

1.7 INNOVATIVE PUBLIC SERVICES (2018.01)

1.7.1 IDENTIFICATION OF THE ACTION

Service in charge	JRC B6, DIGIT D2, DIGIT D3
Associated Services	JRC I2, CNECT H4, CNECT A2, DIGIT B4, TAXUD, GROW, DGT, CNECT, JUST.B4

1.7.2 EXECUTIVE SUMMARY

The EU is undergoing a radical economic and social transformation, mainly due to the digital transformation of all aspects of the economy, society, politics and government. In their nature as General Purpose Technologies, Information and Communication Technologies (ICTs) are horizontal and cross-cutting. Thus, they are and will be one of the pillars of our socio-economic and political systems and their transformation. Digital technologies and the amount of data they generate trigger further innovation in the shape of new products, services, business models, as well as new ways of interaction between humans and machines. The impact of such changes can help improve access to products and services and the quality of life of European citizens, while boosting the European economy. European industry can build on its strengths in advanced digital technologies and its strong presence in traditional sectors to seize the range of opportunities that technologies such as the Internet of Things, big data, advanced manufacturing, robotics, 3D printing, blockchain technologies and artificial intelligence offer. At the same time, the impact of digital transformation may be uneven, and the growth enabled by technology may benefit some social groups, while leaving others behind. This context is fully reflected in some of the most recent policy documents released by the European Commission (e.g. [Digital Transformation Scoreboard](#), [Digital Skills Gap](#), [Digitising European Industry](#)) both at the higher level of general digital policies and at the more specific level of eGovernment policy.

At a policy level, steps and commitments have been taken through the [Tallinn Declaration](#), signed on 6th October 2017, which confirms the commitment to the vision laid out in the [European eGovernment Action Plan 2016-2020](#) and in the European Interoperability Framework (EIF). One of the key elements is the “user-centricity principles for design and delivery of digital public services”. When interacting with public administrations and using digital public services, citizens and businesses should ensure: digital interaction, accessibility, security, availability and usability, reduction of the administrative burden, digital delivery of

public services, citizen engagement, incentives for digital service use, protection of personal data and privacy, redress and complaint mechanisms.

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, as the digitalisation of society has also profound impacts upon the extent our personal data are shared and protected and ultimately how our governance systems and democracies function.

All technological developments associated with digital government are based on data and information exchange. In particular, emerging disruptive technologies mentioned above, such as Blockchain, AI, and IoT related infrastructures, but also more common ones such as APIs, are data fuelled and have highly data-intensive processes³⁵.

However, whereas the various terms are often used inconsistently, sometimes just as specific technological applications, it is evident that only in combination they acquire meaning and full potential for automation. The use of data can dramatically improve public sector productivity, in terms of efficiency and effectiveness, and quality of public service delivery.

To widen the diffusion and penetration of such emerging technologies in the public sector and achieve a positive impact, interoperability issues are a key challenge which need to be addressed at an early stage, especially in the context of innovation in the public administration, to avoid further fragmentation and allow an easy and effective sharing and reuse of solutions.

The action aims therefore at bringing together actors involved in innovation in Public Administration, to address multi-dimensional (i.e. technological, legal, organizational and semantic) interoperability issues of emerging technologies, and defining which conditions are required for their integration into more traditional technological systems and governance processes for improving public service delivery, and propose concrete solution reusable at EU level, including through cross-border collaboration and supporting the aim of ensuring a wide use of digital technologies across the economy and society in strict cooperation with the EU-wide network of Digital Innovation Hubs.

On piloting activities, the action aims at examining 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.

³⁵ See Chapter 8 of the [United Nations E-Government survey 2018](#)

As a starting point, a first pilot will aim at offering a private blockchain network and an API to easily notarize digital information, allowing verifying in the long-term the integrity of such information. It will rely on Open Source software and the Commission nodes will be initially connected to Luxembourg nodes, to later seek collaboration with other Member States to increase the number of partners and, as a consequence, the trust in the blockchain network.

At a second stage, using lessons learned and existing infrastructure from the first pilot, the focus will move to explore and implement a self-sovereign identity pilot using a blockchain-based solution. Self-sovereign identity is a concept where natural and legal persons can store their own identity data on their own devices, and provide it efficiently to those who need to validate it, without relying on a central repository of identity data. It is an interesting concept that could help in the application of eGovernment's once-only principle³⁶, with a citizen-centric approach in contraposition to the traditional government-centric approach. This means that the citizen should request only once a credential to a public administration -or a trusted third-party-, store it, and share it with others under his own control; instead of providing information only once to a public administration and lose its control when it starts moving between different administrations.

This second pilot will aim at implementing a self-sovereign solution, based on blockchain, to support the framework for digitally-signed qualifications developed by DG EMPL in the context of the project to revamp Europass. As the goal of this framework is not only create a proof of origin for the issuers of the qualifications, but define as well which kind of qualifications can issue each of them, Blockchain technology can also help in providing a decentralized and transparent register of issuers' capabilities.

1.7.3 OBJECTIVES

This action aims to provide support to identifying the innovation potential and framing conditions of emerging disruptive technologies such as Blockchain and Distributed Ledger Technologies, AI, and IoT related infrastructures, or technological solutions and platforms already mature in the private sector such as APIs, so to better assess their impact in terms of more efficient and improved service delivery, improved interaction between governments and social and economic benefits.

Specifically, the action has the following objectives:

³⁶ The once-only principle aims reducing administrative burdens in the EU Member States, as exchanging information that has already been collected is cheaper and less burdensome than collecting and storing it repeatedly

- Provide a state of play at EU level of the usage and implementation of emerging disruptive digital technologies in the public sector, to improve public service delivery productivity and quality, while facilitating broader public administration reforms, illustrating the benefits and transformative potential of the combination of diverse technological solutions in a specific local digital social innovation ecosystem at various governance levels. This state of play may look in particular at gathering information on all relevant EU Member States' national, regional and local initiatives of digital innovation in the public sector, including information on how public administrations are using and/or plan to use Blockchain/Distributed Ledger Technologies and AI in their work at all levels (national, regional, local).
- Identify key drivers and major bottlenecks that prevent the full use of emerging disruptive digital technologies in the public sector and their integration in public administration governance processes and policy-making mechanisms, hampering the EU's potential to deliver high quality digital public services with specific respect to interoperability issues at all levels (i.e. technological, legal, organizational and semantic),
- Outline recommendations for EU institutions and Public Administrations to set up assessment workflows that facilitate decision-making on technological evolution of public service provision. This includes advising on future pilot projects where both technological as well as policy measures could be tested and so transformative impacts can be both qualified and quantified. Among others, these pilots should help to i) identify public service domains where a technological solution may bring socio-economic value, ii) evaluate techno-policy impacts and feasibility and iii) identify adaptive measures required to integrate the combination of emerging disruptive technologies into traditional technological systems and governance processes. These recommendations would build upon synergies with the EU-wide network of Digital Innovation Hubs and will investigate means to integrate policy labs in the innovation cycle to facilitate timely policy awareness³⁷.
- Develop a first pilot implementing blockchain technology in a context that could be scaled and replicated in other contexts.

³⁷ The EU-wide network of Digital Innovation Hubs are one of the key elements of the Digitising European Industry strategy and shall '*ensure the digital transformation of public administration and public services and their EU-wide interoperability and facilitate access to technology and knowhow for all businesses, notably SMEs; acting as 'one-stop shops' for small and medium-sized enterprises and public administrations, providing access to technological expertise and experimentation facilities, as well as advice to better assess the business case of digital transformation projects*'.

- Develop a second blockchain pilot, reusing the outcome of the first one, in a more specific context but with a higher impact in terms of reusability and the actors involved, which will include not only Member States, but educational organizations and citizens.

1.7.4 SCOPE

The scope of the action will be the following:

- Create a map of initiatives in Member States (at local, regional and national level) fostering Digital Innovation in Public Services, with specific focus on the usage and implementation of emerging disruptive digital technologies to improve public service delivery productivity and quality, while facilitating broader public administration reforms;
- Define the factors that may affect the success and failure of digital government transformation, including the technology, environment and organisational/managerial aspects, and their interrelation, and the direct and indirect effects of each of them on the development of Digital Government, looking in particular at the interoperability issues concerning the free flow of data, restrictions on data localisation, access to and transfer of non-personal machine-generated data, liability and portability of non-personal data, etc.
- Assess the added-value of adoption of emerging disruptive digital technologies usage in Public Administration and their impact in terms of service delivery, productivity gains and quality, but also with respect to increased trust and security, due to effective modernisation of public authorities to meet citizens' expectation regarding service provision, transparency, accessibility, openness, accountability and user centricity, as well as the conditions for developing an ecosystem to nurture such digital transformation process, ensuring the interoperability of technological infrastructure and governance procedures to facilitate cross-border operational cooperation of public sector organisations and to further develop an integrated EU market.
- Have a decentralized trusted repository that contains the relevant information to identify organizations capable of issuing professional and/or academic qualifications and the type of qualifications they are capable to issue.
- 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:

- A production ready platform for blockchain services for interoperability between the EU institutions, The Member States, and the European citizens.

1.7.5 ACTION PRIORITY

New technologies such as AI and 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. In particular, 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. As the market for possible adoption of this technology is evolving at a fast pace, the EU needs to be prepared to tackle emerging challenges and grasp the opportunities brought about by its use 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> • <i>any other EU policy/initiative having interoperability requirements?</i> 	<p>The action will identify interoperability issues in a number of technologies to be used in the GovTech sector at an early stage to ensure scaling. A number of pilots and testbeds will allow to assess interoperability aspects of possible solutions and ultimately its feasibility.</p> <p>When identifying solutions, particular care will be taken to follow the recommendation of the following principles of the EIF: openness, technological neutrality and data portability and user-centricity.</p>

Question	Answer
	<p>From the Interoperability Action Plan, this</p> <p>11. Identify or introduce means of user engagement in the development of digital public services.</p> <p>1. Identify and liaise with other relevant policies and their governance structures at EU and national levels (including the sectoral committees).</p> <p>The Blockchain pilots will help in the setup of an EU cross-border Blockchain network where multiple use cases can be implemented. Additionally, the second pilot focuses on providing an interoperable solution, compliant to eIDAS and GDPR, to provide integrity and authenticity to the qualifications standard defined by DG EMPL in the context of the Europass revamp.</p>
<p><i>Does the proposal fulfil an interoperability need for which no other alternative action/solution is available?</i></p>	<p>One of the core objectives of the action is to tackle possible interoperability barriers at the earliest possible stage.</p> <p>Blockchain pilots do, especially the one for digitally-signed qualifications. Even if there are other ways to sign, e.g. using electronic seals and qualified certificates, there is currently no way to automatically verify cross-borders if the issuing organization is an educational</p>

Question	Answer
	institution capable of issuing a specific type of qualification (e.g. official diploma, professional certificate, etc.). With this initiative the information will be transparent and interoperable between all parties.

1.7.5.2 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>	The studies will propose a number of testbeds pilots that could be scaled across different sectors or combining data from sectors.
<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.

1.7.5.3 Cross-border

Question	Answer
<i>Will the proposal, once completed, be useful from the interoperability point of view and used by public administrations of three (3) or more EU Members States? Detail your answer for each of the concerned Member State.</i>	<p>The studies will have as one of the main objectives to identify and propose pilots and testbeds that will be by essence cross-border, thus involving a number of EU countries.</p> <p>The Blockchain solutions will be</p>

Question	Answer
	available to ALL Member States, who are welcomed to join the EU Blockchain network to increase the network trust and, 1) enhance the security of their information (notarization pilot), 2) ease the verification of digitally-signed diplomas. The first milestone will be end of 2018 when the notarization pilot should be ready to accept new Member States. The second pilot should be ready to accept participants by the end of 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>	The pace and evolution of technological innovation can surpass the speed at which government can absorb them. Uncoordinated development of pilots and implementation in MS can lead to interoperability issues that could be detrimental to EU public services. Blockchain is a new technology with a relevant potential for the interaction

Question	Answer
	<p>between the EU institutions, the Member States and the citizens. Exploring the implementation of self-sovereign identity concept in initiatives as the pilot on digitally-signed qualifications is an opportunity to set-up legislation activities, such as in extending the trust service providers role in the eIDAS regulation, but also to re-think on the once-only principle, TOOP³⁸, from a different perspective. As the market is evolving at a fast pace the European Union needs to be prepared to tackle this urgently.</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>ISA² is currently the only programme able to tackle interoperability issues the recent technological innovations in their use in governmental context.</p>

1.7.5.5 Reusability of action's outputs

<p>Name of reusable solution to be produced (for new proposals) or produced (for existing actions)</p>	<p>Recommendations on the impact of technological innovations with strong potential for the Digital Transformation of government.</p>
<p>Description</p>	<p>The proposal will provide a knowledge base and inventory of use cases on the usage of innovative disruptive technologies and recommendations for their use to support Digital Government transformation based on analysis of their impact on public administrations in their interactions with citizens and businesses.</p>

³⁸ The European Commission launched the Once-Only Principle Project (TOOP) on 1st January 2017.

Reference	
Target release date / Status	Q2 2019
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)	Knowledge Map of innovative technological solutions and applications for Public Administration.
Description	The analysis will provide a Knowledge Map of actions implemented by Public Administrations using emerging disruptive technologies in all Member States developing and applying a methodological approach to identify innovative solutions based on technology assessment principles. This activity shall be conducted in collaboration with ongoing EU initiatives and projects such as the Digital Innovation Hubs ³⁹ , the H2020 Support Action Big Policy Canvas ⁴⁰ , (among others) and prospects emerging from digital social innovation research and initiatives as well as prospective analysis that can be conducted within the scope of the JRC EU Policy Lab.
Reference	https://ec.europa.eu/jrc/en/iesi
Target release date / Status	Q4 2019
Critical part of target user base	Any public administration, Member States CIOs,

³⁹ <http://s3platform.jrc.ec.europa.eu/digital-innovation-hubs>

⁴⁰ <https://www.bigpolicycanvas.eu>

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)	Study on Artificial Intelligence use and impact on Government operations.
Description	The study will provide a state of play of the use and added value of AI tools in government supporting governance and public service delivery. It will also provide a basic framework for the use of AI in government, with guidelines and an implementation roadmap, based on best practices. It will also provide opportunities for further development of AI solutions in government and how these opportunities can be fulfilled (including identification of target applications, analysis of the re-use potential of best practice solutions, analysis of technology directions, assessment of constraints and enablers, recommendations on next steps, including collaboration opportunities) This study shall be linked to JRC activities on monitoring the use and impact of AI in the public sector in the EU currently under definition.
Reference	https://ec.europa.eu/digital-single-market/en/news/communication-artificial-intelligence-europe
Target release date / Status	Q4 2019
Critical part of target user base	Any public administration, Member States CIOs,
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)	Technological pilot(s)/testbed(s)
Description	<p>The proposed pilot(s) will be designed to facilitate the evaluation of impacts and feasibility of technological solutions in public service provision, and to identify adaptive measures required to integrate the combination of emerging disruptive technologies into traditional technological systems and governance processes.</p> <p>An example could be a pilot on the use of Application Programming Interface (APIs) in government data/services provision and the linkages with AI introduction strategies. This pilot would have the am to test interoperability aspects of such solutions and assess the potential for scalability / transferability at the EU level.</p>
Reference	JRC Report on Blockchain (to be published)
Target release date / Status	Q4 2019
Critical part of target user base	Any public administration, Member States CIOs,
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)	EU BLOCKCHAIN building blocks
Description	<p>Blockchain building blocks will be offered in the form of guidelines and containers to make the process of joining an EU Blockchain network straight-forward.</p> <p>The guidelines will cover all possible scenarios: public, private, and permissioned or permission-less blockchains, and several Blockchain protocols (e.g. Ethereum, Steem, etc.).</p> <p>The containers will help in reducing the time to deploy and join the network</p> <p>Additional software, APIs and documentation will be also delivered related to the two proposed pilot projects, the notarization pilot, and the digitally-signed qualifications pilot (in this case, some software and documentation will also come from the Europass project).</p>
Reference	
Target release date / Status	End of 2019
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 action will reuse the results of studies performed under the ELISE action and any other studies that

Question	Answer
	<p>contribute.</p> <p>The studies will also liaise with a number of initiatives such as the EU Observatory on Blockchain and the 'EU Observatory on Artificial Intelligence' for example.</p> <p>Any testbed or piloting will make reuse of existing solutions (e.g. Core vocabularies), either from the Building Blocks from CEF or ISA² (eDelivery, eTrustex). Any architectural design will have to follow the EIRA structure.</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>n.a.</p>

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 action will contribute to the third pillar of the DSM on Economy and Society and more specifically on the</p> <ul style="list-style-type: none"> • definition of priorities for standards and interoperability in emerging technologies. • support of an inclusive digital society <p>The action has also a special focus on the user-centricity principles annexed to the Tallinn declaration.</p>

1.7.6 PROBLEM STATEMENT

The problem of	low uptake of innovative technologies in Public Administration and Governments
affects	the delivery of public services
the impact of which is	inefficient Public Services towards the citizens and Businesses
a successful solution would be	the identification game changing technologies that could have a high impact.

The problem of	A fast development of new technologies developing at a rapid pace without interoperability considerations
affects	Public Administration (procurers), citizens
the impact of which is	fragmentation and unscaling of solutions using new technologies due to the lack of interoperability
a successful solution would be	identify at an early stage interoperability issues in new technologies to liaise with

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 (e.g. this one) and that a common EU Blockchain network (even supporting several Blockchain protocols) is built capable of fulfilling 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	Most off the ICT enabled innovations are known	Probably 2020	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 2020	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 improved to better service delivery and by extension novel ways to interact with their administration.	Probably 2020	All European Citizens and local administration as well.
(-) Integration or usage cost	Proposal of EU cross-border and cross-sector pilots can lead to shared infrastructure and reusable services.	Probably 2020	Local administrations of EU

Impact	Why will this impact occur?	By when?	Beneficiaries
(+) Savings in money	The notary pilot will help in reducing the amount of money required in audits, as public services information systems can benefit from secure and immutable logs and audit trails. And the digitally-signed qualifications pilot will help in moving to a paper-less situation, with much trusted information, which will be machine-processable, requiring less resources	Probably 2020	All administrations (EU, National, local), educational institutions, private organizations, employers, citizens
(+) Savings in time	Because of previous gain, less time needs to be spent by Member States, European citizens in finding and verifying the relevant information. Auditing machine-processable information will be much easier and bring huge time savings.	Probably 2020	All administrations (EU, National, local), educational institutions, private organizations, employers, citizens
(+) Better interoperability and quality of digital public services	The digitally-signed qualifications pilot will help in increasing the new qualifications standard trust, adding integrity, but especially authenticity, and will help to verify cross-borders the identity of the educational	Probably 2020	All administrations (EU, National, local), educational institutions, private organizations, employers,

Impact	Why will this impact occur?	By when?	Beneficiaries
	institution and its capabilities. All this in a common Blockchain accessible to all European citizens, which will have all access to the same information.		citizens
(-) Integration or usage cost	Local infrastructure needs to be set up by the organizations, most likely Member States and Trust Service Providers running Blockchain nodes, that will be responsible of recording blocks. In addition, the maintenance of the system needs to be foreseen but will be lower than the gains.	Probably 2020	Member States, European Commission, Trust Service Providers
(+) Fraud and trust	The solution will help in reducing fraud, and the trust on the information backed by the Blockchain network will increase.	Probably 2020	All administrations (EU, National, local), educational institutions, private organizations, employers, citizens

1.7.7.2 User-centricity

Most of the emerging technological innovations addressed in this action are pushing the interactions between humans and machines to more simple and intuitive solutions and approaches, and have therefore user-centricity aspects as a big component of their success.

For this reason being the focus of this action on public service delivery, it is expected to take into account and contribute to further improve the user-centricity principles as annexed to the Tallinn Declaration, when drafting recommendations or proposing pilots.

Another user-centric aspect that will be considered as part of this action is the possible redesign of approaches during policy formulation and evaluation phases, by enabling new ways of interaction between citizens and their governments.

To enhance the impact of the action it is envisaged to work in collaboration with an Expert Group focused on Innovation issues, and disseminate results to relevant formal groups of the EC and other relevant organisations as it may be appropriate.

1.7.8 EXPECTED MAJOR OUTPUTS

Output name	EU BLOCKCHAIN building blocks
Description	A common EU Blockchain network (even capable of supporting more than one Blockchain protocol) that offers blockchain services to all European administrations and citizens
Reference	
Target release date / Status	End of 2019/in preparation

Output name	EU BLOCKCHAIN 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 and will even help to discover possible needed legislative changes in regulations such as eIDAS, or the redefinition of EU actions such as TOOP in EU eGovernment Action Plan 2016-2020.
Reference	
Target release date / Status	End of 2020

1.7.9 ORGANISATIONAL APPROACH

1.7.9.1 Expected stakeholders and their representatives

Stakeholders	Representatives	Involvement in the action
Member States, Industry, Citizens	MS representatives, experts, civil society through an Expert Group	Product owner
European Commission	JRC, DIGIT	Project owner
European Commission	CNECT (Digital Innovation and Blockchain unit, F3, and eGovernment & Trust unit, H4)	Associated
United Nations	United Nations Department of Economic and Social Affairs, Division for Public Institutions and Digital Government (UNDESA)	Associated
OECD	Directorate for Public Governance – Digital Government Team and Observatory of Public Sector Innovation (OPSI).	
European Commission	EMPL (Skills and Qualifications unit, E2)	Associated
Educational Institutions	Educational Institutions representatives	Business users / Beneficiaries
Trust Service Providers	Several accredited (Qualified) Trust Service Providers under eIDAS regulation	Business users
All citizens	A group of citizens representing the user community of Europass	Business Users / Beneficiaries

1.7.9.2 Identified user groups

The user groups will be largely composed of the stakeholders but should also include end-users being not only the recipients of the public services but as well as the public servants in particular for any piloting activity. This involvement may be facilitated by the development of an ad hoc online community linked to Joinup.

For the Blockchain pilots, the end-user group will include also educational Institutions (public or private, issuing official or non-official professional or academic qualifications), accredited (Qualified) and European Citizens.

1.7.9.3 Communication and dissemination plan

The project will use the common ISA² website and social communication channel for communicating with the general public and promote their most salient results.

The studies will be published either as JRC Technical Reports or Science for Policy Reports which are published by the Publication Office of the EC.

An important part of user engagement activities will take place on the Joinup platform, which will address a more specialised audience using the features offered by the platform.

The dissemination of the results will be using all the above channels for greater impact but also through the participation to scientific conferences and policy events addressing Digital Government transformation and public sector innovation in general.

1.7.9.4 Key Performance indicators

Description of the KPI	Target to achieve	Expected time for target
Number of pilots/testbed	1 per year	End of 2020
Number of specific studies (on technology use/assessment)	1 per year	End of 2020
Number of initiatives recorder in the IPS Knowledge base	100 inventory / 50 mapped	End of 2020
Number of participations to events	3 per year	End of 2020
Number of engaged stakeholders and organizations	200	End of 2020
Number of partners joining the 1 st pilot network	2	End of 2018
Number of registered transactions in the 1 st pilot	1000	End of 2018
Number of educational institutions registered in the 2 nd pilot	10	End of 2020
Number of issued qualifications in the 2 nd pilot	100	End of 2020

1.7.9.5 Governance approach

The overall action will be jointly managed by DIGIT. D2, D3 and JRC.B6, JRC.B6 conducting most of the study work as well as the creation of the knowledge base and coordinating the piloting activities, which shall be implemented in collaboration with relevant stakeholders and partners and with the support of external specialised experts (depending on the subject) and to be sub-contracted according to JRC procurement rules.

DIGIT D3 will be in charge of the blockchain pilots with the involvement of DIGIT B4.

Other relevant EC services shall be associated and results may be discussed in related technical committees, working groups or Inter-Service Consultation groups and reported to MS as appropriate.

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)
Initiation	Knowledge base and inventory of use cases on the usage of innovative disruptive technologies and recommendations	200	ISA ²	Q3/2018	Q2/2019

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)
	for their use to support Digital Government transformation				
Execution	Knowledge Map of innovative technological solutions and applications for Public Administration.	200	ISA ²	Q2/2019	Q4/2019
Execution	Study on AI for Government	200	ISA ²	Q2/2019	Q4/2019
Initiation	Development and execution of pilot(s)/testbed(s) on the use of Innovative technologies	100	ISA ²	Q3/2019	Q4/2020
Execution	Study on future technological solutions for innovating public services	100	ISA ²	Q3/2019	Q4/2020
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	500	ISA ² /Other	Q2/2018	Q3/2020

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)
	creation of an EU blockchain infrastructure				
	Design, development and Integration with the notarization network	250	ISA ² /Other	Q2/2018	Q4/2018
	Design and development of digitally-signed qualifications blockchain-based building blocks	500	ISA ² /Other	Q1/2019	Q4/2019
	Integration with the digitally- signed qualifications building blocks	250	ISA ² /Other	Q1/2020	Q3/2020
	Dissemination of results	80	ISA ²	Q3/2020	Q3/2020
Closing	Final evaluation	25	ISA ²	Q4/2020	Q4/2020

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	600	
2019	Initiation, planning and Execution	1000	
2020	Initiation, planning and Execution	200	

1.7.12 ANNEX AND REFERENCES

Description	Reference link	Attached document
The European Interoperability Framework	https://ec.europa.eu/isa2/eif_en	
Study Blockchain for eGovernment	To be published as JRC Report	
UN eGovernment Survey 2018	https://publicadministration.un.org/egovkb/en-us/Reports/UN-E-Government-Survey-2018	