solutions by Member States administrations is not in the scope of the project, the solutions built for the

<i>each of the concerned Member State.</i>	exchange of information between the European institutions could be used by Member States too. It could also serve as an example for other tools in which Member State administrations have a strong interest (such as the Comitology Register for instance).
<i>For proposals completely or largely already in operational phase, indicate whether and how they have been utilised by public administrations of three (3) or more EU Members States.</i>	

6.9.5.4 Urgency

The urgency of the action, measured by its potential impact, taking into account the lack of other funding sources

Question	Answer
<i>Is your action urgent? Is its implementation foreseen in an EU policy as priority, or in EU legislation?</i>	Yes, the requirement to deliver the Register by the end of 2017 comes from the Inter-Institutional Agreement on Better Law-Making of 13 April 2016.
<i>How does the ISA² scope and financial capacity better fit for the implementation of the proposal as opposed to other identified and currently available sources?</i>	As this is by definition a multi-institution, cross-border and cross-sector project, ISA2 seems to offer the best framework for its development.

6.9.5.5 Reusability of action's outputs

The re-usability of the action, measured by the extent to which its results can be re-used.

Name of reusable solution to be produced (for new proposals) or produced (for existing actions)	System-to-system events interface
Description	The system will include a system-to-system events interface, based on a JMS topic, that will allow different systems to subscribe and take automatic decisions (for instance trigger withdraw a process after one Institution

	objection) based on the consumed event
Reference	
Target release date / Status	
Critical part of target user base	All involved Institutions
For solutions already in operational phase - actual reuse level (as compared to the defined critical part)	

6.9.5.6 Level of reuse of existing solutions

The re-use by the action (following this proposal) of existing common frameworks and interoperability solutions.

Question	Answer
<i>Does the proposal intend to make use of any ISA², ISA or other relevant interoperability solution(s)? Which ones?</i>	
<i>For proposals completely or largely already in operational phase: has the action reused existing interoperability solutions? If yes, which ones and how?</i>	The IMMC schema is used to simplify the understanding and re-use of the information (both by the parties included in the proposal and by any other future stakeholder) TESTA-NG is used to securely connect the backend systems of the involved Institutions.

6.9.5.7 Interlinked

The extent to which the action (following this proposal) contributes to Union's initiatives such as the DSM.

Question	Answer
<i>Does the proposal directly contribute to at least</i>	This project has a clear link with one of the

<p><i>one of the Union's high political priorities such as the DSM? If yes, which ones? What is the level of contribution?</i></p>	<p>ten priorities of the Juncker Commission, namely "democratic change". Increased transparency over the decision-making process and facilitating stakeholder participation in the policy-making process are elements of this strategic objective. The Register, by allowing an integrated view over the lifecycle of delegated acts, will greatly facilitate both stakeholders' and institutional players' participation.</p>
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6.9.6 PROBLEM STATEMENT

Delegated acts are prepared by Commission services with the help of expert groups. They are then adopted by the College, normally through written procedure, and sent to the EP and Council for their scrutiny during the objection period. Once the objection period is over, they are published in the Official Journal and enter into force. The table in Annex I provides the full list of documents produced in the lifecycle of a delegated acts and the IT applications/websites where they are available today. It shows that information, while in general publicly available, is dispersed. Also, there is currently no standard practice/unified transmission channel at the preparatory stage (expert groups), DGs using e-mail, CIRCABC, own websites, etc. in order to document the discussions in the expert groups. At the other end of the process, there is no centralized repository of documents after the adoption stage, documenting the position of and the actions taken by the other institutions (objections, extensions of deadlines, early non-objections, revocation of empowerments). The Joint Register aims to remedy these shortcomings, by offering an integrated access to all the stages in the lifecycle of a delegated act and by serving as an aggregator of information between the three institutions. The specific actions to be developed in 2018 concern the finalization of the development work.

Describe using the table below one or more problems addressed by the proposal.

The problem of	Not having an unique "one-stop shop" dedicated to delegated acts processing
affects	The different EU Institutions, Member States and citizens
the impact of which is	There are delays in processing and information is not well disseminated among relevant stakeholders
a successful solution would be	To develop an interoperable user friendly information aggregator including all information related to delegated act processing

6.9.7 IMPACT OF THE ACTION

6.9.7.1 Main impact list

The Register's main impacts lie in the areas of transparency, increased legal certainty and increased inter-operability. With information being available in one single place as compared to several databases and websites today, it will also increase the efficiency of staff in charge of following such acts, irrespective of whether they are working in the European institutions, Member State administrations or in stakeholder groups.

Impact	Why will this impact occur?	By when?	Beneficiaries
(+) Savings in money	Not applicable		
(+) Savings in time	By making all information and documents about delegated acts available in one single place, the Register will greatly facilitate the work of people who have an interest in following such files	As of Q1 2018	Stakeholders, staff in national administrations and permanent representations, staff in EU institutions
(+) Better interoperability and quality of digital public service	By aggregating information coming from the back-end systems of the European Commission, European Parliament and Council, the Register offers a one-stop shop to the whole procedure of delegated acts, irrespective of who the actor in charge of a particular step in the procedure is.	As of Q1 2018	EU institutions, Member State administrations, stakeholders
(-) Integration or usage cost	Not applicable		
(+) Increased legal certainty	By showing the end of the objection period, the Register facilitates the work of staff in charge of the publication of acts in the Official Journal.	As of Q1 2018	Staff in EU institutions
(+) Increased transparency	By making all information and documents about delegated acts available in	As of Q1 2018	Stakeholders, staff in national

	one single place, the Register increases the transparency of the process of preparing, adopting and scrutinizing delegated acts.		administrations and permanent representations, staff in EU institutions
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6.9.7.2 User-centricity

Improving access to information on the lifecycle of delegated acts is a central objective of the Register, together with helping streamline communication. Users are therefore central actors, not only in the institutions concerned (European Commission, European Parliament, Council), but also in a wide sense of the word, encompassing citizens, stakeholders, Member State experts, etc. Once the Register is in place, users will have the opportunity to subscribe to notifications in order to be immediately and directly informed of any event occurring in the lifecycle of a particular delegated act, basic act or policy area. The user interface is also being designed from a user-centricity perspective.

6.9.8 EXPECTED MAJOR OUTPUTS

Output name	Support for revocation of delegation
Description	Include the elements to support the process of revoking delegations by the European Parliament and the Council, together with all of its related events and documents
Reference	
Target release date / Status	4Q2018

Output name	Support for the refusal to extend the delegation
Description	Include the elements to support the process of refusing to extend the delegation by the European Parliament and the Council, together with all of its related events and documents
Reference	
Target release date / Status	4Q2018

Output name	Support to corrigenda after the publication of a delegated
Description	Include the elements to support corrigenda to already published delegated acts, made by the European Commission, together with all of its related events and documents
Reference	

Target release date / Status	4Q2018
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Output name	Reports on use of powers
Description	Include all elements in the system to provide the mandatory reports on the use of powers by the European Commission
Reference	
Target release date / Status	4Q2018

6.9.9 ORGANISATIONAL APPROACH

6.9.9.1 Expected stakeholders and their representatives

Stakeholders	Representatives	Roles
European Commission	SG.B2 and DIGIT.B2	SG.B2 is the system owner, DIGIT B.2 the solution provider.
European Parliament	DG IPOL (CODE), DG ITEC	DG IPOL is the business owner on the EP side, with DG ITEC in charge of the necessary adaptations in the EP back-end system. Both are also represented in the governance bodies of the project.
Council of the EU	GIP (DRI Legislation Unit), DGA 5	GIP is the business owner on the Council side, with DGA5 in charge of the necessary adaptations in the Council back-end system. Both are also represented in the governance bodies of the project.

6.9.9.2 Identified user groups

DG coordinators for expert groups and comitology, EP and Council coordinators (both active contributors and users of the system), Member State administrations and the public at large.

6.9.9.3 Communication and dissemination plan

Dedicated trainings will be organized in the three institutions targeting the main user groups of the future Register (for the Commission that would be the expert group coordinators and the comitology coordinators). In terms of external communication, the necessary communication strategy will be put in place, involving a press release, launch statements on social media, communication via the representations in the Member States.

6.9.9.4 Key Performance indicators

Provide a list of KPIs allowing the measurement of the progress and completions of milestones and the action. In case of an on-going action with already identified metrics¹¹⁷ indicate the current values.

Description of the KPI	Target to achieve	Expected time for target
Delegated Acts available via the Register	All acts adopted	As of Q1 2018
DA procedures supported by the Register	90%	Q4 2018
Users subscribed to the notifications	200	Q4 2018
Number of e-mail based interactions between the institutions	25% lower than today	Q4 2018

6.9.9.5 Governance approach

The project will follow the standard PM2 governance structure:

Project Owner: Mr. KLAUS, Henning (SG.B2)

System Supplier: M. VAN PUymbroek, Willy (DIGIT.B2)

Project Manager: Mr. TORRECILLA SALINAS, Carlos (DIGIT.B2)

Business Manager: Ms. TANASESCU, Irina (SG.B2)

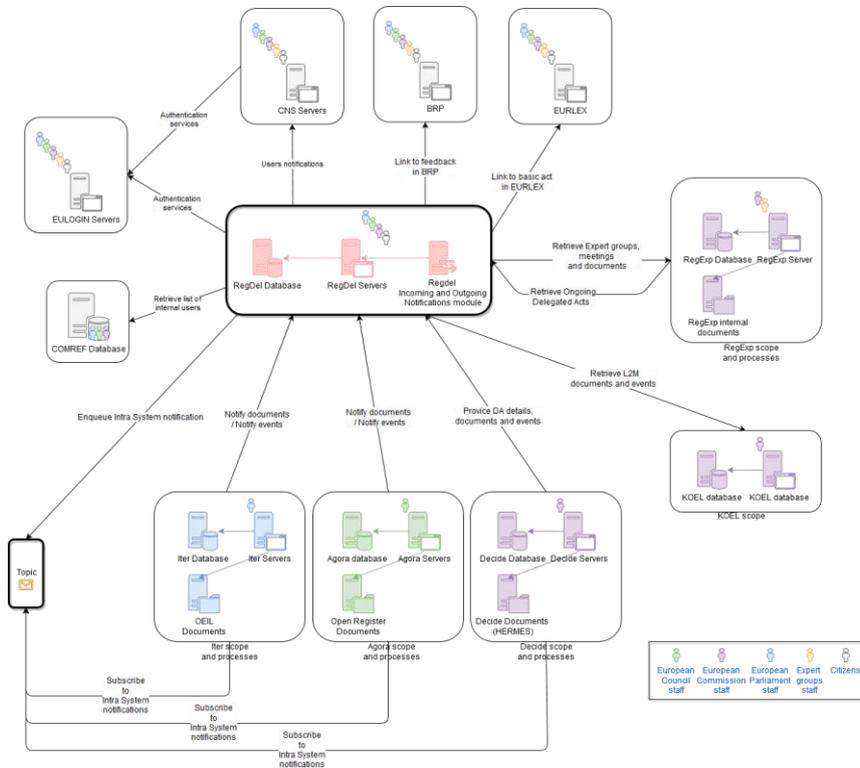
Business Implementation Group (BIG): Representatives from the Institutional Affairs Unit in the Commission, and the Codecision Units in the EP and the Council.

¹¹⁷ For examples see the ISA2 dashboard <https://ec.europa.eu/isa2/dashboard/isadashboard> , effectiveness tab.

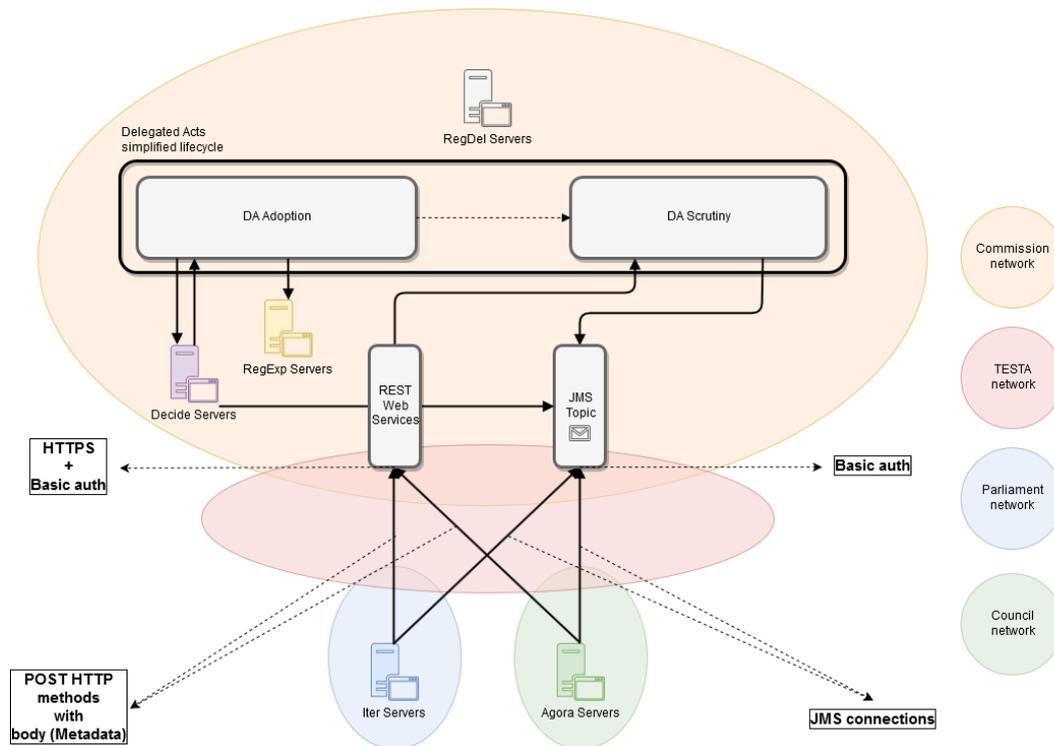
The Heads of Unit of the Codecision Units in the EP and the Council are part of the Project Steering Committee together with the standard members (Project Owner, System Supplier, Business Manager and Project Manager). It is left to each institution to organize itself internally for the link between business and IT and to decide on the participation to the coordination meetings of other colleagues, according to the topics on the agenda. A formal inter-institutional project team structure was established in September 2016 and formalised through endorsement of the GCI (Groupe de Coordination Inter-Institutionnelle).

6.9.10 TECHNICAL APPROACH AND CURRENT STATUS

As from the December 2017, the first version of the Inter-institutional Register of Delegated Acts will go-live. This initial version provides an overview of the delegated acts processing, including all related events and documents, based on the aggregator principle. The register does not store any document but points to the place this document is already available, avoiding information duplication. The picture below depicts the landscape of systems integrated with the register:



It is also important to mention that in order to inter-connect different back-end systems of three different Institutions, services will be deployed in TESTA-NG, following below schema:



Based in the aforementioned technical approach, the second version of the register will incorporate the following new functionality:

- Remaining processes not covered in the first version (notably revocation of powers, refusal to extend, corrigenda after the publication of delegated acts in the Official Journal) in order to fully cover the delegated acts lifecycle.
- Functionality to extract the mandatory reports on use of powers that the European Commission has to regularly provide to the co-legislators.
- Reporting facilities with information on:
 - Number of registered users.
 - Number of accesses and subscriptions
 - Number of accessed documents
 -
- Improvements in expert groups and subscription mechanism (allowing advanced filtering, calendar items export...)
- Technical improvements to ease user management, error handling, troubleshooting and system operation.

6.9.11 COSTS AND MILESTONES

6.9.11.1 Breakdown of anticipated costs and related milestones

Phase: Initiation Planning Execution Closing/Final evaluation	Description of milestones reached or to be reached	Anticipated Allocations (KEUR)	Budget line ISA/ others (specify)	Start date (QX/YYYY)	End date (QX/YYYY)
Initiation	Business process definition	100k	Heading 5	1/9/2016	28/2/2017
Execution	Initial Proof of Concept	35k	ISA	1/3/2017	31/4/2017
Execution	Development of RegDel version 1	689k	ISA	1/5/2017	15/12/2017
Execution	Development of RegDel version 1	59k	Heading 5	1/5/2017	15/12/2017
Execution	Maintenance and support of RegDel version 1	189k	Co-financed by Commission, EP and Council	1/1/2018	31/12/2018
Execution	Development of RegDel version 2	550k	ISA	1/1/2018	15/12/2018
Execution	Project closure/Final evaluation/Project impact	100k	ISA	1/1/2019	15/12/2019
	Total	1722k			

6.9.11.2 Breakdown of ISA² funding per budget year

Budget Year	Phase	Anticipated allocations (in KEUR)	Executed budget (in KEUR)
2016	Initiation	35k	35k
2017	Execution	689k	
2018	Execution	550k	
2019	Execution/Closing/Evaluation	100k	
2020			

6.9.12 ANNEX AND REFERENCES

Description	Reference link	Attached document
IIA BL	http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=OJ:L:2016:123:TOC	

6.10 STUDY ON THE FUTURE COMITOLGY REGISTER (2018.04)

6.10.1 IDENTIFICATION OF THE ACTION

Service in charge	European Commission, SG.B2
Associated Services	European Commission, DIGIT.B2 European Commission, SG.R3

6.10.2 EXECUTIVE SUMMARY

The Commission is often empowered to implement EU legislation with the assistance of committees composed of representatives from EU countries. As such, it adopts around 1600 implementing acts every year, across all policy areas. The procedures underlying this process are set out in Regulation 182/2011 (the Comitology Regularion).

The Comitology Register (RegCom) contains background information and documents relating to the work of these committees, including all documents forwarded to the EU Parliament and the Council for information or scrutiny (on average approximately 20.000 documents per year). As such, the Register allows users to trace the different stages of an implementing measure throughout its entire lifecycle. The current version of the Register dates back to 2008 (with an even older version, now archived, operational since 2002). It reaches its tenth anniversary and it is necessary to rethink the Register from an IT, inter-operability as well as financial perspective. The Register has expanded considerably over the years and reached a level of such complexity that it is considered being a high level risk to do any more development work in the current Register. This action aims to prepare the grounds for the building of a RegCom2 in 2019, by analysing how best to integrate it with other corporate tools (notably Decide and Agora Meetings – AGM), how to streamline transmissions to the other institutions (notably by moving away from e-mail and relying on eTrustEx/eDelivery) and how to improve transparency and access to information for the users. .

6.10.3 OBJECTIVES

The main objective of this action is to analyse how best to rebuild the Comitology Register, in order to make it interoperable, sustainable, more user-friendly, and better equipped to respond to the needs of Member State administrations, the other institutions and stakeholders in general.

6.10.4 SCOPE

This action will investigate how best to develop the new Comitology Register (RegCom2). As such, it will analyse the best integration scenarios, both with the corporate Commission internal decision-making and meeting organisation tools, and with the more modern transmission tools (eTrustEx/E-Delivery). It will also look at the Register from a transparency perspective and suggest the way

forward for the public interface. There is no development work in scope for this action, the purpose is only to analyse the best way forward, before moving to implementation in 2019.

6.10.5 ACTION PRIORITY

The proposed action complies with all the prioritisation criteria listed in art 7 of the ISA2 Decision (Decision (EU)2015/2240), as follows:

(a) the contribution of the action to the interoperability landscape, measured by the importance and necessity of the action to complete the interoperability landscape across the Union;

The current Comitology Register responds to the legal obligation of the Commission to make public a set of documents (either in full or only at the level of the metadata) listed in art. 10 of Regulation 182/2011 (the Comitology Regulation). The current Register also serves as an official transmission channel of such documents to the European Parliament and the Council (although the transmission method used is outdated and clearly improvable). Nevertheless, it stands in complete isolation from the other IT tools in the Commission (such as Decide or AGM). Currently the transmission of the documents to the Member States is done by various different means (in the future it should happen via AGM), requiring in all cases to be uploaded to Comitology Register separately from that transmission. Similarly, the documents that must be adopted as a result of the comitology procedure must be uploaded in Decide in order to proceed with the adoption process. This need to upload the same documents twice or more in different systems is both inefficient and prone to errors. Analysing how the Register of the future should look like from an interoperability perspective is a first step towards putting the Comitology Register on the interoperability map, not only within the Commission but also in relation to the other institutions and the Member States.

(b) the scope of the action, measured by its horizontal impact, once completed, across the sectors concerned;

The Commission adopts every year around 1600 acts following a comitology procedure. The process leading to the adoption of these acts, at committee stage, is documented in the Register, who is therefore home (and transmission vehicle) for thousands of acts every year¹¹⁸, across all policy areas.

(c) the geographical reach of the action, measured by the number of Member States and of European public administrations involved;

Member States are members of the comitology committees whose work is documented by the Register. Member State administrations have, therefore, a great interest in being able to follow such files and would all benefit from an improved Register. Moreover, the analysis should identify the services needed to better share the information between the institutions. Such services could also be used by the Member States should they be interested.

(d) the urgency of the action, measured by its potential impact, taking into account the lack of other funding sources;

¹¹⁸ For more detailed numbers see the Annual Reports on the functioning of the comitology committees on <http://ec.europa.eu/transparency/regcomitology/index.cfm?do=Report.Report>

The current Comitology Register dates back to 2008. The technology underlying it is out-dated and any further development work is high risk. Moreover, it was conceived in isolation from all the other IT tools in the Commission (it is older than Decide for instance).

(e) the re-usability of the action, measured by the extent to which its results can be re-used;

Building on the experience acquired with building the Inter-Institutional Register of Delegated Acts, the study will look at the Comitology Register in the context of its interoperability with Parliament, Council and Member State tools. On the basis of the study developments will be launched in 2019. In this context, the relevant existing services will be reused and any new services to be developed will be conceived with interoperability in mind. One such service, of interest beyond the future Comitology Register, is one linking the steps and documents in the decision-making process with documents exchanged with Member State administrations/experts in official fora (comitology committees, expert groups) that are part of the same logical file.

Also, the analysis will take into account the results of the study on the Digital OLP management ("to be" landscaping exercise). As the purpose of this study is to look into how to improve document exchanges between the institutions in the framework of the Ordinary Legislative Procedure, its findings and proposed next steps are relevant for implementing acts as well. Although not part of the Ordinary Legislative Procedure, such acts are nevertheless officially adopted by the Commission and transmitted to the other institutions, so any improvements that are relevant for this process will be taken into account. As such, this analysis will pave the way for extending the findings and recommendations of the "to be" landscaping exercise to other areas of decision-making and inter-institutional exchanges.

(f) the re-use by the action of existing common frameworks and elements of interoperability solutions;

The study should identify such solutions to be re-used. As a minimum, one can already mention the IMMC Core Metadata exchange protocol, eTrustEx/e-Delivery and TESTA-NG.

(g) the link of the action with Union initiatives to be measured by the collaboration and contribution level of the action to Union initiatives such as the DSM.

This project has a clear link with one of the ten priorities of the Juncker Commission, namely "democratic change". Increased transparency over the decision-making process and facilitating stakeholder participation in the policy-making process are elements of this strategic objective. The study on the future Comitology Register will look at both interoperability and increased transparency, with a view to set the grounds for a better functioning and more user-friendly Register.

6.10.5.1 Contribution to the interoperability landscape

The contribution of the action to the interoperability landscape, measured by the importance and necessity of the action to complete the interoperability landscape across the Union

Question	Answer
<i>How does the proposal contribute to improving</i>	Implementing acts are the largest number

<p><i>interoperability among public administrations and with their citizens and businesses across borders or policy sectors in Europe?</i></p> <p><i>In particular, how does it contribute to the implementation of:</i></p> <ul style="list-style-type: none"> • <i>the new European Interoperability Framework (EIF),</i> • <i>the Interoperability Action Plan and/or</i> • <i>the Connecting Europe Facility (CEF) Telecom guidelines</i> • <i>any other EU policy/initiative having interoperability requirements?</i> 	<p>of legal acts produced by the Commission and the system which supports their processing works in isolation. Analysing the possibility of replacing it by an interoperable solution will contribute to the implementation of the following elements:</p> <ul style="list-style-type: none"> • Regarding the EIS, our proposal falls in the scope of the following clusters: <ul style="list-style-type: none"> ○ "Access to data/Data Sharing/Open Data". ○ "EU policies – supporting instruments" • Regarding the EIF, our action promotes the following principles: user-centricity, multilingualism, transparency, openness and reusability and supports scenarios of technical interoperability to exchange information between the Commission and other European (European Parliament, Council of the European Union) or national Institutions
<p><i>Does the proposal fulfil an interoperability need for which no other alternative action/solution is available?</i></p>	<p>It addresses a technical interoperability issue, by identifying an interoperable solution for the Comitology Register, which currently supports the process that produces the largest number of legal acts at the EU level</p>

6.10.5.2 Cross-sector

The scope of the action, measured by its horizontal impact, once completed, across the policy sectors concerned.

Question	Answer
<p><i>Will the proposal, once completed be useful, from the interoperability point of view and utilised in two (2) or more EU policy sectors? Detail your answer for each of the concerned sectors.</i></p>	<p>All policy sectors are concerned, as implementing acts with committee control are adopted in all policy areas.</p>
<p><i>For proposals completely or largely already in operational phase, indicate whether and how</i></p>	

they have been utilised in two (2) or more EU policy sectors.

6.10.5.3 Cross-border

The geographical reach of the action, measured by the number of Member States and of European public administrations involved.

Question	Answer
<i>Will the proposal, once completed, be useful from the interoperability point of view and used by public administrations of three (3) or more EU Members States? Detail your answer for each of the concerned Member State.</i>	All Member States are concerned, as they all are members of the different comitology committees and will need to be able to follow this process.
<i>For proposals completely or largely already in operational phase, indicate whether and how they have been utilised by public administrations of three (3) or more EU Members States.</i>	

6.10.5.4 Urgency

The urgency of the action, measured by its potential impact, taking into account the lack of other funding sources

Question	Answer
<i>Is your action urgent? Is its implementation foreseen in an EU policy as priority, or in EU legislation?</i>	The volume of produced acts, together with the isolation of the current IT tools, makes the revision urgent.
<i>How does the ISA² scope and financial capacity better fit for the implementation of the proposal as opposed to other identified and currently available sources?</i>	Given the cross-policy and cross-administration (both national and EU-level) dimensions of this project, ISA2 seems its natural home. Moreover, this would place the future Register within the wider scope of on-going ISA2 actions such as the

	landscaping exercise ¹¹⁹ and the Inter-institutional Register of Delegated Acts.
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6.10.5.5 Reusability of action's outputs

The re-usability of the action, measured by the extent to which its results can be re-used.

Can the results of the action (following this proposal) be re-used by a critical part of their target user base, as identified by the proposal maker? For proposals or their parts already in operational phase: have they been re-used by a critical part of their target user base?

Name of reusable solution to be produced (for new proposals) or produced (for existing actions)	Study on technical solutions for the Comitology Register
Description	The conclusions of the study will be a reusable element, that might feed other on-going works like the further evolution of the Inter-institutional Register of Delegated Acts or the future implementation actions stemming from the "to be" landscaping exercise ("Digital OLP management")
Reference	
Target release date / Status	2018Q4
Critical part of target user base	European Institutions, Member State administrations
For solutions already in operational phase - actual reuse level (as compared to the defined critical part)	

6.10.5.6 Level of reuse of existing solutions

The re-use by the action (following this proposal) of existing common frameworks and interoperability solutions.

Question	Answer
<i>Does the proposal intend to make use of any ISA², ISA or other relevant interoperability solution(s)? Which ones?</i>	The study will take into account the experience acquired in other ISA2 actions (landscaping exercise, Inter-Institutional Register of Delegated Acts).

¹¹⁹ Action 2016.17. Interinstitutional Framework for Digital OLP Management

	The feasibility of using standards like IMMC and technical elements like TESTING within the proposed solution will also be analysed during the study.
<i>For proposals completely or largely already in operational phase: has the action reused existing interoperability solutions? If yes, which ones and how?</i>	

6.10.5.7 Interlinked

The extent to which the action (following this proposal) contributes to Union's initiatives such as the DSM.

Question	Answer
<i>Does the proposal directly contribute to at least one of the Union's high political priorities such as the DSM? If yes, which ones? What is the level of contribution?</i>	This project has a clear link with one of the ten priorities of the Juncker Commission, namely "democratic change". Increased transparency over the decision-making process and facilitating stakeholder participation in the policy-making process are elements of this strategic objective.

6.10.6 PROBLEM STATEMENT

Describe using the table below one or more problems addressed by the proposal.

The problem of	The Comitology Register not being interoperable with other systems from other EU Institutions and Member States
affects	The efficiency of staff in the Commission, European Parliament, Council and Member State administrations and the transparency of the European public administration
the impact of which is	Increased difficulty to follow comitology files, double-encodings, difficult transmission processes and impact on the reputation of the Institutions
a successful solution would be	A future Register that is fully part of the interoperable

	landscape and takes into account the conclusions of the related previous interoperability actions
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6.10.7 IMPACT OF THE ACTION

6.10.7.1 Main impact list

List the impacts of the action's outputs (following the proposal) on the beneficiaries to the extent possible. Some impacts are listed below – add others as needed.

Not applicable as the objective of this action is a study. Once the results of the study implemented through the development of a new Register in 2019 one can start discussing about savings.

Impact	Why will this impact occur?	By when?	Beneficiaries
(+) Savings in money			
(+) Savings in time			
(+) Better interoperability and quality of digital public service			
(-) Integration or usage cost			
<i>[add other impacts as needed]</i>			

6.10.7.2 User-centricity

One of the conditions for maximizing the impact of the ISA² actions is by ensuring that they meet users' needs. For this to happen, users' engagement and involvement is needed before and during solutions' implementation, and users' feedback is sought after solutions are in operation. Explain how you intend to achieve the above.

Users will be at the center of the study, as the focus will be both on institutional users (staff from the European Commission, European Parliament, Council and Member State administrations) and on citizens and stakeholders in general (from a transparency and user friendliness perspective). Within the Commission, the network of DG comitology coordinators will be the main vehicle for engaging with the internal users. This network meets regularly and will be consulted specifically on the future of the Comitology Register.

6.10.8 EXPECTED MAJOR OUTPUTS

[Include here only additional major outputs which were not already mentioned under section 1.1.5.5]

Output name	Study on technical solutions for the new Comitology Register
Description	An analysis of the best way to re-build the Comitology Register, in order to maximize inter-operability, increase transparency and facilitate the work of its users.
Reference	
Target release date / Status	Q4 2018

6.10.9 ORGANISATIONAL APPROACH

6.10.9.1 Expected stakeholders and their representatives

Stakeholders	Representatives	Involvement in the action
European Commission	SG.B2	System owner/business manager
European Commission	DIGIT.B2 and SG.R3	Main contributors to the analysis
European Commission	DG comitology coordinators	Main user group
European Parliament	Reception and Referral Unit	Consulted, main stakeholder
Council of the EU	General Secretariat	Consulted, main stakeholder

6.10.9.2 Identified user groups

While the study itself will be mostly directed at the European Commission (who will then need to implement its findings), the users that would most benefit from a renewed Comitology Register are: staff in the EU institutions (Commission, European Parliament, Council), in the Member State administrations (including Permanent Representations), stakeholders and citizens.

6.10.9.3 Communication and dissemination plan

The study itself will be nourished through dialogue with relevant stakeholders, who would thereby already be informed of the upcoming revision of the Comitology Register. Once the study is finished, its findings will be communicated both to the specialized stakeholder groups (notably in the institutions and the Member State administrations) and to the wider audience (notably via the ISA2 communication actions).

6.10.9.4 Key Performance indicators

Provide a list of KPIs allowing the measurement of the progress and completions of milestones and the action. In case of an on-going action with already identified metrics¹²⁰ indicate the current values.

Description of the KPI	Target to achieve	Expected time for target
Future architecture of the Comitology Register clear	100%	Q4 2018
Impact of the future architecture on other systems (notably Decide and AGM) clear	100%	Q4 2018
Impact of the future architecture on other institutions and Member State systems clear	100%	Q4 2018

6.10.9.5 Governance approach

The study will be managed by SG.B2, as system owner of the current Comitology Register (and owner of its successor). It remains to be seen through which contractual channels the study will be commissioned. In any case, both SG.R3, as current supplier of the Comitology Register, and DIGIT.B2, as current supplies of Decide and future supplier of AGM, will be closely associated to the analysis.

6.10.10 TECHNICAL APPROACH AND CURRENT STATUS

Not applicable, as the action is a study.

6.10.11 COSTS AND MILESTONES

6.10.11.1 Breakdown of anticipated costs and related milestones

Phase: Initiation Planning Execution Closing/Final evaluation	Description of milestones reached or to be reached	Anticipated Allocations (KEUR)	Budget line ISA/ others (specify)	Start date (QX/YYYY)	End date (QX/YYYY)
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¹²⁰ For examples see the ISA2 dashboard <https://ec.europa.eu/isa2/dashboard/isadashboard> , effectiveness tab.

Execution	Study completed	80K	ISA 80K	Q1 2018	Q4 2018
	Total 80K				

6.10.11.2 Breakdown of ISA² funding per budget year

Budget Year	Phase	Anticipated allocations (in KEUR)	Executed budget (in KEUR)
2018	Analysis	80 K	
2019			
2020			

6.10.12 ANNEX AND REFERENCES

Description	Reference link	Attached document
Regulation 182/2011	http://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:32011R0182	
Comitology Register	http://ec.europa.eu/transparency/regcomitology/index.cfm	