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PART 2/2

COMMISSION STAFF WORKING DOCUMENT

Final evaluation of the ISA² programme

Accompanying the document

**REPORT FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT AND
THE COUNCIL**

Results of the final evaluation of the ISA² programme

{COM(2021) 965}

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Glossary

<i>Term or acronym</i>	<i>Meaning or definition</i>
ADMS	Asset description metadata schema
AI	Artificial intelligence
CEF	Connecting Europe Facility
CEPS	Centre for European Policy Studies
CPSV-AP	Core public service vocabulary application profile
DCAT-AP	Data catalogue vocabulary application profile for data portals in Europe
DG	Directorate-General
DG DIGIT	Directorate-General for Informatics
DIGIT.D2	Directorate-General for Informatics, Directorate D Digital Services, Unit D2 Interoperability
DSM	Digital single market
EC	European Commission
EEA	European Economic Area
EIA	European interoperability architecture
EIC/EICart	European interoperability cartography
eIDAS	Electronic identification and trust services
EIF	European interoperability framework
EIRA	European interoperability reference architecture
EIS	European interoperability strategy
ELISE	European location interoperability solutions for e-government
EQ	Evaluation question
ERDF	European Regional Development Fund
ESPD	European Single Procurement Document
EU	European Union

EVM	Earned value management
GDPR	General Data Protection Regulation
Horizon 2020	EU funding programme for research and innovation
IAP	Interoperability action plan (Annex I to the Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: European Interoperability Framework — Implementation Strategy. Interoperability action plan, Brussels, 23.3.2017, COM(2017) 134 final)
ICT	Information and communication technology
IDA	Programme on interchange of data between administrations
IDABC	Programme on interoperable delivery of pan-European eGovernment services to public administrations, businesses and citizens
IMAPS	Interoperability maturity assessment of a public service
Interoperability	As explained in Article 2(1) of the ISA² Decision , ‘interoperability’ means the ability of diverse organisations to interact towards mutually beneficial and agreed common goals. It involves the sharing of information and knowledge between the organisations, through their business processes and by means of the exchange of data between their respective ICT systems.
ISA	Programme on interoperability solutions for European public administrations
ISA ²	Programme on interoperability solutions and common frameworks for European public administrations, businesses and citizens
ISA ² actions webpage	https://ec.europa.eu/isa2/actions_en
ISA ² dashboard	https://ec.europa.eu/isa2/dashboard/
ISA ² decision	L 318/1 Decision (EU) 2015/2240 of the European Parliament and of the Council of 25 November 2015 establishing a programme on interoperability solutions and common frameworks for European public administrations, businesses and citizens (ISA ² programme) as a means for modernising the public sector, Brussels 4.12.2015.

ISA ² proposal	European Commission (2014), Proposal for a Decision of the European Parliament and of the Council establishing a programme on interoperability solutions for European public administrations, businesses and citizens (ISA ²) – Interoperability as a means for modernising the public sector, COM(2014) 357 final.
ISA ² solutions webpage	https://ec.europa.eu/isa2/solutions_en
ISA ² website	https://ec.europa.eu/isa2/isa2_en
ISSG	Inter-Service Steering Group
IT	Information technology
Joinup	Collaborative platform facilitating the sharing and reuse of IT solutions developed for public administrations
NGOs	Non-governmental organisations
NIFs	National interoperability frameworks
NIFO	National interoperability framework observatory
OECD	Organisation for Economic Cooperation and Development
PMKI	Public multilingual knowledge management infrastructure for the digital single market
REFIT	The European Commission's regulatory fitness and performance programme
RegDel	Inter-institutional Register of Delegated Acts
SDG	Single digital gateway
SCM	Standard cost model
SEMIC	The ISA ² programme action that promotes semantic interoperability among EU countries
SPI	Schedule performance index
SRSP	Structural reform support programme
sTESTA	Secure trans-European services for telematics between administrations
TSI	Technical support instrument

Annex 1: Procedural information

1. LEAD DG, DECIDE PLANNING/CWP REFERENCES

DG Informatics (DIGIT), PLAN/2020/7027.

2. ORGANISATION AND TIMING

Following the invitation by the Director-General of DIGIT in July 2020, the first Interservice Steering Group (ISSG) meeting took place on 15 September 2020. Altogether the ISSG met seven times with participants from DG CNECT, DEFIS, DIGIT, ECFIN, EMPL, ENER, ENV, ESTAT, FISMA, GROW, the JRC, JUST, MOVE, NEAR, OP, REFORM, REGIO, RTD, SANTE, SG and TAXUD. The ISSG convened for the last time on 14 September 2021, marking the end of the below evaluation activities:

Period	Activity
June 2020 – October 2020	Onboarding of the external consultants
November 2020 – June 2021: <ul style="list-style-type: none">○ November 2020 – April 2021○ March 2021 – June 2021	Running the evaluation process: <ul style="list-style-type: none">○ Data collection○ Data analysis and synthesis
July 2021 – September 2021	Preparation of the Commission report for interservice consultation and adoption

To the general public, the Commission announced the final evaluation in an [evaluation and fitness check roadmap](#) on 16 October 2020.

3. EXCEPTIONS TO THE BETTER REGULATION GUIDELINES

Not applicable

4. CONSULTATION OF THE RSB (IF APPLICABLE)

Not applicable

5. EVIDENCE, SOURCES AND QUALITY

Evidence & sources

Data have been drawn from two main sources:

1) **Primary data** were collected through the below consultation activities:

Consultation activity	Timeframe
Online kick-off workshop: “How interoperability can achieve seamless data flows and services for the EU’s public sector”. The workshop aimed at raising awareness about the Evaluation of ISA ² , the Evaluation of the EIF and the Impact Assessment of for a Future Interoperability Strategy for the EU’s public sector and engaging stakeholders in the process.	3 December 2020
Targeted online survey: A targeted online survey was administered via EUSurvey and was conducted jointly with two other online surveys dedicated to the evaluation of the EIF and the impact assessment of a future interoperability policy for the EU’s public sector.	19 January 2021 – 7 March 2021 (the surveys remained open after the initial deadline set on 15 February 2021 to accommodate some last-minute requests from stakeholders)
In-depth interviews: Interviews were conducted with selected key stakeholders to collect detailed data and information contributing to the evaluation of ISA ² . The interviews were complemented by expert assessments conducted by the five independent experts who were tasked with completing the questionnaire that served as the basis for the in-depth interviews.	1 February 2021 – 8 March 2021
Public consultation: This activity covered the impact assessment for a future interoperability strategy for the EU’s public sector, with the option for stakeholders to contribute to the evaluations of the EIF and ISA ² as well. The questionnaire dedicated to the ISA ² evaluation was available in English, German, and French, as was the case for the entire public consultation.	1 February 2021 – 26 April 2021 (12 weeks)
Validation workshop: “What are the key achievements and lessons from ISA ² for the future of interoperability in the EU’s public sector?”. This workshop was organised as part of the DigitALL Public Conference marking the end of the ISA ² programme and CEF. The aim of the workshop was to discuss and validate the preliminary findings of the final evaluation of the ISA ² programme, collect further information and additional feedback on the different aspects of the programme, and engage stakeholders in the public consultation.	22 April 2021

2) **Secondary data** were gathered by reviewing:

The annual rolling work programmes of ISA ²
The ISA ² dashboard
The Europa webpages on ISA ² actions and solutions (including the Joinup platform)
Monitoring and evaluation reports prepared as part of the regular monitoring of the programme
Reports on the perceived quality and utility of selected actions and solutions – published in 2021
Overview of communication activities of events organised by ISA ² and events in which ISA ² was represented

Lists of participants in ISA ² Committee meetings and in ISA ² Coordination Group meetings
Studies, reports, presentations, workshop summaries and brochures related to the ISA ² actions and solutions
Relevant policy documents and literature

Quality

To support the ISA² final evaluation, in September 2020 the Commission tasked the Centre for European Policy Studies (CEPS) with delivering an independent evaluation study by June 2021. The ISSG members closely monitored the work of CEPS. They discussed the consultant's various deliverables at the ISSG meetings and also commented on the documents in writing. The ISSG accepted CEPS [final evaluation study](#) after the 6th meeting of the ISSG on 25 June 2021. This final 'sign off' by the ISSG also built on the quality assessment results, which concluded that the external contractor's study and work met the required quality standards.

Annex 2: Synopsis report of the consultation activities

Introduction

Interoperability is a key enabler of any digital transformation, as it allows organisations to interact and achieve mutually beneficial goals. Between 2016 and 2020, the ISA² programme (Interoperability Solutions for European Public Administrations, Businesses and Citizens) – through its actions – supported the development of digital solutions that enable public administrations, businesses and citizens in Europe to benefit from interoperable cross-border and cross-sector public services.

During the final evaluation of the ISA² programme, and in line with the consultation strategy, consultation activities were carried out to collect information, views and opinions from the relevant stakeholders on the programme's performance by considering seven evaluation criteria:

- **Relevance** – the alignment between the programme's objectives and the current needs and problems experienced by stakeholders;
- **Effectiveness** – the extent to which the programme has achieved its objectives;
- **Efficiency** – the extent to which the programme's objectives are achieved at a minimum cost;
- **Coherence** – the alignment between the programme and comparable EU initiatives as well as the overall EU policy framework;
- **EU added value** - the additional impacts generated by the programme, as opposed to leaving the subject matter in the hands of EU countries;
- **Utility** – the extent to which the programme meets stakeholders' needs; and
- **Sustainability** – the likelihood that the programme's results will last beyond its completion.

Types of consultation activities conducted

To collect the necessary primary information and data from the relevant stakeholders to feed into the ISA² evaluation, the following **consultation activities**¹ were performed:

- The **online kick-off workshop** “How interoperability can achieve seamless data flows and services for the EU's public sector”, conducted on 3 December 2020 and aimed at raising awareness about the ISA² evaluation and engaging stakeholders in the process.

¹ The evaluation process of the ISA² programme ran simultaneously with the evaluation of the European Interoperability Framework and the impact assessment of a future interoperability policy for the EU's public sector. Given the important synergies between the two evaluations and the impact assessment, a joint consultation strategy for the targeted and public consultations was proposed in order to ensure coordination and the best allocation of resources for collecting primary data from the stakeholders.

- An **online survey** (19 January – 7 March 2021²), targeting specific stakeholder groups.
- **In-depth interviews** (1 February – 8 March 2021) with 9 selected stakeholders to collect detailed data and information from key stakeholders contributing to the evaluation. Expert assessments complemented the interviews conducted by the five independent experts who were tasked with completing the questionnaire that served as the basis for the in-depth interviews.
- A 12-week long **public consultation** (1 February – 26 April 2021), which was available in English, German, and French.
- The **validation workshop** “What are the key achievements and lessons from ISA² for the future of interoperability in the EU’s public sector?”, held on 22 April 2021, allowed to discuss and validate the preliminary findings of the final evaluation of the ISA² programme and to collect further information and additional feedback on the different aspects of the programme.

In addition to the above-listed consultation activities, two stakeholders provided [feedback](#) on the **ISA² evaluation roadmap** in November 2020. One contribution emphasised the need to bring interoperable solutions and the needed skills for their reuse to the local level. The other one called for promoting the use of open-source software and open standards.

Methodology and tools used to process data

The consultation questionnaires were mainly based on ‘Likert scale’ questions, meaning that respondents were asked to give their opinion on a scale from (1) to (5) or from (1) to (4), depending on the type of question:

- (1) not at all; (2) to a limited extent; (3) to some extent; (4) to a great extent; or (5) completely;
- (1) definitely would not; (2) probably would not; (3) probably would; (4) definitely would.

This approach helped the comparison of answers between respondents. In addition to the Likert scale questions, a number of open-ended questions were included to gather more in-depth information from consulted stakeholders. In addition, the interviews allowed more detailed feedback to be collected.

Consulted stakeholder groups

The consultation activities targeted several groups of stakeholders, i.e. stakeholders of the ISA² programme as well as stakeholders of public sector interoperability. The following grouping of stakeholders was used to analyse the feedback to the consultation activities for the ISA² evaluation:

² The official deadline for contributing to the online surveys was initially set on 15 February 2021. The deadline was extended to 7 March 2021 to allow for more contributions.

- Experts and academia (including standardisation organisations and the independent expert assessments);
- ISA² action owners (Commission representatives in charge of specific actions defined under ISA²);
- ISA² solution users (both at EU and national level);
- National and sub-national interoperability actors (national and sub-national public authorities with good knowledge of the programme);
- Programme governance (Commission and EU countries representatives who were directly involved in the governance of ISA²);
- Stakeholders involved in the implementation of linked EU policies (Commission representatives who are in charge of EU initiatives potentially linked to ISA²);
- Wider public (including citizens, businesses, NGOs, and respondents from public authorities with a more limited knowledge of the ISA² programme).

With **a total of 102 respondents**, the consultation activities reached all stakeholders listed above. Table 7 presents the breakdown of responses by stakeholder groups and consultation activity.

Table 7 Overview of respondents engaged by the consultation activities by stakeholder group

Stakeholders	In-depth interview	Online survey	Public consultation	TOTAL
Experts and academia	5*	8	-	13
ISA ² action owners	3	12	-	15
ISA ² solution users	1	4	-	5
National/sub-national public authorities	-	10	5	15
Programme governance	2**	7		9
Stakeholders involved in the implementation of linked EU policies/initiatives	3	4	2	9
Wider public	***	***	36	36
TOTAL	14	45	43	102

* The five in-depth interviews conducted with the group of experts and academia correspond to the five expert assessments.

** One follow-up interview to the targeted online survey was conducted.

*** Invited to participate in the public consultation only.

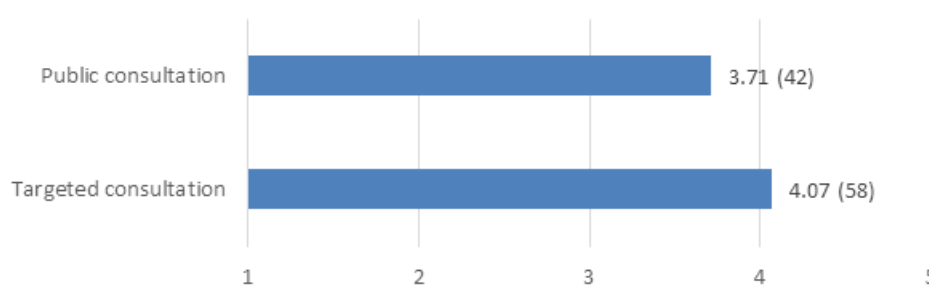
Source: [CEPS final study](#).

In what follows, the feedback received during the consultation activities are presented according to the type of consultation, i.e. public versus targeted consultation. As to the latter, feedback received during in-depth interviews are grouped together with those from the targeted online survey since both consultation activities were based on the same questionnaire, only more qualitative feedback was sought in the in-depth interviews.

Characteristics of respondents

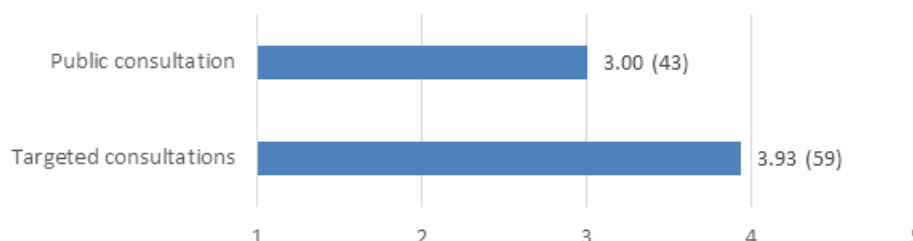
Overall, the consulted respondents claimed to have a high level of knowledge both when it comes to digital public services and interoperability (see Figure 27) and the ISA² programme (see Figure 28). As to digital public services and interoperability, ISA² solution users and the wider public have a slightly lower level of knowledge of the field, while experts and academia have the greatest level of knowledge among the stakeholders' groups. Similarly, most respondents are generally familiar to some extent or to a great extent with the ISA² programme, with the wider public scoring lowest among the stakeholders.

Figure 27 Knowledge of digital public services and interoperability (breakdown by type of consultation; average score and number of respondents)



Score: (1) not at all; (2) to a limited extent; (3) to some extent; (4) to a great extent; or (5) completely.
Note: Averages do not account for respondents answering “don’t know/no opinion” (DK/NO).
Source: [CEPS final study](#).

Figure 28 Knowledge of ISA² (breakdown by type of consultation; average score and number of respondents)

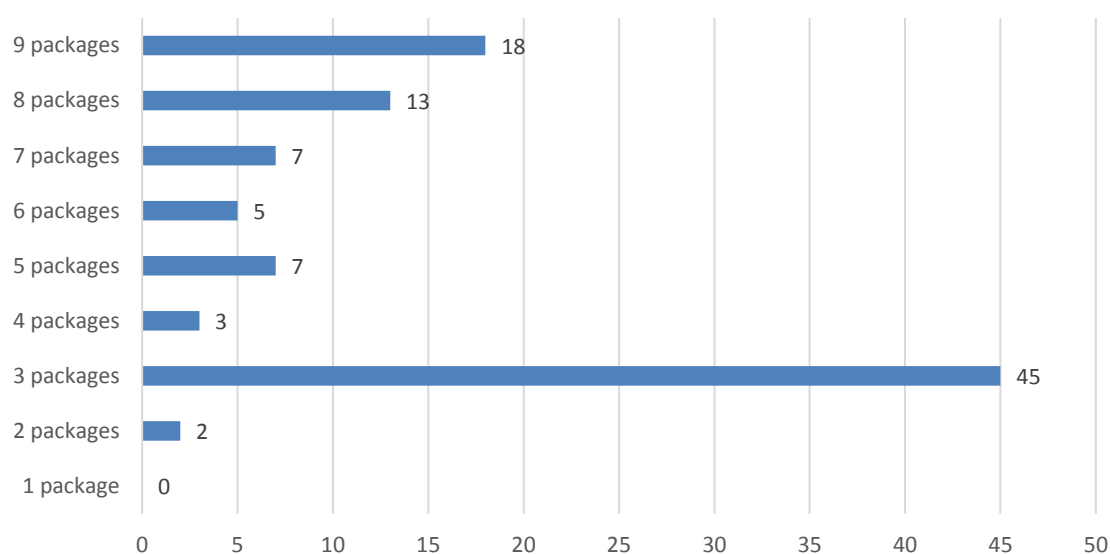


Score: (1) not at all; (2) to a limited extent; (3) to some extent; (4) to a great extent; or (5) completely.
Note: Averages do not account for respondents answering “don’t know/no opinion” (DK/NO).
Source: [CEPS final study](#).

Finally, almost half of the total respondents (45) are familiar with at least three packages of ISA² (see Figure 29)³. Considering the breadth of actions and the variety of stakeholders of the programme, it is natural that some of the consulted stakeholders may be less familiar with some areas of the programme and more familiar with those with which they have interacted more closely.

³ The ISA² actions are grouped in nine work packages defined in the annual rolling work programmes. See: https://ec.europa.eu/isa2/library/isaisa%C2%B2-work-programme_en

Figure 29 Knowledge of ISA² action packages (number of respondents familiar with a given number of packages)



Note: 1) Stakeholders were considered to be familiar with a package if they indicated that they had knowledge of the package “to some extent”, “to a high extent” or “to the fullest extent”. 2) Total number of respondents: 100

Source: [CEPS final study](#).

In terms of geographic distribution, the targeted consultation reflects inputs from both the EU and national levels; representatives from the relevant EU institutions, as well as representatives from EU countries⁴.

Results

The consultation activities revealed a **general consensus among the different stakeholder groups** consulted and confirmed that **ISA² performed well in all the seven evaluation criteria under investigation**. The feedback from the consultation activities is summarised as follows:

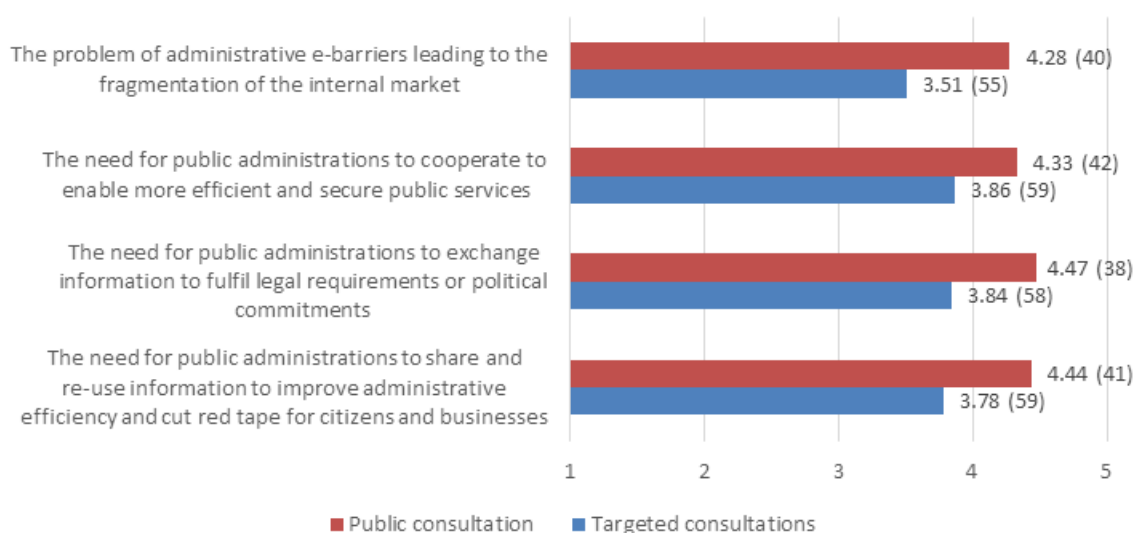
Relevance

The ISA² programme is deemed relevant by consulted stakeholders as it has contributed to addressing public administrations’ needs to cooperate and enable more efficient and secure public service, to exchange information in order to fulfil legal requirements or political commitments, and to share and re-use information to improve administrative efficiency and cut red tape. In particular, the wider public, consulted through the public consultation, considers that ISA² has contributed to a great extent to existing needs and problems. By contrast, targeted respondents identify a more limited contribution (see Figure 30). The feedback also confirms that such needs and problems

⁴ Feedback received from the representatives at the national and regional levels covers the following Member States: Austria, Belgium, Cyprus, Denmark, Finland, Greece, Hungary, Italy, Malta, the Netherlands, Spain, and Sweden.

are still an issue for interoperability in the EU's public sector. Not surprisingly, respondents to the targeted consultation consider the underlying needs and problems to be relatively more important for European public administrations than respondents to the public consultation.

Figure 30 Extent to which achieving ISA² objectives contribute to addressing the needs and problems originally addressed by the programme (breakdown by type of consultation; average score and number of respondents)



Score: (1) not at all; (2) to a limited extent; (3) to some extent; (4) to a great extent; or (5) completely.

Note: Averages do not account for respondents answering “don’t know/no opinion” (DK/NO).

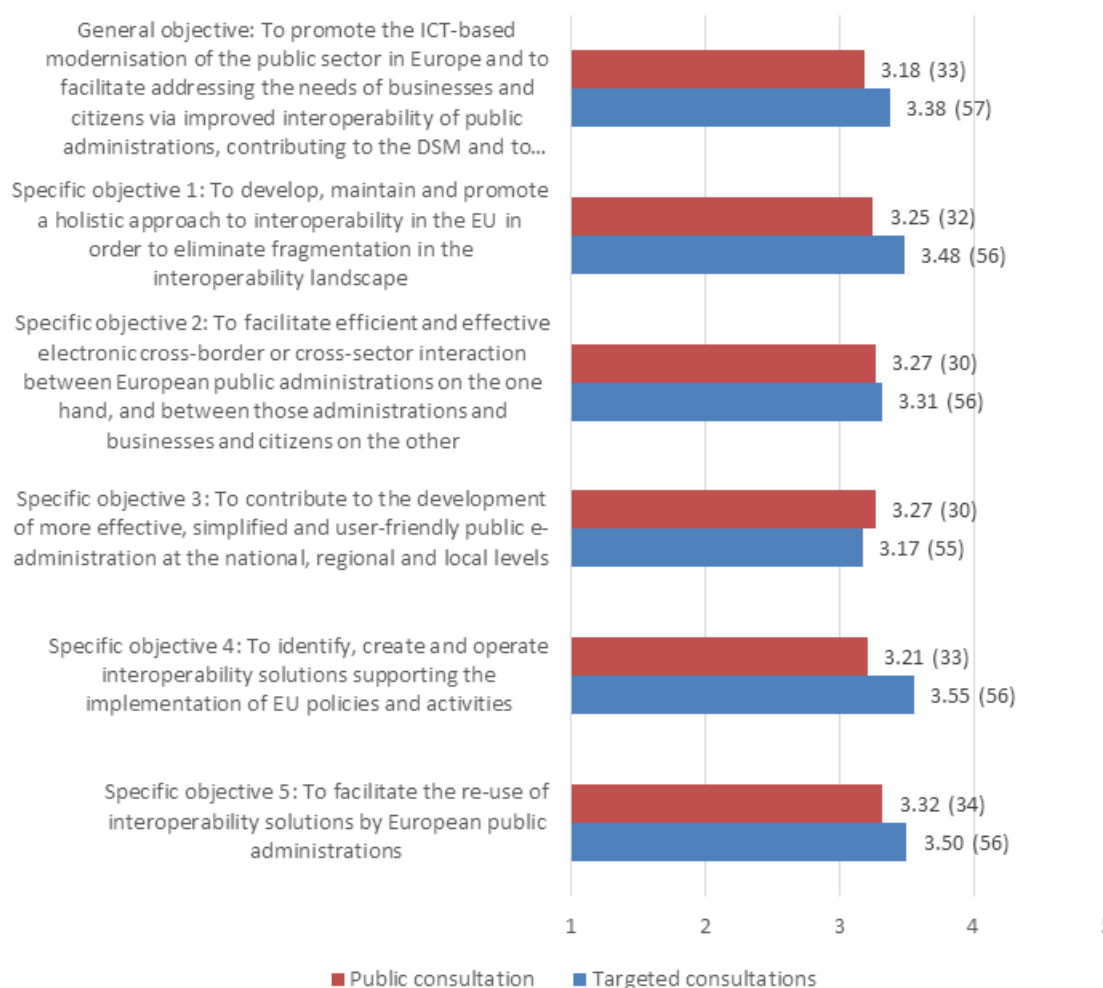
Source: [CEPS final study](#).

Consulted stakeholders emphasised additional needs: the need for coordination and interoperable digital solutions deriving from or exacerbated by the COVID-19 pandemic, the need for digital skills, the need to exchange best practices, the need for feedback loop with citizens to ensure the good functioning of the digital tools and solutions, and the need for consistent governance of interoperability initiatives.

Effectiveness

ISA² is considered **effective** in creating and operating interoperability solutions for the implementation of EU policies and actions and facilitating the re-use of such solutions. The programme has also contributed to promoting a holistic approach to interoperability in the EU. When it comes to these aspects, Figure 31 shows that respondents to the targeted consultation are overall slightly more optimistic about the results of the ISA² solutions in achieving the programme’s objectives.

Figure 31 Extent to which ISA² solutions contributed to achieving the programme's objectives (breakdown by type of consultation; average score and number of respondents)



Score: (1) not at all; (2) to a limited extent; (3) to some extent; (4) to a great extent; or (5) completely.

Note: Averages do not account for respondents answering "don't know/no opinion" (DK/NO).

Source: [CEPS final study](#).

Nonetheless, respondents placed particular emphasis on the fact that the re-use of interoperability solutions could be further enhanced, building on the facilitating role played by ISA². In addition, results have been **achieved only to a limited extent** or to some extent when it comes to reducing the cost and administrative burden of cross-border interaction, removing the administrative e-barriers and contributing to the swift implementation of ICT systems supporting EU legislation.

Several respondents emphasised that **concentrating the efforts on a more limited set of actions and solutions could lead to enhanced achievements**.

External factors could improve but also jeopardise the way in which the programme achieves its objectives and delivers its results. The vast majority of respondents confirmed that the **calls for common standards and frameworks from public**

administrations are important external factors contributing to the performance of the programme. In contrast, **institutional complexity** in the form of multiple layers of governance and differences between national public administrations from various EU countries and local public administrations within EU countries could lead to coordination issues that hamper cross-border and cross-sectoral interoperability.

Efficiency

Action owners and stakeholders involved in the governance of the programme provided feedback regarding the efficiency of the process for selecting actions funded by ISA². The **selection process of ISA² actions** is deemed to have been **relatively efficient and fit for purpose**. Relying on an online platform have helped streamline the process. Respondents also emphasised that one of the positive aspects was that EU countries could submit proposals, alongside European Commission services. Nevertheless, only a limited number of proposals were received from the EU countries.

Furthermore, respondents from the same categories provided information regarding the amount of **time they spent on preparing and submitting a proposal** for an action to be considered by the ISA² programme. This time varied from two to three person-days up to 25 person-days to complete the proposal. The differences in the reported time required reflect the types of actions put forward such as new actions or previous actions for which one can rely on previously accumulated experience.

Coherence

The consultation activities focused on both the **internal coherence** of the programme, i.e. the synergies or overlaps existing between the ISA² actions, and its **external coherence**, namely the synergies or overlaps between ISA² and other EU initiatives, policies, or programmes.

Internal coherence

In terms of **internal coherence**, there are synergies between the actions to some extent and limited overlaps, as confirmed by stakeholders involved in the targeted consultation. However, respondents to the targeted consultation also emphasised that the fragmentation of the programme in multiple different actions makes it difficult to fully tap into all synergies.

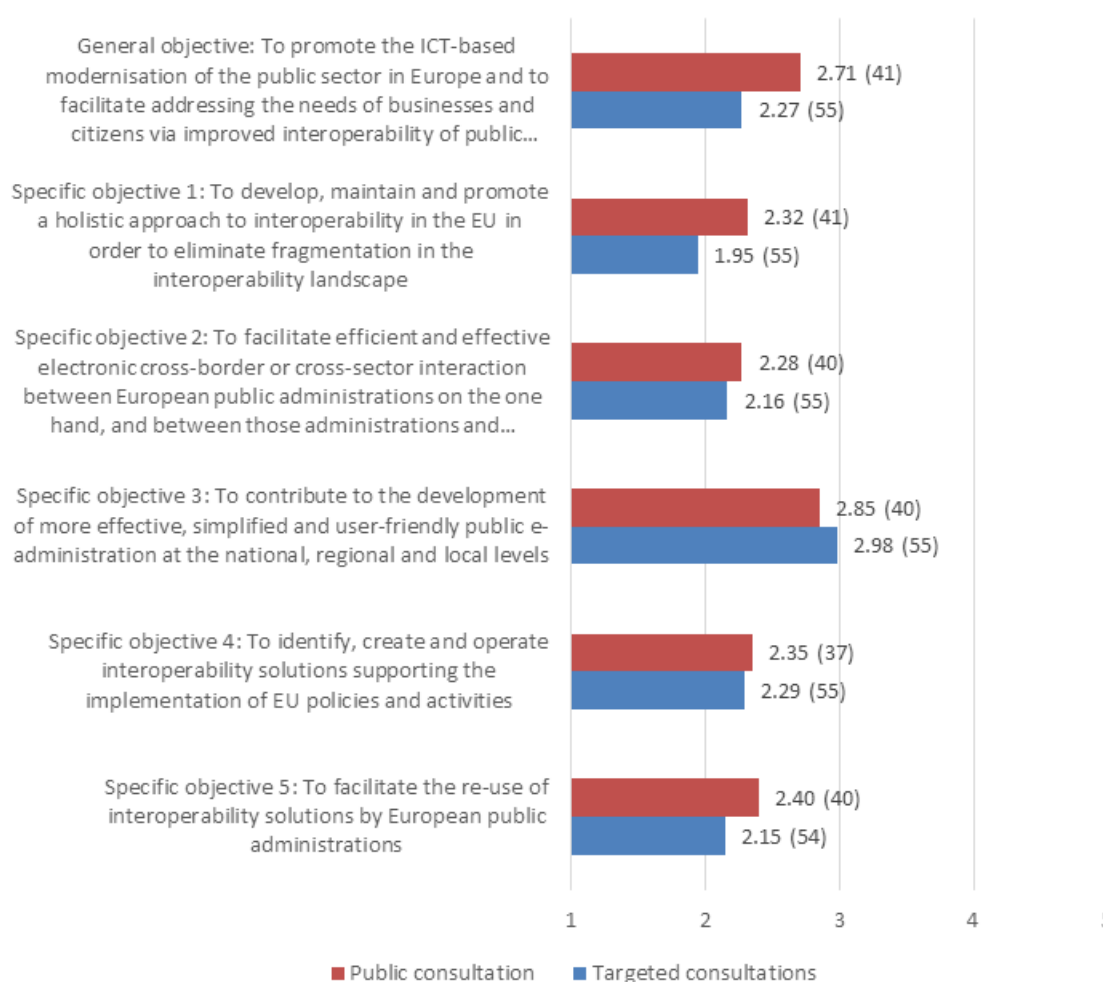
External coherence

In terms of **external coherence**, consulted stakeholders noted that ISA² is particularly synergetic with CEF. This result was consistent across the targeted and public consultations. Participants to the targeted consultation also emphasised strong synergies between ISA² and both the [European Digital Strategy](#) and the [European Data Strategy](#).

EU added value

Many respondents confirmed that national or sub-national initiatives alone would have brought only limited contributions towards most of the objectives of ISA², suggesting the **EU added value of the programme** (see Figure 32). Overall, stakeholders participating in the targeted consultation were less convinced of the ability of national or sub-national interventions to achieve ISA² objectives in the absence of the programme.

Figure 32 Extent to which national or sub-national interventions would be able to achieve the ISA² objectives in the absence of the programme (breakdown by type of consultation; average score and number of respondents)



Score: (1) not at all; (2) to a limited extent; (3) to some extent; (4) to a great extent; or (5) completely.

Note: Averages do not account for respondents answering “don’t know/no opinion” (DK/NO).

Source: [CEPS final study](#).

Respondents agreed that ISA² can probably achieve its objectives at costs that are lower than the costs of national or sub-national interventions. It is also important to mention that consulted stakeholders considered that ISA² has contributed to some extent to enhancing cross-border interoperability. While noting the achievements of the programme, stakeholders confirmed that other EU instruments have complemented the

programme (e.g., [the Open Data Directive](#)⁵) and that achieving cross-border interoperability depends on the adoption of solutions by the relevant public administrations.

Utility

Stakeholders involved in the targeted consultation pointed out that ISA² solutions have contributed to some extent to addressing the main needs and problems originally identified by the programme. They were slightly less positive when it comes to the additional needs and problems experienced by stakeholders.

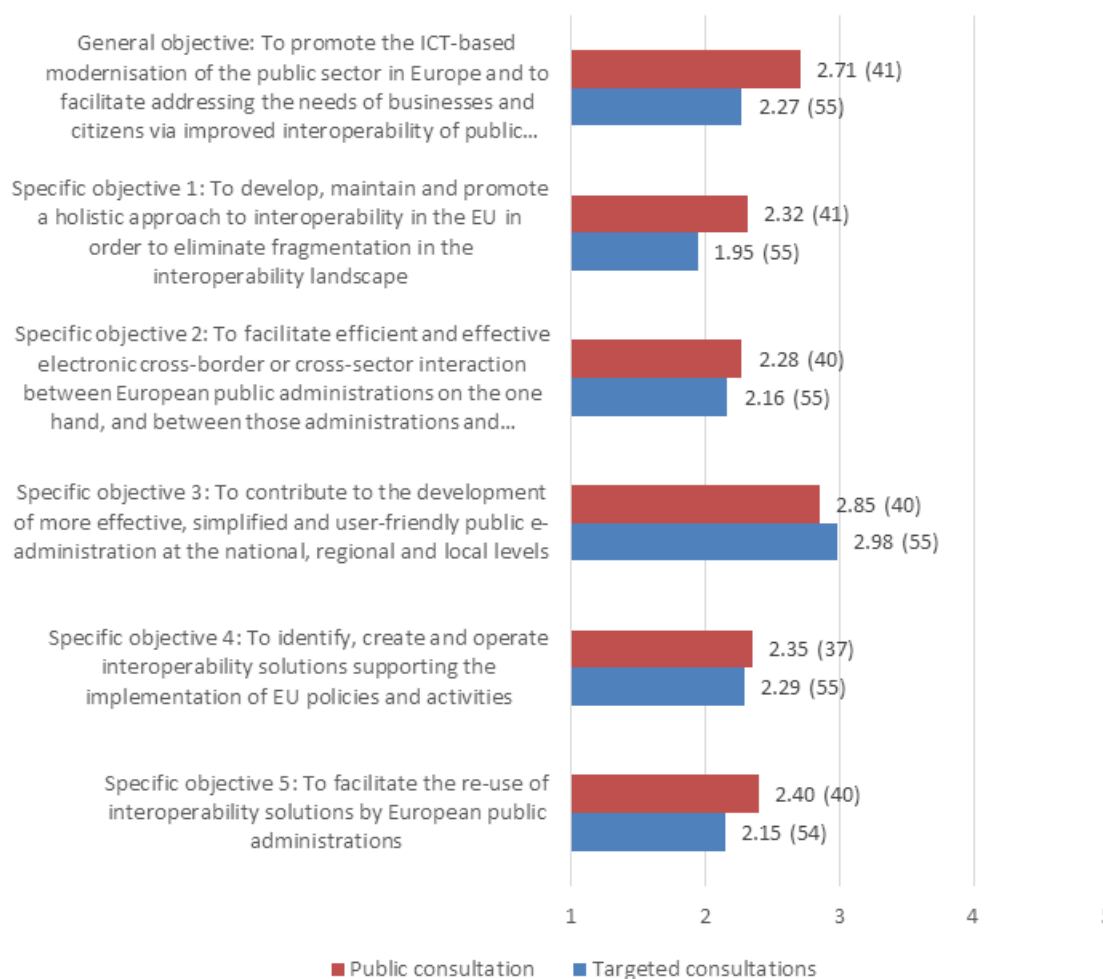
With the caveat that the number of responses from solution users was low (only 5 answers), the feedback received from respondents to the targeted consultation in terms of user satisfaction tends to be positive. Nevertheless, the **utility of the programme** could be further enhanced by working more closely with the EU countries, increasing the promotion of solutions and ensuring that the communication of results is accessible to non-expert audiences.

Sustainability

In terms of **sustainability**, Figure 33 shows that consulted stakeholders in the targeted consultation generally had a positive view of the sustainability of ISA² solutions, indicating that the solutions developed are expected to continue delivering their results even after the programme ends; however, some solutions may also require maintenance costs.

⁵ Directive (EU) 2019/1024 of the European Parliament and of the Council of 20 June 2019 on open data and the re-use of public sector information.

Figure 33 Likelihood that results achieved so far would last if funding for actions covered by the programme would not be available in the future (breakdown by type of stakeholders; average score and number of respondents)



Score: (-2) definitely would not; (-1) probably would not; (1) probably would; (2) definitely would.
 Note: 1) Averages do not account for respondents answering “don’t know/no opinion” (DK/NO). 2) Total number of respondents through targeted consultation: 58.
 Source: [CEPS final study](#).

Annex 3: Intervention Logic

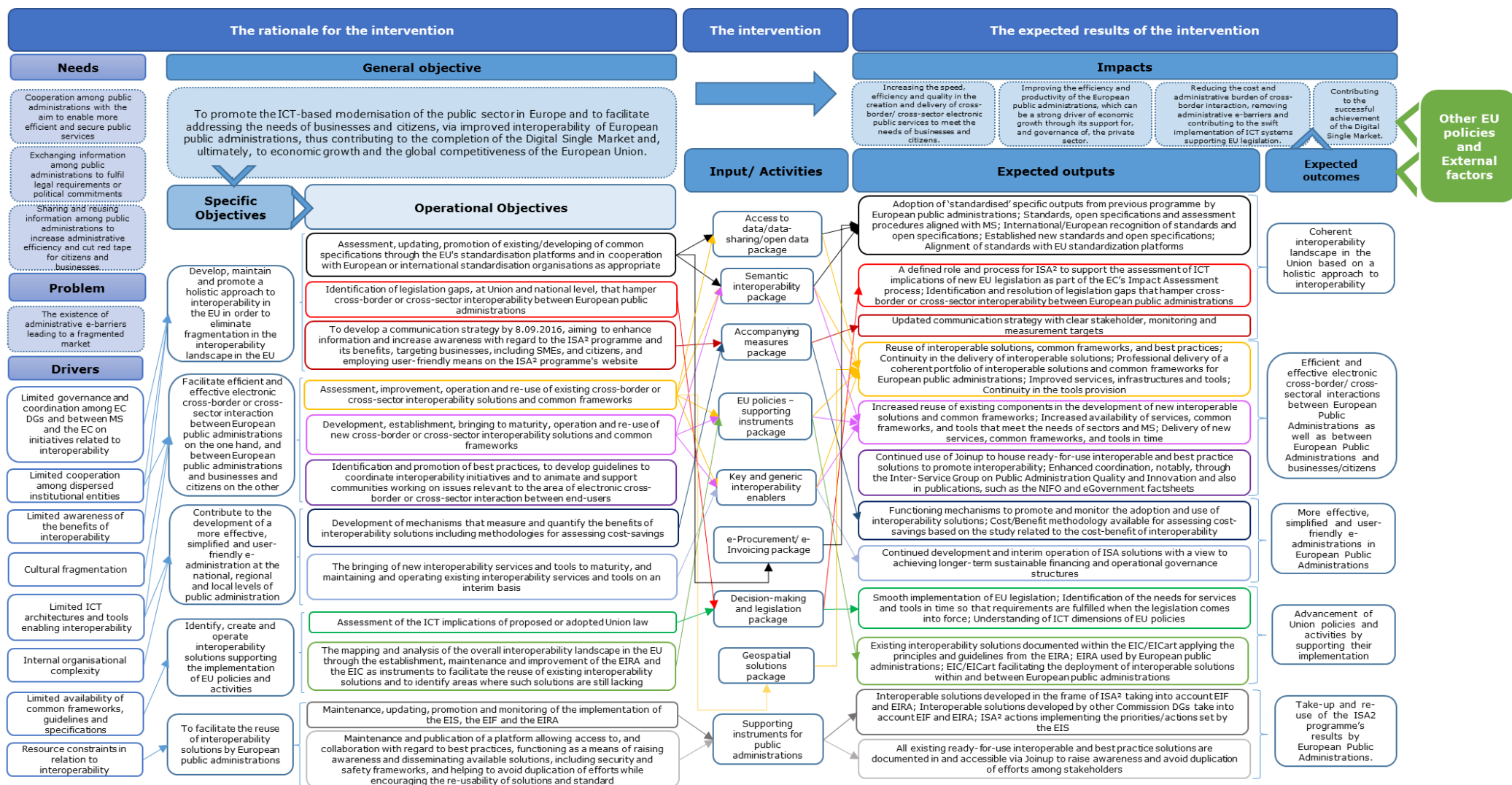
This annex presents the **intervention logic of ISA²**, detailing the rationale, the inputs, and the expected results of the programme at the time of its enactment. The annex is entirely based on the [interim evaluation of the ISA² programme performed by CEPS](#) and published in 2019, following its approval by the European Commission⁶. The decision to rely on the same intervention logic on which the interim evaluation was based is essential for two main reasons.

- This approach ensures full comparability between the findings of the final evaluation and interim evaluation of ISA²;
- This is the best approach from a methodological standpoint, as the intervention logic aims to clarify the logic followed by EU decision-makers back in 2015, when establishing the ISA² programme, and this ex ante perspective does not allow to modify the intervention logic used for the interim evaluation of ISA².

The intervention logic of ISA² includes a detailed description of the **needs, problems and drivers** that the programme intended to address, the **objectives** set out for the programme (following a three-level hierarchy: global objective, specific objectives and operational objectives), the **activities** of the programme, the **expected outputs, outcomes and impacts** of the programme and the logical links between these components.

⁶ CEPS (2019), Evaluation study supporting the interim evaluation of the programme on interoperability solutions for European public administrations, businesses and citizens (ISA²). DOI: 10.2799/13397

Figure 34: Intervention logic of the ISA² programme



1. THE RATIONALE FOR THE INTERVENTION: ‘WHY DID THE EU ESTABLISH THE ISA² PROGRAMME?’

The intervention logic starts by understanding **the rationale of the ISA² programme**. At this stage, the reasons for its establishment were identified by (i) assessing the needs and problems that it aims to address; and (ii) outlining EU decision-makers’ main objectives.

Needs and problems⁷

The Digital Single Market (DMS) Strategy⁸ recognised interoperability as a prerequisite for ‘*efficient connections across borders, between communities and between public services and authorities*’. As highlighted by the Digital Agenda for Europe⁹, interoperability plays a key role in maximising the social and economic potential of ICT. Against this background, three specific **needs** can be identified in the field of interoperability¹⁰:

- the need for cooperation among public administrations to enable more efficient and secure public services;
- the need for exchanging information among public administrations to fulfil legal requirements or political commitments; and
- the need for sharing and reusing information among public administrations to increase administrative efficiency and cut red tape for businesses and the public.

When it comes to **problems**, the ISA² proposal¹¹ outlined one main issue, namely the existence of administrative e-barriers leading to a fragmented market.

This particular problem is affected by the following **eight drivers** (as pointed out in a series of documents including: the ISA² proposal, the final evaluation of the ISA

⁷ Needs refer to prerequisites for the efficient delivery of European public services, more specifically, in what concerns the interoperability dimension. Problems consist of specific bottlenecks that hinder the realisation of the needs. The drivers are the underlying causes that lead to the identified problem.

⁸ European Commission (2015), Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions ‘A Digital Single Market Strategy for Europe’, COM(2015) 192 final

⁹ European Commission (2010), Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, ‘A Digital Agenda for Europe’, COM(2010)245 final.

¹⁰ European Commission (2010), Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, ‘Towards interoperability for European public services’ and ‘Annex II – EIF (European Interoperability Framework)’, COM(2010) 744 final.

¹¹ See Section 1.2 of the ISA² Proposal; Proposal for a DECISION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL establishing a programme on interoperability solutions for European public administrations, businesses and citizens (ISA²) Interoperability as a means for modernising the public sector, COM(2014) 367 final.

programme¹², the Commission Staff Working Document accompanying the DSM Strategy¹³):

- limited governance and coordination among Commission DGs and between EU countries and the Commission on programmes and initiatives related to interoperability;
- limited cooperation among dispersed institutional entities;
- resource constraints in relation to interoperability;
- internal organisational complexity;
- limited ICT architectures and tools enabling interoperability;
- limited availability of common frameworks, guidelines, and specifications;
- limited awareness of the benefits of interoperability; and
- cultural fragmentation¹⁴.

Objectives

The ISA² objectives are presented in a **hierarchical order**, where the achievement of lower level objectives is normally a pre-condition for attaining the higher-level ones.

In this respect, the following three levels of objectives have been identified:

- **general objectives**, concerning the overall rationale of an intervention and its longer-term and more diffuse effects, i.e. pertaining to the questions: ‘why has the ISA² programme been set up?’ and ‘what ultimate goal was it expected to contribute to?’;
- **specific objectives**, providing a basis for assessing an intervention in relation to the short-term or medium-term results that occur at the level of direct beneficiaries/recipients of the intervention; and

¹² Kurt Salmon, KPMG (2015), Final evaluation of the ISA programme, Final report v2.06, 1 December 2015.

¹³ European Commission (2015), Commission Staff Working Document ‘A Digital Single Market Strategy for Europe – Analysis and Evidence’ Accompanying the document Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions ‘A Digital Single Market Strategy for Europe’, SWD(2015) 100 final.

¹⁴ National administrative systems are often characterised by different administrative cultures, which include the beliefs and values on the role of the State and its civil servants. As pointed out by a recent Study published by the Commission, although European public administrations share the values associated with democracy and the rule of law, national administrative cultures show clear differences (Thijs N., Hammerschmid G., Palaric E. (2017), *A comparative overview of public administration characteristics and performance in EU28*, European Commission).

- **operational objectives**, providing a basis for assessing an intervention in relation to its direct outputs, i.e. ‘what is directly produced/supplied during the ISA² programme’s implementation?’.

In concrete terms, the ISA² programme’s objectives are the following:

General objective:

- To promote the ICT-based modernisation of the public sector in Europe and to facilitate addressing the needs of businesses and citizens via improved interoperability of European public administrations, thus contributing to the completion of the Digital Single Market and, ultimately, to economic growth and the global competitiveness of the European Union.¹⁵

Specific objectives:

- **Specific objective #1:** To develop, maintain and promote a holistic approach to interoperability in the Union in order to eliminate fragmentation in the interoperability landscape in the Union (Article 1(a) of the ISA² Decision).
- **Specific objective #2:** To facilitate efficient and effective electronic cross-border or cross-sector interaction between European public administrations on the one hand, and between European public administrations and businesses and citizens on the other (Article 1(b) of the ISA² Decision).
- **Specific objective #3:** To contribute to the development of a more effective, simplified and user-friendly e-administration at the national, regional and local levels of public administration (Article 1(b) of the ISA² Decision).
- **Specific objective #4:** To identify, create and operate interoperability solutions supporting the implementation of Union policies and activities (Article 1(c) of the ISA² Decision).
- **Specific objective #5:** To facilitate the reuse of interoperability solutions by European public administrations (Article 1(d) of the ISA² Decision).

¹⁵ See recitals 34, 36 and 45 of the ISA² Decision and Section 1.1 of the ISA² Proposal.

Operational objectives:

The **operational objectives** of the ISA² programme are listed in the first column of Table 8. The additional columns are relevant for the programme's expected results (see below for further details).

Table 8 Overview of operational objectives and expected outputs of the ISA² programme

Operational objectives	Expected outputs	Performance indicators
Operational objective (1): To support and promote the assessment, improvement, operation and re-use of existing cross-border or cross-sector interoperability solutions and common frameworks (Article 3 (a) of the ISA ² Decision)	<ul style="list-style-type: none"> • Reuse of interoperable solutions and common frameworks • Reuse of best practices • Continuity in the delivery of interoperable solutions • Professional delivery of a coherent portfolio of interoperable solutions and common frameworks for European public administrations • Improved services and infrastructures • Improved tools • Continuity in the tools provision 	<ul style="list-style-type: none"> • Number of common services and generic tools used by European public administrations • Adoption of common frameworks by European public administrations • Users uptake • User satisfaction • Number of new sectors covered by existing solutions (cross-sector / cross-border dimension)
Operational objective (2): To support and promote the development, establishment, bringing to maturity, operation and re-use of new cross-border or cross-sector interoperability solutions and common frameworks (Article 3 (b) of the ISA ² Decision)	<ul style="list-style-type: none"> • Increased reuse of existing components in the development of new interoperable solutions and common frameworks • Increased availability of services and common frameworks that meet the needs of sectors and EU countries • Delivery of new services and common frameworks in time • Increased availability of tools that meet the needs of sectors and EU countries • Delivery of new tools in time 	<ul style="list-style-type: none"> • Number of new common services and generic tools by European public administrations • Adoption of new common frameworks by European public administrations

Operational objectives	Expected outputs	Performance indicators
Operational objective (3): To support and promote the assessment of the ICT implications of proposed or adopted Union law (Article 3 (c) of the ISA ² Decision)	<ul style="list-style-type: none"> • Smooth implementation of EU legislation • Identification of the needs for services and tools in time so that requirements are fulfilled when the legislation comes into force • Understanding of ICT dimensions of EU policies 	<ul style="list-style-type: none"> • Number of pieces of legislation reviewed • Number of assessments of ICT implications of new EU legislation conducted
Operational objective (4): To support and promote the identification of legislation gaps, at Union and national level, that hamper cross-border or cross-sector interoperability between European public administrations (Article 3 (d) of the ISA ² Decision)	<ul style="list-style-type: none"> • A defined role and process for the ISA² programme to support the DGs and services undertaking assessments of ICT implications of new EU legislation as part of the Commission's Impact Assessment process (Better Regulation Guidelines)¹⁶ • Identification and resolution of legislation gaps that hamper cross-border or cross-sector interoperability between European public administrations 	<ul style="list-style-type: none"> • Number of instances where ISA² is involved (e.g. participation of ISA² in evaluations, impact assessments, and REFIT of EU legislation) • Number of pieces of gaps identified
Operational objective (5): To support and promote the development of mechanisms that measure and quantify the benefits of interoperability solutions including methodologies for assessing cost-savings (Article 3 (e) of the ISA ² Decision)	<ul style="list-style-type: none"> • Functioning mechanisms to promote the use and monitor the adoption of interoperability solutions as well as their numbers of users • Cost/Benefit model/methodology available for assessing cost-savings based on the study related to the cost-benefit of interoperability. 	<ul style="list-style-type: none"> • Usage of the Cost/Benefit model to produce figures to show the value of interoperability.
Operational objective (6): To support and promote the mapping and analysis of the overall interoperability landscape in the Union through the establishment, maintenance and improvement of the EIRA and the EIC as instruments to facilitate the re-use of existing interoperability solutions and to identify	<ul style="list-style-type: none"> • Existing interoperability solutions documented within the European Interoperability Cartography (EIC/EICart) applying the principles and guidelines from the European Interoperability Reference Architecture (EIRA) • EIRA used by European public administrations 	<ul style="list-style-type: none"> • Usage of EIRA by European public administrations • Usage of EIC/EICart by European public administrations • Number of references in implementations of interoperable solutions • Number of interoperable solutions documented in the

¹⁶ European Commission (2017), Better Regulation Guidelines, SWD(2017) 350, Brussels, 7 July 2017.

Operational objectives	Expected outputs	Performance indicators
the areas where such solutions are still lacking (Article 3 (f) of the ISA ² Decision)	<ul style="list-style-type: none"> EIC/EICart facilitating the deployment of interoperable solutions within and between European public administrations 	EIC/EICart
Operational objective (7): To support and promote the maintenance, updating, promotion and monitoring of the implementation of the EIS, the EIF and the EIRA (Article 3 (g) of the ISA ² Decision)	<ul style="list-style-type: none"> Interoperable solutions developed in the frame of ISA² that take into account EIF and EIRA Interoperable solutions developed by other Commission DGs that take into account EIF and EIRA ISA² actions implementing the priorities/actions set by the EIS 	<ul style="list-style-type: none"> Usage of EIRA by European public administrations Number of EIS priorities implemented by European public administrations Level of implementation of the EIF at national and Commission level
Operational objective (8): To support and promote the assessment, updating and promotion of existing common specifications and standards and the development, establishment and promotion of new common specifications and open specifications and standards through the Union's standardisation platforms and in cooperation with European or international standardisation organisations as appropriate (Article 3 (h) of the ISA ² Decision)	<ul style="list-style-type: none"> Adoption of 'standardised' specific outputs from previous programme (e.g. Core Vocabularies, ADMS) by European public administrations. Standards, open specifications and assessment procedures aligned with EU countries International/European recognition of standards and open specifications Established new standards and open specifications Alignment of standards with EU standardisation platforms 	<ul style="list-style-type: none"> Number of new or revised standards used by European public administrations Number of new or revised common specifications and open specifications used by European public administrations Number of assessments (e.g. through multi-stakeholder platform or CAMMS)
Operational objective (9): To support and promote the maintenance and publication of a platform allowing access to, and collaboration with regard to, best practices, functioning as a means of raising awareness and disseminating available solutions, including security and safety frameworks, and helping to	<ul style="list-style-type: none"> All existing ready-for-use interoperable and best practice solutions are documented in and accessible via Joinup¹⁷ to raise awareness and avoid duplication of efforts among stakeholders 	<ul style="list-style-type: none"> Number of ready-for-use interoperable and best practice solutions housed in Joinup

¹⁷ For further details see: <https://joinup.ec.europa.eu/>

Operational objectives	Expected outputs	Performance indicators
avoid duplication of efforts while encouraging the re-usability of solutions and standards (Article 3 (i) of the ISA ² Decision)		
Operational objective (10): To support and promote the bringing of new interoperability services and tools to maturity, and maintaining and operating existing interoperability services and tools on an interim basis (Article 3 (j) of the ISA ² Decision)	<ul style="list-style-type: none"> Continued development and interim operation of ISA solutions, e.g. sTESTA, with a view to achieving longer-term sustainable financing and operational governance structures 	<ul style="list-style-type: none"> Number of new interoperability services and tools developed, maintained and operated by ISA² Number of new interoperability services brought to maturity
Operational objective (11): To support and promote the identification and promotion of best practices, to develop guidelines to coordinate interoperability initiatives and to animate and support communities working on issues relevant to the area of electronic cross-border or cross-sector interaction between end-users (Article 3 (k) of the ISA ² Decision)	<ul style="list-style-type: none"> Continued use of Joinup to house ready-for-use interoperable and best practice solutions to promote interoperability Enhanced coordination, notably, through the Inter-Service Group on Public Administration Quality and Innovation and also in publications, such as the NIFO and eGovernment factsheets 	<ul style="list-style-type: none"> Number of ready-for-use interoperable and best practice solutions housed in Joinup Number of joint-initiatives (studies etc.) in interoperability by EU-wide groups, such as the Commission's Inter-Service Group on Public Administration Quality and Innovation. Number of joint-publications
Operational objective (12): To develop a communication strategy [...], aiming to enhance information and increase awareness with regard to the ISA ² programme and its benefits, targeting businesses, including SMEs, and citizens, and employing user-friendly means on the ISA ² programme's website (Article 3 of the ISA ² Decision)	<ul style="list-style-type: none"> An updated Communication Strategy with clear stakeholder, monitoring and measurement targets. 	<ul style="list-style-type: none"> Monitoring and measurement of the Communication Strategy (events, satisfaction surveys, publications). Numbers of stakeholders engaged in different events, actions, initiatives etc.

Source: [CEPS final study](#).

2. THE INTERVENTION: ‘WHAT ACTIONS ARE SUPPORTED BY THE ISA² PROGRAMME?’

After identifying the needs, problems and objectives underlying the ISA² programme, the intervention logic approach requires the assessment of the main features (activities/inputs) of the programme itself. Within the intervention logic, activities and

inputs represent the means to address the needs and problems, and to meet the identified objectives. In this context, these means largely correspond to the **actions of the ISA² programme**, as defined in the [ISA² Rolling Work Programme](#). The ISA² actions are grouped into the following nine packages.

- **Key and generic interoperability enablers** are actions that develop interoperability solutions to support public administrations in providing services, ranging from the secure exchange of files to improving cross-border access to government data and information. Examples include [TESTA](#) and [Open e-TrustEx](#).
- **The semantic interoperability package** consists of initiatives to establish and increase semantic interoperability among public administrations through information standards and specifications. Examples include [Core Vocabularies](#) and [DCAT Application Profile](#) for data portals in Europe.
- Under **the access to data / data sharing / open data package**, the ISA² programme funds actions that help facilitate the reuse of national data repositories, of data across borders and sectors and widen access to data created by the public sector. Examples include ‘[Providing big data opportunities for public administrations](#)’ and ‘[FISMA: Financial Data Standardisation](#)’.
- **The geospatial solutions package** consists of legal/policy, organisational, semantic and technical interoperability solutions that aims to facilitate efficient and effective electronic cross-border and cross-sector interaction between European public administrations, and between them and citizens and companies, in the field of location information and services. This package led to the [Re3gistry](#) solution.
- **The eProcurement/eInvoicing package** helps update and improve existing EU tools for e-procurement. It aims to develop a common public procurement knowledge base to facilitate the creation, exchange, dissemination and reuse of procurement data. Examples include [Open e-Prior](#), [ESPD](#), [eCertis](#) and the [eProcurement Ontology](#).
- **The decision-making and legislation package** covers actions that support the decision-making process, in particular by improving interoperability between EU institutions and between them and the EU countries. These actions address several processes – ranging from collecting feedback from various stakeholders to drafting new legislation and monitoring that this legislation is implemented. The package led to the [LEOS](#) solution.
- **The EU policies — supporting instruments package** covers actions that support the implementation of EU policies for which interoperability aspects need to be considered. The package has led to the following solution: Online Collection Software to support [European Citizens' Initiatives](#).

- **The supporting instruments for public administrations package** maps the EU's interoperability landscape and provides solutions to support greater interoperability, ranging from sharing best practices to supporting the reuse of solutions. Examples include the [Interoperability Academy](#), [EUSurvey](#), [Joinup – European Collaborative Platform and Catalogue](#) and the [National Interoperability Framework Observatory \(NIFO\)](#).
- **The accompanying measures package** consists of activities to raise awareness of interoperability and monitoring and evaluating the programme's implementation. Examples include the annual [SEMIC Conference](#), the [ISA² Mid-Term Conference](#), the [DigitALL conference](#) and the [ISA² dashboard](#).

3. THE EXPECTED RESULTS OF THE INTERVENTION: 'WHAT ARE THE EXPECTED EFFECTS OF THE ACTIONS SUPPORTED BY THE ISA² PROGRAMME?'

When it began, the ISA² programme was expected to have certain effects (i.e. to cause changes) on certain categories of stakeholders. These **effects** fall under **three categories** (outputs, outcomes and impacts) depending on when they occur and the groups they address. Note that external factors and other EU policies may influence the performance of the ISA² programme.

Outputs (expected)

The outputs of the ISA² programme are its **most immediate effects**, i.e. the deliverables/products of the funded actions. As the intervention logic looks at a certain intervention by simulating an *ex ante* perspective, one must identify the outputs that were expected to stem from the programme when it was initially adopted. Note that expected outputs usually reflect the operational objectives identified in previous analytical steps. In this respect, the expected outputs and related indicators are listed in the ex-ante evaluation of ISA². Table 8 above summarises the expected outcomes and a series of key performance indicators for each operational objective of the ISA² programme.

Outcomes (expected)

The outcomes are the **short-term and medium-term changes for the groups the programme directly addresses**. As outcomes are usually connected to the specific objectives; they can be summarised as follows:

- a coherent interoperability landscape in the Union based on a holistic approach to interoperability;
- efficient and effective electronic cross-border or cross-sectoral interactions between European Public Administrations as well as between European public administrations and businesses/citizens;
- more effective, simplified and user-friendly e-administrations in European public administrations;

- advancement of Union policies and activities by supporting their implementation; and
- take-up and re-use of the ISA² programme's results by European public administrations.

Impacts (expected)

As mentioned above, the intervention logic also includes the **impacts**, i.e. the changes caused by an EU intervention **over a longer period** and also **affecting the society as a whole** rather than only the direct addressees of the intervention itself. These changes are related to the general objectives of a certain intervention. By analysing the ISA² decision and the ISA² proposal, the following impacts are expected:

- increasing the speed, efficiency and quality in the creation and delivery of cross-border and cross-sector electronic public services to meet the needs of businesses and citizens;
- improving the efficiency and productivity of the European public administrations, which can be a strong driver of economic growth through its support for, and governance of, the private sector;
- reducing the cost and administrative burden of cross-border interaction, removing administrative e-barriers and contributing to the swift implementation of ICT systems supporting EU legislation; and
- contributing to the successful achievement of the DSM.

Annex 4: Evaluation Framework

This annex presents the evaluation framework on which the entire evaluation is based.

Evaluation questions	Success/judgment criteria	Indicators	Data sources	Data collection / analysis methods
Evaluation criterion #1: Relevance				
1. To what extent are the objectives of the ISA ² programme still pertinent in relation to the evolving needs and problems at both national and EU levels?	<ul style="list-style-type: none"> Degree of alignment between stakeholders' perception of needs and problems at national and sub-national levels and the objectives of the programme. Degree of alignment between stakeholders' perception of needs and problems at EU level and the objectives of the programme. Degree of alignment between needs and problems originally addressed by the programme and stakeholders' perception of needs and problems. 	<ul style="list-style-type: none"> Share of stakeholders confirming the alignment between needs and problems addressed by the programme and current needs and problems. Share of stakeholders confirming the alignment between the objectives of the programme and current needs and problems at national and sub-national levels. Share of stakeholders confirming the alignment between the objectives of the programme and current needs and problems at EU level. Qualitative assessment of the alignment between the objectives of the programme and current needs and problems. Qualitative assessment of the alignment between needs and problems addressed by the programme and current needs and problems. 	<ul style="list-style-type: none"> Primary information on needs and problems from the following categories of stakeholders: <ul style="list-style-type: none"> Programme governance. Action owners. Solution users – European Commission. Solution users – EU countries. Stakeholders responsible for linked EU policies/initiatives. Standardisation organisations. Experts. Indirect beneficiaries and wider public. Secondary information on needs and problems from operational documents, other official documents and relevant literature, such as: <ul style="list-style-type: none"> ISA² decision and accompanying documents. ISA² rolling work programme. eGovernment/digital government factsheets. Study on the role of eGovernment and 	<ul style="list-style-type: none"> Desk research. Interviews with the following categories of stakeholders: <ul style="list-style-type: none"> Programme governance. Action owners. Solution users – European Commission. Solution users – EU countries. Stakeholders responsible for linked EU policies/initiatives. Online surveys targeted to the following categories of stakeholders: <ul style="list-style-type: none"> Programme governance. Action owners. Solution users – European Commission. Solution users – EU countries. Stakeholders responsible for linked policies/initiatives. Standardisation organisations. Public consultation (optional). Quantitative assessment of

Evaluation questions	Success/judgment criteria	Indicators	Data sources	Data collection / analysis methods
			<ul style="list-style-type: none"> interoperability in the European Semester. ○ State of Play of Interoperability in Europe. ○ Data on the digital economy from Eurostat. ○ Mid-term review of the DSM Strategy. ○ Interim evaluation of ISA². 	<ul style="list-style-type: none"> responses to interviews and surveys (Likert scale). • Qualitative assessment of responses to interviews and surveys and data and information collected via desk research. • Expert assessment.
Evaluation criterion #2: Effectiveness				
<p>2. To what extent has the ISA² programme achieved its objectives – with special focus on the re-use of interoperability solutions across the Union and paying particular attention to the needs expressed by the European public administrations?</p> <p>3. Are there aspects (e.g. objectives, actions) that are more or less effective than others, and if so, what lessons can be drawn from this?</p>	<ul style="list-style-type: none"> • Degree of alignment between actual and expected results and objectives of the programme. • Impact of external factors on the performance of the programme. • Measurement of the indicators summarising the outputs of the programme. • Degree of alignment with principles spelled out in Article 4 of the ISA² Decision. • Awareness of the programme. 	<ul style="list-style-type: none"> • Share of stakeholders confirming the alignment between actual and expected results of the programme. • Share of stakeholders confirming the alignment between the objectives and actual results of the programme. • Share of stakeholders who are aware of the programme. • Share of stakeholders identifying external factors contributing to/jeopardising the performance of the programme. • Share of stakeholders who are aware of specific ISA² packages/ actions/ solutions. • Qualitative assessment of the alignment between objectives, expected and actual results of the programme. • Quantitative assessment of performance indicators of 	<ul style="list-style-type: none"> • Primary information actual results and contribution to the programme's objectives from the following categories of stakeholders: <ul style="list-style-type: none"> ○ Programme governance. ○ Action owners. ○ Solution users – European Commission. ○ Solution users – EU countries. ○ Standardisation organisations. ○ Experts. ○ Indirect beneficiaries and wider public. • Secondary information from operational documents and other official documents, such as: <ul style="list-style-type: none"> ○ ISA² rolling work programme ○ ISA² annual monitoring and evaluation reports. ○ ISA² quarterly monitoring 	<ul style="list-style-type: none"> • Desk research. • Interviews with the following categories of stakeholders: <ul style="list-style-type: none"> ○ Programme governance. ○ Action owners. ○ Solution users – European Commission. ○ Solution users – EU countries. • Online surveys targeted to the following categories of stakeholders: <ul style="list-style-type: none"> ○ Programme governance. ○ Action owners. ○ Solution users – European Commission. ○ Solution users – EU countries. ○ Standardisation organisations. • Success stories/lessons learnt. • Public consultation (optional). • Quantitative assessment of responses to interviews and

Evaluation questions	Success/judgment criteria	Indicators	Data sources	Data collection / analysis methods
		outputs. <ul style="list-style-type: none"> Qualitative assessment of the alignment with principles spelled out in Article 4 of the ISA² Decision. 	reports. <ul style="list-style-type: none"> ISA² dashboard. Documentary evidence on funded actions (e.g. deliverables, final reports). Interim evaluation of ISA². 	surveys (Likert scale). <ul style="list-style-type: none"> Qualitative assessment of responses to interviews and surveys and data and information collected via desk research. Multicriteria analysis. Expert assessment.
Evaluation criterion #3: Efficiency				
4. To what extent has the programme been cost-effective? 4.1 How is the programme performing relative to the planned work and budget? 5. Which aspects of the programme are the most efficient or inefficient, especially in terms of resources mobilised?	<ul style="list-style-type: none"> Cost-effectiveness analysis to assess the ratio between allocated funds and actual results of the programme. Earned value management analysis. Efficiency of the selection process of the actions to be included in the Rolling Work Programme. 	<ul style="list-style-type: none"> Comparison between the costs of ISA² packages and the results measured via performance indicators. Earned Value, Actual Costs, Planned Value, and Schedule Performance Index of ISA² packages.¹⁸ Share of stakeholders confirming that the selection process of the actions is fit-for-purpose. Assessment of regulatory costs linked to the selection process of the actions included in the rolling work programme. 	<ul style="list-style-type: none"> Primary information on costs from the following categories of stakeholders: <ul style="list-style-type: none"> Programme governance. Action owners. Secondary information from operational documents and other official documents, such as: <ul style="list-style-type: none"> ISA² rolling work programme. ISA² annual monitoring and evaluation reports. ISA² quarterly monitoring reports. ISA² dashboard. Documentary evidence on funded actions (e.g. deliverables, final reports). Interim Evaluation of ISA². 	<ul style="list-style-type: none"> Desk research. Interviews with the following categories of stakeholders: <ul style="list-style-type: none"> Programme governance. Action owners. Online surveys/written questionnaires targeted to the following categories of stakeholders: <ul style="list-style-type: none"> Programme governance. Action owners. Quantitative assessment of responses to surveys (Likert Scale). Qualitative assessment of responses to interviews and surveys and data and information collected via desk research. Cost-effectiveness analysis. Standard cost model. Earned value management. Success stories/lessons learnt.

¹⁸ The efficiency of the funded actions is already monitored by using the Earned Value Management (EVM) approach.

Evaluation questions	Success/judgment criteria	Indicators	Data sources	Data collection / analysis methods
Evaluation criterion #4: Coherence				
<p>6. To what extent do the ISA² actions form part of a 'holistic' approach within the framework of the programme? (<u>internal coherence</u>)</p> <p>7. To what extent is the ISA² programme coherent with other EU interventions which have similar objectives and with global initiatives in the same field? (<u>external coherence</u>)</p>	<ul style="list-style-type: none"> • Degree of coherence among actions funded by the ISA² programme (internal coherence). • Degree of coherence between the programme and other EU supported programmes (external coherence). <ul style="list-style-type: none"> ◦ Focus on CEF, SRSP, Horizon 2020 • Degree of coherence between the programme and other EU policies (external coherence). <ul style="list-style-type: none"> ◦ Focus on DSM, Digital Strategy, ICT standardisation, Single digital gateway, eGovernment Action Plan, Tallinn Declaration on eGovernment, Data strategy. • Degree of coherence between the programme and global initiatives in the field (external coherence). <ul style="list-style-type: none"> ◦ Focus on OECD Digital Government 	<ul style="list-style-type: none"> • Share of stakeholders identifying synergies/overlaps between funded actions. • Share of stakeholders identifying synergies/overlaps between the programme and other relevant EU programmes/policies. • Qualitative assessment of synergies/overlaps and links between funded actions. • Qualitative assessment of synergies/overlaps between objectives of the programme and other relevant EU programmes/policies. • Qualitative assessment of synergies/overlaps between funded actions and those of other relevant EU programmes. • Qualitative assessment of synergies/overlaps between the programme and global initiatives in the same field. • Instances of reuse of results delivered by funded actions by other actions within the programme. • Instances of reuse of results delivered by funded actions by other EU programmes. 	<ul style="list-style-type: none"> • Primary information on internal coherence from the following categories of stakeholders: <ul style="list-style-type: none"> ◦ Programme governance. ◦ Action owners. ◦ Solution users – European Commission. ◦ Solution users – EU countries. • Primary information on external coherence from the following categories of stakeholders: <ul style="list-style-type: none"> ◦ Programme governance. ◦ Action owners. ◦ Solution users – European Commission. ◦ Solution users – EU countries. ◦ Stakeholders responsible for linked EU policies/initiatives. ◦ Standardisation organisations. ◦ Experts. ◦ Indirect beneficiaries and wider public (optional). • Secondary information from operational documents and other official documents, such as: <ul style="list-style-type: none"> ◦ ISA² Decision and accompanying documents. ◦ ISA² rolling work programme. ◦ ISA² annual monitoring and 	<ul style="list-style-type: none"> • Desk research. • Interviews with the following categories of stakeholders: <ul style="list-style-type: none"> ◦ Programme governance. ◦ Action owners. ◦ Solution users – European Commission. ◦ Solution users – EU countries. ◦ Stakeholders responsible for linked EU policies/initiatives. • Online surveys targeted to the following categories of stakeholders: <ul style="list-style-type: none"> ◦ Programme governance. ◦ Action owners. ◦ Solution users – European Commission. ◦ Solution users – EU countries. ◦ Stakeholders responsible for linked policies/initiatives. ◦ Standardisation organisations. • Public consultation. • Quantitative assessment of responses to interviews and surveys (Likert scale). • Qualitative assessment of responses to interviews and surveys and data and information collected via desk research.

Evaluation questions	Success/judgment criteria	Indicators	Data sources	Data collection / analysis methods
	<p>and the UNPAN.</p> <ul style="list-style-type: none"> • Level of reuse of results of a funded action by another action within the ISA² programme (internal coherence). • Level of reuse of results delivered by ISA² actions by other EU programmes (external coherence). 		<p>evaluation reports.</p> <ul style="list-style-type: none"> ○ ISA² quarterly monitoring reports. ○ Documentary evidence on funded actions (e.g. official deliverables, final reports). ○ Legal texts establishing other relevant programmes accompanying documents. ○ Legal texts devising other relevant EU policies and accompanying documents. ○ Documents describing global initiatives in the same field. ○ Interim Evaluation of ISA². ○ Other interim/final evaluations of EU programmes and policies. 	<ul style="list-style-type: none"> • Success stories/lessons learnt. • Expert assessment.
Evaluation criterion #5: EU added value				
8. What is the additional value resulting from the ISA ² programme, compared to what could reasonably have been expected from EU countries acting at national, regional and/or local levels?	<ul style="list-style-type: none"> • Achievement of objectives that could not be otherwise attained with national or sub-national interventions. • Achievement of objectives at a cost lower than what could be attained via national or sub-national interventions. • Achievement in terms of cross-border 	<ul style="list-style-type: none"> • Share of stakeholders confirming the need for an EU intervention to achieve the objectives of the programme. • Share of stakeholders confirming that an EU intervention is able to achieve the objectives of the programme at cost lower than costs of national or sub-national interventions. • Share of stakeholders' providing positive feedback on achievements in terms of cross-border interoperability. • Qualitative assessment of the 	<ul style="list-style-type: none"> • Primary information on cross-border interoperability and EU added value from the following categories of stakeholders: <ul style="list-style-type: none"> ○ Programme governance. ○ Action owners. ○ Solution users – European Commission. ○ Solution users – EU countries. ○ Standardisation organisations. ○ Experts. ○ Indirect beneficiaries and wider public (optional). • Secondary information from 	<ul style="list-style-type: none"> • Desk research. • Interviews with the following categories of stakeholders: <ul style="list-style-type: none"> ○ Programme governance. ○ Action owners. ○ Solution users – European Commission. ○ Solution users – EU countries. • Online surveys targeted to the following categories of stakeholders: <ul style="list-style-type: none"> ○ Programme governance. ○ Action owners. ○ Solution users – European Commission.

Evaluation questions	Success/judgment criteria	Indicators	Data sources	Data collection / analysis methods
	interoperability. <ul style="list-style-type: none"> Contribution to the advancement of common EU policies. 	contribution to the advancement of common EU policies. <ul style="list-style-type: none"> Quantitative assessment of indicators summarising cross-border outputs of the programme. 	operational documents and other official documents, such as: <ul style="list-style-type: none"> ISA² decision and accompanying documents. ISA² rolling work programme. ISA² annual monitoring and evaluation reports. ISA² quarterly monitoring reports. Documentary evidence on funded actions (e.g. official deliverables, final reports). Interim Evaluation of ISA². 	<ul style="list-style-type: none"> Solution users – EU countries. Standardisation organisations. Public consultation. Quantitative assessment of responses to interviews and surveys (Likert scale). Qualitative assessment of responses to interviews and surveys and of data and information collected via desk research. Success stories/lessons learnt. Expert assessment.
Evaluation criterion #6: Utility¹⁹				
9. How do the ISA ² programme's actions and results, achieved and anticipated, compare with the needs they are supposed to address?	<ul style="list-style-type: none"> Degree of alignment between stakeholders' perception of needs and problems at national and sub-national levels and the results of the programme. Degree of alignment between stakeholders' perception of needs and problems at EU level and the results of the programme. 	<ul style="list-style-type: none"> Share of stakeholders confirming the alignment between the results of the programme and current needs and problems at national and sub-national levels. Share of stakeholders confirming the alignment between the results of the programme and current needs and problems at EU level. Qualitative assessment of the alignment between the results 	<ul style="list-style-type: none"> Primary information on user satisfaction and utility from the following categories of stakeholders: <ul style="list-style-type: none"> Programme governance. Action owners. Solution users – European Commission. Solution users – EU countries. Stakeholders responsible for linked EU policies/initiatives. 	<ul style="list-style-type: none"> Desk research. Interviews with the following categories of stakeholders: <ul style="list-style-type: none"> Programme governance. Action owners. Solution users – European Commission. Solution users – EU countries. Stakeholders responsible for linked EU policies/initiatives. Online surveys targeted to the

¹⁹ The utility criterion to some extent is similar to the relevance criterion insofar as they both look at stakeholders' needs. However, while the relevance criterion looks at the alignment between the objectives of the programme and the current needs and problems experienced by stakeholders, the utility criterion focuses on how the actual results of the programme have (or do not have) contributed to meeting stakeholders' needs. Hence, the utility criterion is a proxy for measuring users' satisfaction.

Evaluation questions	Success/judgment criteria	Indicators	Data sources	Data collection / analysis methods
	<ul style="list-style-type: none"> User satisfaction, with a breakdown by stakeholder group. 	<p>of the programme and current needs and problems.</p> <ul style="list-style-type: none"> Quantitative assessment of users' satisfaction (Likert Scale). Quantitative assessment of the take-up by EU, national and sub-national administrations of ISA² outputs. 	<ul style="list-style-type: none"> Standardisation organisations. Experts. Indirect beneficiaries and wider public (optional). Secondary information on utility from operational documents, other official documents and relevant literature, such as: <ul style="list-style-type: none"> ISA² rolling work programme. ISA² annual monitoring and evaluation reports. ISA² quarterly monitoring reports. Documentary evidence on funded actions (e.g. official deliverables, final reports). Interim evaluation of ISA². 	<p>following categories of stakeholders:</p> <ul style="list-style-type: none"> Programme governance. Action owners. Solution users – European Commission. Solution users – EU countries. Stakeholders responsible for linked policies/initiatives. Standardisation organisations. Public consultation (optional). Quantitative assessment of responses to interviews and surveys (Likert scale). Qualitative assessment of responses to interviews and surveys and of data and information collected via desk research. Success stories/lessons learnt. Expert assessment.

Evaluation criterion #7: Sustainability

<p>10. To what extent is the financial, technical and operational sustainability of the developed solutions – maintained and operated through the ISA² programme – ensured?</p>	<ul style="list-style-type: none"> • Extent to which the results achieved by the ISA² programme are expected to last if funding for actions covered by the programme would not be available in the future. • Extent to which ‘cost recovery’ solutions could be introduced. 	<ul style="list-style-type: none"> • Share of stakeholders expecting that results achieved so far would last if funding for actions covered by the programme would not be available in the future. • Share of actions requiring operation and maintenance costs to deliver their results. • Share of actions requiring technical and operational support to deliver their results. • Share of stakeholders who would pay to keep on using specific ISA² solutions. 	<ul style="list-style-type: none"> • Primary information on sustainability from the following categories of stakeholders: <ul style="list-style-type: none"> ○ Programme governance. ○ Action owners. ○ Solution users – European Commission. ○ Solution users – EU countries. ○ Standardisation organisations. ○ Experts. • Secondary information on sustainability from operational documents, other official documents and relevant literature, such as: <ul style="list-style-type: none"> ○ ISA² rolling work programme. ○ ISA² annual monitoring and evaluation reports. ○ ISA² quarterly monitoring reports. ○ Documentary evidence on funded actions (e.g. official deliverables, final reports). ○ Interim evaluation of ISA². 	<ul style="list-style-type: none"> • Desk research. • Interviews with the following categories of stakeholders: <ul style="list-style-type: none"> ○ Programme governance. ○ Action owners. ○ Solution users – European Commission. ○ Solution users – EU countries. • Online surveys targeted to the following categories of stakeholders: <ul style="list-style-type: none"> ○ Programme governance. ○ Action owners. ○ Solution users – European Commission. ○ Solution users – EU countries. ○ Standardisation organisations. • Quantitative assessment of responses to interviews and surveys (Likert scale). • Qualitative assessment of responses to interviews and surveys and of data and information collected via desk research. • Quantitative assessment of operation and maintenance costs. • Expert assessment.
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Source: [CEPS final study](#).

Annex 5: Sample of actions

The aim of the final evaluation of the ISA² programme is to provide an overall assessment of the performance of ISA². In this context, a sample of actions has been selected to better guide the data collection activities.²⁰ More specifically, the evaluation is conducted on a sample of 21 actions selected out of the total of 54 actions included in the 2020 Rolling Work Programme. To ensure comparability with the interim evaluation, the same sample of action was selected as for the interim evaluation.⁸⁵ One additional action was included in the sample in order to account for new developments in the programme, namely the new action that started after the interim evaluation of the programme was conducted (the action ‘2019.01 Interoperability Academy’). Three main criteria have been used to select the sample:

1. **Action packages:** the selected actions should be largely representative of the nine ISA² packages of actions, as they are defined in the rolling work programme.
2. **New actions and actions continued from ISA:** within each action package, the selected actions should be representative of two clusters, namely those actions that have been continued from ISA and those actions that have been started under ISA².
3. **New actions since the interim evaluation of ISA²:** to keep track of most recent developments, the Evaluation team included in the sample the new action that started after the interim evaluation of the programme was conducted (namely action ‘2019.01 Interoperability Academy’).

To build the sample, several steps were followed. First, the 54 actions funded by ISA² were grouped according to the packages to which they belong. Second, within each package, the evaluation team identified those actions that were continued from ISA and those that were introduced under ISA². Third, a target sample size of 21 actions (i.e. more than one-third of the total) was set in order to ensure the feasibility of the evaluation while allowing for a comprehensive sample of typical actions (see Table 9). Then the evaluation team identified the **number of actions to be selected** based on: i) the share of actions from each package relative to the total number of actions; and ii) the share of old and new actions compared to the total number of actions per package. The relative shares were then rounded off. The final sample is presented in Table 10, which also provides an overview of the solutions stemming from selected actions. Beyond the criteria outlined above, the sampled actions have been randomly selected to avoid any selection bias.

Importantly, the sampled actions helped assessing how the ISA² programme has contributed to the implementation of the Interoperability Action Plan (annexed to the 2017 EIF Communication). For further details please see Annex 6.k.

²⁰ Stakeholders related to all 54 actions were invited to answer the online surveys. However, desk research (review of documentary evidence) and interviews focused only on sampled actions.

Table 9 Number of sampled actions by package and programme

Package	Number of actions	Number of ISA actions	Number of ISA ² actions	Package actions / Total actions proportion	Number of sampled actions (total)	Number of sampled actions (ISA)	Number of sampled actions (ISA ²)
1. Key and generic interoperability enablers	7	5	2	13%	2	2	0
2. Semantic interoperability	4	1	3	7%	2	1	1
3. Access to data/data sharing/open data	7	2	5	13%	3	1	2
4. Geospatial solutions	1	1	0	2%	1	1	0
5. eProcurement/ eInvoicing - Supporting instruments	1	1	1	2%	1	1	0
6. Decision making and legislation - Supporting instruments	10	5	5	19%	3	1	2
7. EU Policies - Supporting instruments	5	3	2	9%	1	1	0
8. Supporting instruments for public administrations	17	11	6	31%	7	5	2
9. Accompanying measures	2	0	2	4%	1	0	1
TOTAL	54	29	25	100%	21	13	8

Note: The column 'Number of ISA actions' shows the number of actions continued under ISA² from the programme's previous editions. The column 'Number of ISA² actions' shows the number of new actions under ISA², which are not a direct continuation of any actions of the previous editions of the programme.

Source: [CEPS final study](#).

Table 10 Sampled actions and relevant solutions

Package	Action number	Action Name	ISA/ ISA ²	Solutions			
1. Key and generic interoperability enablers	2016.19	Trusted Exchange Platform (e-TrustEx)	ISA	Common tool / service: Open e-TrustEx			
1. Key and generic interoperability enablers	2016.29	Catalogue of Services	ISA	Common framework: Core Public Service Vocabulary Application Profile (CPSV-AP)			
2. Semantic interoperability	2016.07	SEMIC: Promoting Semantic	ISA	Common framework (data models, data	Common specification / standard: ADMS	Common specification:	Common tool / service: VocBench3

Package	Action number	Action Name	ISA/ ISA ²	Solutions			
		Interoperability Amongst the European Union EU countries		standards): Core vocabularies		DCAT Application Profile for data portals in Europe (DCAT-AP), GeoDCAT-AP, StatDCAT-AP	
2. Semantic interoperability	2016.16	Public Multilingual Knowledge Management Infrastructure for the DSM	ISA ²	Common framework: PMKI Core data model for multilingual taxonomies/terminologies	Common specification / standard: Semantic links - core dataset with additional semantic links between different language resources (in particular having EuroVoc as pivot)		
3. Access to data/data sharing/open data	2016.03	Big Data for Public Administrations	ISA	Study: Big data analytics for policy making	Common tool / service: DORIS - stakeholders' feedback analysis tool	Study: Big Data Test Infrastructure	
3. Access to data/data sharing/open data	2016.06	Sharing Statistical Production and Dissemination Services and Solutions in the European Statistical System	ISA ²	Common framework: ESS: Statistical Production Reference Architecture v1.0			
3. Access to data/data sharing/open data	2016.18	Development of an Open Data Service, Support and Training Package in	ISA ²	Common tool / service: Catalogue of data visualisation tools (part of EU Open Data portal)			

Package	Action number	Action Name	ISA/ ISA ²	Solutions			
		the Area of Linked Open Data, Data Visualisation and Persistent Identification					
4. Geospatial solutions	2016.10	European Location Interoperability Solutions for e-Government (ELISE)	ISA	Common tool / service: Re3gistry	Common framework: EULF Blueprint	Common tool / services: Common services, pilots and applications	Common tool / service: INSPIRE Reference validators and interoperability testing (test framework)
5. eProcurement/ eInvoicing - Supporting instruments	2016.05	European Public Procurement Interoperability Initiative	ISA	Common tool / service: Open e-Prior	Common tool / service: eCertis	Common tool / service: European Single Procurement Document (ESPD) service as well as a data model on the ESPD	Common tool / service: eProcurement Ontology
6. Decision making and legislation - Supporting instruments	2016.23	Legal interoperability (former ICT Implications of EU Legislation)	ISA	Common tool: Tool #27 of the Better Regulation Toolbox: The digital economy and society & ICT issues	Common framework: ICT Impact Assessment Guidelines	Common tool: Decision supporting tool on interoperability	
6. Decision making and legislation - Supporting instruments	2017.03	REFIT Platform	ISA ²	Common tool / service: REFIT Platform IT Tool			
6. Decision making and legislation - Supporting instruments	2017.04	Inter-Institutional Register of Delegated Acts (RegDel)	ISA ²	Common tool / service: Register of Delegated Acts (RegDel)			

Package	Action number	Action Name	ISA/ ISA ²	Solutions			
7. EU Policies - Supporting instruments	2016.14	European Citizens' Initiatives and European Parliament Elections	ISA	Common tool / service: Online Collection Software to support European Citizens' Initiatives (OCS for ECIs)	Common tool / service: European Parliament Crypto Tool		
8. Supporting instruments for public administrations	2016.20	Joinup – European Collaborative Platform and Catalogue	ISA	Common tool / service: Joinup			
8. Supporting instruments for public administrations	2016.21	National Interoperability Framework Observatory	ISA	Common framework: NIFO factsheets	Common framework: State of play of interoperability in Europe		
8. Supporting instruments for public administrations	2016.32	European Interoperability Architecture (EIA)	ISA	Common framework: European Interoperability Reference Architecture (EIRA)	Common tool / service: CarTool		
8. Supporting instruments for public administrations	2016.35	EUSurvey	ISA	Common tool / service: EUSurvey	Common tool / service: DORIS		
8. Supporting instruments for public administrations	2016.37	Interoperability Maturity Assessment of a Public Service (IMAPS)	ISA	Common tool / service: Interoperability Maturity Assessment of a Public Service (IMAPS)			
8. Supporting instruments for public administrations	2017.01	Standard-Based Archival Data Management, Exchange and Publication	ISA ²	Study: Study on Standard-Based Archival Data Management, Exchange and Publication	Common tool: Assessment tool offering support for the selection of IT solutions for archives management.		

Package	Action number	Action Name	ISA/ ISA ²	Solutions			
8. Supporting instruments for public administrations	2019.01	Interoperability Academy	ISA ²	Common tool / service: Interoperability Academy Winter School	Common tool / service: Interoperability Academy Catalogue of Educational Training Resources		
9. Accompanying measures	2016.30	Raising Interoperability Awareness Communication Activities –	ISA ²	Events organised by ISA ²	Events in which ISA ² participated		

Source: [CEPS final study](#).

Annex 6: Supporting evidence from desk research

This annex presents evidence collected from desk research of performance indicators, the rolling work programme, the information available online in the webpages dedicated to the individual ISA² actions and solutions, relevant literature and additional evidence received from the action owners of the 21 sampled actions. In the following section, evidence is presented by evaluation criterion and question.

Relevance

EQ1: To what extent are the objectives of the ISA² programme still pertinent in relation to the evolving needs and problems at both national and EU levels?

Annex 6.a. Academic and grey literature outlining the needs and problems in the field of interoperability

This section presents an overview of the academic and grey literature supporting the assessment of the needs and problems tackled by ISA², thus contributing to the evaluation of the relevance criterion.

Table 11 Literature review: needs and problems in the field of interoperability

ISA ² identified needs and problems	Studies, reports and articles that substantiate the existence of specific needs and problems
The need for public administrations to cooperate to enable more efficient and secure public services	<ul style="list-style-type: none">• Kalvet et al. (2018), <i>Cross-border e-Government Services in Europe: Expected Benefits, Barriers and Drivers of the Once-Only Principle</i>. In Proceedings of the 11th International Conference on Theory and Practice of Electronic Governance (ICEGOV '18);• Tinholt et al. (2013), <i>Study on Analysis of the Needs for Cross-Border Services and Assessment of the Organisational, Legal, Technical and Semantic Barriers</i>. Publications Office of the European Union;• De Abreu (2017), <i>Digital Single Market under EU political and constitutional calling: European electronic agenda's impact on interoperability solutions</i>. EU Law Journal. Vol. 3, No. 1, January 2017;• Krimmer et al. (2018), <i>Contributing to a Digital Single Market for Europe: Barriers and Drivers of an EU-wide Once-Only Principle</i>. Proceedings of the 19th Annual International Conference on Digital Government Research;

ISA ² identified needs and problems	Studies, reports and articles that substantiate the existence of specific needs and problems
	<ul style="list-style-type: none"> • Cave et al. (2017), <i>EU-wide digital Once-Only Principle for citizens and businesses: Policy options and their impacts</i>. Publications Office of the European Union; • Masciotta (2019), <i>A strategy on the interoperability issue within the P.A. from the Italian constitutional perspective</i>. ITALIAN J. PUB. L. 689 (2019); • Kourabali and Katehakis (2019), <i>The new European interoperability framework as a facilitator of digital transformation for citizen empowerment</i>. Journal of Biomedical Informatics 94; • JRC(2020), <i>Assessing the impacts of digital government transformation in the EU</i>. Publications Office of the European Union.
The need for public administrations to exchange information to fulfil legal requirements or political commitments	<ul style="list-style-type: none"> • Kalvet et al. (2018), <i>Cross-border e-Government Services in Europe: Expected Benefits, Barriers and Drivers of the Once-Only Principle</i>. In Proceedings of the 11th International Conference on Theory and Practice of Electronic Governance (ICEGOV '18); • Sallamo et al. (2020), <i>Recommendations for organising and governing integrated public services</i>. Publications Office of the European Union; • Krimmer et al. (2018), <i>Contributing to a Digital Single Market for Europe: Barriers and Drivers of an EU-wide Once-Only Principle</i>. Proceedings of the 19th Annual International Conference on Digital Government Research; • JRC(2020), <i>Assessing the impacts of digital government transformation in the EU</i>. Publications Office of the European Union.
The need for public administrations to share and re-use information to improve administrative efficiency and cut red tape for citizens and businesses	<ul style="list-style-type: none"> • Kalvet et al. (2018), <i>Cross-border e-Government Services in Europe: Expected Benefits, Barriers and Drivers of the Once-Only Principle</i>. In Proceedings of the 11th International Conference on Theory and Practice of Electronic Governance (ICEGOV '18); • Sallamo et al. (2020), <i>Recommendations for organising and governing integrated public services</i>; Publications Office of the European Union, 2021. Publications Office of the European Union; • Krimmer et al. (2018), <i>Contributing to a Digital Single Market for Europe: Barriers and Drivers of an EU-wide Once-Only Principle</i>. Proceedings of the 19th Annual International Conference on Digital Government Research; • Gallo et al. (2014) <i>Study on eGovernment and the Reduction of Administrative Burden</i>. Publications Office of the

ISA ² identified needs and problems	Studies, reports and articles that substantiate the existence of specific needs and problems
	<p>European Union;</p> <ul style="list-style-type: none"> • Cave et al. (2017), <i>EU-wide digital Once-Only Principle for citizens and businesses: Policy options and their impacts</i>. Publications Office of the European Union.
Administrative e-barriers are leading to the fragmentation of the internal market	<ul style="list-style-type: none"> • Cave et al. (2017), <i>EU-wide digital Once-Only Principle for citizens and businesses: Policy options and their impacts</i>. Publications Office of the European Union; • Gallo et al. (2014) <i>Study on eGovernment and the Reduction of Administrative Burden</i>. Publications Office of the European Union; • Sallamo et al. (2020), <i>Recommendations for organising and governing integrated public services</i>; • Krimmer et al. (2018), <i>Contributing to a Digital Single Market for Europe: Barriers and Drivers of an EU-wide Once-Only Principle</i>.
Needs for digitalisation and cooperation deriving from or exacerbated by the COVID-19 pandemic	<ul style="list-style-type: none"> • Charay et al. (2021), <i>Report on Public Administrations' Digital Response to COVID-19 in the EU</i>, Publications Office of the European Union, 2021; • Renda and Castro (2020), <i>Towards Stronger EU Governance of Health Threats after the COVID-19 Pandemic</i>, European Journal of Risk Regulation, 11 (2020), pp. 273–282. Cambridge University Press; • Ciucci and Gouardères (2020), <i>National COVID-19 contact tracing apps</i>. Briefing Policy Department for Economic, Scientific and Quality of Life Policies, European Parliament Briefing; • Politis et al. (2021), <i>On an innovative architecture for digital immunity passports and vaccination certificates</i>. IEEE Network; • Mithani et al. (2021), <i>A scoping review of global vaccine certificate solutions for COVID-19</i>. Preprint, Research Square; • Gstrein et al. (2021), <i>A Terrible Great Idea? COVID-19 'Vaccination Passports' in the Spotlight</i>. Working Paper No. 153 The Centre on Migration, Policy & Society University of Oxford (2021).
The need for digital literacy and skills to ensure that the tools developed can also be used effectively and thus improve take-up	<ul style="list-style-type: none"> • Tinholt et al. (2013), <i>Study on Analysis of the Needs for Cross-Border Services and Assessment of the Organisational, Legal, Technical and Semantic Barriers</i>. Publications Office of the European Union; • Taipale (2012), <i>The use of e-government services and the Internet: The role of socio-demographic, economic and geographical predictors</i>. Telecommunications Policy 37 (2013) 413;

ISA ² identified needs and problems	Studies, reports and articles that substantiate the existence of specific needs and problems
	<ul style="list-style-type: none"> • Misuraca et al. (2020), <i>Exploring Digital Government Transformation in the EU</i>. Publications Office of the European Union; • Gallo et al. (2014) <i>Study on eGovernment and the Reduction of Administrative Burden</i>. Publications Office of the European Union; • Krimmer et al. (2018), <i>Contributing to a Digital Single Market for Europe: Barriers and Drivers of an EU-wide Once-Only Principle</i>. Proceedings of the 19th Annual International Conference on Digital Government Research; • JRC(2020), <i>Assessing the impacts of digital government transformation in the EU</i>. Publications Office of the European Union; • Chinn et al. (2020), <i>The future is now: Closing the skills gap in Europe's public sector</i>, McKinsey & Company.
The need for extended diffusion of the digital identity	<ul style="list-style-type: none"> • Tinholt et al. (2013) <i>Study on Analysis of the Needs for Cross-Border Services and Assessment of the Organisational, Legal, Technical and Semantic Barriers</i>. Publications Office of the European Union; • Krimmer et al. (2018), <i>Contributing to a Digital Single Market for Europe: Barriers and Drivers of an EU-wide Once-Only Principle</i>. Proceedings of the 19th Annual International Conference on Digital Government Research; • Cave et al. (2017), <i>EU-wide digital Once-Only Principle for citizens and businesses: Policy options and their impacts</i>. Publications Office of the European Union.
The need to exchange best practices between EU countries.	<ul style="list-style-type: none"> • Halmos (2018), <i>Cross-border digital public services, Cross Border Review 2018</i> Central European Service For Cross-Border Initiatives; • Sallamo et al. (2020), <i>Recommendations for organising and governing integrated public services</i>. Publications Office of the European Union.
The need to ensure a feedback loop with citizens in order to improve the functioning of digital tools and solutions	<ul style="list-style-type: none"> • Misuraca et al. (2020), <i>Exploring Digital Government Transformation In The EU</i>. Publications Office of the European Union; • Sallamo et al. (2020), <i>Recommendations for organising and governing integrated public services</i>. Publications Office of the European Union.
The need for consistent governance of the different initiatives in the field	<ul style="list-style-type: none"> • Sallamo et al. (2020), <i>Recommendations for organising and governing integrated public services</i>. Publications Office of the European Union;

ISA ² identified needs and problems of interoperability at the EU level.	Studies, reports and articles that substantiate the existence of specific needs and problems
	<ul style="list-style-type: none"> • Lakka et al. (2012), <i>What drives eGovernment growth? An econometric analysis on the impacting Factors</i>. Int. J. Electronic Governance Vol. 6, No. 1, 2013; • Krimmer et al. (2018), <i>Contributing to a Digital Single Market for Europe: Barriers and Drivers of an EU-wide Once-Only Principle</i>. Proceedings of the 19th Annual International Conference on Digital Government Research.

Source: [CEPS final study](#).

Effectiveness

EQ2: To what extent has the ISA² programme achieved its objectives – with special focus on the re-use of interoperability solutions across the Union and paying particular attention to the needs expressed by the European public administrations?

EQ3: Are there aspects (e.g. objectives, actions) that are more or less effective than others, and if so, what lessons can be drawn from this?

Annex 6.b. Take-up of solutions of the sampled ISA² actions

This section presents an overview of how the solutions of the sampled ISA² actions have been taken up in the EU institutions (Table 12) and by public administrations in the EU countries (Table 13), based on the information available on the ISA² actions and solutions webpages and additional information provided in the evaluation process by ISA² action owners. This section contributes primarily to the assessment of the effectiveness and EU-added value of the programme.

Table 12 EU institutions using solutions provided by sampled ISA² actions

	European Commission	Council of the EU	European Parliament	Publications Office of the EU	European Council	European Central Bank	TOTAL
ADMS				x			1
Core Vocabularies	x			x			2
DCAT-AP	x			x			2

	European Commission	Council of the EU	European Parliament	Publications Office of the EU	European Council	European Central Bank	TOTAL
eCertis	x					x	2
EIRA and CarTool	x	x		x			3
e-TrustEx	x	x	x	x			4 ²¹
EUSurvey	x		x	x	x		4
GeoDCAT-AP	x						1
Open e-Prior	x			x			2
Re3gistry	x						1
RegDel	x	x	x	x			4
VocBench3	x			x			2
TOTAL	11	3	3	9	1	1	28

Source: [CEPS final study](#), which built on the data available on [ISA² solutions webpage](#) as of January 2021

Table 13 EU EU countries using solutions provided by sampled ISA² actions

	BE	BG	CZ	DK	DE	EE	IE	EL	ES	FR	HR	IT	CY	LV	LT	LU	HU	MT	NL	AT	PL	PT	RO	SL	SK	FI	SE	TOT.
ADMS					x				x			x																3
Core Vocabularies	x					x			x			x							x									5
CPSV-AP ²²	x				x	x	x	x	x			x							x			x			x	x		11
DCAT-AP	x				x		x		x			x							x								x	7
eCertis	x	x	x	x	x		x	x	x	x	x	x	x		X		x		x	x	x	x		x	x	x	x	22
EIRA	x		x	x		x			x			x				x			x							x	x	10
e-PRIOR	x																											1

²¹ The overview was updated based on additional feedback received from the action owners.

²² In certain cases, such as data models including the CPSV-AP, the use of a specific ISA² solution refers to the fact that the Member States use solutions that are aligned with the ones developed as part of the ISA² programme.

	BE	BG	CZ	DK	DE	EE	IE	EL	ES	FR	HR	IT	CY	LV	LT	LU	HU	MT	NL	AT	PL	PT	RO	SL	SK	FI	SE	TOT.
ESPD ²³	x	x	x	x	x	x	x	x	x	x	x	x		x	x		x	x	x	x	X	x	x	x	x	x	x	25
Open e-TrustEx ²⁴	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	27
European Parliament Crypto Tool	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	27
EUSurvey									x																			1
GeoDCAT-AP					x																							1
IMAPS	x		x	x		x		x	x	x	x	x	x				x	x	x	x				x		x	x	17
Joinup	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x		x	x	x	x	x	x	x	x	x	25
NIFO	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x		x	x	x	x	x	x	x	25
OCS for ECIs																x												1
Re3gistry									x	x		x								x					x	x		6

Source: [CEPS final study](#), which built on the data available on [ISA² solutions webpage](#) as of January 2021

Table 14 Status of sampled actions and their cross-border feature

Package	Action number	Action Name	Operational solutions	Out of which cross-border solution	Solutions under development
1. Key and generic interoperability enablers	2016.19	Trusted Exchange Platform (e-TrustEx)	1	1	-
1. Key and generic interoperability enablers	2016.29	Catalogue of Services	1	1	-
2. Semantic interoperability	2016.07	SEMIC: Promoting Semantic Interoperability Amongst the European Union EU countries	4	2	-

²³ The overview was updated based on additional feedback received from the action owners.

²⁴ The overview was updated based on additional feedback received from the action owners. The e-TrustEx solution is used by all Member States in the context of the DECIDE project.

Package		Action number	Action Name	Operational solutions	<i>Out of which cross-border solution</i>	Solutions under development
2. interoperability	Semantic	2016.16	Public Multilingual Knowledge Management Infrastructure for the Digital Single Market	-	-	4
3. Access to data/data sharing/open data		2016.03	Big Data for Public Administrations	3	3	1
3. Access to data/data sharing/open data		2016.06	Sharing Statistical Production and Dissemination Services and Solutions in the European Statistical System	2	2	6
3. Access to data/data sharing/open data		2016.18	Development of an Open Data Service, Support and Training Package in the Area of Linked Open Data, Data Visualisation and Persistent Identification	1	1	1
4. Geospatial solutions		2016.10	European Location Interoperability Solutions for e-Government (ELISE)	4	4	1
5. e-Procurement/ e-invoicing - Supporting instruments		2016.05	European Public Procurement Interoperability Initiative	3	3	5
6. Decision making and legislation - Supporting instruments		2016.23	Legal interoperability (former ICT Implications of EU Legislation)	2	-	-
6. Decision making and legislation - Supporting instruments		2017.03	REFIT Platform	-	-	1
6. Decision making and		2017.04	Inter-Institutional Register of	1	-	-

Package	Action number	Action Name	Operational solutions	Out of which cross-border solution	Solutions under development
legislation - Supporting instruments		Delegated Acts (RegDel)			
7. EU Policies - Supporting instruments	2016.14	European Citizens' Initiatives and European Parliament Elections	2	2	-
8. Supporting instruments for public administrations	2016.20	Joinup – European Collaborative Platform and Catalogue	1	1	-
8. Supporting instruments for public administrations	2016.21	National Interoperability Framework Observatory	3	3	-
8. Supporting instruments for public administrations	2016.32	European Interoperability Architecture (EIA)	2	2	1
8. Supporting instruments for public administrations	2016.35	EUSurvey	2	1	-
8. Supporting instruments for public administrations	2016.37	Interoperability Maturity Assessment of a Public Service (IMAPS)	1	1	-
8. Supporting instruments for public administrations	2017.01	Standard-Based Archival Data Management, Exchange and Publication	2	2	1
9. Accompanying measures	2016.30	Raising Interoperability Awareness – Communication Activities	The full overview of events organised is listed in Annex 6.e.		
TOTALS			35	29	21

Source: European Commission's own elaboration

Annex 6.c. Performance indicators

The below table presents relevant performance indicators for the solutions of the sampled ISA² actions based on the data of the ISA² dashboard and the webpages dedicated to ISA² actions and solution. The performance indicators contribute primarily to the assessment of the effectiveness of the programme and its EU added value. The table presents one or two performance indicators per solution, as relevant depending on the solution type. The value of each performance indicator is listed in a dedicated column (“Value performance indicator 1”; “Value performance indicator 2”), followed by the description of the performance indicator (“Performance indicator 1”; “Performance indicator 1”). The performance indicators were collected based on the entire duration of the programme. The data presented below was collected in January 2021.

Table 15 Overview of performance indicators for sampled ISA² actions²⁵

Package	ISA / ISA ²	Action number	Solution	Value performance indicator 1	Performance indicator 1	Value performance indicator 2	Performance indicator 2
1. Key and generic interoperability enablers	ISA	2016.19	e-TrustEx	200	Number of public administrations in the EU countries using this solution	16,700,000 ²⁶	Number of documents exchanged between connected EU institutions, as well as public and private entities in the EU countries
1. Key and generic interoperability enablers	ISA	2016.29	CPSV-AP	12	Number of public administrations in EU countries using this solution (including in cases of cross-border catalogues)	701	Number of downloads on Joinup (up until January 2021) of the latest version of CPSV-AP (version 2.2.1 released in 2019)
2. Semantic interoperability	ISA	2016.07	ADMS	9	Number of public administrations (the EU countries and the EU	2,934	Number of interoperability solutions on Joinup described

²⁵ The ISA² solutions are part of the EIF toolbox, supporting and contributing to the achievement of the objectives of the EIF. The EIF Toolbox is available on Joinup: <https://joinup.ec.europa.eu/collection/nifo-national-interoperability-framework-observatory/solution/eif-toolbox/eif-toolbox>

²⁶ The information was updated based on additional feedback received from the action owners.

Package	ISA / ISA ²	Action number	Solution	Value performance indicator 1	Performance indicator 1	Value performance indicator 2	Performance indicator 2
					institutions) and businesses using the solution		using ADMS (ADMS is used for organising the descriptive metadata of all solutions on Joinup; in January 2021, 2,934 solutions were available on Joinup and thus described using the ADMS solution)
2. Semantic interoperability	ISA	2016.07	Core vocabularies	11	Instances of use of the solution by public administrations (in the EU countries and the EU institutions)		
2. Semantic interoperability	ISA	2016.07	DCAT-AP	29	Instances of use of the solution by public administrations (in the EU countries and the EU institutions) and their data portals, associations, universities.		
2. Semantic interoperability	ISA	2016.07	VocBench3	14	Number of public administrations (in the EU countries and the EU institutions), universities, institutes, international organisations using the previous versions of VocBench.		
2. Semantic interoperability	ISA ²	2016.16	PMKI Core data for multilingual taxonomies / terminologies	2 journal articles; 7 international conference proceedings	Instances of inclusion in academic journals and international conferences		
2. Semantic interoperability	ISA ²	2016.16	Semantic links	4	Collaborations with European public administrations to establish semantic interoperability between		

Package	ISA / ISA ²	Action number	Solution	Value performance indicator 1	Performance indicator 1	Value performance indicator 2	Performance indicator 2
					national language resources and EuroVoc (3 EU countries and the EU institutions)		
3. Access to data/data sharing/open data	ISA ²	2016.06	ESS Service	20	Number of registered contributors (EU countries)	28	Number of National Statistical Institutes' CIOs and Heads of Methodology who adopted the ESS reference architecture
3. Access to data/data sharing/open data	ISA ²	2016.18	Data Visualisation Tools Catalogue	31	Number of users of solution by public administrations (EU countries and the EU institutions) and projects	214	Number of downloads on Joinup platform
4. Geospatial solutions	ISA	2016.10	Re3gistry	13	Public administrations (EU countries, EC) using this solution		
4. Geospatial solutions	ISA	2016.10	EULF Blueprint	29	Number of public administrations using the solution (EU countries and the EU institutions)		
4. Geospatial solutions	ISA	2016.10	Studies on location information (ELISE)	8	Number of studies published on location information, including best practices		
5. eProcurement/ eInvoicing - Supporting instruments	ISA	2016.05	Open e-Prior	70	Number of public administrations using the solution (EU institutions)	306	Number of suppliers connected via the web portal
5. eProcurement/ eInvoicing - Supporting	ISA	2016.05	eCertis	44 ²⁷	Public administrations (EU countries, EU institutions), contracting authorities,	25	Connections from EU countries' solutions to

²⁷ In addition, 3000 unique visitors were recorded in June 2021, based on additional information received from the action owners.

Package	ISA / ISA ²	Action number	Solution	Value performance indicator 1	Performance indicator 1	Value performance indicator 2	Performance indicator 2
instruments					companies – using this solution		eCertis ¹⁰⁵
5. eProcurement/ eInvoicing - Supporting instruments	ISA	2016.05	ESPD	35,752	Number of solution downloads	75	Number of ESPD solutions, either using the data model or the open source version of the ESPD service developed under ISA ²
6. Decision making and legislation - Supporting instruments	ISA	2016.23	Digital screening mentioned in Tool #27 of the Better Regulation Toolbox: The digital economy and society & ICT issues	955	Number of Commission proposals screened for ICT impacts between 2014 and 2020		
6. Decision making and legislation - Supporting instruments	ISA	2016.23	ICT impact assessment guidelines	11	Instances of known use of the guidelines (since 2014)		
6. Decision making and legislation - Supporting instruments	ISA ²	2017.03	REFIT Platform IT Tool	No instance of re-use/internal tool	Instance of re-use/internal tool		
6. Decision making and legislation - Supporting instruments	ISA ²	2017.04	RegDel	144,587	Number of page views since the launch up until 1 February 2019	2,202	Number of active subscriptions

Package	ISA / ISA ²	Action number	Solution	Value performance indicator 1	Performance indicator 1	Value performance indicator 2	Performance indicator 2
7. EU Policies - Supporting instruments	ISA	2016.14	Online Collection Software to support European Citizens' Initiative	45	Number of ECIs launched using the Online Collection Software		
7. EU Policies - Supporting instruments	ISA	2016.14	European Parliament Crypto Tool	27	Number of EU countries using the solution		
8. Supporting instruments for public administrations	ISA	2016.20	Joinup	16,092	Number of professionals working in the field of e-Government registered on Joinup (as of 14 January 2021)	2,934	Solutions created within the 147 Collections (thematic collaborative spaces) on Joinup.
8. Supporting instruments for public administrations	ISA	2016.21	NIFO factsheets	253	Number of members on Joinup webpage	36	Number of countries covered in Digital Public Administration Factsheets
8. Supporting instruments for public administrations	ISA	2016.32	EIRA and CarTool	10	Number of public administrations in EU countries and EU deploying the solution	3,610	Number of downloads of EIRA on Joinup up to January 2021
8. Supporting instruments for public administrations	ISA	2016.35	EUSurvey	29,200	Number of surveys created (sum for 2016, 2017, 2018, Q2 in 2019 and Q3 in 2020), based on the ISA ² solution webpage, on 2018/2019 Rolling Work Programme and ISA ² action dashboard		
8. Supporting instruments for public	ISA	2016.37	IMAPS	141	Total number of IMPAS assessments (2018 - 2020) based on the 2018 and 2020 editions of		

Package	ISA / ISA ²	Action number	Solution	Value performance indicator 1	Performance indicator 1	Value performance indicator 2	Performance indicator 2
administrations					the Report on IMAPS Results ²⁸		
8. Supporting instruments for public administrations	ISA ²	2017.01	Study on Standard-based Archival Data Management, Exchange, and Publication	124	Unique visitors/downloads since the publication (2018)		
8. Supporting instruments for public administrations	ISA ²	2017.01	Assessment tool offering support for the selection of IT solutions for archives management	65	Unique visitors/downloads since the publication (2018)		
8. Supporting instruments for public administrations	ISA ²	2019.01	Interoperability Academy Catalogue of Educational Training Resources	35	Number of resources included in catalogue		
9. Accompanying measures	ISA ²	2016.30	Raising Interoperability Awareness – Communication Activities	50	Events organised by ISA ²	82	Events in which ISA ² participated

Source: [CEPS final study](#).

²⁸ Report on IMAPS results, 2018 edition, Directorate-General for Informatics, European Commission, https://joinup.ec.europa.eu/sites/default/files/solution/documentation/2018-05/ISA2%20Action%202016.37%20Report%20on%20IMAPS%20results.%202018%20Edition_0.pdf; Report on IMAPS results, 2020 edition, Directorate-General for Informatics, European Commission, https://ec.europa.eu/isa2/sites/isa/files/report_on_imaps_results.pdf

Annex 6.d. Overview of studies, reports and papers developed as part of the sampled ISA² actions

This section provides a summary of the studies, reports and papers published as part of the implementation of ISA² actions, forming a particular type of output category of the programme. The information presented was collected from the ISA² actions and solutions webpages and Joinup. This section contributes to the assessment of the effectiveness criterion.

Table 16 Overview of studies, reports and papers developed as part of the sampled ISA² actions

Package	Action number	Action name	Studies, reports, papers
1. Key and generic interoperability enablers	2016.29	Catalogue of Services	<ul style="list-style-type: none"> • "Architecture for public service chatbots" (2019); • "European taxonomy for public services" (2019); • "Guidelines on how to build catalogues of public services at one-stop-shop portals and improve user experience" (2018)
2. Semantic interoperability	2016.07	SEMIC: Promoting Semantic Interoperability Amongst the European Union EU countries	<ul style="list-style-type: none"> • "Use cases and benefits of ISA² specifications" (2019); • "GDPR Data Portability and Core Vocabularies" (2018); • "Towards an open government data ecosystem in Europe using common standards" (2017)
2. Semantic interoperability	2016.16	Public Multilingual Knowledge Management Infrastructure for the DSM	<ul style="list-style-type: none"> • P. Schmitz, F. Sanmartin, E. Francesconi, N. Hajlaoui, B. Batouche, Automatic Alignment of Multilingual Resources in the Linguistic Linked Open Data Cloud, in Journal of Open Access to Law; • M. Fiorelli, A. Stellato, T. Lorenzetti, A. Turbati, P. Schmitz, E. Francesconi, N. Hajlaoui, B. Batouche. Towards OntoLex-Lemon editing in VocBench 3, in AIDAinformazioni, Rivista di scienze dell'informazione, ISBN 978-88-548-8992-7, ISSN 1121-0095.; • A. Stellato, A. Turbati, M. Fiorelli, T. Lorenzetti, P. Schmitz, E. Francesconi, N. Hajlaoui, B. Batouche, Towards the Assessment of Gold-Standard Alignments between Legal Thesauri, in JURIX 2018 - The 31st international conference on Legal Knowledge and Information Systems. December 12–14, 2018 in Groningen, Netherlands; • P. Schmitz, E. Francesconi, N. Hajlaoui, B. Batouche, A. Stellato, Semantic Interoperability of Multilingual Language Resources by Automatic Mapping', in Proceedings of the 7th International Conference on Electronic Government and

Package	Action number	Action name	Studies, reports, papers
			<p>the Information Systems Perspective (EGOVIS 2018), Regensburg, Germany 3-6 September 2018;</p> <ul style="list-style-type: none"> • Schmitz P., Francesconi E., Hajlaoui N., Batouche B., PMKI: a European Commission action for the interoperability, maintainability and sustainability of Language Resources in Proceedings of the 11th edition of the Language Resources and Evaluation Conference, 7-12 May 2018, Miyazaki (Japan); • Stellato A., Fiorelli M., Turbati A., Lorenzetti T., Schmitz P., Francesconi E., Hajlaoui N., Batouche B., Dataset Alignment and Lexicalization to Support Multilingual Analysis of Legal Documents in AI Approaches to the Complexity of Legal Systems - Models and Ethical Challenges for Legal Systems, Legal Language and Legal Ontologies, Argumentation and Software Agents, within JURIX 2017 Conference, University of Luxembourg, 13-15 December 2017; • Schmitz P., Francesconi E., Hajlaoui N., Batouche B., Towards a Public Multilingual Knowledge Management Infrastructure for the European Digital Single Market, in Proceedings of the LDK 2017 Workshops: 1st Workshop on the OntoLex Model (OntoLex-2017), Shared Task on Translation Inference Across Dictionaries & Challenges for Wordnets, co-located with 1st Conference on Language, Data and Knowledge (LDK 2017), pp. 33-42, CEUR Workshop Proceedings Vol-1899, ISSN 1613-0073, Galway, Ireland, 8 June 2017; • M. Fiorelli, A. Stellato, T. Lorenzetti, A. Turbati, P. Schmitz, E. Francesconi, N. Hajlaoui, B. Batouche, "Editing OntoLex-Lemon in VocBench 3", in Proceedings of the 12th International Conference on Language Resources and Evaluation (LREC 2020), Marseille, France, 11-16 May 2020; • M. Fiorelli, A. Stellato, T. Lorenzetti, P. Schmitz, E. Francesconi, N. Hajlaoui and B. Batouche, "Metadata-driven Semantic Coordination", in 13th International Conference on Metadata and Semantics Research, Rome, Italy, 28-31 October 2019.
	2016.07	VocBench3	<ul style="list-style-type: none"> • Armando Stellato, Manuel Fiorelli, Andrea Turbati, Tiziano Lorenzetti, Willem Gemert, Denis Dechandon, Christine Laaboudi-Spoiden, Anikó Gerencsér, Anne Waniart, Eugeniu Costetchi and Johannes Keizer VocBench 3: A collaborative Semantic Web editor for ontologies, thesauri and lexicons, Semantic Web, doi:10.3233/SW-200370, 1-27, 05, 2020

Package	Action number	Action name	Studies, reports, papers
3. Access to data/data sharing/open data	2016.03	Big Data for Public Administrations	<ul style="list-style-type: none"> • "Big Data Analytics for Policy Making Report" (2016)
4. Geospatial solutions	2016.10	European Location Interoperability Solutions for e-Government (ELISE)	<ul style="list-style-type: none"> • "Assessment of economic opportunities and barriers related to geospatial data in the context of the Digital Single Market" (2018); • "Digital Government Benchmark - Study on Digital Government Transformation" Final Report (2018); "Study on Digital Government Transformation" Final Report (2018) • "Digital Government Benchmark - API study" Final Report (2018); • "Blockchain for Digital Government" Final Report (2019); • "Exploring Digital Government Transformation: understanding public sector innovation in a data-driven society" (2020); • "INSPIRE-MMTIS, overlap in standards related to the Delegated Regulation (EU) 2017/1926" (2019); • "The role of Spatial Data Infrastructures in the Digital Government Transformation of Public Administrations" (2019); • "Study of the terms of use applied in the INSPIRE resources and their usability barriers" (2019); • "Artificial Intelligence in the public sector. Use, impact and governance of AI in the public sector of the EU" (2020); • "Data Ecosystems for Geospatial Data: Establishment of Sustainable Data Ecosystems" (2020); • "WGIC Geospatial Information and Privacy - Policy Perspectives and Imperatives for the Geospatial Industry" (2020); • "Location intelligence benchmarking study" (2020). • "Establishing a new baseline for monitoring the status of EU Spatial Data Infrastructure" (2020)²⁹
6. Decision making	2016.23	Legal interoperability (former ICT	<ul style="list-style-type: none"> • "Case study analysis of regulatory reporting practices across the European

²⁹ The overview was amended to include additional input received from ISA² action owners.

Package	Action number	Action name	Studies, reports, papers
and legislation - Supporting instruments		Implications of EU Legislation)	Commission" (2019); • "ICT Impact Assessment Guidelines: Practical tools and guidelines for assessing ICT implications" (2018).
8. Supporting instruments for public administrations	2016.21	NIFO	• "The role of eGovernment and Interoperability in the European Semester process" (2018, 2019 and 2020); • "eGovernment factsheets anniversary report" (2019); • "Report on the state-of-play of digital public administration and interoperability" (2020); • "Report on public administrations' digital response to COVID-19 in Europe" (2021). • In addition, the action also published regularly factsheets and infographics: Digital public administration and interoperability factsheets and infographics (2018, 2019 and 2020) covering 35 European countries.
8. Supporting instruments for public administrations	2016.37	IMAPS	• "Report on IMAPS results" (2018, 2020)
8. Supporting instruments for public administrations	2017.01	Standard-Based Archival Data Management, Exchange and Publication	• "Study on Standard-Based Archival Data Management, Exchange and Publication" (2018)

Source: [CEPS final study](#).

Annex 6.e. Communication activities

This section presents an overview of the communication activities linked to the programme. It outlines both events in which ISA² representatives played an active role (Table 17) as well as events funded by ISA² (Table 18). The overview of communication activities contributes primarily to the effectiveness criterion, but also to EU added value.

Table 17 Events in which ISA² representatives played an active role

Year	Events	Location	Total participants
2016	Ljubljana ICT Procurement workshop	Ljubljana, Slovenia	N/A
2016	Nordic Digital Day	Tallinn, Estonia	N/A
2016	Open Source Summit Paris	Paris, France	180
2016	Digital Stakeholders Forum	Brussels, Belgium	150
2016	Digitec16	Brussels, Belgium	500
2016	Manage IT 2016	Antwerp, Belgium	N/A
2017	Open Belgium	Antwerp, Belgium	150
2017	SG IT Day	Brussels, Belgium	200
2017	Digital Day Rome	Rome, Italy	600
2017	ECI Day 2017	Brussels, Belgium	150
2017	ICT Spring Luxembourg 2017	Luxembourg, Luxembourg	5,000
2017	Conference Krems	Krems, Austria	N/A
2017	Digital Assembly 2017	Valletta, Malta	5,000
2017	Semantics Conference 2017	Amsterdam, The Netherlands	200
2017	ICA Conference 2017		N/A
2017	Inspire Conference 2017	Strasbourg, France	3,000
2017	Data for Policy	London, UK	200
2017	DK Architecture Conference	Copenhagen, Denmark	N/A
2017	Jornada sobre Interoperabilidad y Archivo Electronico	Madrid, Spain	180
2017	Digitalisierungsessen 17	Odense, Denmark	350
2017	Egov Conference Tallinn, 2017	Tallinn, Estonia	200
2017	3rd Annual Public Sector Transformation Conference	Brussels, Belgium	N/A
2017	3rd ELRC Conference	Brussels, Belgium	N/A
2017	ICT Proposers Day 2017	Budapest, Hungary	150
2017	Metaforum 2017	Brussels, Belgium	N/A
2017	Informatika v Javni Upravi	Brdo, Slovenia	175

Year	Events	Location	Total participants
2017	Paris Open Source Summit 2017	Paris, France	150
2017	Connecting Europe Facility (CEF) Conference	Brussels, Belgium	150
2017	eDemocracy Conference	Athens, Greece	100
2018	Connected Smart Cities Conference	Brussels, Belgium	500
2018	Flosscon	Brussels, Belgium	200
2018	GDPR Conference	Berlin, Germany	150
2018	Digital Czech Republic	Prague, Czech Republic	250
2018	Interop Summit 2018	Brussels, Belgium	150
2018	Open Belgium	Louvain La Neuve, Belgium	250
2018	RDA Berlin	Berlin, Germany	200
2018	IESA 2018	Berlin, Germany	250
2018	CNIS2018	Madrid, Spain	300
2018	Digital Day	Rome, Italy	300
2018	CEEE Gov Days 2018	Budapest, Hungary	150
2018	German Federal Level Conference	Berlin, Germany	120
2018	Good Governance Conference 2018	Brussels, Belgium	650
2018	Civil Society Days 2018	Brussels, Belgium	200
2018	Language Technology Industry Summit	Brussels, Belgium	200
2018	Egov Conference Tallinn, 2018	Tallinn, Estonia	300
2018	Conference Supervisory reporting for the Digital Age	Brussels, Belgium	150
2018	Digital Assembly 2018	Helsinki, Finland	125
2018	ICA Conference 2018	Sofia, Bulgaria	5,000
2018	ICT implications presentation in Vienna	Vienna, Austria	120
2018	Inspire Conference 2018	Antwerp, Belgium	900
2018	TOOP Conference	Vienna, Austria	150
2018	eGov High Level Conference 2018	Vienna, Austria	N/A
2018	Infifest Montenegro	Podgorica, Montenegro	150

Year	Events	Location	Total participants
2018	European Week of Regions and Cities 2018	Brussels, Belgium	6,000
2018	GovTech Summit 2018	Paris, France	3,000
2018	Digitec18	Brussels, Belgium	900
2018	ICT Vienna	Vienna, Austria	5,000
2018	Paris Open Source Summit 2018	Paris, France	200
2018	Symposium on Digital Transformation of the public sector 2018	Belgium	200
2018	Webinar on Government Transformation: "How co-creation will shape the future of value creation in the public sector"	Belgium	200
2018	1st CEF eTranslation Conference	Brussels, Belgium	N/A
2018	European Open Source & Free Software Law Event (EOLE 2018)	Paris, France	
2018	Paris Open Source Summit 2018, with a session on the Open Source Observatory	Paris, France	
2018	Symposium on "Digital transformation: Is it an evolution or a revolution?"	Leuven, Belgium	
2018	Webinar: Shaping the Future of Value Creation in the Public Sector	Online event	
2019	Connected Smart Cities Conference 2019, with a presentation on ISA ²	Brussels, Belgium	
2019	Startup Europe Summit 2019	Cluj-Napoca, Romania	
2019	Western Balkans Digital Summit	Belgrade, Serbia	
2019	e-Society 2019 conference	Utrecht, Netherlands	
2019	e-Governance Conference 2019: Same Goals, Different Roadmaps	Tallinn, Estonia	
2019	URBIS Smart City Fair	Brno, Czech Republic	
2019	Digital Assembly 2019	Bucharest, Romania	
2019	EU Datathon 2019 supported by ISA ²	Brussels, Belgium	
2019	EGOV-CeDEM-ePart 2019	San Benedetto del Tronto, Italy	
2019	Digital Excellence Forum @ ICT Proposers' Day 2019	Helsinki, Finland	
2019	European Week of Regions and Cities 2019	Brussels, Belgium	
2019	Web Summit 2019	Lisbon, Portugal	
2019	GovTech Summit	Paris, France	
2020	Inspire 2020 - the Virtual Conference	Online event	

Year	Events	Location	Total participants
2020	Webinar: Powering public sector change through Digital Innovation Hubs	Online event	
2020	ICEGOV 2020	Athens, Greece	
2020	ReMeP 2020 - Research Meets Practice. Legal Informatics Conference	Vienna, Austria	
2020	OECD - OPSI event "Policymaking after shock"		
2020	EU Regions Week: How can regions boost digital services?	Online event	

Source: [CEPS final study](#).

Table 18 Events funded by ISA² between 2016 and 2020

Year	ISA2 workshop/ conference	Location	Total remote onsite	Total remote participants
2016	From ISA to ISA2	Brussels, Belgium	300	-
2016	SEMIC2016*	Rome, Italy	206	-
2016	Workshop at Paris Open Source Summit 2016	Paris, France		
2016	Energy and Location Workshop: Methodologies for energy performance assessment based on location data	Ispira, IT		
2016	Semantic Interoperability Conference 2016 (SEMIC)	Rome, IT		
2016	INSPIRE Conference 2016 Parallel Session: INSPIREd Energy	Barcelona, ES		
2016	INSPIRE Conference 2016 Parallel Session: INSPIRE and the European Interoperability Framework: chaired by ELISE action leader	Barcelona, ES		
2016	INSPIRE Conference 2016 Workshop: European Location Interoperability Solutions for e-Government: from EULF and ARE3NA to ELISE	Barcelona, ES		
2016	INSPIRE Conference 2016 Parallel Session: The INSPIRE Toolbox: Re3gistry - A tool to manage and share reference codes	Barcelona, ES		
2016	INSPIRE Conference 2016 Parallel Session: The INSPIRE Toolbox: INSPIRE validation, conformance and interoperability testing	Barcelona, ES		
2016	From ISA to ISA ² — new challenges and opportunities	Brussels, BE		
2016	INSPIRE Conference 2016 Parallel Session: Costs and benefits of implementing INSPIRE: EULF lessons learned and follow up	Barcelona, ES		
2016	INSPIRE Conference 2016 Parallel Session: Next Generation SDI:	Barcelona, ES		

Year	ISA2 workshop/ conference	Location	Total remote onsite	Total remote participants
	Exploring Access Control in INSPIRE and e-Government			
2016	TESTA-ng Working Group Meeting	Brussels		
2017	Workshop on the EIF	Thessaloniki	N/A	-
2017	Sharing & Reuse Conference and Awards 2017	Lisbon, Portugal	220	810
2017	Workshop on Sharing and reuse Framework	Lisbon, Portugal		
2017	SEMIC2017	Valletta, Malta	224	609
2017	Webinar on the ISA ² Interoperability Test Bed	online event		
2017	Access to Base Registries Webinar	online event		
2017	TESTA-ng Working Group Meeting	Brussels		
2017	Open Conversation on Information Governance	online event		
2017	DCAT-AP "Change Management & Release Policy" Webinar	online event		
2017	EU Datathon 2017	Brussels (Belgium)	95	95
2017	Change and Release Management Policy for DCAT-AP - final webinar	online event		
2017	INSPIRE Conference 2017 Parallel Session: INSPIRE thinking out of the box: EU Location Framework Blueprint - Paving the road to digital government	Kehl, DE / Strasbourg, FR		
2017	INSPIRE Conference 2017 Speed Presentations: Introducing User Feedback in SDI to improve data quality and user experience	Kehl, DE / Strasbourg, FR		
2017	INSPIRE Conference 2017 Parallel Session: INSPIRE and linked data: Spatial Data on the Web - Tools and guidance for data providers	Kehl, DE / Strasbourg, FR		
2017	Webinar: what's new on Joinup	online		
2017	Change and Release Management Policy for DCAT-AP - final webinar	online		
2017	DCAT-AP "Change Management & Release Policy" Webinar	online		
2017	Open Conversation on Information Governance	online		
2017	Access to Base Registries webinar	online		
2017	Webinar on Interoperability Test Bed	online		
2017	SEMIC	Valletta, Malta		

Year	ISA2 workshop/ conference	Location	Total remote onsite	Total remote participants
2017	Sharing & Reuse Conference 2017	Lisbon, PT		
2017	INSPIRE Conference 2017 Parallel Session: INSPIRE and linked data: INSPIRE in RDF - increasing semantic interoperability for European geospatial data?	Kehl, DE / Strasbourg, FR		
2017	INSPIRE Conference 2017 Parallel Session: MIWP 2016-2020 Overview: INSPIRE Reference Validator	Kehl, DE / Strasbourg, FR		
2017	INSPIRE Conference 2017 Parallel Session: Thematic Focus - Energy: Web apps for INSPIRE - The ELISE Energy pilot example	Kehl, DE / Strasbourg, FR		
2017	INSPIRE Conference 2017 Parallel Session: Continued support to implementation: Re3gistry v2 - Manage and share reference codes in a simple way	Kehl, DE / Strasbourg, FR		
2017	INSPIRE Conference 2017 Workshop: INSPIREd Energy	Kehl, DE / Strasbourg, FR	20	
2017	INSPIRE Conference 2017 Workshop: New Directions in Digital Government using INSPIRE	Kehl, DE / Strasbourg, FR	60	
2017	1st meeting of ISA ² WG GS	Ispra, IT	37	37
2017	Webinar: What's new on Joinup?	online event		
2017	Sharing & Reuse at workshop at Paris Open Source Summit 2017			
2018	Webinar: Implementing ISA ² Core Vocabularies in JSON-LD			
2018	Open PM2 Conference (partially funded by ISA2)	Brussels, Belgium	538	1800 (connections to web streaming)
2018	Kick-off webinar: Core Public Event Vocabulary	online event		
2018	ELISE Webinar: Assessment of economic opportunities and barriers related to geospatial data	online event		
2018	Follow-up webinar on Core Public Event Vocabulary	online event		
2018	Webinar on Access to Base Registries	online event		
2018	Workshop: Addressing the Barriers to IPv6 Adoption			
2018	SEMIC 2018	Sofia, Bulgaria	220	701
2018	Access to Base Registries webinar on European Registry of Registries	online event		
2018	Digital Government Beyond 2020: workshop with civil society and	Brussels, Belgium		

Year	ISA2 workshop/ conference	Location	Total remote onsite	Total remote participants
	start-ups			
2018	EU Datathon 2018	Brussels, Belgium		
2018	Digital Government Beyond 2020 Workshop	Brussels, Belgium		
2018	Digital Government Beyond 2020 workshop with City and Regional representatives	Brussels, Belgium		
2018	Digital Government Beyond 2020 workshop with private sector representatives	Brussels, Belgium		
2018	ISA ² Mid-Term Conference: Linking Public Administrations, Businesses and Citizens	Brussels, Belgium	325	-
2018	ISA ² Interim Evaluation: Kick-off Workshop	Brussels, Belgium		
2018	Workshop organised as part of the European Week of Regions and Cities 2018	Brussels, Belgium	98	-
2018	Workshop organised as part of the Inspire Conference	Antwerp, Belgium	95	-
2018	ISA ² Mid-Term Conference: Linking Public Administrations, Businesses and Citizens	Brussels, Belgium		
2018	ISA ² Interim Evaluation: Kick-off Workshop	Brussels, Belgium		
2018	4th Follow-up Expert Meeting, 27th March 2019, on the provision of EU-Wide Multimodal Travel Information Services	Brussels, BE		
2018	ISA2 interim evaluation - kick off	Brussels, BE		
2018	ISA2 midterm conference	Brussels, BE		
2018	Digital Government beyond 2020	Brussels, BE		
2018	Access to Base Registries webinar	online		
2018	SEMIC	Sofia, BG		
2018	to IPv6 adoption	Brussels, BE		
2018	Webinar on Access to Base Registries	online		
2018	TESTA-ng Working Group Meeting	Brussels		
2018	Follow up webinar on Core Public Event Vocabulary	online		
2018	Open PM2 conference	Brussels, BE		
2018	Kick-off webinar: Core Public Event Vocabulary	online		
2018	4th meeting of ISA ² WG GS	Brussels, BE	20	20

Year	ISA2 workshop/ conference	Location	Total remote onsite	Total remote participants
2018	Delivering EU-wide multimodal travel information, planning and ticketing services: dream or reality?	Brussels, BE		
2018	INSPIRE Conference 2018 Parallel Session: Fitness for purpose: Adding Location Interoperability to Better Regulation's Assessment of ICT Implications of New Legislation	Antwerp, BE		
2018	INSPIRE Conference 2018 Workshop: Digital transformation and the future of SDIs	Antwerp, BE		
2018	INSPIRE Conference 2018 Workshop: General Data Protection Regulation (GDPR) - Trusting the use of your personal location data	Antwerp, BE		
2018	INSPIRE Conference 2018 Parallel Session: The use of INSPIRE to support Intelligent Transport Systems	Antwerp, BE		
2018	INSPIRE Conference 2018 Parallel Session: Energy & Location	Antwerp, BE		
2018	INSPIRE Conference 2018 Workshop: INSPIRE on tools (Geoportal, Re3gistry v2.0, Validator)	Antwerp, BE		
2018	INSPIRE Conference 2018 Parallel Session: Helping to make INSPIRE work: Good practices for licences – overcoming usage barriers for INSPIRE data	Antwerp, BE		
2018	3rd meeting of ISA ² WG GS	Online		19
2018	Pan-European Authoritative Gazetteer Developments (closed event)	Online		17
2018	Workshop on GDPR and Location Data	Online		35
2018	Location Data Licensing (closed event)	Online		25
2018	Digital platforms in government environments (Closed event)	Online		
2018	2nd meeting of ISA ² WG GS	Brussels, BE	23	23
2018	ELISE Webinar: Spatial Data on the Web : GeoNetwork's User feedback form - How to make geospatial data more accessible for e-government applications	Online		35
2018	ELISE Webinar: Spatial Data on the Web : How to make geospatial data more accessible for e-government applications	Online		35
2018	DIGITEC 2018 - LEOS: Making legislative drafting more efficient	Brussels, Belgium		
2018	ELISE Webinar: Assessment of economic opportunities and barriers related to geospatial data in the context of the Digital Single Market	Online		35

Year	ISA2 workshop/ conference	Location	Total remote onsite	Total remote participants
2018	ELISE Energy Pilot Seminar - "Possible synergies between energy smart meters, SensorThings API and INSPIRE"	Ispra, IT		
2018	EU Datathon 2018	Brussels (Belgium)	115	115
2019	OSOR Workshop at Paris Open Source Summit	Paris, France		
2019	Catalogue of Services Webinar	Online event		
2019	7th meeting of ISA ² WG GS	Brussels, BE/VC	19	23
2019	ELISE EU Gazetteer Evaluation Project (closed event)	Online		12
2019	ELISE User panel EU Gazetteer Evaluation Project (closed event)	Online		11
2019	ELISE Webinar - The role of Spatial Data Infrastructures for Digital Government Transformation	Online		46
2019	ELISE Webinar - Geospatial Technology and Public Participation	Online		33
2019	Exploring Digital Government Transformation in the EU (closed event)	Online		21
2019	ELISE Webinar - Persistent Identifiers (PIDs) as the glue for linking information infrastructures	Online		
2019	ELISE User panel - EU Gazetteer Evaluation – Cultural Heritage Testbed (Closed event)	Online		
2019	6th meeting of ISA ² WG GS	Ispra, IT/VC	22	31
2019	Sharing and Reuse conference 2019	Bucharest, RO		
2019	ELISE Webinar - Governance models, ecosystems and benefits of APIs for public sector organisations	Online		27
2019	ELISE UP on EU Gazetteer Evaluation Project - Introductory Webinar	Online		9
2019	Workshop on Semantic Interoperability for the multilingual web	Luxembourg, LU		
2019	5th meeting of ISA ² WG GS	Online	25	25
2019	Joinup webinar	Online		
2019	ELISE Webinar: The role of Geospatial for Digital Government Transformation	Online		
2019	ELISE User Panel LIFO wave one (Closed event)	Online		
2019	EIF workshop	Brussels, BE		

Year	ISA2 workshop/ conference	Location	Total remote onsite	Total remote participants
2019	OSOR workshop	Brussels, BE		
2019	Interim evaluation workshop			
2019	Catalogue of Services webinar	Online		
2019	Webinar on AI and Public Administrations	Online		
2019	Access to Base Registries webinar	Online		
2019	The Digital Transformation of Government (Closed event)	Online		15
2019	Workshop: The Future of the Open Source Observatory (OSOR)	Brussels, Belgium		
2019	EIF Workshop on Organisational Interoperability and Public Service Governance	Brussels, Belgium		
2019	Webinar: Access to Base Registries[ARM(1)]	Online event		
2019	Catalogue of Services Webinar	Online event		
2019	Webinar: The Future of the Open Source Observatory	Online event		
2019	Interim Evaluation of the ISA ² Programme: Final Workshop	Brussels, Belgium		
2019	Webinar: Mastering Joinup to your advantage	Online event		
2019	Workshop on Semantic interoperability for the multilingual web	Luxembourg City, Luxembourg		
2019	Sharing & Reuse Conference and Awards 2019	Bucharest, Romania		
2019	Webinar on CCCEV evolution: past, present and future	Online event		
2019	Webinar: GeoDCAT-AP - adoption and implementation experiences of the geospatial extension to DCAT-AP	Online event		
2019	Webinar on DCAT-AP major release	Online event		
2019	Webinar on the Core Public Event Vocabulary - International development and future plans	Online event		
2019	2nd EIF workshop on Organisational Interoperability and Integrated Public Service Governance	Brussels, Belgium		
2019	Access to Base Registries Webinar	Online event		
2019	SEMIC 2019: Linking data spaces for citizens	Helsinki, Finland		
2019	Catalogue of Services Webinar	Online event		
2019	JIAMCATT 2019 - LEOS - Editing legal text with LEOS	Online		
2019	LEOS Community webinar	Online event		45

Year	ISA2 workshop/ conference	Location	Total remote onsite	Total remote participants
2019	Interoperability Academy Winter School	Leuven, Belgium		
2019	Data visualisation training programme: courses and webinars	Luxembourg (Luxembourg), Brussels (Belgium)	959	355
2019	EU dataViz conference 2019	Luxembourg (Luxembourg)	550	YouTube views on video conference: 547
2019	LEX summer school - LEOS: LEOS – Drafting tool development workshop	Ravenna, Italy		
2019	EU Datathon 2019 supported by ISA ²	Brussels (Belgium)	160	160
2020	Catalogue of Services Webinar	Online event		
2020	Workshop: Open Source Software sustainability at FOSDEM20	Brussels, Belgium		
2020	Webinar: Introduction to the new OSOR and its Knowledge Centre	Online event		
2020	Catalogue of Services Webinar - Single Digital Gateway Metadata Model	Online event		
2020	Working group meeting: Access to Base Registries	Online event		
2020	LEOS community webinar	Online event		56
2020	Webinar: Access to Base Registries	Online event		
2020	Solid hands-on workshop	Online event		45
2020	SEMIC 2020	Online event		
2020	"Better Legislation for smoother implementation" - Community Kick-off Virtual Breakfast (Legal interoperability action)	Online	-	35
2020	"Better Legislation for smoother implementation" virtual breakfast - "Digital-ready policymaking in Denmark" (Legal interoperability action)	Online	-	61
2020	"Better Legislation for smoother implementation" virtual breakfast "Policy making after shock is digital-ready – Are you ready?" in the framework of the OECD - OPSI event "Policymaking after shock" (legal interoperability action)	Online	-	67
2020	"Better Legislation for smoother implementation" virtual breakfast on regulatory reporting (legal interoperability action)	Online	-	40
2020	IPS.API4IPS: Public administration & private sector APIs co-design	Online	N/A	57

Year	ISA2 workshop/ conference	Location	Total remote onsite	Total remote participants
	- I			
2020	IPS.API4IPS: Public administration & private sector APIs co-design	Online	N/A	58
2020	- II			
2020	EU Datathon 2020 supported by ISA ²	Online	350	350
2020	dataViz webinars	Online	2910	2.910 plus views via YouTube (5 650 until today)
2020	SEMIC 2021 - LEOS: virtual stand	Online		
2020	LEX summer school - LEOS: LEOS 3.0 and future challenges	Online		
2020	AI Watch 1st Peer Learning Workshop on the use and impact of AI in public services	Brussels, BE	50	50
2020	ELISE Webinar: Using synonyms to improve discovery of geospatial data	Online		89
2020	ELISE Workshop on Cross-border Data Flows (closed event)	Online		26
2020	ELISE Workshop: SensorThings API brings Dynamic Data to INSPIRE	Online		88
2020	ELISE Workshop: Data Ecosystems for Geospatial Data	Online		86
2020	ELISE Webinar: Location enabled public services	Online		50
2020	ELISE Webinar: Guidance on Location data privacy	Online		56
2020	ELISE Participatory Lab at European Week of Regions and Cities	Online		62
2020	AI Watch 2nd Peer Learning Workshop on the use and impact of AI in public services	Online		48
2020	ELISE Webinar: Monitoring and understanding emerging geospatial technologies	Online		63
2020	ELISE Webinar: Location Intelligence Technology trends and case studies in digital government	Online		64
2020	ELISE Webinar: Location Intelligence for Cities and Regions: preparing the ground for smart places of the future	Online		92
2020	ELISE Webinar: Exploring Digital Government Transformation in the EU - DIGIGOV	Online		221
2020	ELISE Webinar: Geospatial Data and Artificial Intelligence – a deep dive into GeoAI	Online		149

Year	ISA2 workshop/ conference	Location	Total remote onsite	Total remote participants
2020	ELISE Webinar: Digital Twins - Are they ready to embrace the benefits of Location Information?	Online		96
2020	LIFO Wave 2 – Location Interoperability Framework Observatory			
2020	ISA ² Working Group Webinar - May 27th, 2020(closed event)	Online		
2020	ELISE Session at INSPIRE 2020: INSPIRE/api	Online		152
2020	ELISE Session at INSPIRE 2020: EO4GEO/ELISE Vocabularies Workshop	Online		83
2020	ELISE Session at INSPIRE 2020: Data ecosystems for geospatial data	Online		110
2020	ELISE Session at INSPIRE 2020: INSPIRE Reference Validator: Status & next steps	Online		303
2020	ELISE Session at INSPIRE 2020: Statistics and geospatial information – on a common path towards sustainability and digitalisation	Online		165
2020	ELISE Session at INSPIRE 2020: Energy & Location	Online		112
2020	ELISE Session at INSPIRE 2020: Smart cities & Green Deal	Online		215
2020	ELISE Session at INSPIRE 2020: Co-innovation with public-private sector data ecosystems	Online		148
2020	ELISE Webinar: Location Intelligence and Partnerships to support the Sustainable Development Goals	Online		79
2020	ELISE Webinar: The role of Organisational Interoperability in the context of Geospatial and Digital Government Transformation	Online		92
2020	ELISE Webinar - Using serious games in the geospatial domain to stimulate digital transformation of government	Online		16
2020	TESTA-ng Working Group Meeting	Brussels		85
2020	TESTA-ng Working Group Meeting	Brussels		28

Source: ISA2 website

Annex 6.f. Alignment with principles spelled out in Article 4(b) of the ISA² Decision

This section outlines the contribution of the sampled ISA² actions to the 13 principles listed in the ISA² decision under Art. 4(b). Importantly, the assessment of how the programme contributed to the principles is an obligation included in the ISA² Decision, in Article 13 (5).³⁰

Table 19 Contribution of sampled ISA² actions to the principles listed in Art. 4(b) of the ISA² decision

Art. 4(b) Principles	Relevant evidence
Subsidiarity and proportionality	ISA ² aims to contribute to a holistic interoperability landscape by creating solutions at EU level. The adoption of solutions by European public administrations is voluntary.
User-centricity	As part of the proposal process of actions to be included in the rolling work programme, all the proposed actions must take into account user-centricity and describe the ways in which user input is integrated into the action and the development of solutions. For example, user-centricity was considered in the design and implementation of the new features of “NIFO” action by getting a feedback from relevant stakeholders. ³¹
Inclusion and accessibility	ISA ² relies on a number of channels to disseminate the information about the actions and the solutions developed: i) ISA ² website, including information dedicated to each action and solution, official documents, infographics, videos, presentations, training material, and publications; ii) Joinup as a platform for sharing the solutions developed under ISA ² ; iii) events organised by ISA ² in various EU countries and the distribution of promotional material; and iv) events with ISA ² participation in various EU countries and the distribution of promotional material. In addition, solutions take into account potential barriers to accessibility and inclusion, detailing such barriers where relevant and providing solutions. An example is the “EU CAPTCHA” ³² action, which aims to address the issues of accessibility of CAPTCHA tests by exploring alternative solutions to improve the user experience.
Delivery of public services in such a way as to prevent digital divide	As part of the process of proposing actions to be included in the rolling work programme, all the proposed actions must specify their expected contribution to the EU’s higher political priorities, such as the Digital Single Market. Where applicable, the rolling work programme details how specific actions contribute to the third pillar of the Digital Single Market

³⁰ Decision (EU) 2015/2240 of the European Parliament and of the Council of 25 November 2015 establishing a programme on interoperability solutions and common frameworks for European public administrations, businesses and citizens (ISA² programme) as a means for modernising the public sector.

³¹ Additional information on the user-centricity in the “NIFO” action can be found on the [Rolling Work Programme](#).

³² “CAPTCHA” stands for “Completely Automated Public Turing Test to tell Computers and Humans Apart” and it represents a test that is expected to be difficult for machines to complete correctly, but possible for humans to complete correctly.

Art. 4(b) Principles	Relevant evidence
	Strategy, which also includes support for an inclusive digital society.
Security, respect for privacy and data protection	Where appropriate, the descriptions of actions included in the rolling work programme must specify the measures taken to ensure security, respect for privacy and data protection.
Multilingualism	Examples of ISA ² actions that produce tools and frameworks that contribute to multilingualism are: ‘SEMIC’; ‘PMKI’; ‘Development of an open data service, support and training package in the area of linked open data, data visualisation and persistent identification’, and ‘EUSurvey’.
Administrative simplification and modernisation	Administrative simplification and modernisation are taken into consideration in the rolling work programme of ISA ² under the section ‘main impact list’. The detailed list of expected impacts for each action indicates the extent to which the proposed actions contribute to this aspect.
Transparency	Various channels ensure the transparency of ISA ² actions. These include: i) the rolling work programme that provides an overview of each action’s objectives, planned and developed solutions, expected impacts, and budget; ii) the ISA ² dashboard that provides quarterly updates on the efficiency and effectiveness of actions, in terms of costs, earned value management, effectiveness indicators and targets; iii) a specific ISA ² webpage with information on the level of take-up of solutions; and iv) the Joinup platform where developed solutions can be accessed.
Preservation of information	The ‘Library’ section of the ISA ² website preserves information about ISA ² in various formats including: presentations, videos, publications, infographics, posters, leaflets, training course materials, press releases, articles, ISA ² work programmes, speeches, and official documents.
Openness	The publication of ISA ² solutions on Joinup ensures that solutions are openly available for (potential) users.
Re-usability and avoidance of duplication	As part of the proposal process for actions to be included in the rolling work programme, the descriptions of proposed actions specify (i) the extent to which the action proposed reuses other readily available solutions and (ii) the reusability of the action outputs.
Technological neutrality, solutions which, insofar as possible, are future-proof, and adaptability	The rolling work programme’s section on ‘Contribution to the interoperability landscape’ describes, among others, the contributions made by actions to the European Interoperability Framework, aspects of which include technological neutrality, future-proof solutions and adaptability. As such, this principle is already taken into account in the proposal phase.
Effectiveness and efficiency	The ISA ² dashboard provides quarterly data on the efficiency and effectiveness of actions. The historic data can be accessed together with the most recent data available.

Source: [*CEPS final study*](#).

Efficiency

EQ4: To what extent has been the programme been cost-effective?

Annex 6.g. Supporting evidence for the assessment of the efficiency of the programme

This section provides an overview of the underlying data used to compute the average costs for preparing a new or a renewed proposal for an ISA² action, supporting the analysis presented in Chapter 5.3 Efficiency. The assessment is based on data collected during the interim evaluation as well as the final evaluation of the programme.

Source		Person-days	Type of proposal	Labour cost (hourly rate in EUR)	Cost (in EUR)
Final consultations	evaluation	25	New proposal	27.6	5520
Final consultations	evaluation	20	New proposal	39.9	6384
Final consultations	evaluation	2.5	Renewed proposal	39.9	798
Final consultations	evaluation	4	Renewed proposal	39.9	1276.8
Final consultations	evaluation	5	Renewed proposal	45.6	1824
Final consultations	evaluation	10	New proposal	39.9	3192
Final consultations	evaluation	3	Renewed proposal	39.9	957.6
Final consultations	evaluation	20	New proposal	45.6	7296
Final consultations	evaluation	5	Renewed proposal	39.9	1596
Interim consultations	evaluation	10	New proposal	39.9	3192
Interim consultations	evaluation	2	Renewed proposal	39.9	638.4
Interim consultations	evaluation	10	New proposal	39.9	3192
Interim consultations	evaluation	2	Renewed proposal	39.9	638.4
Interim consultations	evaluation	2.5	Renewed proposal	45.6	912
Interim consultations	evaluation	5	Renewed proposal	39.9	1596
Interim consultations	evaluation	1	Renewed proposal	39.9	319.2
Interim consultations	evaluation	30	New proposal	45.6	10944
Interim consultations	evaluation	24	New proposal	39.9	7660.8
Interim consultations	evaluation	1	Renewed proposal	39.9	319.2
Interim consultations	evaluation	5	Renewed proposal	39.9	1596
Interim consultations	evaluation	5	Renewed proposal	39.9	1596
Interim consultations	evaluation	4	Renewed proposal	39.9	1276.8
Interim consultations	evaluation	3	Renewed proposal	39.9	957.6
Interim consultations	evaluation	20	New proposal	39.9	6384
Interim consultations	evaluation	3	Renewed proposal	39.9	957.6
Interim consultations	evaluation	10	New proposal	27.6	2208

Source		Person-days	Type of proposal	Labour cost (hourly rate in EUR)	Cost (in EUR)
Interim consultations	evaluation	20	New proposal	39.9	6384
Interim consultations	evaluation	6	Renewed proposal	46.1	2212.8
Interim consultations	evaluation	5	Renewed proposal	39.9	1596
Interim consultations	evaluation	2	Renewed proposal	20.7	331.2

Note: The analysis distinguishes between the renewal / updating of a proposal for an existing action (with an estimated average time spent of up to 6 days) and the preparation of a new proposal for a new action, for which the time spent increases significantly, from 10 person-days to 30 person-days.

features the reported number of person-days spent to prepare a new or a renewed proposal, the hourly labour costs for the service sector at the Member State level based on Eurostat data, and the total estimated cost per answer collected, where the cost is the result of the person-days multiplied by the hourly rate, multiplied by 8 (assuming an average working day of 8 hours).

Table 20 Cost of preparing a new or renewed ISA² proposal

Source		Person-days	Type of proposal	Labour cost (hourly rate in EUR)	Cost (in EUR)
Final consultations	evaluation	25	New proposal	27.6	5520
Final consultations	evaluation	20	New proposal	39.9	6384
Final consultations	evaluation	2.5	Renewed proposal	39.9	798
Final consultations	evaluation	4	Renewed proposal	39.9	1276.8
Final consultations	evaluation	5	Renewed proposal	45.6	1824
Final consultations	evaluation	10	New proposal	39.9	3192
Final consultations	evaluation	3	Renewed proposal	39.9	957.6
Final consultations	evaluation	20	New proposal	45.6	7296
Final consultations	evaluation	5	Renewed proposal	39.9	1596
Interim consultations	evaluation	10	New proposal	39.9	3192
Interim consultations	evaluation	2	Renewed proposal	39.9	638.4
Interim consultations	evaluation	10	New proposal	39.9	3192
Interim consultations	evaluation	2	Renewed proposal	39.9	638.4
Interim consultations	evaluation	2.5	Renewed proposal	45.6	912
Interim consultations	evaluation	5	Renewed proposal	39.9	1596
Interim consultations	evaluation	1	Renewed proposal	39.9	319.2
Interim consultations	evaluation	30	New proposal	45.6	10944
Interim consultations	evaluation	24	New proposal	39.9	7660.8
Interim consultations	evaluation	1	Renewed proposal	39.9	319.2
Interim consultations	evaluation	5	Renewed proposal	39.9	1596
Interim consultations	evaluation	5	Renewed proposal	39.9	1596
Interim consultations	evaluation	4	Renewed proposal	39.9	1276.8
Interim consultations	evaluation	3	Renewed proposal	39.9	957.6

Source	Person-days	Type of proposal	Labour cost (hourly rate in EUR)	Cost (in EUR)
consultations				
Interim evaluation consultations	20	New proposal	39.9	6384
Interim evaluation consultations	3	Renewed proposal	39.9	957.6
Interim evaluation consultations	10	New proposal	27.6	2208
Interim evaluation consultations	20	New proposal	39.9	6384
Interim evaluation consultations	6	Renewed proposal	46.1	2212.8
Interim evaluation consultations	5	Renewed proposal	39.9	1596
Interim evaluation consultations	2	Renewed proposal	20.7	331.2

Note: The analysis distinguishes between the renewal / updating of a proposal for an existing action (with an estimated average time spent of up to 6 days) and the preparation of a new proposal for a new action, for which the time spent increases significantly, from 10 person-days to 30 person-days.

Source: [CEPS final study](#). (The data on hourly labour cost were retrieved from Eurostat: [Eurostat, Labour cost levels by NACE Rev. 2 activity](#) (based on the available data for 2019))

Coherence

EQ6: To what extent do the ISA² actions form part of a ‘holistic’ approach within the framework of the programme? (Internal coherence)

Table 21 Number of links between sampled actions

Actions	Number of other ISA ² solutions that are used by the action	Number of other ISA ² actions that use the solutions of the action
1. Key and generic interoperability enablers		
Trusted Exchange Platform (e-TrustEx)	4	5
Catalogue of Services	2	3
2. Semantic Interoperability		
Public Multilingual Knowledge Management Infrastructure for the Digital Single Market (PMKI)	1	0
SEMIC: Promoting Semantic Interoperability Amongst the European Union EU countries	5	17
3. Access to data/data sharing/open data		
Big Data for Public Administrations	5	0
Sharing Statistical Production and Dissemination Services and Solutions in the European Statistical System	3	0
Development of an Open Data Service, Support and Training Package in the Area of Linked Open Data, Data Visualisation and Persistent Identification	1	0
4. Geospatial Solutions		
European Location Interoperability Solutions for e-Government (ELISE)	6	0
5. eProcurement/eInvoicing-Supporting instruments		
European Public Procurement Interoperability Initiative	6*	4
6. Decision making and legislation-Supporting instruments		
ICT Implications of EU Legislation	6	0
REFIT Platform	0	2
Inter-Institutional Register of Delegated Acts	1	1
7. EU Policies-Supporting instruments		
European Citizens' Initiatives and European Parliament Elections	0	0
8. Supporting instruments for public administrations		
Joinup - European Collaborative Platform and Catalogue	4	14
National Interoperability Framework Observatory	7	0
European Interoperability Architecture (EIA)	7	9

Actions	Number of other ISA ² solutions that are used by the action	Number of other ISA ² actions that use the solutions of the action
EUSurvey	0	0
Interoperability Maturity Model	9	2
Standard-Based Archival Data Management, Exchange and Publication	0	1
9. Accompanying measures		
Raising Interoperability Awareness - Communication Activities	1	0

**Note: For the 'European Public Procurement Interoperability Initiative' action further information was provided by the DG GROW regarding the number of other ISA² solutions that are used by the action.*

Source: [CEPS final study](#).

EQ7: To what extent is the ISA² programme coherent with other EU interventions which have similar objectives and with global initiatives in the same field? (external coherence)

Table 22 Number of links between the sample actions and other EU programmes / policies / initiatives

Actions	Number of other EU programmes / policies / initiatives that the action relies on	Number of other EU programmes / policies / initiatives that use the solution(s) provided by the action
1. Key and generic interoperability enablers		
Trusted Exchange Platform (e-TrustEx)	5	7*
Catalogue of Services	4	2
2. Semantic Interoperability		
Public Multilingual Knowledge Management Infrastructure for the Digital Single Market (PMKI)	1	1
SEMIC: Promoting Semantic Interoperability Amongst the European Union EU countries	6	2
3. Access to data/data sharing/open data		
Big Data for Public Administrations	0	2
Sharing Statistical Production and Dissemination Services and Solutions in the European Statistical System	12	2
Development of an Open Data Service, Support and Training Package in the Area of Linked Open Data, Data Visualisation and Persistent Identification	3	1
4. Geospatial Solutions		
European Location Interoperability Solutions for e-Government (ELISE)	3	3**

Actions	Number of other EU programmes / policies / initiatives that the action relies on	Number of other EU programmes / policies / initiatives that use the solution(s) provided by the action
5. eProcurement/e-invoicing-Supporting instruments		
European Public Procurement Interoperability Initiative	7	0
6. Decision making and legislation-Supporting instruments		
ICT Implications of EU Legislation	3	2
REFIT Platform	0	1
Inter-Institutional Register of Delegated Acts	0	2
7. EU Policies-Supporting instruments		
European Citizens' Initiatives and European Parliament Elections	2	0
8. Supporting instruments for public administrations		
Joinup - European Collaborative Platform and Catalogue	1	1
National Interoperability Framework Observatory	0	1
European Interoperability Architecture (EIA)	3	1
EUSurvey	1	0
Interoperability Maturity Model	0	1
Standard-Based Archival Data Management, Exchange and Publication	0	4
9. Accompanying measures		
Raising Interoperability Awareness - Communication Activities	1	1

**Note: Additional information was retrieved from the 2019 rolling work programme.*

***Note: Additional information was provided by the actions owners of the 'ELISE' action.*

Source: [CEPS final study](#).

Annex 6.h. Contribution of sampled ISA² actions to the Digital Single Market

This section outlines the contribution of the sampled ISA² to the three pillars of the Digital Single Market (DSM) Strategy³³. The programme's actions have contributed to specific areas of the DSM Strategy from the perspective of interoperability as a key enabler of digitalisation. The assessment contributes to the evaluation of the external coherence and the EU added value criterion.

³³ COM(2015) 192 final, Communication From The Commission To The European Parliament, The Council, The European Economic And Social Committee And The Committee Of The Regions, A Digital Single Market Strategy for Europe.

Table 23 ISA² contribution to the DSM Strategy*Contribution to Pillar I³⁴ of the DSM Strategy*

Action number	Action name	Contribution to Pillar I: Better access for consumers and businesses to online goods and services across Europe
2016.07	SEMIC: Promoting Semantic Interoperability Amongst the European Union EU countries	Semantic interoperability is a prerequisite for enacting most levels of systems' interoperability, including the once-only principle and ensuring open data.
2016.16	Public Multilingual Knowledge Management Infrastructure for the DSM	The creation of a Public Multilingual Knowledge Infrastructure will support EU public administrations in creating services that can be accessible and shareable regardless of the language actually used, allowing SMEs to sell goods and service cross-border in a DSM.
2016.29	Catalogue of Services	Obliges EU countries to create Points of Single Contact with combined information for business setup and other citizen formalities.
2016.37	IMAPS	IMAPS helps public administrations to assess interoperability of public service and further improve the levels of interoperability.

Contribution to Pillar II³⁵ of the DSM Strategy

Action number	Action name	Contribution to Pillar II: Creating the right conditions for digital networks and services to flourish
2016.05	European Public Procurement Interoperability Initiative	The activities supported by this proposal will help to further create or improve standards regarding public procurement and encourage EU countries to shift towards full eProcurement
2016.06	Sharing Statistical Production and Dissemination Services and Solutions in the European Statistical System	A reusable solution for the dissemination of statistics for use by any administration to reduce the cost of dissemination and improve the delivery of data to public consumers
2016.20	Joinup-European Collaborative Platform and Catalogue	Joinup creates a central platform for observatory functionalities, collaborative features, and interoperability solutions
2017.01	Standard-Based Archival Data Management, Exchange and Publication	The activities supported by this action aims to ensure proper managing, exchanging and opening to the public of archived-digitally generated public documents. Thereby, facilitates cross-border and cross-sector interactions related to the archival data

Contribution to Pillar III³⁶ of the DSM Strategy

³⁴ Access: better access for consumers and businesses to digital goods and services across Europe.

³⁵ Environment: creating the right conditions and a level playing field for digital networks and innovative services to flourish.

³⁶ Economy & Society: maximising the growth potential of the digital economy.

Action number	Action name	Contribution to Pillar III: Maximising the growth potential of our European Digital Economy
2016.03	Big Data for Public Administrations	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 to accelerate the transition towards a data-driven economy.
2016.05	European Public Procurement Interoperability Initiative	This action contributes to the development of the single electronic public procurement market in the EU by providing and supporting interoperability standards and interoperability initiatives in the field of electronic public procurement.
2016.10	European Location Interoperability Solutions for e-Government (ELISE)	This action 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.
2016.14	European Citizens' Initiatives and European Parliament elections	This action enhances existing solutions for European Citizen Initiatives by facilitating the verification of the statements of support and by developing new solutions for improvement of European Citizen Initiatives and European Parliamentary elections.
2016.15	FISMA: Financial Data Standardization	Looks to work on ICT standardisation to reduce administrative costs of legacy and data systems in the financial sector.
2016.16	Public Multilingual Knowledge Management Infrastructure for the Digital Single Market	The creation of a Public Multilingual Knowledge Infrastructure will support EU public administrations in creating 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.
2016.18	Development of an Open Data Service, Support, and Training Package in the Area of Linked Open Data, Data Visualisation and Persistent Identification	Open government data is a core asset for the knowledge-based economy, since its reuse is a basis for innovative information products and services as it is a key enabler for transparency, evidence-based decision-making and a broader participation in the political discourse. 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.
2016.19	e-TrustEX	Acts as a broker in the exchange of data and documents to foster greater interaction across heterogeneous systems.
2016.21	National Interoperability Framework Observatory	The EIF and the EIF Implementation Strategy foster interoperability and contribute to the DSM. By contributing to the implementation of the EIF, this action is relevant for the DSM.
2016.23	Legal Interoperability	The action has a horizontal value as it can 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.
2016.30	Raising Interoperability Awareness-Communication Activities	Communicating the ISA ² programme and its results reinforces the programmes contributions to the DSM, the eGovernment action plan, the EIS and the new EIF,

Action number	Action name	Contribution to Pillar III: Maximising the growth potential of our European Digital Economy
		but also the Open Data Initiative of the European Union and INSPIRE, among other.
2016.32	European Interoperability Architecture (EIA)	The EIA looks to maintain the EIRA, an interoperability reference that is key to the once-only principle.
2016.35	EUSurvey	By offering an easy means of collecting opinions and information between heterogeneous parties, the EUSurvey considerably facilitates the organisation and consolidation of any types of 'feedback-based' decision.
2017.01	Standard-Based Archival Data Management, Exchange and Publication	By clarifying and supporting technical standards for archival management, it will ensure better access to digital goods and services and by providing access to Commission archives in Open Data format it will generate value, allowing the reuse of this information producing new products and services.
2019.01	Interoperability Academy	Interoperability Academy creates the right conditions for better digital public services by developing digital skills of public servants, providing learning opportunities and increasing user awareness on interoperability.

Source: [CEPS final study](#).

Annex 6.i. Alignment with the Tallinn Declaration on eGovernment

Box 7 Alignment between ISA² and the Tallinn Declaration on eGovernment

The Tallinn Declaration is a statement of intents in which the **32 signatory countries** made a commitment to **move towards a digital government** following **five principles**:

1. Digital-by-default, inclusiveness and accessibility
2. Once-only
3. Trustworthiness and security
4. Openness and transparency
5. Interoperability by default

These principles inform the policy action lines, together with the additional line 'Horizontal enabling policy steps'. Out of these five principles, principles #2, #4 and #5 are specifically reflected in the ISA² programme. In particular:

- **Principle #2**, 'once-only', is reflected in actions such as 'SEMIC', 'European Interoperability Architecture', and 'European public procurement interoperability initiative' that support the implementation of the principle.
- **Principle #4**, openness and transparency, is reflected in the attention paid to Linked Open Data in actions like 'SEMIC', 'PMKI', 'ELISE', 'Standard-Based Archival Data Management, Exchange and Publication' of ISA², even though in the Declaration the scope is wider and is specifically addressed to the openness of public institutions;
- **Principle #5**, interoperability by default, is directly linked to the objectives of ISA²

programme.

Furthermore, the policy action line ‘Horizontal enabling policy steps’ involves some aspects that are characteristic of the ISA² programme, such as the digital transformation of public administrations and integration of digital considerations in policy initiatives. Among the many **proposals of the Declaration**, a few are directly coherent with ISA² objectives:

- to implement the European Interoperability Framework and the Interoperability Action Plan (policy line 5);
- to consider strengthening the requirements for use of open source solutions and standards when (re)building of ICT systems and solutions takes place with EU funding (policy line 5);
- to fully integrate digital considerations into existing and future policy and regulatory initiatives (policy line 6);
- to prepare proposals on the future (post 2020) and sustainability of existing EU-level cross-border digital service infrastructures and building blocks (policy line 6); and
- to convene and support the work of groups of interested countries and other parties to exchange practices and develop reference guidelines and standards for taking emerging ICT into use in the public administration (policy line 6).

From this standpoint, there is **no contradiction between the Tallinn Declaration and the ISA² programme**. Although their scope and aims differ, **they proceed in the same direction and share common intents**. There may be synergies in the above-mentioned points, but they can also turn into overlaps and duplications, or even worse, misalignments, if there is no strong coordination.

While the ISA² programme is multi-national, the Declaration also affects each country individually. Therefore, initiatives and projects may be promoted separately by individual countries to fulfil the commitments agreed upon by the EU countries. The Declaration also includes specific calls to EU institutions to enhance interoperability within the EU framework. Overall, this document stresses the need for more effort, both at EU institutions-level and at Member State-level, to ensure citizen-centric eGovernment and interoperability.

Finally, as the annex of the Tallinn Declaration highlights the importance of principles like the ‘Protection of personal data and privacy’ and ‘Incentives for digital service use’, better coherence would be ensured if the ISA² programme began to include some of these principles in its actions.

EU added value

EQ8: What is the additional value resulting from the ISA² programme, compared to what could reasonably have been expected from EU countries acting at national, regional and/or local levels?

Annex 6.j. Contribution of the sampled ISA² actions to cross-border interoperability

This section contributes to the assessment of the EU added value criterion. It describes the contribution of the 21 sampled actions to enhancing cross-border interoperability, based on the interim evaluation of the programme and information available in the rolling work programme.

Table 24 Contribution of sampled actions to cross-border interoperability

Package	Action number	Action name	Contribution to cross-border interoperability
1. Key and generic interoperability enablers	2016.19	Trusted Exchange Platform (e-TrustEx)	The e-TrustEx platform is currently used as a key element of pan-European messaging infrastructures for projects such as: e-PRIOR (DIGIT), DECIDE (SG), EDMA (COMP), the European e-Justice Portal (JUST), OPOCE (OP), EU-CEG (DG SANTE). Around 200 public institutions across the 28 EU countries are in scope of these projects (such as national parliaments and permanent representations).
1. Key and generic interoperability enablers	2016.29	Catalogue of Services	The CPSV-AP is already being used by public administrations in Belgium, Italy, Finland, and Estonia to create a cross-border federated catalogue of public services.
2. Semantic interoperability	2016.07	SEMIC: Promoting Semantic Interoperability Amongst the European Union EU countries	The proposal will facilitate the cross-border interoperability thanks to its inherent support for multilingualism. 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. VocBench is already used by public administrations in Denmark, Finland, France, Germany, Greece, Italy, the Netherlands, Portugal, the United Kingdom and Scotland and interest has been expressed from public administrations in Belgium, the Czech Republic, Slovenia and in Spain.
2. Semantic interoperability	2016.16	Public Multilingual Knowledge Management Infrastructure for the Digital Single Market	The objective of this action is to support enterprises and particularly 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. The outputs in the form of semantic links developed so far contribute to the

Package	Action number	Action name	Contribution to cross-border interoperability
			cross-border service interoperability from a semantic perspective.
3. Access to data/data sharing/open data	2016.03	Big Data for Public Administrations	In 2017, a long list of requirements has been collected from different EU countries to understand their needs in the area of (Big) data analytics for policymaking, especially with regard 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. EU countries on board so far are: the 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.
3. Access to data/data sharing/open data	2016.06	Sharing Statistical Production and Dissemination Services and Solutions in the European Statistical System	The development of statistical services includes a broad international community. In the ESS, 14 EU countries are actively involved in a Task Force and a consortium of six EU countries (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 re-use of developed solutions and services with the European Commission. In the architecture domain, the ESS reference architecture in its current state has been adopted by the 28 NSIs CIOs and Heads of Methodology. Its upgrading towards greater interoperability through more standards and deeper architectural guidance is done in collaboration with an ESS EA Board involving five EU countries.
3. Access to data/data sharing/open data	2016.18	Development of an Open Data Service, Support and Training Package in the Area of Linked Open Data, Data Visualisation and Persistent Identification	EU countries can consult and re-use the project outputs (knowledge base, trainings, the description of the tools and projects included in the catalogue of data visualisation tools).
4. Geospatial solutions	2016.10	European Location Interoperability Solutions for e-Government (ELISE)	Road safety data-exchange solutions piloted and implemented in Norway and Sweden are being rolled-out to five other EU countries using CEF funds, with more rollouts planned. INSPIRE Registry services have 450k accesses per quarter.*

Package	Action number	Action name	Contribution to cross-border interoperability
5. eProcurement / eInvoicing - Supporting instruments	2016.05	European Public Procurement Interoperability Initiative	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 EU countries. For eCertis: Roughly 25 services in the EU are retrieving data from eCertis, using the CEF eProc DSI. Other services will follow. For ESPD services: Private and public entities from roughly 17 EU countries have participated in the CEF eProc DSI Others are using Structural Funds to implement an ESPD service. They all have implemented ESPD services using the ESPD data model or the open source code developed under the ISA ² project. Currently roughly 74 entities are providing an ESPD services in 25 EU countries (Norway as well).
6. Decision making and legislation - Supporting instruments	2017.03	REFIT Platform	The REFIT Platform consists of two Commission expert groups: a Government group in which all EU countries are represented, and a Stakeholder group with representatives of businesses, social partners, civil society organisations in various EU countries, the Economic and Social Committee and the European Committee of the Regions.
7. EU Policies - Supporting instruments	2016.14	European Citizens' Initiatives and European Parliament Elections	ECI-OCS serves the citizens and public administrations in all EU countries as it facilitates the verification of the statements of support for legislation. The European Parliament Crypto tool is useful to the public administrations of all the EU countries
8. Supporting instruments for public administrations	2016.20	Joinup – European Collaborative Platform and Catalogue	The end-users of Joinup are from different EU EU countries and countries outside the EU (USA, Canada and New Zealand). In addition, several national repositories (NL, ES, EL, SL, BE) are stored on Joinup, making their national solutions available for re-use.
8. Supporting instruments for public administrations	2016.21	National Interoperability Framework Observatory	The outputs of NIFO have already been re-used by various EU countries. The eGovernment factsheets are considered as a reference. The state of play reports on interoperability in Europe and the NIFO factsheets served as a source of input in the revision of the EIF and the IAP.
8. Supporting instruments for public administrations	2016.32	European Interoperability Architecture (EIA)	EIRA has been deployed in EE, NL, DK, ES, CZ, PL, BE, SE, NO, IT, and FI.
8. Supporting instruments for public administrations	2016.35	EUSurvey	EUSurvey is available in 23 EU languages, facilitating cross-border interoperability. In 2017, more than 7,800 surveys have been created with the tool, resulting in more than 2.7 million contributions.
8. Supporting	2017.01	Standard-Based	The action addresses the semantic interoperability

Package	Action number	Action name	Contribution to cross-border interoperability
instruments for public administrations		Archival Data Management, Exchange and Publication	issue of how to describe electronic archives by means of the identification of existing standards for digital archives, facilitating the cross-border interoperability of electronic archives.
9. Accompanying measures	2016.30	Raising Interoperability Awareness – Communication Activities	This action has, by definition, a cross-border approach. It provides learning resources for public administrations at all levels (EU, national, sub-national), aims to enhance collaboration with international, national, or regional initiatives, and promotes the importance of interoperability across the EU.

Source: CEPS (2019), Interim evaluation; additional information based on the rolling work programme.

Annex 6.k. Contribution of sampled ISA² actions to the European Interoperability Framework and the Interoperability Action Plan

This section links the sampled ISA² actions to the [EIF](#) and the [IAP](#) by describing relevant contributions to implementing the EIF and the IAP. The assessment contributes to the evaluation of the EU added value criterion.

While the EIF provides principles, models and associated recommendations to help improve the delivery of interoperable digital public services, the IAP outlined specific actions to be undertaken between 2017 and 2020. Based on the analysis of sampled actions, Table 25 provides an overview of the contribution of ISA² actions to the implementation of the EIF and the IAP.

As the ISA² programme was one of the main implementing instruments of the IAP, it is worth exploring to what extent the ISA² actions contributed to implementing the actions listing in the IAP within the timeframe mentioned.

There are **direct links** between several sampled ISA² actions and the IAP actions:

- **“Legal Interoperability”**: The "Legal Interoperability" action supports policymaking across policy areas, bringing to the forefront the importance of considering potential digital impacts and the role of interoperability when developing new legislation. This ISA² action implements:
 - **Action 3 of the IAP**, by raising awareness on the importance of considering interoperability early on in the legislative process and by developing a methodology for legal interoperability screening;
 - **Actions 19 and 20 of the IAP**, by having put forward guidelines for ICT impact assessment as part of the Better Regulation Toolbox (Tool #27) and guidelines for digital-ready policy proposals.

- **“NIFO”**: The NIFO action has contributed to **Actions 4 and 5 of the IAP** by monitoring the state of play of interoperability, developing the EIF Monitoring Mechanism and the EIF Toolbox to support the implementation of the EIF.³⁷
- **“Raising Interoperability Awareness - Communication Activities”**: The communication activities implement **Action 8 of the IAP**, ensuring the dissemination of information about interoperability, ISA² and the EIF.
- **“Joinup”**: The action facilitates the sharing and re-use of solutions for public administrations and provides the stakeholders with the means to collaborate via a collaborative platform. The activities conducted as part of the "Joinup" action have contributed to **Action 10 of the IAP**, which explicitly asked for "maintaining, improving and animating the Joinup platform for better user engagement and community building", as well as **Action 21**.
- **“Catalogue of services”**: The Catalogue of Services is one of the interoperability enablers for integrated public services according to the conceptual model defined by the revised EIF. The Catalogue of Services responds in particular to **Action 13 of the IAP**.
- **“EIA”**: The "EIA" action implements **Action 22 of the IAP**, by ensuring the further development of the EIRA and the Cartography Tool and providing new versions of the architecture.

In addition to examples from the sampled actions, two additional ISA² actions stand out as having a clear link to the IAP. These actions are:

- The **“Access to Base Registries”** in relation to Action 12 of the IAP (“Define and implement common specifications on the terms and conditions for accessing and managing base registries”);
- The **“Sharing and Re-use”** action in relation to Action 21 of the IAP (“Maintain and promote the ‘sharing and re-use framework for IT solutions’ (including open source) developed in the context of the ISA² programme”).

Beyond the clear links, ISA² actions also had **overarching contributions** to the IAP actions:

- **“Development of an Open Data Service, Support and Training Package in the Area of Linked Open Data, Data Visualisation and Persistent Identification”**: The action supports open data initiatives by facilitating data re-use and sharing and offering tools to visualise data effectively. The action contributes to several priorities listed in the IAP: organisational interoperability (**Actions 6 and 7**); sharing of good practices (**Action 11**); governance structure (**Action 2**) and key enablers focused on EU open data initiative (**Action 14**).
- **“Interoperability Academy”**: This action was established in order to help increase awareness of interoperability, the EIF and the solutions developed under ISA². The action facilitates access to information and

³⁷ The EIF Monitoring Mechanism, the EIF Toolbox and the reports and factsheet on the digital public administrations and interoperability can be consulted in the NIFO collection on Joinup: <https://joinup.ec.europa.eu/collection/nifo-national-interoperability-framework-observatory/knowledge-centre>.

learning material in this sense. The Interoperability Academy contributes primarily to **Actions 5, 8, 11 of the IAP**.

Table 25 ISA² contribution to the EIF and the IAP

Package	Action number	Action name	Contribution to the EIF and the IAP
1. Key and generic interoperability enablers	2016.19	Trusted Exchange Platform (e-TrustEx)	<p>e-TrustEx is a platform offered to public administrations at European, national and regional levels to undertake secure exchange of natively digital documents or scanned documents from system to system via standardised interfaces.</p> <ul style="list-style-type: none"> • Contribution to the EIF: The action thus contributes particularly to Recommendation 15 of the revised EIF, through enabling the secure exchange of documents. • Contribution to the IAP: The platform supports public administrations in implementing EU policies that require the electronic exchange of information, contributing to the implementation of the eIDAS Regulation among others. In this context, e-TrustEx contributes to Action 15 of the IAP.
1. Key and generic interoperability enablers	2016.29	Catalogue of Services	<p>The Catalogue of Services is one of the interoperability enablers for integrated public services according to the conceptual model defined by the revised 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.</p> <ul style="list-style-type: none"> • Contribution to the EIF: The action addresses Recommendation 44 of the revised version of the EIF on the catalogue of public services. • Contribution to the IAP: The Catalogue of Services responds in particular to Action 13 of the IAP.
2. Semantic interoperability	2016.07	SEMIC: Promoting Semantic Interoperability Amongst the European Union EU countries	<p>The Action supports the implementation of the EIF and the EIS by promoting semantic interoperability, through the definition and use of common specifications.</p> <ul style="list-style-type: none"> • Contribution to the EIF: The action contributes primarily to Recommendation 16 of the revised EIF. In addition, the action covers the following underlying principles of the EIF: Reusability, Multilingualism, Openness, Semantic interoperability, Technical interoperability and Standardisation. • Contribution to the IAP: SEMIC supports several actions of the IAP, including: 12, 13, 14 and 18.
2. Semantic interoperability	2016.16	Public Multilingual Knowledge Management Infrastructure for the Digital Single Market	<p>The creation of a Public Multilingual Knowledge Infrastructure aims to support EU public administrations in creating services that can be accessible and shareable independently from the language actually used, as well as allowing SMEs to sell goods and service cross-border in a DSM.</p>

Package	Action number	Action name	Contribution to the EIF and the IAP
			<ul style="list-style-type: none"> Contribution to the EIF: The action is based on several recommendations (primarily Recommendation 16 on taking into account multilingualism in the setting up of European public services) and principles of the new EIF, in particular those concerning multilingualism, accessibility, administrative simplification, transparency, and reusability of the solutions. Contribution to the IAP: This action contributes to Action 7 of the IAP, with its focus on the particular area of multilingualism to improve the delivery of services and exchange of information.
3. Access to data/data sharing/open data	2016.03	Big Data for Public Administrations	<p>This action will facilitate the sharing of open data between public administrations through the support to the execution of analytics projects on Big Data; 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 EU countries of EU Institutions; and provide public administrations with the opportunity to test (open source) technologies in this domain before making a decision on the technical way forward.</p> <ul style="list-style-type: none"> Contribution to the EIF: This action contributes to several EIF principles including “openness”, “transparency”, “reusability” and “technological neutrality”. Contribution to the IAP: This action contributes primarily to Action 14 of the IAP.
3. Access to data/data sharing/open data	2016.06	Sharing Statistical Production and Dissemination Services and Solutions in the European Statistical System	<p>This action contributes to several areas: developing, maintaining and promoting interoperable solutions for the production and dissemination of statistics by EU public administrations (including the EC) and 2) developing, maintaining and promoting a) a specification of the EIRA to support better interoperability and cooperation for the production and dissemination of Official Statistics in the European Statistical System; b) a common infrastructure for the exposure and consumption of shared statistical services. 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> <ul style="list-style-type: none"> Contribution to the EIF: Through its focus on aligning infrastructures for shared statistical services, the action builds on the principles and recommendations of the EIF, in particular Recommendation 36. Contribution to the IAP: The activities undertaken as part of this action feed into Actions 7 9, 22.
3. Access to data/data	2016.18	Development of an Open Data Service, Support and	The action supports open data initiatives by facilitating data re-use and sharing and offering tools to visualise data effectively.

Package	Action number	Action name	Contribution to the EIF and the IAP
sharing/open data		Training Package in the Area of Linked Open Data, Data Visualisation and Persistent Identification	<ul style="list-style-type: none"> Contribution to the EIF: The action contributes to the new EIF, namely the interoperability principles: openness, transparency, reusability, user-centricity and multilingualism, accessibility. Contribution to the IAP: The action contributes to several priorities listed in the IAP: organisational interoperability (Actions 6 and 7); sharing of good practices (Action 11); governance structure (Action 2) and key enablers focused on EU open data initiative (Action 14).
4. Geospatial solutions	2016.10	European Location Interoperability Solutions for e-Government (ELISE)	<p>ELISE has aimed to deepen the understanding of location interoperability enablers and barriers related to the transition towards digital government.</p> <ul style="list-style-type: none"> Contribution to the EIF: ELISE builds on several areas of the EIF including openness, reusability, technological neutrality, user-centricity, multilingualism, and administrative simplification. Contribution to the IAP: ELISE brings contributions in particular to Action 17, through its support for the implementation of the INSPIRE Directive. ELISE also contributes to Actions 4, 6 & 19.
5. eProcurement/ eInvoicing Supporting instruments	2016.05	European Public Procurement Interoperability Initiative	<p>This action supports several activities designed to simplify procurement and facilitate the participation in online procurement as well the re-use of data in the field.</p> <ul style="list-style-type: none"> Contribution to the EIF: The action builds in particular on Recommendations 28 and 30 of the EIF, as well as facilitating the implementation of the once-only principle in the area of public procurement. <p>Contribution to the IAP: The “European Public Procurement Interoperability Initiative” contributes in particular to actions 1, 7 and 18.</p>
6. Decision making and legislation - Supporting instruments	2016.23	Legal interoperability (former ICT Implications of EU Legislation)	<p>The “Legal Interoperability” action supports policymaking across policy areas, bringing to the forefront the importance of considering potential digital impacts and the role of interoperability when developing new legislation.</p> <ul style="list-style-type: none"> Contribution to the EIF: The action implements Recommendation 27 on legal interoperability of the new EIF. Contribution to the IAP: This ISA² action implements action 3 of Focus Area 1 on the governance and coordination of interoperability initiatives, and actions 19 and 20 of Focus Area 5 on supporting instruments for interoperability.
6. Decision	2017.04	Inter-Institutional Register of	This action focused on developing an IT tool setting up the Inter-Institutional Register of

Package	Action number	Action name	Contribution to the EIF and the IAP
making and legislation - Supporting instruments		Delegated Acts (RegDel)	<p>Delegated Acts, increasing transparency around delegated acts and thus responding to the 2016 commitment of the Commission in this sense.</p> <ul style="list-style-type: none"> Contribution to the EIF: This action contributes primarily to the transparency principle of the EIF and to Recommendation 5 of the new EIF by providing a transparent overview of delegated acts. Contribution to the IAP: This action, by enhancing inter-institutional governance, contributes to Action 1 of the IAP.
8. Supporting instruments for public administrations	2016.20	Joinup – European Collaborative Platform and Catalogue	<p>The action facilitates the sharing and re-use of solutions for public administrations and provides the stakeholders with the means to collaborate via a collaborative platform.</p> <ul style="list-style-type: none"> Contribution to the EIF: “Joinup” builds especially on the reusability principle of the EIF, facilitating access and supporting the re-use of available interoperable solutions. Contribution to the IAP: The activities ran as part of the “Joinup” action have contributed to Action 10 of the IAP, which explicitly asked for “maintaining, improving and animating the Joinup platform for better user engagement and community building”, as well as action 21.
8. Supporting instruments for public administrations	2016.21	National Interoperability Framework Observatory	<p>The NIFO action has monitored interoperability initiatives in the Members and developed the Monitoring Mechanism to keep track of the implementation of the EIF Recommendations by EU countries. NIFO has also developed an EIF Toolbox to support EU countries in the implementation of the EIF.</p> <ul style="list-style-type: none"> Contribution to the EIF: NIFO provides an overarching contribution to the EIF, by helping monitor the alignment of national initiatives with the EIF and the implementation of the EIF in the EU countries. The action responds to the commitment from the 2017 EIF Communication that called for the development of a framework for monitoring the implementation of the EIF. This was achieved with the development of the EIF Monitoring Mechanism as part of the NIFO action. Contribution to the IAP: NIFO has contributed to Actions 4 and 5 of the Action Plan.
8. Supporting instruments for public administrations	2016.32	European Interoperability Architecture (EIA)	<p>This action helps define the needs and shortcomings with relation to a common interoperability architecture for European public services and contribute to defining such an architecture as well as map reusable solutions and guidelines services as interoperability building blocks.</p> <ul style="list-style-type: none"> Contribution to the EIF: The “EIA” actions contribute in particular to Recommendation 23 of the EIF and to overall interoperability governance. Contribution to the IAP: The “EIA” action implements Action 22.

Package	Action number	Action name	Contribution to the EIF and the IAP
8. Supporting instruments for public administrations	2016.35	EUSurvey	EUSurvey contributes primarily to the multilingualism principle of the EIF. As a survey tool widely used in EU policymaking, EUSurvey has also contributed to Action 11 of the IAP on the engagement of stakeholders in the development of digital public services.
8. Supporting instruments for public administrations	2016.37	IMAPS	<p>This action supports tools for the assessment of the interoperability maturity level of digital public services, helping to identify improvement priorities.</p> <ul style="list-style-type: none"> • Contribution to the EIF: This action contributes to the principles of reusability and user-centricity (in particular, Recommendation 12 of the EIF) by creating a mechanism for analysis, design, assessment and further development of the European Public Services. • Contribution to the IAP: The IMAPS action contributes to action 20 of the IAP.
8. Supporting instruments for public administrations	2017.01	Standard-Based Archival Data Management, Exchange and Publication	<p>The action contributes to supporting data standards in the field of archival information management, studying among others how Open Data formats can be used in this area.</p> <ul style="list-style-type: none"> • Contribution to the EIF: The action builds on several principles of the EIF including openness, transparency, reusability, technological neutrality, preservation of information, user-centricity. • Contribution to the IAP: This action contributes to implementing Action 14 of the IAP.
8. Supporting instruments for public administrations	2019.01	Interoperability Academy	<p>This action was established in order to help increase awareness of interoperability, the EIF and the solutions developed under ISA². The action facilitates access to information and learning material in this sense.</p> <ul style="list-style-type: none"> • Contribution to the EIF: This action promotes the principle of reusability. In addition, it provides an overall contribution to the EIF, by promoting the principle, models, and recommendations of the Framework and facilitating access to information about implementing the EIF. • Contribution to IAP: The Interoperability Academy contributes primarily to Actions 5, 8, 11 of the IAP.
9. Accompanying measures	2016.30	Raising Interoperability Awareness – Communication Activities	<p>Contribution to the EIF: This action contributes to the principles of inclusion, accessibility and transparency by disseminating information about interoperability and the work of ISA2.</p> <ul style="list-style-type: none"> • Contribution to the IAP: The communication activities implement Action 8 of the IAP. • Contribution to IAP: The Interoperability Academy contributes primarily to Actions 5, 8, 11 of the IAP.

Source: [CEPS final study](#).

Sustainability

EQ10: To what extent is the financial, technical and operational sustainability of the developed solutions – maintained and operated through the ISA² programme –ensured?

Annex 6.I. Sustainability of the solutions of sampled ISA² actions

The sustainability of ISA² solutions depends on the extent to which the solutions would require further maintenance and updating in order to continue to deliver results. This section thus outlines the expected level of maintenance or need for updates for the solutions of the sampled actions, based on the general principle that software solutions would require more maintenance and updating while solutions in the forms of guidelines and specifications would require a relatively lower level of maintenance and update, while acknowledging that in keeping up with technological developments updates may become nevertheless necessary. The assessment is based on desk research and independent expert assessments, contributing to assessing the sustainability criterion.

Table 26 Overview of the sustainability of the solutions of sampled ISA² actions

Package	ISA / ISA ²	Action	Solution	Lower maintenance / less frequent update	Lower maintenance / less frequent update
1. Key and generic interoperability enablers	ISA	2016.19	e-TrustEx		X
1. Key and generic interoperability enablers	ISA	2016.29	CPSV-AP	X Note: In general such models need fewer updates, but 2018 was the latest update; it could need a further update.	
2. Semantic interoperability	ISA	2016.07	ADMS	X Note: As ADMS was launched in 2013, the need for an update may be considered.	
2. Semantic interoperability	ISA	2016.07	Core vocabularies	X Note: While constant maintenance	

Package	ISA / ISA ²	Action	Solution	Lower maintenance / less frequent update	Lower maintenance / less frequent update
				may not be necessary, relevant updates need to be considered to ensure new developments are accounted for.	
2. Semantic interoperability	ISA	2016.07	DCAT-AP	X Note: While constant maintenance may not be necessary, relevant updates need to be considered to ensure new developments are accounted for.	
2. Semantic interoperability	ISA	2016.07	VocBench3		X
2. Semantic interoperability	ISA ²	2016.16	PMKI Core data model for multilingual taxonomies/terminologies	X Note: While constant maintenance may not be necessary, relevant updates need to be considered to ensure new developments are accounted for.	
2. Semantic interoperability	ISA ²	2016.16	Semantic Links	X Note: While constant maintenance may not be necessary, relevant updates need to be considered to ensure new developments are accounted for.	
3. Access to data/data sharing/open data	ISA ²	2016.06	ESS Service		X Note: Statistical services have to updated more often to changes in the economy and society
3. Access to data/data sharing/open data	ISA ²	2016.18	Data Visualisation Tools Catalogue	X Note: On the one hand, visualisation tools should be established as	

Package	ISA / ISA ²	Action	Solution	Lower maintenance / less frequent update	Lower maintenance / less frequent update
				standards to increase their use, but they also need to be adapted to new technological developments and new data sources as relevant.	
4. Geospatial solutions	ISA	2016.10	Re3gistry		X
4. Geospatial solutions	ISA	2016.10	EULF Blueprint	X Note: The fourth version was released in September 2020. Updates as necessary need to be considered.	
4. Geospatial solutions	ISA	2016.10	Studies on Location information (ELISE)	X	
5. eProcurement/ eInvoicing Supporting instruments	ISA	2016.05	Open e-Prior		X
5. eProcurement/ eInvoicing Supporting instruments	ISA	2016.05	eCertis		X
5. eProcurement/ eInvoicing Supporting instruments	ISA	2016.05	ESPD		X
6. Decision making and legislation - Supporting instruments	ISA	2016.23	Digital screening mentioned in Tool #27 of the Better Regulation (BR) Toolbox: The digital economy and society & ICT issues	X Note: Generally, Tool #27 serves to guide the policymaking process, thus it remains as a reference in the field. A major overhaul of the tool has been ongoing since 2020 – in line	

Package	ISA / ISA ²	Action	Solution	Lower maintenance / less frequent update	Lower maintenance / less frequent update
				with the Commission's intention to update its BR toolbox by summer 2021.	
6. Decision making and legislation - Supporting instruments	ISA	2016.23	ICT Impact Assessment Guidelines (updated)	X Note: Generally, the guidelines serve to guide the policymaking process, thus they remain as a reference in the field. As ICT impacts are changing, and digital is more and more present in policymaking, an update of the tool may be due in the coming years.	
6. Decision making and legislation - Supporting instruments	ISA	2016.23	Decision supporting tool on interoperability	X Note: Generally, the tool contains high-level considerations for the attention of decision-makers, which are rather future-proof.	
6. Decision making and legislation - Supporting instruments	ISA ²	2017.03	REFIT Platform IT Tool		X Note: The REFIT Platform needs to be updated to keep up with the evolving needs of the Commission. A new platform – Fit for Future – is currently under development, based on the REFIT Platform.
6. Decision making and legislation - Supporting instruments	ISA ²	2017.04	RegDel		X
7. EU Policies - Supporting instruments	ISA	2016.14	Online Collection Software to support European Citizens' Initiative		X Note: The OCS was updated in 2019, but importantly, this is an instance of a very dynamic software.

Package	ISA / ISA ²	Action	Solution	Lower maintenance / less frequent update	Lower maintenance / less frequent update
7. EU Policies - Supporting instruments	ISA	2016.14	European Parliament Crypto Tool		X
8. Supporting instruments for public administrations	ISA	2016.20	Joinup		X
8. Supporting instruments for public administrations	ISA	2016.21	NIFO Digital public administration factsheets		X Note: Updates are necessary due to the continual monitoring aspects of the action.
8. Supporting instruments for public administrations	ISA	2016.32	EIRA and CarTool	X Note: While constant maintenance may not be necessary, relevant updates need to be considered to ensure new developments are accounted for.	
8. Supporting instruments for public administrations	ISA	2016.35	EUSurvey		X
8. Supporting instruments for public administrations	ISA	2016.37	IMAPS	X	
8. Supporting instruments for public administrations	ISA ²	2017.01	Study on Standard-based Archival Data Management, Exchange, and Publication	X	
8. Supporting	ISA ²	2017.01	Assessment tool offering	X	

Package	ISA / ISA ²	Action	Solution	Lower maintenance / less frequent update	Lower maintenance / less frequent update
instruments for public administrations			support for the selection of IT solutions for archives management		
8. Supporting instruments for public administrations	ISA ²	2019.01	Interoperability Academy Winter School		X Note: This assessment is based on the extent to which the Winter School would be repeated every year.
8. Supporting instruments for public administrations	ISA ²	2019.01	Interoperability Academy Catalogue of Educational Training Resources	X Note: A lower level of maintenance may be sufficient, to the extent to which this solution relies on other tools and instruments and facilitate their dissemination.	

Source: [CEPS final study](#).