



Evaluation Study supporting the interim evaluation of the programme on interoperability solutions for European public administrations, businesses and citizens (ISA²)

Final Report

Written by:
CEPS
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ABSTRACT

In compliance with Article 13 of Decision (EU) 2015/2240 establishing the ISA² programme, the interim evaluation assessed the relevance, effectiveness, efficiency, EU added value, coherence, utility and sustainability of ISA². Based on primary data collected from 129 consulted stakeholders, extensive desk research, and expert assessments, the evaluation confirms that ISA² performs well in all the evaluation criteria. The objectives pursued by ISA² are still pertinent in relation to the evolving needs and problems in the field of interoperability of digital public services, and the results achieved so far are aligned with the objectives of the programme. As ISA² progresses and solutions are further developed, the expected results should be attained, given that the implementation of the programme is continuing as planned. There are substantial synergies and limited overlaps among ISA² actions. Moreover, particularly strong synergies exist with the Connecting Europe Facility. ISA² contributed to enhancing cross-border interoperability and users generally tend to be satisfied with the solutions provided. Overall, ISA² plays a crucial role in enhancing the interoperability landscape in the European Union. In light of these findings, the evaluation outlines some measures to improve the performance of ISA² and future editions of the programme.

ZUSAMMENFASSUNG

Gemäß Artikel 13 des Beschlusses (EU) 2015/2240 zur Einrichtung des Programms ISA² wurden im Rahmen der Zwischenauswertung Relevanz, Effektivität, Effizienz, EU-Mehrwert, Kohärenz, Nützlichkeit und Nachhaltigkeit von ISA² beurteilt. Auf der Grundlage von Primärdaten, die dank des Beitrags von 129 konsultierten Interessenvertretern, umfangreicher Sekundärforschungen und Expertengutachten gesammelt werden konnten, bestätigt die Evaluierung, dass ISA² bei allen Bewertungskriterien gut abschneidet. Die im Rahmen von ISA² verfolgten Zielsetzungen sind in Bezug auf sich wandelnde Bedürfnisse und Probleme im Bereich der Interoperabilität der digitalen öffentlichen Dienste immer noch relevant und die bisher erzielten Ergebnisse stehen in Einklang mit den Programmzielen. Da die Umsetzung von ISA² Fortschritte macht und Lösungen weiterentwickelt werden, sollten die erwarteten Ergebnisse erzielt werden, vorausgesetzt dass die Umsetzung des Programms planmäßig verläuft. Bei den Maßnahmen zur Umsetzung von ISA² gibt es beträchtliche Synergien und nur geringfügige Überschneidungen. Zudem bestehen besonders starke Synergien mit der Fazilität „Connecting Europe“. ISA² hat zur Verstärkung der grenzüberschreitenden Interoperabilität beigetragen und die Nutzer sind im Allgemeinen mit den bereitgestellten Lösungen zufrieden. Insgesamt spielt ISA² eine entscheidende Rolle bei der Verbesserung der Interoperabilitätslandschaft in der Europäischen Union. Angesichts dieser Ergebnisse werden in der Evaluierung einige Maßnahmen zur Leistungsverbesserung des Programms ISA² und der künftigen Auflagen des Programms vorgeschlagen.

EXTRAIT

Conformément à l'article 13 de la décision (UE) 2015/2240 établissant le programme ISA², l'évaluation intermédiaire a évalué la pertinence, l'effectivité, l'efficacité, la valeur ajoutée au niveau de l'UE, la cohérence, l'utilité et la viabilité d'ISA². Sur la base des données brutes collectées auprès de 129 parties prenantes, d'une étude documentaire approfondie et d'évaluations d'experts, l'évaluation confirme qu'ISA² obtient de bons résultats pour tous les critères de l'évaluation. Les objectifs poursuivis par ISA² sont toujours pertinents au regard de l'évolution des besoins et des problèmes dans le domaine de l'interopérabilité des services publics numériques, et les résultats atteints jusqu'à présent sont conformes aux objectifs du programme. ISA² progressant et que des solutions continuant d'être développées, les résultats attendus devraient être atteints, puisque la mise en œuvre du programme se déroule comme prévu. Il existe des synergies considérables et peu de chevauchements au sein des actions d'ISA². De plus, il existe des synergies particulièrement fortes avec le mécanisme pour l'interconnexion en Europe. ISA² a contribué à l'amélioration de l'interopérabilité transfrontalière et les usagers sont plutôt satisfaits des solutions proposées. ISA² joue globalement un rôle crucial dans l'amélioration du paysage de l'interopérabilité au sein de l'Union européenne. À la lumière de ces conclusions, l'évaluation expose les grandes lignes de certaines mesures visant à améliorer les résultats de ISA² et les éditions futures du programme.

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**Evaluation Study supporting the
interim evaluation of the
programme on interoperability
solutions for European public
administrations, businesses and
citizens (ISA²)**

Final Report

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List of acronyms, abbreviations and terms used in the report

ADMS	Asset Description Metadata Schema
Assignment	Interim evaluation of the programme on interoperability solutions for European public administrations, businesses and citizens (ISA ²)
CEA	Cost-effectiveness analysis
CEF	Connecting Europe Facility
CEN	European Committee for Standardisation
CENELEC	European Committee for Electrotechnical Standardization
CEPS	Centre for European Policy Studies
Client	DG DIGIT – DIGIT.D2
CPSV-AP	Core Public Service Vocabulary Application Profile (CPSV-AP)
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
EEA	European Economic Area
EFTA	European Free Trade Association
EIF	European Interoperability Framework
EIRA	European Interoperability Reference Architecture
ELISE	European Location Interoperability Solutions for e-Government
EQ	Evaluation question
ERDF	European Regional Development Fund
ESF	European Social Fund
ESIF	European Structural and Investment Funds
ESPD	European Single Procurement Document
EU	European Union
Evaluation Team	Team of evaluators led by CEPS
EVM	Earned Value Management
Horizon 2020	EU Framework Programme for Research and Innovation (2014-2020)
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, Business and Citizens
IMAPS	Interoperability Maturity Assessment of a Public Service
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 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

NIFO	National Interoperability Framework Observatory
OECD	Organisation for Economic Co-operation and Development
PMKI	Public Multilingual Knowledge Management Infrastructure for the Digital Single Market
REFIT	The Regulatory Fitness and Performance programme of the European Commission
RegDel	Inter-institutional Register of Delegated Acts
RFS	Request for Services DIGIT/2/2018
SCM	Standard cost model
SEMIC	Promoting Semantic Interoperability amongst the EU Member States
SPI	Schedule Performance Index
SRSP	Structural Reform Support Programme
TOOP	The "Once-Only" Principle Project, http://www.toop.eu/
UNPAN	United Nations Public Administrations Network
VIES	Value Added Tax Information Exchange System
W3C	World Wide Web Consortium

Introduction

ISA² (Interoperability Solutions for European Public Administrations, Businesses and Citizens) is a spending programme of the European Union (EU) that supports 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**.

By identifying, creating and facilitating the reuse of **interoperability solutions**, ISA² aims to promote a holistic approach to interoperability¹ in the EU and thus – as a key enabler – it supports the implementation of various Union policies and activities. ISA² is also the principal instrument for implementing the revised European Interoperability Framework (EIF) and its annex, the Interoperability Action Plan.

The primary stakeholders of the programme are the **European public administrations at Union, national and regional levels**. Yet the programme affects a much wider group of stakeholders, also including **EU businesses and citizens**. ISA² is open to EU Member States, other countries of the European Economic Area and Candidate Countries. In addition to the 28 EU Member States, three other countries take part in the programme: Iceland, Norway (since 2016) and Montenegro (since 2018). The programme also encourages cooperation with other third countries and with international organisations or bodies.

The ISA² programme has a **budget of € 130.9 million** and runs for **five years** from 1 January 2016 until 31 December 2020. It has been established by the 'ISA² Decision'.² According to **Article 13(3)** of this decision, the Commission shall carry out an interim evaluation of the ISA² programme by 30 September 2019. This interim evaluation was announced by the Commission on 29 May 2018 via an evaluation and fitness check roadmap.³

In this context, this report presents the results of the independent study supporting the **interim evaluation of the ISA² programme** (hereinafter "the Assignment"). The Assignment was performed by a team of evaluators (hereinafter "the Evaluation Team"), led by the Centre for European Policy Studies (CEPS), in line with the requirements spelled out in the Request for Services (RFS) issued by the European Commission – DG DIGIT – DIGIT.D2 - Interoperability (DIGIT.D2, hereinafter "the Client"). It was conducted between October 2018 and May 2019, with the aim of **assessing the achievements** of the programme so far and **identifying areas of potential improvement**. The assessment was based on an evaluation framework (see Box 1 and ANNEX D – EVALUATION FRAMEWORK) composed of 10 Evaluation Questions (EQ), grouped around seven evaluation criteria: i) relevance, ii) effectiveness, iii) efficiency, iv) EU added value, v) coherence, vi) utility and vii) sustainability. The interim evaluation focused on the performance of the ISA² programme from **its start** (January 2016) **up until its midway point** (third quarter of 2018). In line with the geographical scope of the programme, the

¹ As spelled out in Article 2(1) of the [ISA² Decision](#), 'interoperability' means the ability of diverse organisations to interact towards mutually beneficial and agreed common goals, involving 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.

² 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, Brussels 4.12.2015.

³ For further details see: https://ec.europa.eu/info/law/better-regulation/initiatives/ares-2018-2768206_en

evaluation covered **all Member States** and made also references to the cooperation taking place with countries outside the EU.

Box 1 Evaluation framework

The Assignment was based on an evaluation framework composed of seven evaluation criteria, further detailed through 10 Evaluation Questions (EQs). The evaluation criteria and the EQs are summarised below:

- **Relevance** refers to the alignment between the objectives of the programme and the evolving needs and problems experienced by stakeholders.
 - **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?
- **Effectiveness** focuses on the extent to which the ISA² programme has achieved the objectives that it was intended to achieve, and generated the results that it was intended to produce.
 - **EQ2:** How far are the ISA² programme's results in the process of achieving the programme's objectives?
 - **EQ3:** Are there aspects that are more or less effective than others are, and if so, what lessons can be drawn from this?
- **Efficiency** concerns the minimisation of costs borne by various stakeholders to achieve the objectives/results identified under the 'effectiveness' criterion.
 - **EQ.4:** To what extent has the programme been cost-effective?
 - **EQ.5:** Which aspects of the programme are the most efficient or inefficient, especially in terms of resources mobilised?
 - EQ5.1: How is the programme performing relative to the planned work and budget?
- **Coherence** is a measure of the degree to which the interventions supported by the ISA² programme are consistent among each other (so-called 'internal coherence') and with the EU policy framework at large as well as relevant global initiatives (so-called 'external coherence').
 - **EQ.6:** To what extent do the ISA² actions form part of a "holistic" approach within the framework of the programme? (Internal coherence)
 - **EQ.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? (External coherence)
- **EU added value** captures the additional impacts generated by the programme at the EU level, as opposed to leaving the issues addressed by ISA² solely in the hands of national and sub-national authorities.
 - **EQ.8:** What is the additional value resulting from the ISA² programme, compared to what could reasonably have been expected from Member States acting at national, regional and/or local levels?
- **Utility** refers to (i) the extent to which the results of ISA² meet stakeholders' needs and (ii) the level of stakeholder satisfaction with the solutions of ISA².
 - **EQ.9:** How do the ISA² programme's actions and results, achieved and anticipated, compare with the needs they are supposed to address?
- **Sustainability** measures the likelihood that the results of the ISA² programme last beyond its completion.
 - **EQ.10:** To what extent is the financial, technical and operational sustainability of the developed solutions – maintained and operated through the ISA² programme – ensured?

For further details, please see ANNEX D – EVALUATION FRAMEWORK.

The report is structured as follows:

- Part I provides the **background information on the ISA² programme** and the interim evaluation:
 - Chapter 1 summarises the background of the ISA² programme and describes the intervention logic, which is further detailed in Annex C;
 - Chapter 2 provides an overview of the implementation of the programme;
 - Chapter 3 discusses the data sources and methods applied to perform the evaluation as well as the main limitations affecting the undertaking of the Assignment;
- Part II presents the **results of the evaluation**:
 - Chapters 4 to 10 report on the analysis of primary and secondary data collected in order to assess the following evaluation criteria:
 - i) Relevance (Chapter 4);
 - ii) Effectiveness (Chapter 5);
 - iii) Efficiency (Chapter 6);
 - iv) Coherence (Chapter 7);
 - v) EU added value (Chapter 8);
 - vi) Utility (Chapter 9);
 - vii) Sustainability (Chapter 10).

Each chapter presents the key findings, the evaluation framework utilised and the results of the analysis of the specific criterion.

- Chapter 11 provides concluding remarks.

The report also comprises **five annexes**:

- Annex A provides details on the consultation activities conducted during the interim evaluation of ISA² by presenting the consultation strategy (Section 1), the Synopsis Report of the consultation activities (Section 2), as well as additional supporting evidence from consultation activities (Section 3);
- Annex B presents the supporting evidence gathered via desk research;
- Annex C discusses the intervention logic of the programme;
- Annex D contains the Evaluation Framework on which the interim evaluation is based;
- Annex E presents the sample of ISA² actions analysed to perform the interim evaluation.

PART I – BACKGROUND

1 Background of the intervention

ISA² represents the **current edition of a series of five European Commission programmes** providing and promoting interoperability solutions for public administrations in the European Union:

- In 1995, the Interchange of Data between Administrations (**IDA**)⁴ programme was established with the goal of promoting the development and operation of trans-European telematics networks for data interchange between Member State administrations and/or EU institutions.
- The second phase of the IDA programme, **IDA II**⁵, was launched in 1999, aiming to increase the efficiency of the delivery of eGovernment services to European businesses and citizens.
- IDA II came to an end in December 2004 and was followed by the Interoperable Delivery of Pan-European eGovernment Services to public Administrations, Business and Citizens (**IDABC**)⁶ programme, which entered into force in January 2005. IDABC aimed to “identify, support and promote the development and establishment of pan-European eGovernment services and the underlying interoperable telematics networks supporting the Member States and the Community in the implementation, within their respective areas of competence, of Community policies and activities, achieving substantial benefits for public administrations, businesses and citizens”.⁷
- In 2010, the Interoperability Solutions for European Public Administrations (**ISA**)⁸ programme began its operation, as a continuation of IDABC, with a view toward “supporting cooperation between European public administrations by facilitating the efficient and effective electronic cross-border and cross-sectoral interaction between such administrations”.⁹
- The programme on interoperability solutions and common frameworks for European public administrations, businesses and citizens (**ISA²**) was established in 2015 and came into force on 1 January 2016.¹⁰ ISA² draws on the developments in the field of interoperability in the EU accumulated over the course of the four preceding programmes.

The results of the **ISA programme** represent the main **baseline** for the purpose of this interim evaluation. In this respect, the present interim evaluation focused on results achieved after the completion of ISA. The ISA² programme is however building on the previous achievements of ISA, which implemented 51 actions during its 6-year period

⁴ Council Decision 95/468/EC of 6 November 1995 on a Community contribution for telematics interchange of data between administrations in the Community (IDA).

⁵ Decision 1719/1999/EC of the European Parliament and of the Council of 12 July 1999 on a series of guidelines, including the identification of projects of common interest, for trans-European networks for the electronic interchange of data between administrations (IDA).

⁶ Decision 2004/387/EC of the European Parliament and of the Council of 21 April 2004 on the interoperable delivery of pan-European eGovernment services to public administrations, businesses and citizens (IDABC).

⁷ Ibid, Article 2(1).

⁸ Decision 922/2009/EC of the European Parliament and of the Council of 16 September 2009 on interoperability solutions for European public administrations (ISA).

⁹ Idem, Article 1(2).

¹⁰ 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, Brussels 4.12.2015.

(from 2010 to 2015) with a total budget of around € 164 million.¹¹ In particular, it is worth noting that ISA² aims to achieve its objectives through a number of actions continued from the previous edition of the programme, as well as through new actions. Therefore, where relevant, the impact of ISA on ISA² was assessed by **comparing the performance of actions continued from ISA with that of actions started during ISA².**

The end of the ISA programme was marked by a **final evaluation**, which put forward a number of **recommendations for the future edition of the programme**.¹² More specifically, the recommendations focused primarily on: i) communication activities, ii) a revised strategy for interoperability in the EU, as well as iii) the coherence of the programme with relevant EU policies. When it comes to **communication activities**, based on the recommendation included in the final evaluation of the ISA programme, ISA² developed a communication strategy.¹³ More specifically, the ISA² Decision explicitly mentioned the creation of a communication strategy as one of the main activities of the programme, meant to “enhance information and increase awareness with regard to the programme and its benefits” (see Article 3 of the ISA² Decision). With regard to a **revised strategy for interoperability**, under ISA² a revised European Interoperability Framework (EIF) has been adopted and an ISA² action is in place to monitor its implementation (“EIF implementation and governance models”), as recommended in the final evaluation. Finally, with regard to the recommendation for **continued coherence** with other EU policies, Chapter 7 Coherence (see below) details the current achievements of ISA², which performs well in terms of both internal and external coherence.

ISA² is part of a wider policy framework related to the digitalisation of public administrations in the EU. In cooperation with the Member States and the Commission, the ISA² programme promotes and maintains the EIF, which has been in place since 2010 and was revised with an updated version in 2017, as mentioned above.¹⁴ The revision of the EIF was called for in the Communication on a **Digital Single Market Strategy** for Europe¹⁵, recognising the role of interoperability in cross-border and cross-sector connections between communities, public services and public administrations. Other initiatives related to the digitalisation of public administrations to which ISA² contributes include:

- The **eGovernment Action Plans** (with the current version running between 2016 and 2020), aiming to make “public administrations and institutions in the EU open, efficient and inclusive, providing borderless, personalised, user-friendly, end-to-end digital public services to all citizens and businesses in the EU”.¹⁶

¹¹ Further details can be consulted at the following page: <http://ec.europa.eu/archives/isa/>.

¹² Kurt Salmon (2015), *Final evaluation of the ISA programme. Final Report v2.06*, European Union.

¹³ European Commission, DG DIGIT (2017), *ISA² programme. Communication strategy and stakeholders engagement plan*, available online at: https://ec.europa.eu/isa2/sites/isa/files/comms_strategy.pdf.

¹⁴ 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*, Brussels, 23.03.2017, COM(2017) 134 final.

¹⁵ 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*, Brussels, 06.05.2015, COM(2015) 192 final.

¹⁶ Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions EU, *eGovernment Action Plan 2016-2020. Accelerating the digital transformation of government*, COM/2016/0179 final, p.3.

- The 2017 **Tallinn Declaration on eGovernment**¹⁷, a ministerial declaration of the EU Member States spelling out the commitment of the Member States to a number of principles, including “interoperability by default”. It aims to ensure that public services are designed to work seamlessly within the Single Market and across organisational silos, relying on the free movement of data and digital services in the EU.
- The **Connecting Europe Facility (CEF)** established in 2013¹⁸ as a funding programme (in the particular case of digital services) providing support to cross-border interaction between the digital services infrastructures of the Member States. CEF Digital provides Building Blocks, based on interoperability agreements between Member States, which ensure interoperability between IT systems that citizens, businesses and administrations can benefit from seamless digital public services across the European Union.
- **Horizon 2020**, the EU programme dedicated to research and innovation, supporting, among others, open government initiatives as well as the role of ICT in promoting and enabling public sector innovation.¹⁹
- The **European Social Fund (ESF)**, contributing to the modernisation of public institutions and to improving their effectiveness.²⁰
- The **European Regional Development Fund (ERDF)**, supporting institutional capacity in public administrations particularly by prioritising the “strengthening of ICT applications for e-government, e-learning, e-inclusion, e-culture and e-health”.²¹
- The **Structural Reform Support Programme (SRSP)**, which provides support to Member States in five main reform areas, including IT capacity building in public administrations.²²
- The **Single Digital Gateway**, facilitating the online access to information, procedures and assistance regarding EU and national rules to citizens and businesses.²³

The links between ISA² and the programmes and initiatives mentioned above are further detailed in Chapter 7 Coherence.

1.1 Intervention logic

The intervention logic aims to clarify the reasoning followed by EU decision-makers when establishing the ISA² programme. It includes a detailed description of the **needs**,

¹⁷ Tallinn Declaration on eGovernment, at the ministerial meeting during the Estonian Presidency of the Council of the EU on 6 October 2017.

¹⁸ Regulation (EU) No 1316/2013 of the European Parliament and of the Council of 11 December 2013 establishing the Connecting Europe Facility, amending Regulation (EU) No 913/2010 and repealing Regulations (EC) No 680/2007 and (EC) No 67/2010.

¹⁹ More information about the Horizon2020 and its support for public sector innovation can be accessed here: “ICT-enabled public sector innovation in Horizon 2020”, <https://ec.europa.eu/digital-single-market/en/ict-enabled-public-sector-innovation-horizon-2020>

²⁰ More information about the activities related to the modernisation of public institutions can be accessed here: “European Social Fund – More Effective Institutions”, <http://ec.europa.eu/esf/main.jsp?catId=526&langId=en>

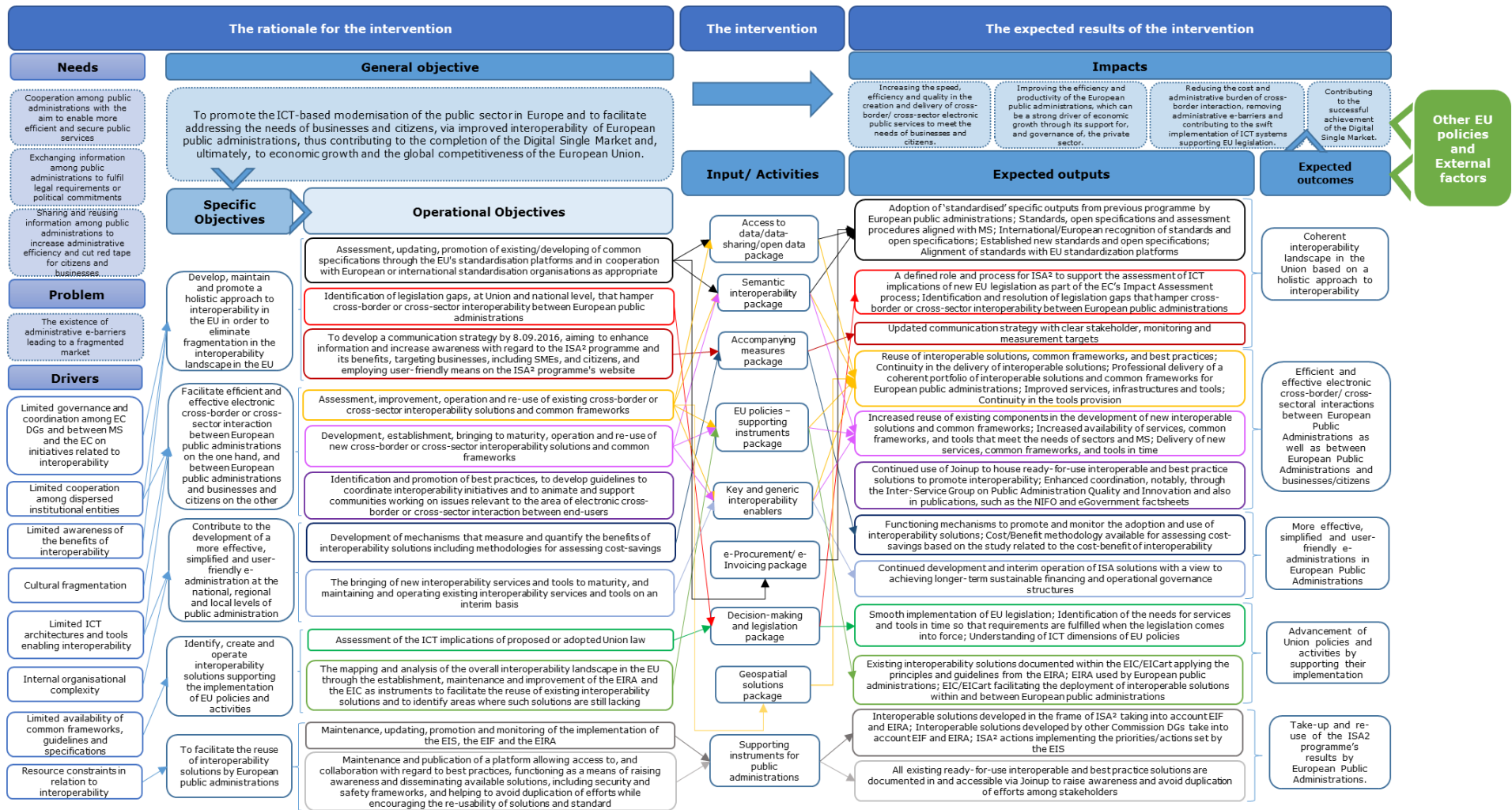
²¹ More information about ERDF and its support for the ICT modernisation of public administrations can be accessed here: “Regional Policy - Information and communication technologies”, https://ec.europa.eu/regional_policy/en/policy/themes/ict/.

²² More information can be accessed here: https://ec.europa.eu/info/funding-tenders/funding-opportunities/funding-programmes/overview-funding-programmes/structural-reform-support-programme-srsp_en

²³ Regulation (EU) 2018/1724 of the European Parliament and of the Council of 2 October 2018 establishing a single digital gateway to provide access to information, to procedures and to assistance and problem-solving services and amending Regulation (EU) No 1024/2012, 21.11.2018.

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 **inputs or activities** of the programme, the **expected results** of the programme and the **logical links** between these components. The intervention logic elements and links provide a benchmark against which the interim evaluation can assess the achievements of the programme in the first half of its period of operation. Whereas Figure 1 provides an overview of the elements of the intervention logic and the links between them, further details are provided in ANNEX C – INTERVENTION LOGIC.

Figure 1 Intervention logic of the ISA² programme



Source: Authors' own elaboration on official documents (see ANNEX C – INTERVENTION LOGIC).

2 State of play

ISA² is operational from 1 January 2016 until 31 December 2020 with a total budget of around € 131 million. ISA² consists of **nine groups of actions**, called packages, which are defined on a yearly basis through an **annual rolling work programme**:

- Key and generic interoperability enablers;
- Semantic interoperability;²⁴
- Access to data / data sharing / open data;
- Geospatial solutions;
- eProcurement / eInvoicing;
- Decision-making and legislation;
- EU policies – supporting instruments;
- Supporting instruments for public administrations;
- Accompanying measures.

The 2018 rolling work programme consists of 53 actions, categorised into the nine packages mentioned above. ISA² managed 39 actions in its first year of operation, 43 actions in 2017, 53 actions in 2018, and is currently managing **54 actions under the 2019 rolling work programme**. Table 1 provides a breakdown of actions and allocated budget per package and per year. As ISA² is scheduled to end on 31 December 2020, one additional rolling work programme remains to be decided upon and adopted. Nevertheless, the present evaluation is based on the rolling work programmes implemented in 2016, 2017 and 2018, as the 2019 rolling work programme had not yet been adopted when the data was collected for this Assignment.

Table 1 Overview of allocated budget and number of actions per package from 2016 to 2018

Package	Allocated budget 2016 (thousand €)	Actions 2016	Allocated budget 2017 (thousand €)	Actions 2017	Allocated budget 2018 (thousand €)	Actions 2018
Key and generic interoperability enablers	4,900	6	5,407	6	4,250	7
Semantic interoperability	2,008	3	1,831	3	1,503	4
Access to data / data sharing / open data package	2,800	5	3,548	5	3,925	7
Geospatial solutions	983	1	2,240	1	1,900	1
eProcurement / eInvoicing	2,400	1	1,445	1	1,063	1
Decision-making and legislation	2,260	6	2,608	9	2,235	10
EU policies – supporting instruments	2,935	3	3,580	3	4,820	5
Supporting instruments for public administrations	4,425	12	3,533	13	5,315	16
Accompanying measures	1,280	2	730	2	1,290	2
Total	23,991	39	25,545	43	26,301	53

Source: ISA² Rolling Work Programmes (2016, 2017, 2018), Indicative Planning and Financial Overview.

²⁴ In the 2016 and 2017 rolling work programmes, the semantic interoperability package is referred to as the “Information interoperability” package.

The programme in its entirety is overseen by the **Interoperability Unit of DG DIGIT** (DIGIT.D2), while individual actions are implemented by different Commission services, depending on the thematic scope. In addition, the Member States are also involved in programme governance through two channels: the **ISA² Committee**, the high-level governing body of the programme, and the **ISA² Coordination Group**, a technical body mandated to ensure horizontal coherence between the programme's actions.²⁵ All 28 EU Member States participate in the programme. Beyond the EU, ISA² numbers three additional members - Iceland, Montenegro and Norway - and an agreement of cooperation has been in place with Uruguay since March 2018.²⁶

ISA² actions are selected and implemented through a process consisting of four steps performed each year:

1. **Submission:** Commission services, Member States, and other countries participating in ISA² are invited to submit proposals for actions to be included in the rolling work programme via a call for proposals.
2. **Evaluation:** The submitted proposals are analysed by DIGIT.D2, which compiles a list of proposals that qualify to be included in the rolling work programme, based on the selection and prioritisation criteria as defined in the ISA² Decision. At this stage, the ISA² Committee gives an opinion on the proposed action list.
3. **Adoption:** The rolling work programme is adopted by the Commission and the budget is released.
4. **Implementation:** The actions in the adopted rolling work programme are implemented by the Commission services in charge.

The overall performance of the programme as well as the progress of each action are frequently recorded through the quarterly and annual monitoring and evaluation reports, which feed into the ISA² Dashboard.²⁷ The Dashboard is an online interactive tool that facilitates the dissemination of information about the activities and achievements of actions with respect to efficiency, effectiveness and coherence. The efficiency of actions is measured using the earned value management analysis (for further details, please see Chapter 6 Efficiency), effectiveness is presented in terms of performance indicators (for further details, please see Chapter 5 Effectiveness), and the coherence of actions is mapped using network analysis (for further details, please see Chapter 7 Coherence).

²⁵ In addition, working groups on specific topics are organised as part of specific actions. For instance, in the field of geospatial interoperability solutions, the "European Location Interoperability Solutions for e-Government" (ELISE) action established the ISA² Working Group on Geospatial Solutions, bringing together representatives from Member States active in the field in order to set priorities and disseminate results. See: https://ec.europa.eu/isa2/actions/elise_en.

²⁶ For more details, please see: https://ec.europa.eu/isa2/news/european-commission-reinforces-cooperation-uruguay-interoperability_en.

²⁷ The Dashboard is available at: <https://ec.europa.eu/isa2/dashboard/>.

3 Data, methods and limitations

3.1 Data sources

The data collection phase of the Assignment involved a mix of quantitative and qualitative data collection methods and aimed to gather the evidence base to respond to the evaluation questions (EQs) spelled out in the Evaluation Framework (ANNEX D – EVALUATION FRAMEWORK). More specifically, data have been drawn from two main sources:

- **Primary data** collected via the following consultation activities:
 - Public consultation;
 - Short questionnaire distributed during the ISA² Mid-Term Conference and the Kick-off workshop;
 - Targeted online surveys;
 - Targeted in-depth interviews;
 - Kick-off workshop.
- **Secondary data** collected by reviewing:
 - Publicly available documents and data sources, including the annual rolling work programmes of ISA², the ISA² Dashboard, and the webpages dedicated to actions and solutions (see “List of acronyms, abbreviations and terms used in the report” for further details);
 - Additional operational documents including monitoring and evaluation reports, overviews of communication activities, and lists of participants in the ISA² Committee and Coordination Group.

It needs to be pointed out that, in order to better guide the data collection activities, **a sample of 20 actions was selected** from the total of 53 actions funded by the ISA² programme up to 2018. The sampling was based on **four criteria**: i) the selected actions are largely representative of the nine packages of ISA² actions; ii) within each package, the selected actions consist of both actions continued from ISA as well as actions started during ISA² (to the extent possible); iii) to allow for sufficient evidence, no actions started in 2018 have been selected; and iv) actions that have already ended have been included in the sample (to the extent possible). Based on these criteria, the sampled actions are presented in Table 2. More details regarding the sampling methodology can be found in ANNEX E – SAMPLE OF ACTIONS.

Table 2 Overview of sampled actions

Package	Action nr.	Action Name
1. Key and generic interoperability enablers	2016.19	Trusted Exchange Platform (e-TrustEx)
1. Key and generic interoperability enablers	2016.29	Catalogue of Services
2. Semantic interoperability	2016.07	SEMIC: Promoting Semantic Interoperability Amongst the European Union Member States (SEMIC)
2. Semantic interoperability	2016.16	Public Multilingual Knowledge Management Infrastructure for the Digital Single Market (PMKI)
3. Access to data/data sharing/open data	2016.03	Big Data for Public Administrations
3. Access to data/data sharing/open data	2016.06	Sharing Statistical Production and Dissemination Services and Solutions in the European Statistical System
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
4. Geospatial solutions	2016.10	European Location Interoperability Solutions for e-Government (ELISE)

Package	Action nr.	Action Name
5. e-Procurement/ e-invoicing - Supporting instruments	2016.05	European Public Procurement Interoperability Initiative
6. Decision making and legislation - Supporting instruments	2016.23	Legal interoperability (former ICT Implications of EU Legislation)
6. Decision making and legislation - Supporting instruments	2017.03	REFIT Platform
6. Decision making and legislation - Supporting instruments	2017.04	Inter-Institutional Register of Delegated Acts (RegDel)
7. EU Policies - Supporting instruments	2016.14	European Citizens' Initiatives and European Parliament Elections
8. Supporting instruments for public administrations	2016.20	Joinup – European Collaborative Platform and Catalogue
8. Supporting instruments for public administrations	2016.21	National Interoperability Framework Observatory
8. Supporting instruments for public administrations	2016.32	European Interoperability Architecture (EIA)
8. Supporting instruments for public administrations	2016.35	EUSurvey
8. Supporting instruments for public administrations	2016.37	Interoperability Maturity Model
8. Supporting instruments for public administrations	2017.01	Standard-Based Archival Data Management, Exchange and Publication
9. Accompanying measures	2016.30	Raising Interoperability Awareness – Communication Activities

Source: Authors' own elaboration based on the ISA² actions.

The desk research and review of the operational documents of the programme as well as the targeted in-depth interviews focused on the 20 sampled actions. Stakeholders related to all actions, however, had the opportunity to respond to either the targeted online surveys or the public consultation, to participate in the Kick-off workshop and to complete the short questionnaire distributed during the ISA² Mid-Term Conference.

The overall data collection was finally complemented by an **expert assessment** of the programme performed by technical experts in interoperability who are part of the Evaluation Team (Mr Andrea Caccia, Prof. Dr Ake Gronlund, Prof. Dr Marijn Janssen and Prof. Dr Paolo Spagnoletti).

Primary data

The consultation activities were launched at the end of November 2018 and their duration was planned in order to ensure that stakeholders had enough time to provide their inputs (Table 3).

Table 3 Timeframe of the consultation activities

Consultation activity	Timeframe
ISA² Mid-Term Conference short questionnaire: A short questionnaire based on the public consultation questionnaire was distributed during the ISA ² Mid-Term Conference and during the Kick-off workshop.	29 - 30 November 2018
Kick-off workshop: The workshop aimed to present the interim evaluation and the planned consultation activities to the different stakeholder groups of the ISA ² programme.	30 November 2018
Public consultation: This activity gave all relevant parties, primarily citizens, businesses, stakeholders' associations and public administrations, the opportunity to express their opinions and views on the achievements of the ISA ² programme. The public consultation was available in 23 EU languages.	7 December 2018 – 1 March 2019 (12 weeks)

Consultation activity	Timeframe
Targeted online surveys: Five online surveys were made available via EUSurvey, targeting the following stakeholder groups: programme governance, action owners, solution users, stakeholders responsible for linked EU policies/initiatives, and standardisation organisations.	14 December 2018 – 23 January 2019 (the surveys remained open after the initial deadline set on 18 January 2018 to accommodate some last-minute requests from stakeholders)
Targeted in-depth interviews: Interviews were conducted with stakeholders from the five groups targeted by the online surveys: programme governance, action owners, solution users, stakeholders responsible for linked EU policies/initiatives, and a standardisation expert. The interviews, based on questionnaires very similar to those used for the online surveys, facilitated the collection of additional qualitative data to complement data collected via such surveys.	12 December 2018 – 23 January 2019 (several interviews were conducted after the initial deadline set on 18 January 2018 as some stakeholders were not available to be interviewed at an earlier time)

Note: More details on the different stakeholder groups are presented in ANNEX A – CONSULTATION ACTIVITIES, SECTION 1: Consultation Strategy, ANNEX A – CONSULTATION ACTIVITIES.

Source: Authors' own elaboration.

The five consultation activities listed in Table 3 led to a total of **129 responses** from stakeholders. The breakdown of responses for each consultation activity and stakeholder category is presented in Table 4. Consultation activities allowed for a **wide coverage of the different stakeholders** of the ISA² programme, ranging from actors involved in the programme governance to citizens, i.e. indirect beneficiaries of ISA². Primary data contributed to the assessment of all the evaluation criteria in the scope of this Assignment. Overall, the **answers collected are consistent across stakeholder groups**. The in-depth interviews and the targeted surveys provided particularly useful input to the interim evaluation. They were tailored to stakeholders closely related to the programme and allowed them to provide extensive details, thus helping the evaluation gain deep insights.

In this context, it is necessary to point out that **the public consultation yielded a relatively low response rate** (14 responses). This is mainly due to two reasons:

- ISA² is a technical programme producing solutions addressed mainly to European public administrations. In this respect, understanding the functioning of the programme requires specific knowledge in the field. Therefore, the direct contact between the average citizen/business and the programme tends to be very limited, and this most probably led to the reduced response rate. In order to increase the chances of participation of as many citizens/businesses as possible, a short questionnaire with the same questions as those of the public consultation was distributed during the ISA² Mid-Term Conference, leading to 15 additional responses. It is worth noting, however, that businesses and citizens are benefiting indirectly from the ISA² solutions and activities, through their interactions with public administrations. Thus, a low response rate among these groups of stakeholders does not reflect negatively on the programme.
- Stakeholder groups that are in direct contact with the programme (e.g. solution users, action owners, etc.) were consulted via targeted online surveys and interviews, which covered *inter alia* the same topics addressed by the public consultation. Therefore, stakeholders belonging to such groups were asked not to respond to the public consultation in order to avoid duplicate answers.

Table 4 Number of consulted stakeholders by consultation activity and stakeholder category

Stakeholder category	In-depth interview	Online survey + follow-up interview	Online survey	Public consultation	Short questionnaire	TOTAL
Programme Governance	2	2	15	-	-	19
Action owners	3	-	20	-	-	23

Stakeholder category	In-depth interview	Online survey + follow-up interview	Online survey	Public consultation	Short questionnaire	TOTAL
Solution users – EU institutions	3	-	12	-	-	15
Solution users – Member States	3	-	25	-	-	28
Stakeholders related to linked EU policies/ programmes/ initiatives	5	1	4	-	-	10
Standardisation organisations	1	-	4	-	-	5
Public administrations	-	-	-	5	11	16
Citizens	-	-	-	9	3	12
Professionals' associations	-	-	-	-	1	1
TOTAL	17	3	80	14	15	129

Source: Authors' own elaboration.

Part II of this report presents the results of the consultation activities using **bar charts with averages**. The results of the public and targeted consultation activities are combined and presented in aggregated form throughout the evaluation. For each question, average scores were computed for each stakeholder group providing feedback on the specific question. Averages do not take into account those respondents who answered "don't know/no opinion" to the question under analysis. The data labels of the bar charts feature the average score first, then the number of respondents in brackets. ANNEX A – CONSULTATION ACTIVITIES to this report provides aggregate results deriving from the data collected via consultation activities by showing **frequency distributions** and **top-two box/bottom-two box tables** (for further details see ANNEX A – CONSULTATION ACTIVITIES). The consultation strategy applied in order to gather primary data is detailed in ANNEX A – CONSULTATION ACTIVITIES, SECTION 1: Consultation Strategy.

Finally, an overview of the respondents' expertise in the fields of digital public services and interoperability and on the ISA² programme is presented in Box 2. On average, the **respondents are characterised by a high level of expertise**, which contributed to increasing the quality and reliability of the primary data collected.

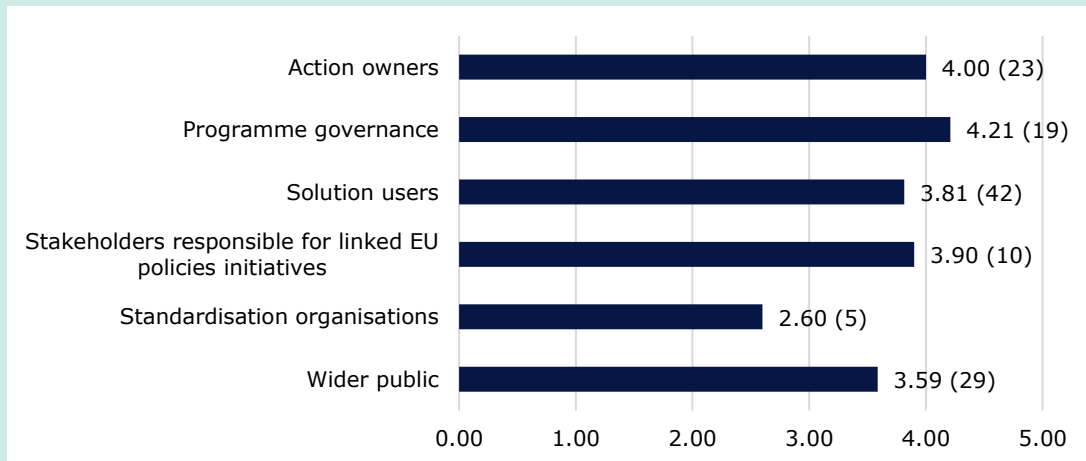
Box 2 Overview of the expertise of respondents and geographical coverage

In order to gain a better overview of the expertise of the respondents, each questionnaire contained a background screening section, allowing to differentiate between stakeholders with different levels of knowledge of (i) digital public services and interoperability, (ii) the ISA² programme as a whole, and (iii) the thematic groups of ISA² actions (packages). The results of the public and targeted consultation activities are presented in aggregated form.

The majority of respondents have a **high level of expertise in the fields of digital public services and interoperability** (Figure 2) **and on the ISA² programme** (Figure 3). Solution users, however, tend to have a relatively more limited knowledge of ISA² as a whole; 45% of the respondents from the group of solution users (19 out of 42) indicated they were familiar with the programme to a high extent or to the fullest extent; 31% (13 out of 42) indicated having limited knowledge or no knowledge of the programme in its entirety (Figure 3). In addition, half of the respondents to the public consultation or the short questionnaire ("wider public"; 15 out of 29) are familiar with

ISA² to a high extent or to the fullest extent, compared to 24% (7 out of 29) who are familiar with the programme in its entirety only to a limited extent or not at all. Stakeholders related to standardisation organisations tend to have a more limited knowledge of both interoperability and the ISA² programme. Additional details concerning the respondents' level of familiarity with ISA² are presented in Chapter 5 Effectiveness.

Figure 2 Knowledge of digital public services and interoperability (average score of answers, number of respondents)



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

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

Source: Authors' elaboration on data collected via consultation activities.

Figure 3 Knowledge of ISA² (average score of answers, number of respondents)



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

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

Source: Authors' elaboration on data collected via consultation activities.

Furthermore, we examined how many respondents have at least some **familiarity with one or more of the ISA² packages** (Figure 4). In this respect, 65% of respondents

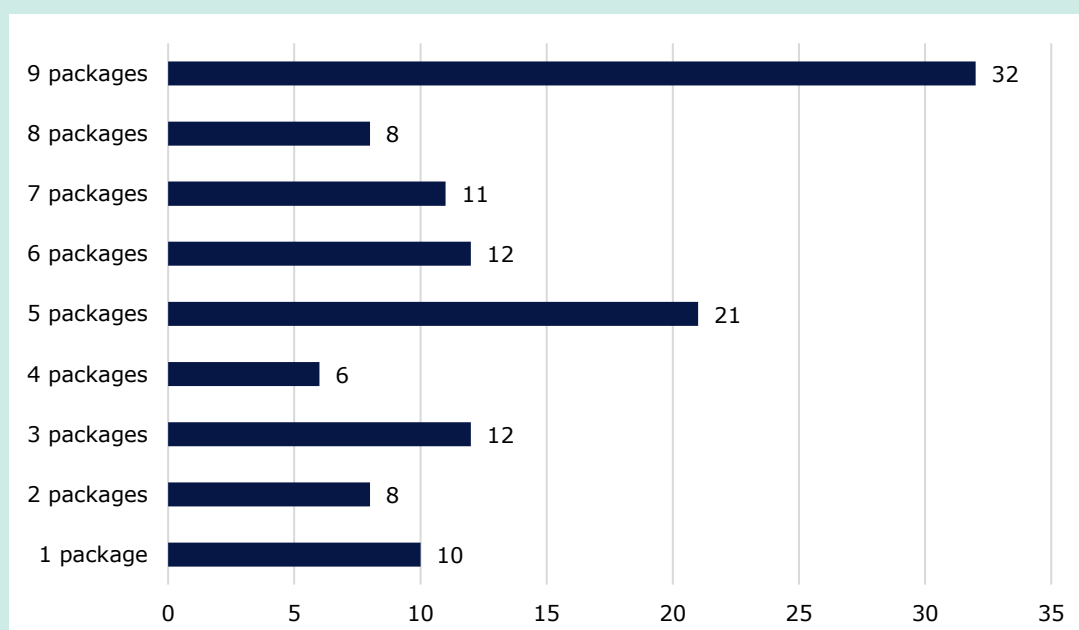
(84 out of 120) are familiar with five packages or more out of the total of nine packages (Figure 4).

In terms of geographic distribution, solution users from different Member States provided their input via the in-depth interviews and the online surveys:

- At the EU level, solution users who responded to the consultation activities work in EU institutions located in nine different EU countries: Belgium, the Czech Republic, France, Hungary, Italy, Luxembourg, Poland, Portugal, and Sweden;
- At the national and regional levels, solution users (including respondents who answered as individuals) who provided their feedback come from the following 13 countries: Belgium, Bulgaria, Croatia, the Czech Republic, France, Germany, Greece, Hungary, Italy, Luxembourg, the Netherlands, Portugal, and Sweden.

During the public consultation, feedback was received from individuals residing in **six Member States** (Belgium, France, Germany, Greece, Spain, and the United Kingdom) and from public administrations from **three Member States** (the Czech Republic, Greece, and Spain).

Figure 4 Knowledge of ISA² action packages (number of respondents familiar with a given number of packages)²⁸



Source: Authors' elaboration on data collected via consultation activities.

Secondary data

A significant part of the desk research relied on official documents and data that were readily available on the ISA² website. The consulted sources are the following:

- The **ISA² Dashboard** was used to gather the data that feed into the earned value management analysis, including the earned value, planned value, and actual costs of all the sampled ISA² actions, in time series format; these data contribute to the

²⁸ 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.

assessment of the efficiency criterion. The dashboard also provides various performance indicators and values for each action. Relevant performance indicators from the dashboard were selected and included in the assessment of the effectiveness criterion. A final set of data provided by the dashboard relates to the existing links between the sampled ISA² actions, and between the ISA² actions and other EU policies/programmes/initiatives; these data play a key role in the assessment of the coherence criterion.

- The **rolling work programme**, published annually, is particularly relevant for the assessment of the coherence criterion and for understanding the contribution of each action to the principles spelled out in Article 4 of the ISA² Decision.
- The **webpages of the Europa website dedicated to ISA² actions and solutions** are relevant for assessing the effectiveness criterion, in particular as they contain valuable information with respect to the progress made in implementation and the take-up of solutions by public administrations and other entities.

In addition to investigating the readily available information and data mentioned above, the Evaluation Team reviewed the following operational documents shared by DIGIT.D2:

- The **Monitoring and Evaluation reports** (quarterly and annual), which complement the data reported on the ISA² Dashboard, providing the necessary information for assessing the efficiency and effectiveness of the programme, of packages and of actions. More specifically, the Evaluation Team reviewed the monitoring and evaluation reports available for 2016 (annual report), 2017 (quarterly reports and annual report), and 2018 (the reports for the first two quarters of 2018).
- **Performance indicators** directly shared by action owners of the sampled actions were also used to assess the effectiveness and efficiency of the programme.
- With regard to the effectiveness of the communication strategy, the Evaluation Team relied on a **summary of communication activities** that included events organised by ISA² between 2016 and 2018 (including information on the location and the number of participants) and events in which ISA² was represented (including information on the location of the events). These data also contributed to the assessment of the EU added value criterion.
- **Lists of participants in ISA² Committee meetings and in ISA² Coordination Group meetings** between 2016 and 2018 were also considered when assessing the EU added value of the programme.

3.2 Data validation

The collected data were **validated via triangulation** in order to ensure the robustness of evidence. In fact, for all evaluation criteria and questions data were **collected from multiple sources and using different tools**, in order to ensure that all the findings of the Assignment are based on well-grounded evidence. Triangulation allows for increasing confidence in collected data, revealing unique findings and providing a clearer understanding of the problem.

The Better Regulation Toolbox defines triangulation as “the application and combination of several research methodologies in the study of the same phenomenon”.²⁹ **Triangulation** ensures the validity of the results. Validity requires checking “whether the

²⁹ European Commission (2017), Better Regulation "Toolbox", https://ec.europa.eu/info/sites/info/files/better-regulation-toolbox_2.pdf, p. 20.

findings of a study are true and certain: “true” in the sense that research findings accurately reflect the situation; and “certain” in the sense that research findings are supported by evidence”.³⁰ In this context, the Evaluation Team relied on three different types of triangulation to provide a solid basis from which robust conclusions can be drawn:

- **Triangulation of data.** For each EQ, data were collected from multiple sources and stakeholders;
- **Triangulation of methods.** For each EQ, data were collected via at least two different data collection methods (e.g. interviews, targeted questionnaire, public consultation, desk research);
- **Triangulation of evaluators.** Several members of the Evaluation Team were involved in data collection activities; in addition, each evaluation criterion was assessed by at least two members of the Evaluation Team. Hence, conclusions were agreed upon by at least two evaluators.

3.3 Quantitative methods for data analysis

Besides the statistical analysis of data collected via consultation activities, desk research and the qualitative analysis of open responses provided by consulted stakeholders and information contained in documentary evidence, the Evaluation Team has applied three specific quantitative methods in order to evaluate the efficiency of the programme:

- The **standard cost model (SCM)**³¹ is a method for assessing administrative costs imposed by rules or policies *inter alia* on businesses and public administrations. It is based on the identification of the basic components of a rule, the **Information Obligations**, whose costs for the addressees can be measured and quantified. An Information Obligation is a specific duty to gather, process or submit information to the public authority or a third party. The SCM was used to measure the costs borne by action owners to prepare and submit proposals for ISA² actions.
- **Cost-effectiveness analysis (CEA)**³² is a method for assessing the merits of a policy in an interim and *ex post* evaluation setting. In a nutshell, CEA measures the value-for-money of past policies, i.e. the amount of benefit generated by unitary costs. **Costs are measured in monetary terms**, whereas **effectiveness is measured in “natural units”**, and the unit of account varies depending on the nature of the problem addressed (e.g. number of users of Key and Generic Interoperability Enablers). The heterogeneity of performance indicators available for ISA² actions makes it difficult to draw conclusions about the overall cost-effectiveness of the programme and thus allowed using CEA only for certain action packages and indicators, as described in PART II – EVALUATION of this report.

³⁰ Lisa A. Guion, David C. Diehl, and Debra McDonald (2011), Triangulation: Establishing the Validity of Qualitative Studies.

³¹ European Commission (2017), “Tool #60. The standard cost model for estimating administrative costs”, in the Better Regulation “Toolbox”, available at https://ec.europa.eu/info/sites/info/files/better-regulation-toolbox_2.pdf; SCM Network (2005), “The International SCM Manual; Measuring and Reducing Administrative Burdens for Businesses”, available at: http://www.administrativeburdens.com/filesystem/2005/11/international_scm_manual_final_178.doc.

³² European Commission (2017), “Tool #57. Analytical methods to compare options or assess performance”, in the Better Regulation “Toolbox”, available at https://ec.europa.eu/info/sites/info/files/better-regulation-toolbox_2.pdf.

- In line with the PM² methodology developed by the Commission³³, the **earned value management** (EVM) and **earned schedule** (ES) methods are currently used to monitor and assess the **efficiency of the ISA² programme**. EVM is a project management technique that helps determine work progress against a given baseline, so that costs, time, and scope of a certain activity are constantly tracked. In the context of the ISA² programme, efficiency is assessed at action and programme levels. The implementation of EVM requires managers to calculate the **earned value**, i.e. a quantification of the 'worth' of the work done to date, and the **actual costs**, i.e. the **executed budget for achieving the work**, and to compare them with the **planned value** of such activity. This allows for a better understanding of the performance of the programme. The ES is an extension of the EVM method that deepens the level of analysis to a 'units of time' layer. In the framework of the ISA² programme, tailored versions of the EVM and ES approaches are adopted.³⁴ The Evaluation Team relied on secondary data to apply this method and show the progress made with implementing the programme.

3.4 Main limitations

The consultation strategy (ANNEX A – CONSULTATION ACTIVITIES, SECTION 1: Consultation Strategy) and the data collection plan put forward in the Evaluation Framework (ANNEX D – EVALUATION FRAMEWORK) were fully implemented. Therefore, the Evaluation Team was able to draw robust conclusions for all EQs based on both primary and secondary data. Nevertheless, some emphasis needs to be placed on **caveats** that may have an impact on the main findings of the Assignment as well as on future evaluation exercises:

- The **timing of this Assignment** is compliant with Article 13 of the ISA² Decision, which requires the Commission to present an independent interim evaluation to the European Parliament and the Council by 30 September 2019. Given this constraint, in order to complete the Assignment on time, the evaluation confined the analysis to actions funded during the first three years of the Programme (2016, 2017 and 2018). In particular, some actions under evaluation are still ongoing; hence, their outputs and outcomes can only be recorded to some extent. On a more general note, as discussed in the intervention logic (ANNEX C – INTERVENTION LOGIC), impacts occur over the long term and it is difficult to capture them in an interim evaluation. In principle, in the coming years, ISA² actions may see improvements³⁵ in the way they achieve the programme's objectives and deliver the expected results.
- The **contact details for solution users** were not provided to the Evaluation Team due to confidentiality and data protection reasons. Therefore, action owners were requested to: i) invite users to complete the relevant targeted online survey; and ii) share with the Evaluation Team the details of those users who gave their consent to participate in interviews in the context of this Assignment. This two-step

³³ European Commission (2018), PM² project management methodology, available at: <https://publications.europa.eu/en/publication-detail/-/publication/ac3e118a-cb6e-11e8-9424-01aa75ed71a1/language-en/format-PDF/source-83307127>.

³⁴ More specifically, the tailored version is based on the Earned Value Management Tutorial, Module 1: Introduction to Earned Value Management, prepared by Booz, Allen and Hamilton, Department of Energy, the United States of America, and on the guidelines on Earned Schedule in Action, developed by Kim Henderson, from the Project Management Institute (PMI) Oklahoma, 13.07.2007.

³⁵ The analysis presented in PART II – EVALUATION shows that more mature solutions perform relatively better. For further details regarding the performance of indicators for older and newer actions implemented under ISA², please see Box 4.

approach may have limited the number of answers received from solution users. In addition, some action owners interviewed for this Assignment explained that they were unable to contact their users for the purpose of evaluation, as the users' consent to be involved in consultation activities was never collected. Against this background, in order to facilitate future evaluations, the Evaluation Team suggests that all users of ISA² be requested to provide their consent to be contacted by Commission's staff and contractors for evaluation purposes.

PART II – EVALUATION

4 Relevance

KEY FINDINGS

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?

- The **original needs and problems** that the programme intended to address are still fully relevant.
- In addition, there are also some **new needs and problems** related to the interoperability of digital public services that are currently experienced by consulted stakeholders at both national and EU levels, such as:
 - The need for a more binding legal framework for interoperability and a more prescriptive approach to design interoperable public services;
 - The need to improve the way administrations communicate with one another;
 - The need to share best practices;
 - The need to account for new developments such as blockchain, privacy-by-design, self-sovereign identities;
 - Resource constraints experience by national and local public administrations;
 - The problem of different political priorities among Member States;
 - The limited awareness of interoperability initiatives at the regional and local levels.
- By achieving its original objectives, **ISA² can address the needs and problems** in the field of interoperability of digital public services **identified when the programme was adopted**.
- **New needs and problems** experienced by consulted stakeholders, however, **can only be partially addressed** by attaining the programme's objectives.
- For ISA² to address these additional needs and problems, the following measures could be taken into consideration for future actions and future editions of the programme:
 1. Ensuring more **collaboration and exchanges with regional and local administrations**;
 2. Improving the **sharing of best practices** among public administrations;
 3. Performing studies focusing on the **impacts of new ICT developments** on interoperability;
 4. Ascertaining that interoperability of digital public services becomes a **priority for EU Member States**;
 5. Designing a **more binding legal framework for interoperability**.

4.1 Evaluation framework for Relevance

Article 13 of the 'ISA² Decision' requires the Interim Evaluation to assess, *inter alia*, the **relevance** of the programme, i.e. the extent to which the objectives of the programme are in line with the evolving needs and problems³⁶ experienced by stakeholders. This criterion is translated into the following EQ:

- 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?

³⁶ Needs are defined here as prerequisites for the efficient delivery of European public services; problems consist of specific bottlenecks that do not allow meeting such needs.

Based on the Evaluation Framework (see ANNEX D – EVALUATION FRAMEWORK), EQ1 can be broken down into **two main judgment criteria**, measured by relying on data collected via consultation activities as well as on expert assessment:

- Alignment between needs and problems addressed by the programme and current needs and problems experienced at the EU, national and subnational level; and
- Alignment between the objectives of the programme and current needs and problems experienced at the EU, national and subnational level.

4.2 Analysis

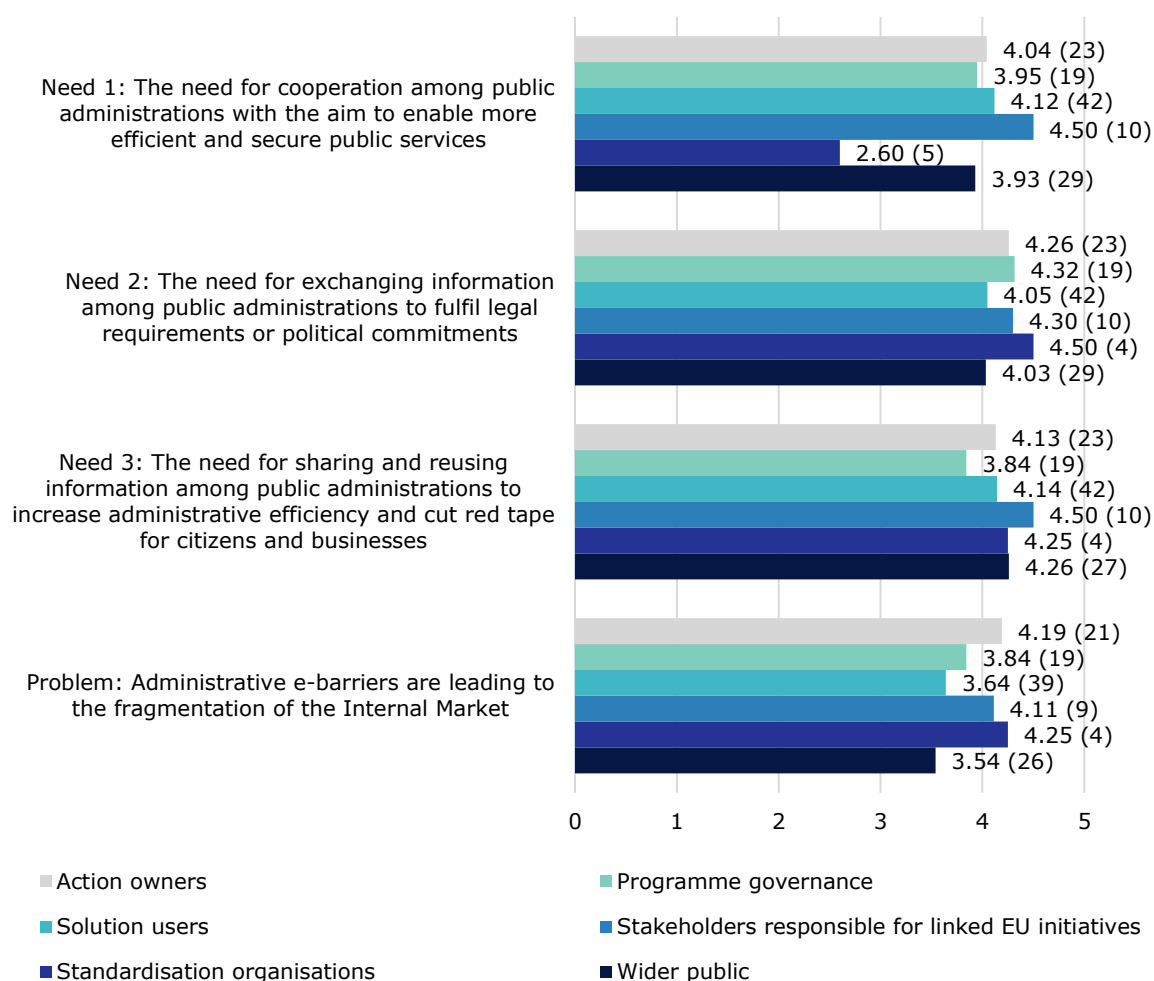
Alignment between original and current needs and problems

The rapidly evolving nature of ICT and interoperability begs the question as to whether the needs and problems originally targeted by the programme are still aligned with the current needs and problems experienced by stakeholders.

In this context, Figure 5 outlines the average scores derived from the answers received per stakeholder group. Overall, more than 70% of respondents consider that **the three original needs**, as presented in Figure 5, **are still relevant** to a high extent or to the fullest extent (93 out of 128 respondents for the first need, 99 out of 127 respondents for the second need, and 94 out of 125 respondents for the third need). However, there is a small exception when it comes to the *need for cooperation among public administrations with the aim to enable more efficient and secure public services*. In fact, two out of the five respondents representing standardisation organisations consider this need as relevant only to a limited extent or not at all, while only one respondent from the same group considers that the need is still highly relevant.

At the same time, **the problem of administrative e-barriers originally identified by the programme is still relevant**. Two-thirds of the respondents (79 out of 118) consider this problem still relevant to a high extent or the fullest extent, in comparison to almost 13% (15 out of 118) who believe the problem is relevant only to a limited extent or not at all. Further details on the alignment of original and current needs and problems are presented in ANNEX A – CONSULTATION ACTIVITIES.

Figure 5 Extent to which needs and problems originally addressed by ISA² are currently experienced by European public administrations, businesses and/or citizens (average score of answers, number of respondents)



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

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

Source: Authors' elaboration on data collected via consultation activities.

There are some additional needs and problems that the programme could aim to address, as pointed out by 39% of the consulted stakeholders (46 out of 129). More specifically, several respondents converged on the following needs and problems related to interoperability of public services that are currently experienced by European public administrations, businesses and/or citizens:

- EU level:
 - The need for a **more binding legal framework for interoperability**, including the need for legally binding standards or the general need for a more binding approach to interoperability in the EU;
 - The need for a more prescriptive approach to design interoperable public services (**'interoperability by design'**). It is worth noting, however, that the revised EIF adopted in 2017 explicitly mentions 'interoperability by

design' as the conceptual model for interoperable public services.³⁷ Therefore, this need is taken into account through the wider framework of the EIF;

- The need to improve **the way administrations communicate with one another**, given the different forms of organisation and functioning of public administrations in the Member States;
- The need to **share best practices**;
- The need to account for **new developments** such as blockchain, privacy-by-design, self-sovereign identities,³⁸ which are changing the interoperability landscape.
- National/subnational level:
 - **Resource constraints**, such as shortage of qualified IT staff, experienced by national and local public administrations;
 - The **different political priorities** among Member States hindering a consistent approach to interoperability in the EU;
 - The **limited awareness of ISA²** and other initiatives related to interoperability, especially at the regional and local levels.³⁹

Alignment between needs and problems and the objectives of the programme

After ascertaining that all the original needs and problems are still relevant and identifying additional needs and problems experienced by stakeholders at the EU and national levels, in order to assess the relevance of ISA² it is necessary to check whether the objectives of the programme are aligned with addressing such needs and problems.

The majority of consulted stakeholders indicate that, through its general objective⁴⁰, **ISA² can address**, either to a high extent or to the fullest extent, **the main needs and problems identified** in the field of interoperability of digital public services at the time the programme was established (Figure 6). This result holds true across all stakeholder groups. Over 80% of respondents indicate that, by achieving its general objective, ISA² can address the original needs to a high extent or to the fullest extent (103 out of 125 respondents for the first need, 103 out of 123 respondents for the second need, and 103 out of 124 respondents for the third need). When it comes to the problem of administrative e-barriers, approximately two-thirds of respondents (77 out of 116) agree that it can be addressed by ISA² through its general objective, while only 11% (13 out of 116) believe that the problem can be addressed only to a limited extent or not at all by the programme. These results are also confirmed by the independent assessment performed by the Evaluation Team's technical experts, who pointed out that ISA², through its objectives, brings forward the topic of interoperability and helps to build a community of professionals, thus contributing to addressing the needs and problems identified in the intervention logic.

³⁷ See Annex 2 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*, Brussels, 23.03.2017, COM(2017) 134 final.

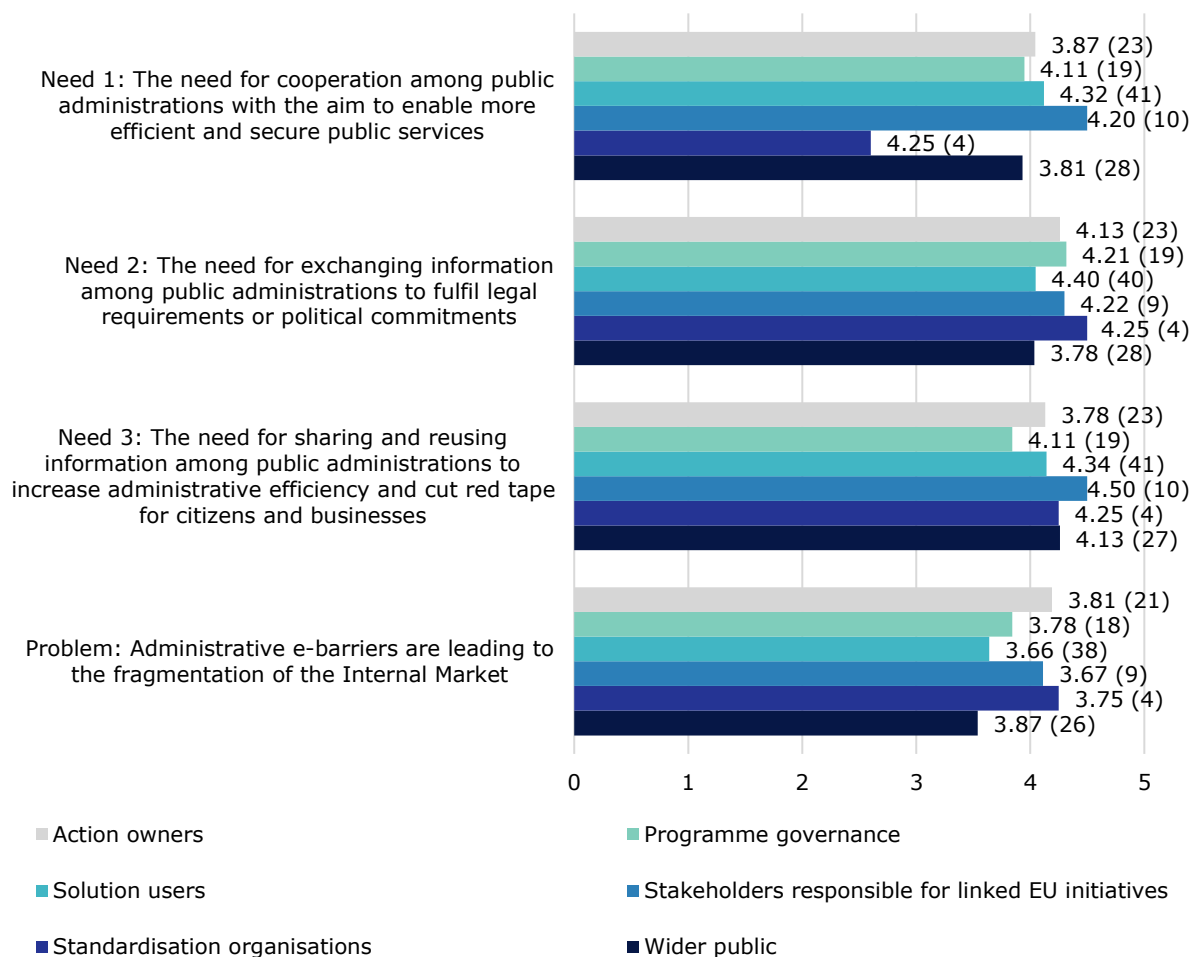
³⁸ A "self-sovereign identity" is an emerging concept referring to the creation and management of digital identities by individuals. For more information, please see: Der, Uwe, Stefan Jähnichen, Jan Sürmeli (2017), *Self-sovereign Identity – Opportunities and Challenges for the Digital Revolution*, available online at: <https://arxiv.org/abs/1712.01767>.

³⁹ In this respect, the way information trickles down from the national level to the regional and local levels is important.

⁴⁰ The general objective of the programme, as outlined in the intervention logic, is the following: "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".

Further details on the alignment of original needs and problems and the objectives of the programme are presented in ANNEX A – CONSULTATION ACTIVITIES.

Figure 6 Extent to which achieving ISA² objectives contributes to addressing the needs and problems originally addressed by the programme (average score of answers, number of respondents)



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

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

Source: Authors' elaboration on data collected via consultation activities.

When it comes to the new needs and problems identified by consulted stakeholders, on average, respondents to the consultation activities believe that the programme, through its general objective, could address them to some extent (Figure 7). Three out of the six respondents responsible for linked EU initiatives who indicated additional needs and problems, however, consider that the general objective cannot address or can only address to a limited extent these additional needs and problems, as **some of the issues mentioned fall outside the scope of the programme** (for instance, the different political priorities among Member States). Further details on the alignment between the objectives of the programme and additional needs and problems currently experienced by stakeholders are presented in ANNEX A – CONSULTATION ACTIVITIES.

Figure 7 Extent to which achieving ISA² objectives contributes to addressing additional (current) needs and problems identified by consulted stakeholders (average score of answers, number of respondents)



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

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

Source: Authors' elaboration on data collected via consultation activities.

Against this background, several measures could be implemented in order to increase the relevance of the current and future editions of the programme *vis-à-vis* existing needs and problems:

1. **Ensuring more collaboration and exchanges with regional and local administrations** in order to increase awareness of interoperability and the take-up of ISA² solutions at the sub-national level.
2. **Improving the sharing of best practices** among public administrations with a view toward increasing awareness of interoperability as well as toward increasing the take-up of ISA² solutions across Member States.
3. **Performing more studies** to assess the opportunities or challenges brought by **new ICT developments** with regard to interoperability.
4. **Ascertaining that interoperability of digital public services becomes a priority for EU Member States**, for instance by better emphasising the benefits stemming from interoperability or by enhancing Member States' commitment via the ISA² Committee. It is worth noting that the Tallinn Declaration⁴¹ marks the commitment of Member States in this regard, therefore, it is important to ensure that the principles and policy actions lines agreed upon in the Declaration are followed up by concrete actions.
5. **Designing a more binding legal framework for interoperability**⁴², for instance by ensuring that all public administrations relying on EU funding to provide public services improve the cross-border and cross-sectoral interoperability of such

⁴¹ See footnote 17

⁴² This need was indicated by respondents from the following stakeholder groups: programme governance (at the Member State level), solution users and action owners.

services.⁴³ In this respect, one option would be the introduction of a system based on **conditionalities**, whereby funding is awarded to public administrations contingent upon their use of interoperable solutions, leading to a greater take-up of solutions and ultimately to a more coherent interoperability landscape in the EU. In addition, the European Semester process could provide further impetus to the modernisation of public administrations. Introducing the topic of reform of the public administration, including the digital modernisation, as a key area in the European Semester would ensure that progress is tracked and concrete recommendations are issued for each Member State with a view toward enhancing, *inter alia*, the cross-border and cross-sectoral interoperability of public administrations in the EU.

The first two measures could be implemented within **the current edition of the programme** by relying on the existing network of national stakeholders as well as in the context of current actions (for instance by further developing actions like "Joinup", which provides a space for collaboration and where the exchange of best practices can take place, or "Sharing and Reuse", which encourages the reuse of interoperability solutions in public administrations). The third measure could be implemented in the next edition of the programme, as it requires the careful identification of relevant topics to be analysed and the funding of new actions. In the same vein, the fourth measure may require more time, especially if a **multi-year communication and dissemination strategy** would be required in order to affect political priorities set by the Member States. Due to its very nature, the fifth measure could only be realistically considered after identifying feasible policy options to promote interoperability and performing an in-depth impact assessment of such options. The fourth and fifth measures target more the political level rather than the operational aspects of the programme and require a strong political commitment.

⁴³ This need can also be seen in the context of new services being developed and provided by Member States as part of EU initiatives such as the Single Digital Gateway (see: https://ec.europa.eu/growth/single-market/single-digital-gateway_en) and the Public Sector Information Directive (see: <https://ec.europa.eu/digital-single-market/en/european-legislation-reuse-public-sector-information>), which require the interoperability of tools and services at the EU and the Member State levels.

5 Effectiveness

KEY FINDINGS

EQ2: How far are the ISA² programme's results in the process of achieving the programme's objectives?

- The results achieved so far by ISA² are **aligned with the objectives of the programme**, as confirmed by all stakeholder groups consulted for this Assignment. Nevertheless, they still do not fully match the expected results, as most of the actions are still ongoing and solutions are still being developed. **More time is needed** in order to achieve all the expected results. This is confirmed by the assessment of key performance indicators and a comparison between actions continued from ISA and actions started under ISA².
- External factors could improve but also jeopardise the way in which the programme achieves its objectives and delivers its results. The main findings hold true across the different stakeholder groups and are further confirmed by expert assessments. The **call for common standards and frameworks from public administrations** represents an external factor contributing to the performance of the programme. By contrast, **institutional complexity**, as a higher-order issue, could harm the achievement of cross-border and cross-sectoral interoperability. Even though ISA² is meant to enhance cross-border and cross-sectoral cooperation and exchanges between public administrations, the multiple layers of governance and differences between national public administrations in various Member States and local public administrations within Member States are obstacles that may require more extensive reforms for addressing them.

EQ3: Are there aspects that are more or less effective than others are, and if so, what lessons can be drawn from this?

- The programme performs relatively less well when it comes to **developing a more effective, simplified and user-friendly e-administration at the national, regional and local levels of public administration**. This is an area where Member States can in fact have a greater impact. National initiatives supporting interoperability can enhance the overall performance of ISA² as the topic becomes more prominent.
- As the secondary data collected through desk research shows, the **20 sampled actions** covered in detail by this assignment have generated **35 solutions** so far. Some of these solutions are used by all 28 EU Member States (like the "European Parliament Crypto Tool") or the vast majority of Member States (as it is the case with "Open e-TrustEx" or "Joinup") as well as by EU institutions.
- The **take-up rate** of solutions is influenced by **the duration of the programme**, a conclusion drawn from desk research and confirmed by the independent assessment of the technical expert that are part of the Evaluation Team. As such, actions continued from previous editions of the programme have produced solutions that are now more widely used than solutions resulting from actions that have been newly established under ISA².
- The rolling work programme process plays a role in ensuring that ISA² actions take into consideration a **set of core principles**. Based on desk review of official documents, ISA² actions are largely compliant with the principles listed in Article 4 of the ISA² Decision; as such, these principles are taken into account from the very beginning, i.e. when the actions are designed, selected and included in the rolling work programme.

- There is a general awareness of the programme, as the primary data from consultation activities shows; however, there are **areas that could benefit from more promotion**. For instance, as legal interoperability is specifically mentioned among the operational objectives, the solutions developed for assessing the ICT and interoperability impacts of legislation could be more prominently featured in order to improve awareness among stakeholders. At the moment, legal interoperability solutions target the internal policy process of the Commission, a fact which could explain the relatively more limited awareness among the stakeholders of the programme.
- The assessment of the programme's achievements could be further enhanced by developing **studies that quantify the impact of interoperability solutions** on the **efficiency and productivity of public administrations**. This would also have positive spill-over effects on dissemination and communication activities: the monetary benefits deriving from ISA² solutions would be better emphasised, thus providing a better basis for stakeholder support of future EU efforts promoting interoperability.

5.1 Evaluation framework for Effectiveness

In line with Article 13.4 of the ISA² Decision, the interim evaluation is expected to assess the programme's **effectiveness**, i.e. the extent to which the programme has achieved its objectives and generated the expected results. Analysing the effectiveness of ISA² requires answering two EQs:

- EQ2: How far are the ISA² programme's results in the process of achieving the programme's objectives?⁴⁴
- EQ3: Are there aspects that are more or less effective than others, and if so, what lessons can be drawn from this?

Evaluating the effectiveness of the programme, as outlined in the Evaluation Framework (see ANNEX D – EVALUATION FRAMEWORK), requires the application of the following **judgment criteria**:

- Alignment between actual results, the objectives and the expected results of the programme;
- Impact of external factors on the performance of the programme;
- Awareness of the programme;
- Performance indicators; and
- Alignment with principles spelled out in Article 4(b) of the ISA² Decision.

The analysis performed in this Chapter relies on data collected via both consultation activities and desk review of performance indicators, the rolling work programme, the information available online in the webpages dedicated to the individual ISA² actions and solutions, as well as on additional evidence received from the action owners of the 20 sampled actions. Data analysis is complemented by the expert assessment performed by the technical experts who are part of the Evaluation Team.

⁴⁴ The Request for Service (RFS) originally referred to the programme's "results and impacts". The EQ was rephrased given that the terminology used throughout the report considers "results" as consisting of "outputs" (short-term results), outcomes (medium-term results), and "impacts" (long-term results).

5.2 Analysis

Alignment between actual results, the objectives and expected results of the programme

While the 'relevance' criterion looks at the alignment between objectives and needs and problems, the 'effectiveness' criterion assesses, *inter alia*, to what extent **the results delivered so far are aligned with the objectives of the programme** (Figure 8). In what follows, the focus falls on the solutions developed by ISA², as they represent the most tangible results achieved so far. In this respect, 45% of the respondents (49 out of 109) agree that ISA² solutions have contributed to a high extent or to the fullest extent to achieving the **general objective** of the programme. By contrast, only 15% of respondents (16 out of 109) believe that there has been either no contribution or a limited contribution in this sense. The positive feedback is higher when it comes to the **specific objectives**. For instance:

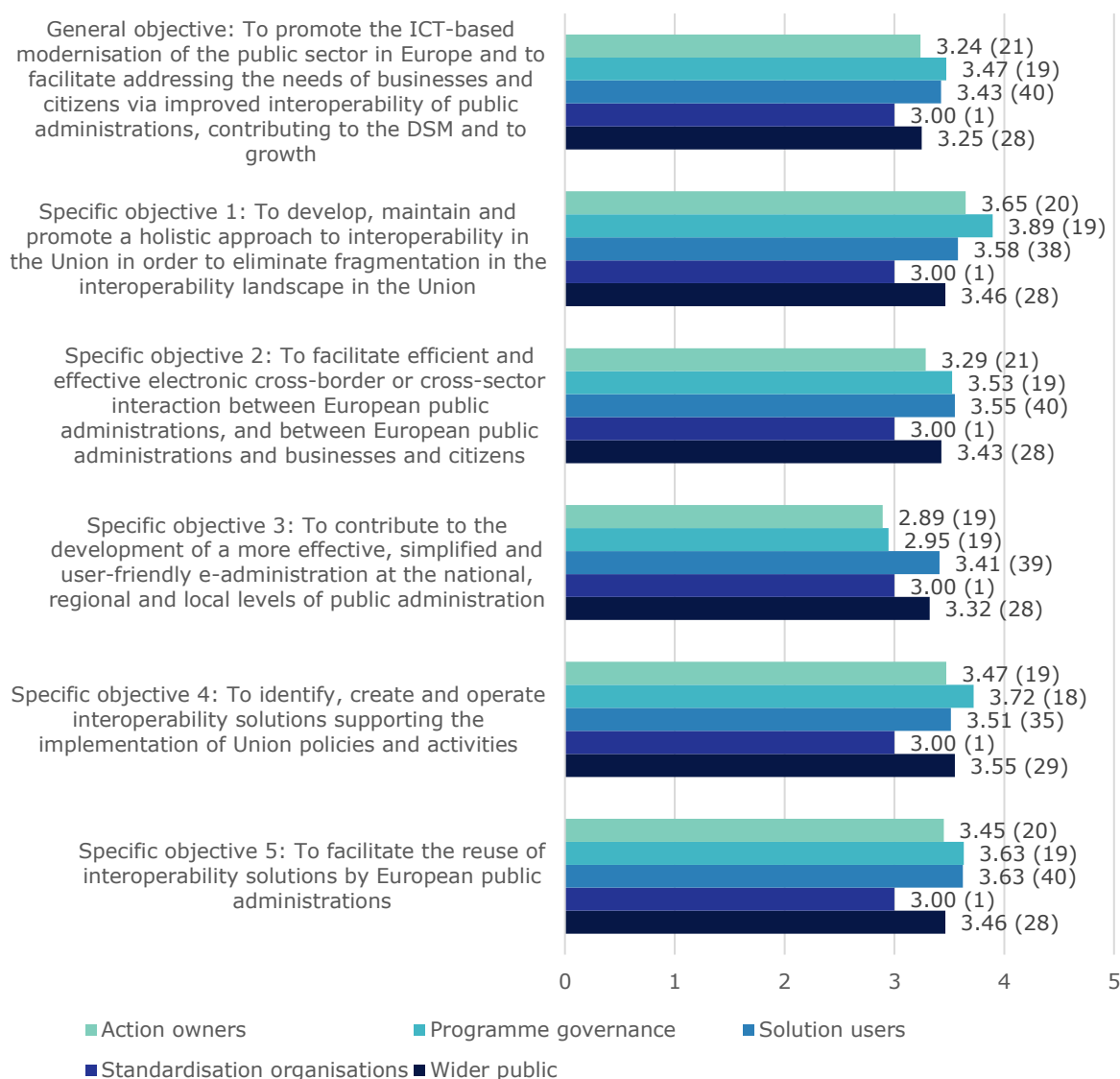
- More than 56% of respondents (59 out of 106) confirm that the solutions developed have contributed to a high extent or to the fullest extent to *developing, maintaining and promoting a holistic approach to interoperability in the Union* (specific objective 1);
- More than 56% of respondents (60 out of 108) indicate that the solutions developed have contributed to a high extent or to the fullest extent to *facilitating the reuse of interoperability solutions by European public administrations* (specific objective 5).

In this respect, the **desk review of secondary data** helps in gaining a more comprehensive overview of the achievements of ISA² in relation to its objectives. Looking at the 20 sampled actions, the solutions developed are used across the 28 Member States and across different EU institutions, contributing to a coherent approach to interoperability as European public administrations at EU, national, and sub-national levels use the same interoperability solutions (see Table B - 1 and Table B - 2, ANNEX B – SUPPORTING EVIDENCE FROM DESK RESEARCH). Furthermore, the "Joinup" action and events such as the "Sharing and Reuse Conference"⁴⁵ facilitate the access to interoperability solutions and the exchange of best practices.

However, respondents to the consultation activities express a lower level of agreement regarding the contribution to the development of a more effective, simplified and user-friendly e-administration at the national, regional and local levels of public administration (specific objective 3). Only 34% of respondents (36 out of 106) consider that ISA² solutions have contributed to a high extent or to the fullest extent to this objective, while 22% (23 out of 106) believe that there has been either no contribution or a limited contribution. This is aligned with the assessment of the EU added value criterion (see Chapter 8 EU Added Value), which shows that Member States' initiatives tend to perform relatively better when it comes to achieving the specific objective 3. Further details on the alignment between ISA² solutions and general and specific objectives of the programme are presented in ANNEX A – CONSULTATION ACTIVITIES.

⁴⁵ For more information see for instance: <https://joinup.ec.europa.eu/event/sharing-reuse-conference-2017>.

Figure 8 Extent to which ISA² solutions contributed to achieving the programme’s objectives (average score of answers, number of respondents)



Score: 1 - not at all; 2 - to a limited extent; 3 - to some extent; 4 - to a high extent; 5 - to the fullest extent.
 Note: Averages do not account for respondents answering "don't know/no opinion" (DK/NO).
 Source: Authors' elaboration on data collected via consultation activities.

Turning to the **operational objectives** (Figure 9), the highest achievements of the ISA² solutions pertain to the following objectives:

- Operational objective 7 – 68% of the respondents (42 out of 62) confirmed that the existing solutions have contributed to a high extent or to the fullest extent to *supporting and promoting the maintenance, updating, promotion and monitoring of the implementation of the EIS, the EIF and the EIRA*, and only 1% (1 out of 62) believed that there was a limited contribution. For instance, the “European Interoperability Architecture” (EIA) works on developing a conceptual reference architecture, which is already deployed in eight Member States. Moreover, the “European Interoperability Reference Architecture” (EIRA) solution that is available on the “Joinup” platform has been downloaded 1,364 times so far (Table B - 3,

ANNEX B – SUPPORTING EVIDENCE FROM DESK RESEARCH). In addition, the “National Interoperability Framework Observatory” contributes to this objective by assessing the interoperability developments in the Member States and the national alignment with the EIF.

- Operational objective 9 – according to 68% of respondents (50 out of 73), ISA² solutions have contributed to a high extent or to the fullest extent to *supporting and promoting 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*, in comparison to 11% (8 out of 73) who believe the contribution has been limited. The “Joinup” action, by maintaining and further developing the collaborative platform with the same name, is directly related to this operational objective. This platform counts over 13,000 members, namely professionals working in the field of eGovernment. The platform allows members to collaborate on over 109 thematic working spaces (the so-called “Collections”; see Table B - 3, ANNEX B – SUPPORTING EVIDENCE FROM DESK RESEARCH).

Conversely, based on the feedback received, there are **two areas for potential improvement**:

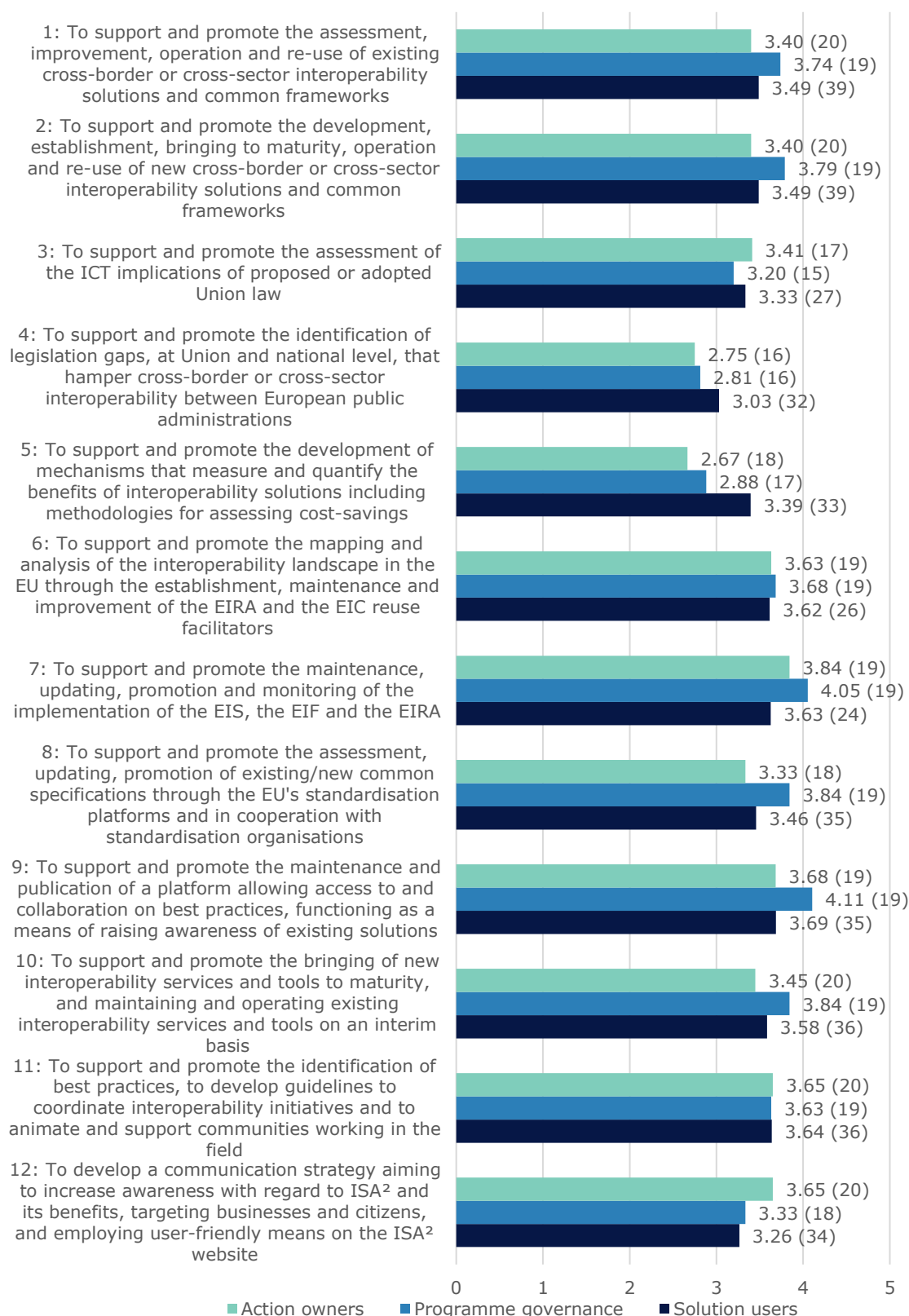
- Operational objective 4 – only 23% of respondents (15 out of 64) believe that ISA² solutions have contributed to a high extent or to the fullest extent to *supporting and promoting the identification of legislation gaps, at Union and national level, that hamper cross-border or cross-sector interoperability between European public administrations*. At the moment, legal interoperability solutions are targeting the internal policy process of the Commission, which this could explain the more limited awareness among the stakeholders of the programme.
- Operational objective 5 – only 25% of respondents (17 out of 68) indicate that ISA² solutions have contributed to a high extent or to the fullest extent to *supporting and promoting the development of mechanisms that measure and quantify the benefits of interoperability solutions including methodologies for assessing cost-savings*.

With regard to these two operational objectives, the desk review of relevant secondary data has found that ISA² is involved in the screening of new Commission proposals in order to identify ICT and interoperability impacts, as part of the “Legal interoperability” action. Since 2015, 280 initiatives have been screened for potential ICT impacts, as suggested by Tool #27 of the Better Regulation Toolbox⁴⁶ (see Table B - 3, ANNEX B – SUPPORTING EVIDENCE FROM DESK RESEARCH). In this context, for instance, the ISA² programme could raise more awareness about the work conducted to enhance legal interoperability. In fact, Tool #27 provides a comprehensive methodology for assessing the impacts of EU policies related to the digital economy and society, including the costs and benefits of ICT solutions. Raising awareness may help promote the application of the tool also by the European Parliament and the Council when amending the Commission’s proposals, and, ultimately, by those Member States that rely on better regulation principles in their national law- and policy-making processes.

Further details on the alignment between ISA² solutions and operational objectives of the programme are presented in ANNEX A – CONSULTATION ACTIVITIES.

⁴⁶ European Commission (2017), Better Regulation “Toolbox”, https://ec.europa.eu/info/sites/info/files/better-regulation-toolbox_2.pdf

Figure 9 Extent to which ISA² solutions contributed to achieving the programme's operational objectives (average score of answers, number of respondents)



Score: 1 - not at all; 2 - to a limited extent; 3 - to some extent; 4 - to a high extent; 5 - to the fullest extent.

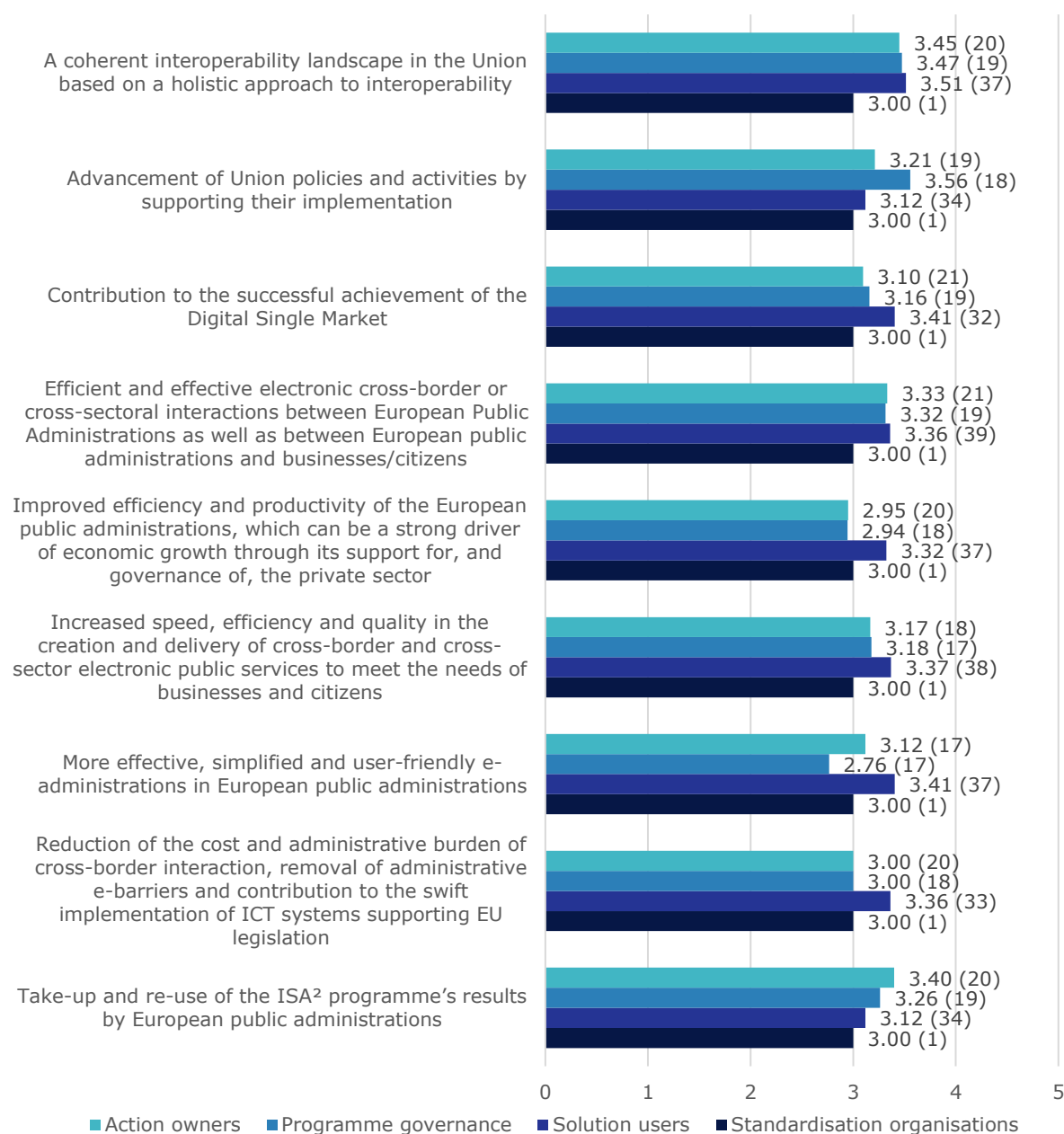
Note: Averages do not account for respondents answering "don't know/no opinion" (DK/NO).

Source: Authors' elaboration on data collected via consultation activities.

As the programme has only just passed its midway point, it is reasonable to assume that **the actual results of the programme might not fully match the expected results, since actions are ongoing and solutions are still being developed** until the end of the programme in 2020. **Experts confirmed this assumption**, pointing out that ISA² solutions have contributed, for instance, to “a coherent interoperability landscape in the Union”, but more time is needed for the expected results to be fully realised. In addition, further contributing to a coherent interoperability landscape in the EU might require a change in strategy based on tackling both the technical aspects, as well as the challenges posed by the complex institutional setting. The feedback received as part of the consultation activities provides further evidence in this regard (Figure 10). The **developed solutions are mostly aligned with the expected result of achieving a coherent interoperability landscape in the Union based on a holistic approach to interoperability**. In fact, around 50% of the respondents (37 out of 77) believe that ISA² solutions have achieved this expected result to a high extent or to the fullest extent, in comparison to 8% (6 out of 77) who argue there has been limited achievement or no achievement in this sense. The achievement of expected results is further assessed below, when presenting performance indicators (see the section *Performance indicators*).

Turning to **areas of potential improvement**, only 30% of the respondents (23 out of 76) consider that ISA² solutions led to **improved efficiency and productivity of the European public administrations**. Further details on respondents’ feedback are presented in Annex A. Interestingly enough, during the interviews conducted, it was pointed out that a clear answer in this regard is difficult to formulate, as no concrete studies have been performed on the efficiency and productivity effects of ISA² solutions, although such effects are expected to exist. Future actions may aim to bridge this gap and ensure that impacts generated by ISA² solutions on public administrations are identified and quantified. This would improve the conditions for assessing the effectiveness of the programme as well as for the dissemination and exploitation of the programme’s achievements. In principle, this could also ultimately contribute to making interoperability a priority for EU Member States, in line with the findings presented in Chapter 4 Relevance.

Figure 10 Extent to which ISA² solutions achieved the expected results of the programme (average score of answers, number of respondents)



Score: 1 - not at all; 2 - to a limited extent; 3 - to some extent; 4 - to a high extent; 5 - to the fullest extent.

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

Source: Authors' elaboration on data collected via consultation activities.

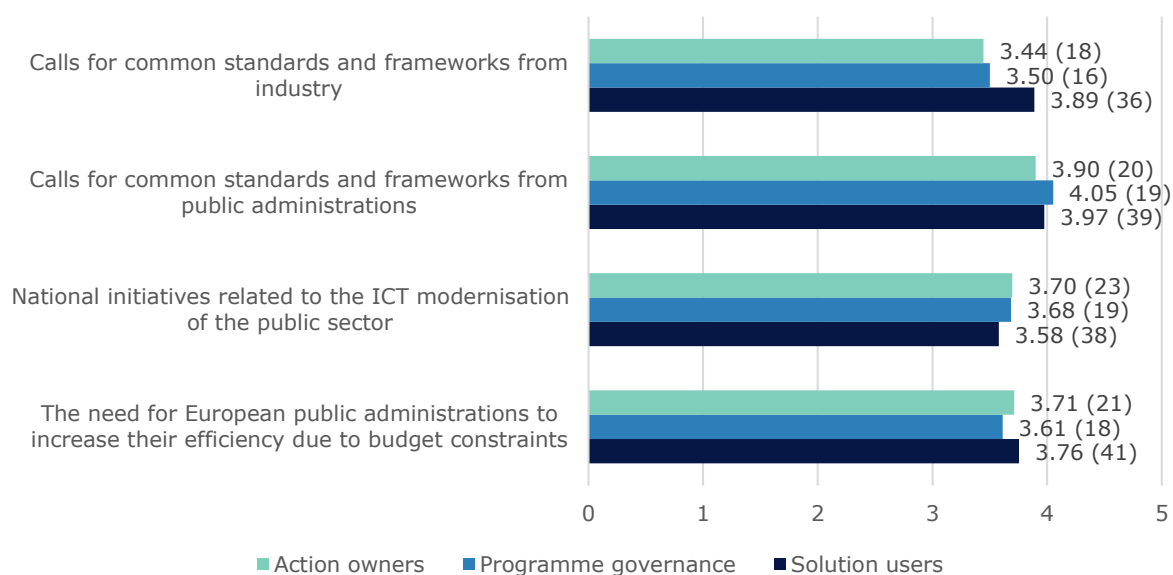
External factors

In line with the Evaluation Framework, assessing the effectiveness of the programme also implies considering the impacts, both positive and negative, that external factors might have on the overall performance of the programme.

To this end, consulted stakeholders were asked to identify and rank the external factors that on the one hand contribute to and on the other hand jeopardise the performance of the programme. Among all groups consulted on this matter (programme governance

stakeholders, action owners, and solution users), a pattern emerges with regard to the main positive and negative external factors that were indicated. The **calls for common standards and frameworks from public administrations** are particularly important to the programme (Figure 11), as they can guide the development of new solutions to address the issues raised by public administrations, i.e. the direct beneficiaries of the solutions. In addition, it shows that interoperability is among the priorities of the European public administrations. The great majority of respondents, 81% (63 out of 75), believe that the calls for common standards and frameworks from public administrations are contributing to the performance of ISA² to a high extent or to the fullest extent.

Figure 11 Extent to which the following external factors are contributing to the performance of ISA² (average score of answers, number of respondents)



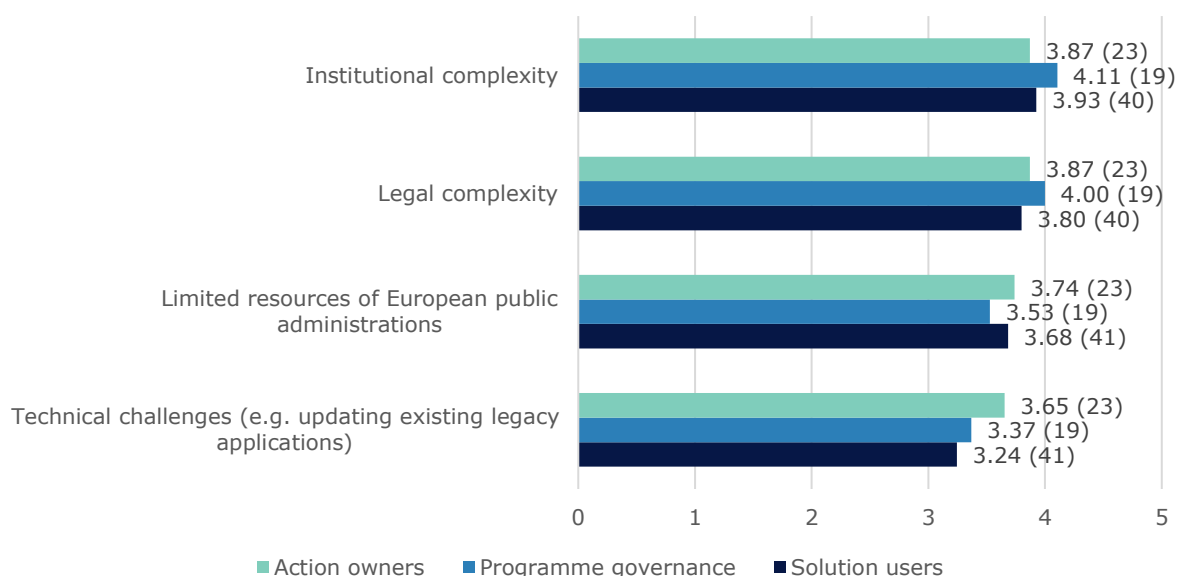
Score: 1 - not at all; 2 - to a limited extent; 3 - to some extent; 4 - to a high extent; 5 - to the fullest extent.

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

Source: Authors' elaboration on data collected via consultation activities.

Conversely, **institutional complexity** appears to be the external factor generating the greatest negative impact (Figure 12). In this respect, 78% of respondents (64 out of 82) believe that this factor is jeopardising the performance of the programme to a high extent or to the fullest extent. Institutional complexity comes in the form of multiple layers of governance and differences between national public administrations in various Member States as well as between local public administrations within Member States, which could lead to coordination issues. Institutional complexity is, in this regard, a higher-order issue that would require more extensive reforms to be entirely addressed. This result is confirmed by the **expert assessments**, which point to institutional complexity along with legal complexity as the factors that most jeopardise the programme's performance. Further details on external factors affecting the performance of the programme are presented in ANNEX A – CONSULTATION ACTIVITIES.

Figure 12 Extent to which the following external factors are jeopardising the performance of ISA² (average score of answers, number of respondents)



Score: 1 - not at all; 2 - to a limited extent; 3 - to some extent; 4 - to a high extent; 5 - to the fullest extent.

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

Source: Authors' elaboration on data collected via consultation activities.

Awareness

The feedback collected via the consultation activities must be nuanced by taking into consideration the level of awareness of each stakeholder group about interoperability issues and, more specifically, the ISA² programme. As illustrated in Box 2, the consulted stakeholders were asked to assess their knowledge of digital public services and interoperability as well as their knowledge of ISA². On average, the results show that **most of the respondents have expert knowledge of interoperability and of ISA²**: 71% of respondents (91 out of 128) are familiar with digital public services and interoperability to a high extent or to the fullest extent, in comparison to 11% (14 out of 128) who either are not familiar with the field or are familiar only to a limited extent. In addition, 63% (81 out of 128) of respondents are familiar with the ISA² programme to a high extent or to the fullest extent, compared to 20% (25 out of 128) who report only a low degree of familiarity or no familiarity with the programme. A more detailed examination shows a pattern emerging when the stakeholder groups are compared:

- **Programme governance respondents and consulted action owners report the highest levels of familiarity with interoperability:** 95% of programme governance respondents (18 out of 19) and 83% of consulted action owners (19 out of 23) are highly or fully familiar with digital public services and interoperability. **The same observation is valid when it comes to knowledge about ISA²,** with 89% of programme governance respondents (17 out of 19) and 96% of consulted action owners (22 out of 23) reporting that they are highly or fully familiar with the ISA² programme.
- **Consulted solution users tend to be relatively more knowledgeable about interoperability issues in general than about the ISA² programme in particular.** The results show that 65% of solution users (28 out of 43) indicate that they are familiar with digital public services and interoperability to a high

extent or to the fullest extent, while only 44% (19 out of 43) report the same level of familiarity when it comes to the ISA² programme. As pointed out during the interviews, solution users tend to be more aware of the ISA² activities that are directly linked to their area of interest (for instance improving their data models by using the ISA² Core Vocabularies) and less aware of other aspects of ISA². This explains why we observe a lower level of familiarity with the programme among solution users compared to the previous two groups.

- **Respondents to the public consultation and short questionnaire (“wider public”) have a level of knowledge about interoperability that is similar to that of solution users, but they tend to be more familiar with the ISA² programme.** In this regard, 62% of respondents in this category (18 out of 29) are familiar with digital public services and interoperability to a high extent or to the fullest extent, and 52% (15 out of 29) report the same level of familiarity with regard to ISA².
- Out of all stakeholder groups consulted during the evaluation, **respondents from standardisation organisations are the least familiar with both interoperability and the ISA² programme itself:** only one out of the six respondents reported a high degree of familiarity in both fields, while two of them are either not familiar or familiar only to a limited extent with interoperability issues and ISA².

Performance indicators

Reporting documents on ISA² actions and solutions provide more detailed background information against which the inputs gathered via the consultation activities can be interpreted. The desk review of such documents was conducted for a sample of 20 actions (see ANNEX E – SAMPLE OF ACTIONS). In line with the Evaluation Framework, data have been collected on several performance indicators in order to assess the achievement of the operational objectives of the programme.

To begin with, it is important to distinguish between **different categories of ISA² actions:**

- Actions continued from ISA and actions started during ISA²;
- Actions already completed at the time of the interim evaluation and actions still ongoing.

The different stages in which actions find themselves imply different levels of accomplishment of objectives and expected results, as some solutions are fully operational while others are in earlier stages, such as proof of concept stage. Within this context, **so far 35 solutions have been developed as part of the 20 sampled actions.** The solutions can be categorised by type as the following: common tools / services, common frameworks, common specifications or standards, and studies. Out of the total of 35 solutions, **10 have been newly developed under ISA²** (Table 5). Further details on performance indicators are provided in ANNEX B – SUPPORTING EVIDENCE FROM DESK RESEARCH.

Beyond these four solution types associated with the ISA² actions, a particular case is represented by the action “Raising Interoperability Awareness – Communication Activities”, which is part of the “Accompanying measures” package. As there are no solutions associated with this action, its outputs are of a specific nature, namely events organised or events to which ISA² representatives actively contributed. Box 3 presents an overview of the communication activities that are part of the programme.

Table 5 Overview of solutions by type for the sampled actions

Type of solution	Total number of solutions	New solutions developed by ISA ²
Common tools/services	20	4
Common frameworks	9	2
Common specifications/standards	3	1
Studies	3	3
TOTAL	35	10

Source: Authors' elaboration on the information available in the rolling work programmes and the ISA² website, under the "Solutions" tab⁴⁷

Box 3 Communication activities

From 2016 to the end of 2018, **ten major events** were organised as part of the action on "**Raising Interoperability Awareness – Communication Activities**", with an average of **211 participants per event** (the average is based on the data presented in ANNEX B – SUPPORTING EVIDENCE FROM DESK RESEARCH, Table B - 4, considering the number of on-site participants; as some events offered the possibility for remote connection, the average including remote participants would be higher). The events were organised in six different countries: Belgium, Bulgaria, Greece, Italy, Malta, and Portugal, thus ensuring the outreach to a wide pool of professionals in the field.

In addition, ISA² representatives have played an active role in 60 events organised in 18 Member States and one EU candidate country (Montenegro) between 2016 and 2018. The number of participants in these events ranged from 125 to 6,000, thus ensuring the dissemination of information about the programme to numerous stakeholders.

An overview of the related events is presented in ANNEX B – SUPPORTING EVIDENCE FROM DESK RESEARCH. Past events and upcoming events are also listed online on the ISA² website.⁴⁸

When it comes to performance indicators, **an array of metrics can be used to assess the effectiveness of solutions**, for example the number of users, the instances of use, the number of downloads, or the number of page views. While the level of use and reuse of solutions varies on a country-by-country basis, **ISA² solutions are certainly adopted by public administrations from all 28 EU countries**. For instance, the "European Parliament Crypto Tool" solution is used by all 28 Member States, while solutions like "Open e-TrustEx" or "Joinup" are used by the vast majority of EU countries (Table B - 1, ANNEX B – SUPPORTING EVIDENCE FROM DESK RESEARCH). In addition, the **Commission services, the Council, the European Parliament, the Committee of the Regions, the European Economic and Social Committee, the Publications Office and the European agencies are also users of ISA² solutions**. A full breakdown of the users by solution, country, and EU institution for the sample of 20 actions is shown in Table B - 3, ANNEX B – SUPPORTING EVIDENCE FROM DESK RESEARCH.

Overall, the performance of ISA² solutions is reflected in a variety of indicators assessed via desk research. For instance:

- 280 Commission proposals have been screened for ICT impacts since 2015;

⁴⁷ European Commission, "ISA² - Solutions", https://ec.europa.eu/isa2/solutions_en

⁴⁸ For further details see: https://ec.europa.eu/isa2/events_en.

- 13,440 professionals working in the field of eGovernment are registered on “Joinup” in order to access interoperability solutions and collaborate with one another;
- Over 8.8 million documents have been exchanged so far between the Commission, the Council, the Member States, and companies using the “e-TrustEx” platform;
- The “European Single Procurement Document” (ESPD) website⁴⁹ has been visited almost 200,000 times (as of January 2019);
- The “Core Public Service Vocabulary-Application Profile” (CPSV-AP) solution has been downloaded over 2,500 times from “Joinup”.

Additional performance indicators, collected as part of the desk review of secondary data, are included in Table B - 3, ANNEX B – SUPPORTING EVIDENCE FROM DESK RESEARCH.

A more detailed assessment of the performance indicators by type of action and packages of actions provides further insights into the results of the consultation activities. The feedback from consulted stakeholders indicates that **the programme is on track** to achieving the expected results; however, **more time is needed to fully achieve the expected results**. This pattern is confirmed when comparing performance indicators for actions continued from ISA or started during ISA², as detailed in Box 4.

Box 4 Comparing solutions and performance indicators of actions continued from ISA and actions started during ISA²

The pattern that emerges from the performance indicators associated with actions continued from ISA and actions started during ISA² can be illustrated using the two sampled actions that are part of the semantic interoperability package:

- “Public Multilingual Knowledge Management Infrastructure” (PMKI) for the Digital Single Market (the action was initiated during ISA²);
- “SEMIC: Promoting Semantic Interoperability Amongst the European Union Member States” (this action is a continuation from the action with the same name that was in place during ISA).

The “**PMKI**” action so far has provided two solutions: i) a common framework in the form of a core data model for multilingual taxonomies/terminologies; and ii) a common specification in the form of semantic links between different language resources. The most suitable performance indicator associated with the core data model is represented by “instances of inclusion in academic journals and international conference”. Since the model was published in 2017, **two scientific papers** based on the model have been published in international journals, as part of the action. In addition, the work on the model has been presented at **seven international conferences**. With regard to the semantic links, the main performance indicator consists of the instances of collaboration with European public administrations with a view to establishing semantic interoperability between national language resources and EuroVoc.⁵⁰ **Four collaborations** have been established so far, namely:

- Collaboration with the Italian Senate and with the University of Rome to align the Eurovoc thesaurus with the TESEO (TEsauro SENato per l’Organizzazione dei documenti parlamentari) thesaurus;
- Collaboration with the Luxembourgish government in order to align their vocabulary with EuroVoc;

⁴⁹ See: <https://ec.europa.eu/tools/espd>

⁵⁰ EuroVoc is EU’s multilingual and multidisciplinary thesaurus, containing terms in 23 EU languages. For further details please see: <https://publications.europa.eu/en/web/eu-vocabularies/th-dataset/-/resource/dataset/eurovoc>

- Collaboration with the BNL "National Library of Luxembourg" to align BNL vocabulary with EuroVoc;
- Collaboration with the European Parliament to align Eurovoc with IATE (Interactive Terminology for Europe), the EU's terminology database.

In comparison, for the **"SEMIC"** action, which has been in place longer than PMKI, the relevant performance indicators associated with the SEMIC solutions are the number of solution users, in particular **the number of public administrations using the solutions**. For the four solutions that are part of "SEMIC", the numbers of users are the following:

- The **"Asset Description Metadata Schema"** (ADMS) is used in **eight public administrations** in the Member States and the Commission, and by one company. In addition, the solution has been used **to describe approximately 4,700 interoperability solutions** on Joinup;
- The **"Core Vocabularies"** are used in **11 public administrations** in the Member States and in the Commission;
- **"Data Catalogue Vocabulary Application Profile for Data Portals in Europe"** (DCAT-AP) is used by **29 public administrations** in the Member States and the Commission, associations, and universities;
- Finally, "SEMIC" is also in charge of **"VocBench3"**.⁵¹ Previous versions of this solution are used in **14 public administrations** (in the Member States and Commission), universities, institutes, and international organisations.

An analysis of the solutions resulting from the PMKI and SEMIC actions suggest that the **performance indicators assessing actions continued from ISA tend to show a higher degree of maturity and take-up** of the solutions already developed under ISA and continued under ISA². Therefore, all solutions seem to need more time to show fully-fledged results. This is a natural conclusion, especially considering that over one year and a half is left until the ISA² programme concludes, therefore actions, and their solutions, will continue to develop.

Contribution to principles listed in Article 4(b) of the ISA² Decision

The evaluation of effectiveness also requires the assessment of the **programme compliance with the principles listed in Article 4(b) of the ISA² Decision**. In this respect, the rolling work programme provides relevant details on how such principles are taken into consideration by ISA² actions. The overall judgment stemming from the desk analysis of the rolling work programme is **positive** (Table 6). Supporting examples are provided by examining the contribution of ISA² actions to the implementation of the EIF, as the principles listed below also fall under the scope of the EIF (see Table B - 13, ANNEX B – SUPPORTING EVIDENCE FROM DESK RESEARCH).

Table 6 Contribution of 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 the 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-

⁵¹ See: https://ec.europa.eu/isa2/solutions/vocbench3_en.

Art. 4(b) Principles	Relevant evidence
	centricity and describe the ways in which user input is integrated into the action and the development of solutions.
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 Member States and the distribution of promotional material; and iv) events with ISA ² participation in various Member States 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" ⁵² 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 proposal process of actions to be included in the rolling work programme, all the proposed actions must specify the contribution expected to be made to the higher political priorities of the EU, such as the Digital Single Market. Where applicable, the rolling work programme details the contribution of specific actions to the third pillar of the Digital Single Market 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 producing 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	The transparency of ISA ² actions is ensured by various channels: i) the rolling work programme provides an overview of the objectives of the actions, the planned and developed solutions, the expected impacts, and the budget allocated to each action; ii) the ISA ² Dashboard provides quarterly updates regarding the efficiency and effectiveness of actions, in terms of costs, earned value management, effectiveness indicators and targets; iii) information on the level of take-up of solutions is made available via the ISA ² webpage dedicated to solutions; and iv) the solutions developed can be accessed via the Joinup platform.
Preservation of information	The "Library" section of the ISA ² website ensures the preservation of information about ISA ² in various formats: presentations, videos, publications, infographics and posters, leaflets, training course materials, press releases and 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 section "Contribution to the interoperability landscape" of the rolling work programme describes, among others, the contributions brought by actions to the European Interoperability Framework, one aspect of which is 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 regarding the efficiency and effectiveness of actions. The historic data can be accessed together with the most recent data available.

Source: Authors' elaboration on the 2018 rolling work programme of ISA² and the ISA² website.

⁵² "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.

6 Efficiency

KEY FINDINGS

EQ.4: To what extent has the programme been cost-effective?

- The heterogeneity of performance indicators makes it difficult to draw conclusions about the overall cost-effectiveness of the programme. For those packages where it was possible to apply cost-effectiveness techniques, **costs per end-user (e.g. business, citizens, etc.) have been estimated as low.**
- In this respect, **monitoring and evaluation reports could converge towards some common metrics** to measure the performances of all actions, such as the number of EU public administrations using a given solution, the number of downloads from the “Joinup” platform for downloadable solutions, and/or the number of single users per solution, thus allowing for a more consistent appraisal in terms of cost-effectiveness.

EQ5: Which aspects of the programme are the most efficient or inefficient, especially in terms of resources mobilised?

EQ5.1: How is the programme performing relative to the planned work and budget?

- The **process to select actions funded by ISA²** is considered relatively efficient and fit for purpose. Nonetheless, this process could be further streamlined by **simplifying the rolling work programme and launching thematic calls for actions**, thus ensuring that the selection process is driven by objectives.
- On average, six person-days at most are required to prepare and submit a proposal for actions already included in previous rolling work programmes. By contrast, between 10 and 30 person-days are required to prepare a proposal for a new action.
- The **costs incurred to prepare a proposal are**, however, **relatively small**, ranging between 0.09% and 0.5% of the potential funds that could be allocated to the proposal once accepted.
- When looking at progress made in the implementation of the programme, **all packages are either on track or close to achieving the planned level of work.** As some actions started during ISA and continued under ISA², processes had already been established during the previous programme. Therefore, commencing the work on those actions under ISA² could happen much faster than planned.

6.1 Evaluation framework for Efficiency

Article 13.4 of the ISA² Decision requests an evaluation of the **efficiency** of the ISA² programme. The efficiency criterion relates to the extent to which the programme’s objectives are achieved at a minimum cost. This evaluation criterion includes two EQs and one sub-question:

- EQ.4: To what extent has the programme been cost-effective?
- EQ.5: Which aspects of the programme are the most efficient or inefficient, especially in terms of resources mobilised?
 - EQ5.1: How is the programme performing relative to the planned work and budget?

To answer the above questions, the analysis presented in this chapter focuses on the three main **judgment criteria**, in line with the Evaluation Framework (see ANNEX D – EVALUATION FRAMEWORK):

- Efficiency of the selection process of the actions to be included in the rolling work programme;
- Cost-effectiveness analysis to assess the ratio between allocated funds and actual results of the programme; and
- EVM analysis.

To apply these judgment criteria, data were collected from the ISA² Dashboard and the monitoring and evaluation reports as well as via consultation activities.

6.2 Analysis

Efficiency of the action selection process

The ISA² programme is implemented in four phases: i) submission; ii) evaluation; iii) adoption; and iv) implementation (further details are provided in Chapter 2 State of play). The process to select ISA² actions includes the first three phases, i.e. submission, evaluation, and adoption. This section does not assess the selection of contractors to implement the actions, as this follows the general European Public Procurement Rules, the efficiency of which cannot be evaluated in this Assignment.

Against this background, several elements need to be spelled out with regard to the “submission” phase. First, the preparation and submission of a proposal to be included in the ISA² rolling work programme require the applicant to perform several activities such as: i) finding out about the call for proposals; ii) studying the documents of the call for proposals and understanding the rules and procedures; iii) preparing a concise description of the proposed action in compliance with the “work programme entry template”; iv) collecting the required internal authorisations to submit the proposal; and v) submitting the proposal by e-mail. Second, it is important to distinguish between two types of proposals, namely proposals for new actions and proposals for continuing actions that have already started. This distinction is relevant when it comes to assessing the overall workload required for submitting a proposal.

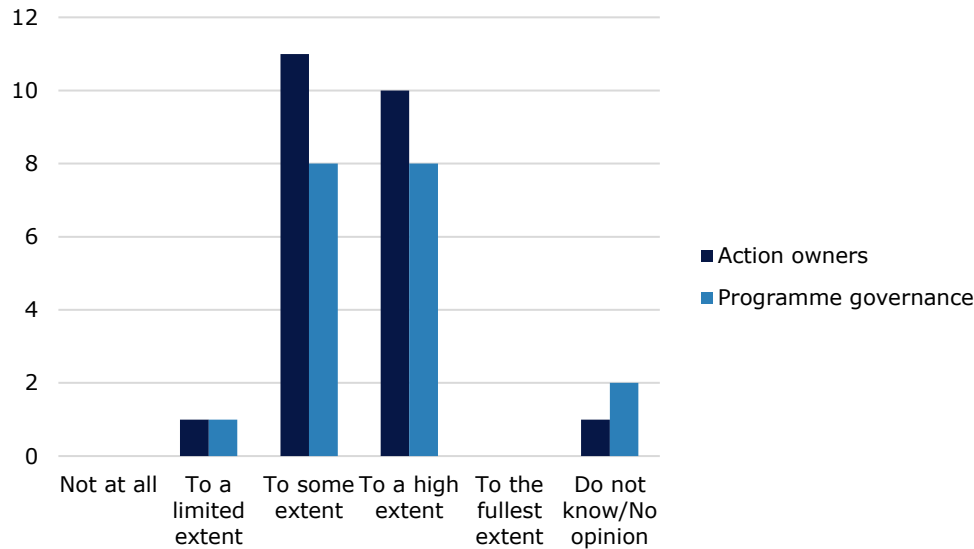
The efficiency of **the selection process of actions** (which includes the submission, evaluation, and adoption phases) is assessed by relying on the feedback received from programme governance stakeholders and action owners, as they are the stakeholder groups directly involved in the process. **The process is considered to be efficient at least to some extent by the lion’s share of respondents:** 16 out of 19 consulted programme governance stakeholders and 21 out of 23 consulted action owners (Figure 13). However, some **measures could be taken to further streamline the process**, as 13 out of the 42 consulted stakeholders indicated. These measures (as mentioned by several stakeholders) include:

- **Simplifying the rolling work programme**, which can be done by:
 - Making the template more flexible to account for the specificities of the actions. This measure could ensure better inputting of information, increasing the efficiency of the drafting of proposals, but could also improve the readability and interpretation of the work programme by anyone seeking specific information about ISA² actions.
 - Extending the duration of a rolling work programme to cover more than one year, thus allowing for multiannual actions. In principle, actions to be

performed on a multiannual basis can be proposed, however the budget is allocated on an annual basis. As such, action owners must submit an updated proposal every year as part of the rolling work programme in order to access funding.

- Setting up an electronic data input system rather than full text editing.
- **Simplifying the overall process by launching thematic calls for actions**, thus ensuring that the selection is more objective-driven.

Figure 13 Extent to which the selection process of the actions is fit-for-purpose (number of respondents by stakeholder category)



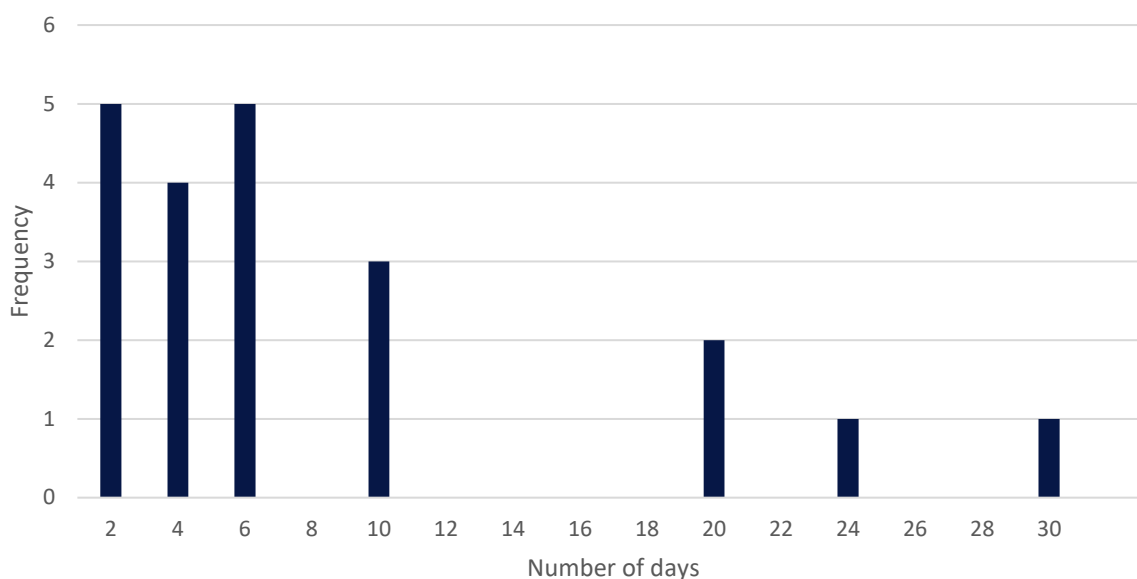
Source: Authors' elaboration on the data collected during the consultation activities.

Focusing on the **submission phase** of the selection process, 26 out of the 42 consulted action owners and programme governance representatives indicated that they had prepared and submitted proposals. Out of the 26 respondents, 21 also indicated the amount of time they spent on preparing the proposal. The answers provided vary between 1 to 30 person-days, with the average being 9 person-days. The large variation can be primarily explained by the differences in the efforts required to submit a proposal for a new action versus the amount of effort required to renew a proposal for an existing action.

Regarding the time needed for submission, Figure 14 shows a clear **concentration of answers**: 14 of the respondents indicated that they finalised their proposal in 1 to 6 person-days. However, 4 respondents indicated that 20 or more person-days were needed. This distribution of answers and the qualitative inputs provided by some of the respondents during the consultation activities allow **differentiating between preparing a renewed proposal and a brand-new proposal**. Renewing a proposal for an action that has already been included in a previous rolling work programme tends to require between **1 and 6 person-days at most**, while **preparing a new proposal** takes significantly longer, **between 10 and 30 person-days**. In the majority of cases, stakeholders prepare the proposals themselves, **without relying on external contractors**.

Additional time is also required to **merge proposals that have similarities** upon request by the Commission team in charge of shortlisting the proposals to be funded.

Figure 14 Distribution of the number of days needed to prepare and submit a proposal for an ISA² action (number of respondents)



*Note: The histogram was constructed using a bin size of 2 days, which grouped the answers of respondents in intervals of 2 days. This bin size was deemed most appropriate after reviewing the answers provided.
Source: Authors' elaboration on data collected via consultation activities.*

The time spent to prepare and submit a proposal for an action to be included in the rolling work programme, whether it is a new or a renewed proposal, can be used to measure regulatory costs by applying the **Standard Cost Model**⁵³, as requested by the Better Regulation Toolbox.⁵⁴ First, person-days are converted into person-hours by assuming that each person-day corresponds to eight hours.⁵⁵ Then, the overall number of hours is multiplied by a standard tariff, i.e. the 2017 hourly labour cost for the service sector at the Member State level (see Table B - 9, ANNEX B – SUPPORTING EVIDENCE FROM DESK RESEARCH).⁵⁶

Two respondents indicated that they relied on **external service providers** to prepare the proposal. In this case, regulatory costs would also account for out-of-pocket expenses incurred for such services. The average regulatory costs are presented in Table 7 both by

⁵³ SCM Network (2005), "The International SCM Manual; Measuring and Reducing Administrative Burdens for Businesses", available at: http://www.administrativeburdens.com/filesystem/2005/11/international_scm_manual_final_178.doc.

⁵⁴ European Commission, Better Regulation "Toolbox", 7 July 2017, Tool #60 available at: https://ec.europa.eu/info/sites/info/files/better-regulation-toolbox_2.pdf.

⁵⁵ Eurofound (2016), "Working time developments in the 21st century: Work duration and its regulation in the EU"

⁵⁶ The country of activity was recorded for each respondent providing feedback on the number of days spent preparing the proposal. The hourly labour costs were retrieved for each country. In the case of the Commission, the hourly labour costs in either Belgium or Luxembourg were considered, depending on the Commission service. The regulatory costs were computed for each case recorded during the consultation activities, taking into consideration the country of activity. At the end, the average regulatory cost was computed. In this case, labour costs include wage and non-wage costs less subsidies. They do not include vocational training costs or other expenditures such as recruitment costs, spending on working clothes, etc. For further details see: https://ec.europa.eu/eurostat/statistics-explained/index.php/Hourly_labour_costs#Source_data_for_tables_and_figures_on_this_page_.28MS.

taking into account the fees related to the external service providers as well as without accounting for these additional fees. The average respondent faced regulatory costs of approximately € 1,077 for renewing a proposal and € 5,651 for preparing a new proposal, without accounting for the fees incurred when relying on external service providers. Considering the two instances when external service providers were used for the preparation of the proposals, the average regulatory cost for a renewed proposal amounted to € 1,138 and for a new proposal the average regulatory cost was € 6,590. In comparison, the average funding allocated to an ISA² action between 2016 and 2018 amounts to € 1,217,566.⁵⁷ **The costs incurred to prepare a proposal are thus very small, ranging between 0.09% and 0.5% of the potential funding that could be allocated to the proposal once accepted.**

Table 7 Average regulatory costs incurred by respondents who prepared and submitted proposals for ISA² actions

	Average regulatory cost, including external services (€)	Average regulatory cost without external services (€)	Average funding allocated per action (€)
Renewed proposal	1,138	1,077	1,217,566
New proposal	6,590	5,651	

Note: The calculations are based on a sample of 21 respondents who indicated the time spent on preparing proposals.

Source: Authors' elaboration on data collected via consultation activities.

One respondent mentioned that the reason they relied on external service providers in this process was **the need to tailor the proposal to the requirements of the rolling work programme template**. As such, one potential cost-reduction method could be the simplification of the rolling work programme template, thus further corroborating the measures proposed to streamline the selection process of the actions.

Cost-effectiveness

Based on the performance indicators discussed in the Chapter on Effectiveness and on data related to the actual costs of actions, a cost-effectiveness analysis can be performed. However, it is important to note the **limitations of this method**. First, the heterogeneity of performance indicators makes it difficult to draw conclusions about the overall cost-effectiveness of the programme. As previously noted, performance indicators can be described in terms of the number of solutions users, instances of use, number of downloads, or number of page views, depending on the specificity of the solution. As such, computing an aggregate value that is representative for the programme or action packages is quite difficult. Second, such data are only partially available, as some ISA² solutions are still under development. In addition, as concluded in the Chapter on Effectiveness, it is expected that the values of the performance indicators will improve over time, as solutions tend to require longer periods to fully show their results. Third, for a limited number of solutions developed so far, data on their effectiveness are not yet available.

Against this background, the cost-effectiveness analysis can be exemplified by using some of the ISA² packages that rely on similar performance indicators. Two packages fit this profile: "Key and generic interoperability enablers" and "eProcurement / eInvoicing – supporting instruments". For the sampled actions included in both packages, the number

⁵⁷ The average was computed based on the data available on the ISA² Dashboard for all ISA² actions.

of public administrations (at EU, national and regional levels) that use the solutions generated by the actions can be employed as a performance indicator. By relying on the available data on the number of solution users (public administrations) and the actual costs of the action between 2016 and Q3 of 2018, the average cost per solution user can be estimated (Table 4). For the “Key and generic interoperability enablers” package, the average actual cost⁵⁸ per public administration using the solutions that are part of this package amounts to € 19,420. For the “eProcurement / eInvoicing – Supporting instruments” package, the average actual cost amounts to € 25,870. It should be noted that these average costs are computed per public administration using the solution rather than per single end-user. Each administration is serving millions of end-users (citizens/businesses); hence, **costs per end-user are estimated to be low.**

Table 8 Costs per user for ISA² solutions

Package	Actual costs of sampled actions in the package (€)	Number of public administrations using the solutions of the package	Average actual cost (€)
Key and generic interoperability enablers	4,117,069.81	212	19,420
eProcurement / eInvoicing – Supporting instruments	3,544,135.98	137	25,870

Note: The calculations are based on the sampled actions of the indicated ISA² packages over the period Q1 2016 - Q3 2018. The total number of public administrations using the solutions of the “Key and generic interoperability enablers” package consists of approximately 200 public administrations using “e-TrustEx” and 12 public administrations using “CPSV-AP”. The total number of public administrations using the solutions of the “eProcurement / eInvoicing – Supporting instruments” package includes 70 public administrations using e-Prior, 23 Member States implementing the ESPD data model, and 44 public administrations and contracting authorities using version 1 of eCertis. The full overview of the number of users and other performance indicators is presented in Table B - 3, ANNEX B – SUPPORTING EVIDENCE FROM DESK RESEARCH. The overview of costs per package is presented in Figure 15.

Source: Authors’ elaboration on data collected via desk research.

A more consistent appraisal of the cost-effectiveness of the programme could be facilitated by ensuring that monitoring and evaluation reports quantify some performance indicators common to all actions. Examples of such indicators are the number of EU public administrations using a solution, the number of public administrations participating in pilots, a consistent approach to reporting the number of downloads from the “Joinup” platform for solutions that can be downloaded, and/or the number of single users per solution.

Box 5 Summary of the main costs and benefits detected

Costs. The main costs associated with the intervention can be grouped in two categories: regulatory costs of the selection process for ISA² funded actions and the costs per user for ISA² solutions.

Regulatory costs of the selection process for ISA² funded actions

⁵⁸ Actual costs refer to the executed budget. For more information, please see: <https://ec.europa.eu/isa2/dashboard/faq-page>.

The regulatory costs can be divided into two groups: i) costs of new proposals, and ii) costs of renewed proposals. Costs estimated in this report are based on a sample of 21 respondents who indicated the time spent on preparing proposals.

- New proposal
 - Average regulatory costs, including external services: € 6,590
 - Average regulatory costs without external services: € 5,651
 - The time required to prepare a new proposal is estimated to range between 10 and 30 person-days.
- Renewed proposal
 - Average regulatory cost, including external services: € 1,138
 - Average regulatory cost without external services: € 1,077
 - The time required to renew a proposal for an action that has already been included in a previous rolling work programme varies between 1 and 6 person-days.

The average regulatory costs for preparing and submitting a proposal for an ISA² action vary between **0.09% and 0.5% of the potential funding** that is on average allocated to the proposal once accepted.

Cost-effectiveness: cost per user

The costs per user have been estimated for two ISA² action packages:

- For the “Key and generic interoperability enablers” package, the average actual cost are estimated at around € 19,512 per public administration using the solutions that are part of this package.
- For the “eProcurement / eInvoicing – Supporting instruments” package, the average actual cost are estimated to amount to € 27,057 per public administrations using the solutions developed as part of this package.

As these average costs are computed per public administration using the solution rather than per single end-user and considering that each administration is serving millions of end-users (citizens/businesses), **costs per end-user are estimated to be low.**

Benefits. In turn, the benefits generated are expressed in the form of **performance indicators** attached to each solution developed as part of ISA² actions, which can be measured using a variety of metrics, for example the number of users, the instances of use, the number of downloads, or the number of page views. The benefits generated by the programme can be thus summarised as follows (the list is not exhaustive):

- 280 Commission proposals have been screened for ICT impacts since 2015;
- 13,440 professionals working in the field of eGovernment are registered on “Joinup” in order to access interoperability solutions and collaborate with one another;
- Over 8.8 million documents have been exchanged so far between the Commission, the Council, the Member States, and companies using the “e-TrustEx” platform;
- The “European Single Procurement Document” (ESPD) website⁵⁹ has been visited almost 200,000 times (as of January 2019);
- The “Core Public Service Vocabulary-Application Profile” (CPSV-AP) solution has been downloaded over 2,500 times from “Joinup”.

⁵⁹ See: <https://ec.europa.eu/tools/espd>

Additional performance indicators, collected as part of the desk review of secondary data, are included in Table B - 3, ANNEX B – SUPPORTING EVIDENCE FROM DESK RESEARCH.

Earned value management

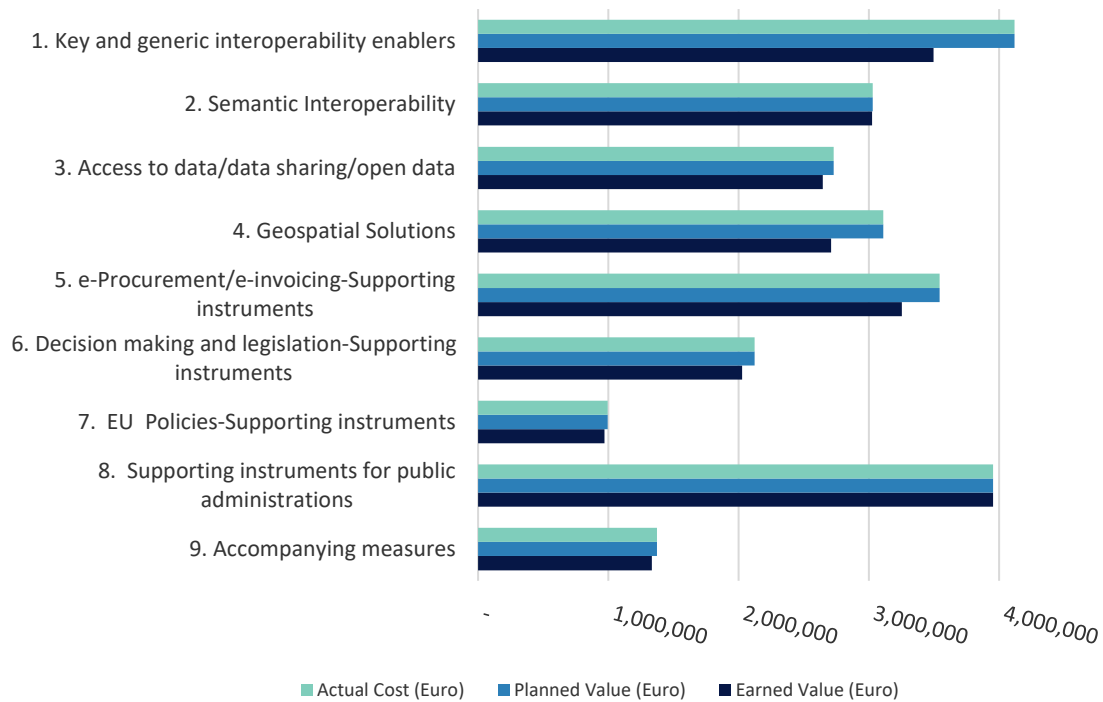
Whereas EQ4 refers to the costs and outputs of ISA² packages as well as the efficiency of the selection process of actions, EQ5 and EQ5.1 focus on the **progress made with implementing the programme**. The assessment of EQ5 and EQ5.1 is facilitated by the EVM analysis, which helps determine the work progress against a given baseline, so that costs, time, and scope of a certain activity are constantly tracked. To this end, the ISA² Dashboard provides quarterly data on the earned value, planned value, and actual costs of each monitored action.⁶⁰ With regard to the sample of 20 actions grouped in the respective packages, Figure 15 presents the data at the end of Q3 2018 for the earned and planned value, as well as for the actual costs recorded. The earned value is close to equalling the planned value, signalling that the work is progressing as expected, with exception of the “Key and generic interoperability package”. However, the indicators are expected to converge at the end of the year as the ISA² budget year closes.

The data available also allow for a historical analysis of the work progress for each package of actions. The work progress can also be shown in the form of a Schedule Performance Index (SPI), which represents the ratio of earned value to planned value (Figure 16). An SPI value above one indicates that the item analysed is ahead of schedule, while an SPI value below one suggests that the item analysed is behind schedule. Since the beginning of the programme and up until Q3 of 2018, **the SPIs of the sampled actions grouped by packages have shown fluctuations, but now tend to converge on one**, although values below one are still reported for almost all packages. These data show that the packages “Semantic interoperability” and “Supporting instruments for public administrations”, in particular, are on track, while the others are close to achieving the planned level of work. Given that some actions were started later on in the programme, as is the case of the Geospatial solutions package, data for the EVM analysis are not always available from Q2 of 2016, but only from a later point in time.

Furthermore, SPI values above two were reported for the “Key generic interoperability enablers” package in Q2 and Q3 of 2016. This indicates that the work on the package was ahead of schedule in that period. While this result might seem surprising at first, it can be explained by considering the continuity of actions from ISA. For those actions that started during ISA and continued under ISA², processes had already been established during the previous programme. Therefore, commencing the work on those actions under ISA² could occur much faster than planned, resulting in a higher value of the SPI at the beginning of the process. In fact, both of the actions sampled for the “Key generic interoperability enablers” package (“Trusted Exchange Platform e-TrustEx” and “Catalogue of Services”) were already launched under the ISA programme.

⁶⁰ The earned value represents a quantification of the work accomplished to date. The planned value is a quantification of how far along the work on the programme is supposed to be in terms of the schedule and cost estimate at a given point in the programme. The actual costs represent the executed budget.

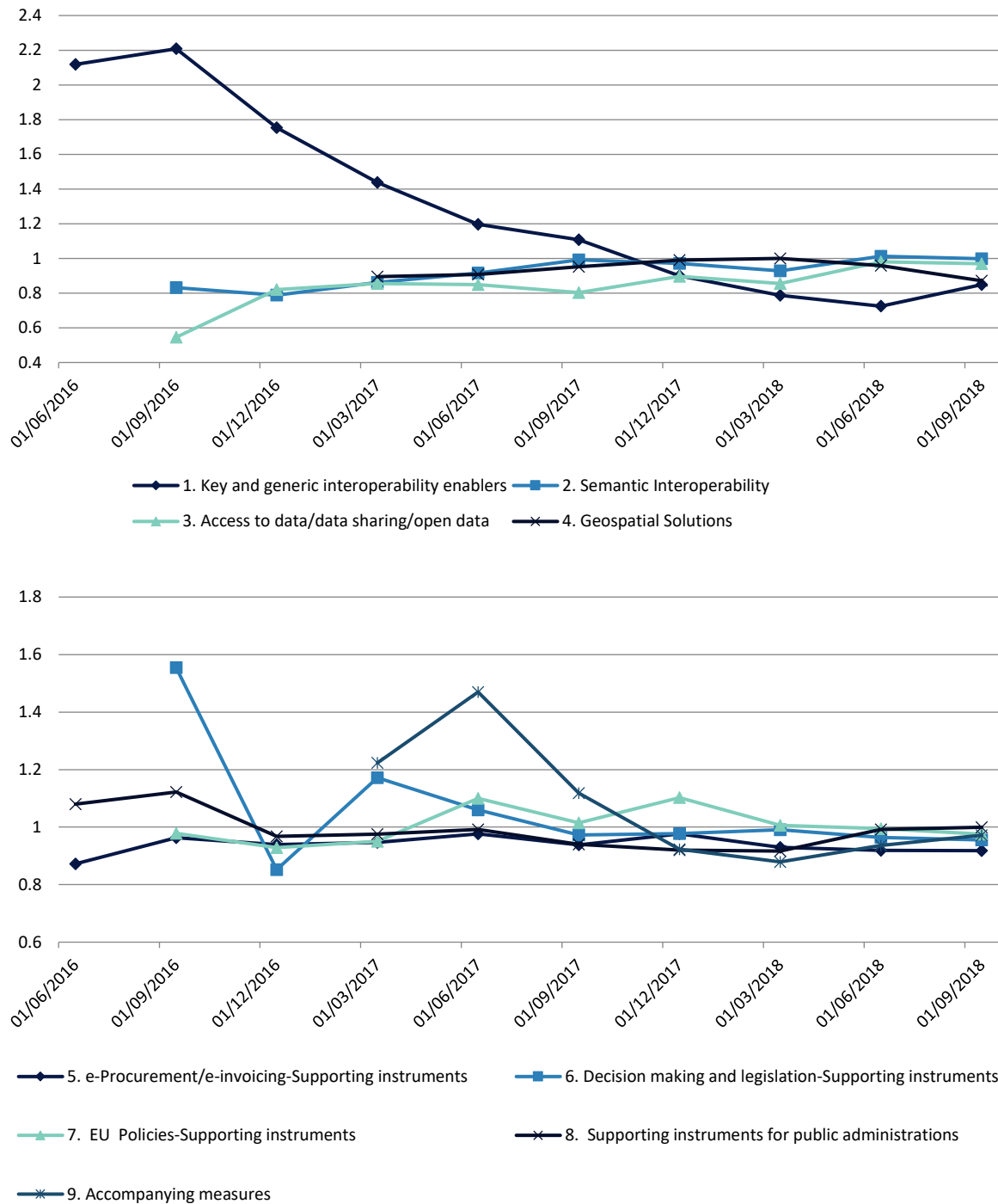
Figure 15 Earned Value, Actual Costs and Planned Value sampled actions, by package (Q3 2018)⁶¹



Source: Authors' elaboration on information from ISA² Dashboard.

⁶¹ The PV and AC are equal in all cases. As explained on the ISA² Dashboard, most of the specific contracts under the ISA² actions are on fixed price, therefore it is not relevant to keep track of the AC before the end of a Work Programme year. Taking this into account, the AC is then considered equal to the PV. For more details please see: ISA² Dashboard – Frequently Asked Questions, <https://ec.europa.eu/isa2/dashboard/faq-page>.

Figure 16 Schedule Performance Indices of the sampled actions grouped by packages



Source: Authors' elaboration on information from ISA² Dashboard.

7 Coherence

KEY FINDINGS

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

- ISA² actions are characterised by **substantial synergies** among each other and **limited overlaps**. The feedback from stakeholders on the synergies and overlaps provides a positive picture of the internal coherence of the ISA² programme.
- There are **multiple instances of internal reuse** of ISA² solutions, with actions like "SEMIC" or "Joinup" playing a particularly nodal role in the system. At the same time, some actions tend to be less central within the network. This is for instance the case of the "EUSurvey" and "European Citizens' Initiative and European Parliament Election" actions and can be explained by the particular nature of these actions.

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)

- When it comes to external coherence, respondents to the consultation activities identify the **highest level of synergies between ISA² and CEF**. In contrast, among the EU programme interacting with ISA², the ESF tends to be the least synergistic.
- Respondents also pointed out the synergies and overlaps with "other" EU initiatives such as **ERDF, Corporate IT Governance and the Single Digital Gateway**.
- Synergies also exist between ISA² and other broader EU initiatives or policies, such as **Digital Single Market Strategy**, the **eGovernment Action Plan**, the **Tallinn Declaration** on eGovernment, and the **Rolling Plan for ICT standardisation**. Synergies have been detected also between ISA² and the **OECD Digital Government Initiative**, although this initiative may not necessarily foster cross-border interoperability.
- **ISA² actions have multiple links outside of the programme**, as they rely on other EU programmes / policies / initiatives to deliver their results and their solutions are used by other programmes / policies / initiatives. This further corroborates the positive results in terms of the external coherence of the programme.
- Potential issues may arise with regard to standardisation. More specifically, the coherence between **intellectual property rights for ISA² solutions** and **CEN/CENELEC standards** need to be clarified and resolved before the standardisation system can be fully engaged.

7.1 Evaluation framework for Coherence

Article 13.4 of the ISA² Decision requires assessing the coherence of ISA² actions, otherwise referred to as the '**internal coherence**' of the programme. In addition, Article 13.6 pays specific attention to the '**external coherence**' of the programme in order to "identify potential overlaps and examine coherence with areas for improvement and verify synergies with other Union initiatives, in particular with the CEF". In this context, the coherence criterion can thus be translated into two EQs:

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

- 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)⁶²

To assess both the internal and the external coherence of the programme, a mix of primary and secondary data is required. More specifically, the information provided by stakeholders is complemented by findings from desk research on the linkages between ISA² actions as well as the relationship between ISA² and other relevant EU programmes / policies / initiatives. In this context, the following **judgment criteria** are considered (see ANNEX D – EVALUATION FRAMEWORK):

- Degree of coherence among actions funded by the ISA² programme (internal coherence);
- Level of reuse of results of a funded action by another action within the ISA² programme (internal coherence);
- Degree of coherence between the programme and other EU supported programmes (external coherence);
- Level of reuse of results delivered by ISA² actions by other EU programmes (external coherence);
- Degree of coherence between the programme and other EU policies (external coherence); and
- Degree of coherence between the programme and global initiatives in the field (external coherence).

7.2 Analysis

Internal coherence

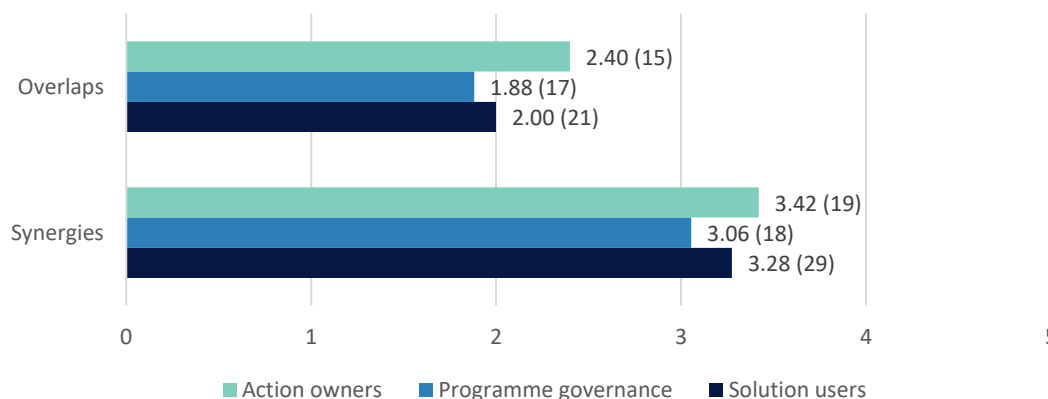
Given that the ISA² programme currently manages 53 actions, it is important to ensure that they work together to create benefits and that they do not give rise to duplications. Among the stakeholder groups consulted on this matter (programme governance, action owners, solution users) there tends to be an agreement **that ISA² actions generate synergies** (Figure 17). At the same time, most stakeholders indicate only limited overlaps between ISA² actions. The feedback of stakeholders on the synergies and overlaps, as two sides of the same coin, paints a positive picture of the internal coherence of the ISA² programme.

Only 4% of respondents (2 out of 53) identify a high degree of overlaps between ISA² actions, while the vast majority, 77% (41 out of 53), consider overlaps as either not existing or being limited. In addition, respondents point to the existence of synergies. In this regard, 41% of respondents (27 out of 66) identify synergies as existing to a high extent or to the fullest extent and 17% (11 out of 66) identify either no synergy or limited synergies. It is relevant to note that a significant number of solution users indicated that they were unaware of either synergies or overlaps between ISA² actions. This outcome of the consultation activities can be explained by the various levels of knowledge of stakeholders about ISA² packages (see Chapter 3 Data, methods and limitations for more details). As not all stakeholders are familiar with all ISA² packages, they might not be in a suitable position to identify potential synergies or overlaps. Further details on

⁶² Compared to the RFS, the wording of the EQ7 was modified in the Inception Report in order to better capture the importance of assessing, *inter alia*, the external coherence of the programme in relation to international developments.

respondents' assessment of the internal coherence are presented in ANNEX A – CONSULTATION ACTIVITIES.

Figure 17 Extent to which synergies / overlaps between ISA² actions exist (average score of answers, number of respondents)



Score: 1 - not at all; 2 - to a limited extent; 3 - to some extent; 4 - to a high extent; 5 - to the fullest extent.

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

Source: Authors' elaboration on data collected via consultation activities.

The **review of documentary evidence** confirms the results of the consultation activities, particularly regarding the existence of synergies between ISA² actions. In this sense, the indicator of the "network" of relationships between the programme's actions⁶³, as shown on the ISA² Dashboard, is particularly relevant. Based on the data provided online, a quantitative assessment of the instances of reuse can be made for the sample of 20 actions under assessment. As shown in Table 9, **there are multiple instances of internal reuse of ISA² solutions**, with actions like "SEMIC" or "Joinup" playing a particularly nodal role in the system.

At the same time, some actions tend to be less central in the network. This is the case particularly for the "EUSurvey" and "European Citizens' Initiative and European Parliament Election" actions, and can be explained by the nature of these actions. "EUSurvey" is a tool designed to facilitate the gathering of feedback and opinions quickly and reliably via online surveys. Given the specificity of the action, the reuse of the action does not come primarily in the form of its IT components being reused, but rather in the form of other actions and actors creating surveys via this tool in order to collect feedback relevant to their own action (see ANNEX B – SUPPORTING EVIDENCE FROM DESK RESEARCH). Similarly, the solutions of the action dedicated to the "European Citizens' Initiative and the European Parliament Election" (Online Collection Software supporting the European Citizens' Initiative and the European Parliament Crypto Tool) have a very specific scope, enabling citizens to bring initiatives to the attention of the Commission and developing effective mechanisms to prevent double voting. This specificity makes it more likely for the action to be used/reused by other programmes or initiatives, rather than by other ISA² actions. Overall, this is a reflection of the four different layers of

⁶³ These data are available for each monitored action under the "coherence" tab of the ISA² Dashboard page dedicated to the respective action.

interoperability⁶⁴ that ISA² is contributing to: legal, organisational, semantic, and technical interoperability.

Table 9 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 Member States	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
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: Authors' elaboration on information from ISA² Dashboard.

Throughout the consultation activities, additional inputs were collected from respondents concerning synergies between actions and examples of instances when results delivered

⁶⁴ See for instance: European Commission (2017), "New European Interoperability Framework. Promoting seamless services and data flows for European public administrations", https://ec.europa.eu/isa2/sites/isa2/files/eif_brochure_final.pdf, pp. 22-31.

by an ISA² action were used by another action. In this regard, the following **examples** were mentioned by several respondents:

- The “DCAT-AP” specification, developed under the “SEMIC” action, has been reused in the development of the “CPSV-AP” under the “Catalogue of Services” action. “Access to Base Registries” reuses “Core Vocabularies”, “DCAT-AP” (both part of the “SEMIC” action) and “EIRA” (part of the “European Interoperability Architecture” action). In addition, “SEMIC” solutions have been used by the “ELISE” action as well.
- The “Re3gistry” solution, part of the “ELISE” action, is used to share the codes for the “Core Vocabularies” (part of the “SEMIC” action).
- The platform for secure file exchange “e-TrustEx” (part of the action with the same name) is used in the area of eProcurement by the action “European Public Procurement Interoperability Initiative”, in particular by the “e-Prior” solution developed as part of the action. “E-Prior” is a module built based on “e-TrustEx”.
- Regarding synergies with the “Joinup” platform, there is a particularly strong relationship between the “Sharing and Reuse” action and “Joinup”. The former action aims to support public administrations in sharing collaborative development, reusing IT solutions, promoting best practices and the latter is a collaborative platform providing the means for achieving this.
- The “National Interoperability Framework Observatory” (NIFO) action is reusing some of the information from the “Access to Base Registries” action in order to compile the eGovernment factsheets.

External coherence

In order to assess the external coherence of ISA², stakeholders were asked to assess the level of synergies and overlaps existing between ISA² and four EU programmes identified during the Inception phase of this Assignment as relevant for the field of digitalisation of public administrations and interoperability: i) CEF⁶⁵, ii) ESF⁶⁶, iii) Horizon 2020⁶⁷ and iv) SRSP.⁶⁸ The results are presented in Figure 18. In line with Article 13.6 of the ISA² Decision, the assessment of external coherence pays particular attention to CEF, since interoperability is a key issue addressed by CEF and ISA² and thus the potential synergies should be fully exploited and the overlaps minimised.

Out of the four programmes, **respondents to the consultation activities identify the highest level of synergies between ISA² and CEF**. According to 78% of respondents (51 out of 65), ISA² and CEF have a high level or a very high level of synergies. Both programmes have contributed directly to, *inter alia*, the Open Data Policy of the Commission: for instance, the DCAT-AP solution of ISA² provides a metadata specification used by open data portals across the EU (see Table B - 1 and Table B - 2, ANNEX B – SUPPORTING EVIDENCE FROM DESK RESEARCH); and CEF ensures funding for the Public Open Data Infrastructure that aims to enhance the reuse of open public data in the EU. However, 18% of respondents (10 out of 57) also note the existence of overlaps to a high extent or to the fullest extent. Examples of potential overlap mentioned during the consultation activities are represented by “TESTA” and “e-Delivery”. “TESTA”, a solution developed under ISA², provides a secured communication infrastructure facilitating data exchange between European and national administrations. The “e-Delivery” building block

⁶⁵ For further details see: <https://ec.europa.eu/inea/en/connecting-europe-facility>.

⁶⁶ For further details see: <http://ec.europa.eu/esf/main.jsp?catId=526&langId=en>.

⁶⁷ For further details see: <https://ec.europa.eu/programmes/horizon2020/en>.

⁶⁸ For further details see: https://ec.europa.eu/info/funding-tenders/funding-opportunities/funding-programmes/overview-funding-programmes/structural-reform-support-programme-srsp_en.

developed under CEF ensures the secure delivery of documents from one party to another: between Member States, or between institutions and Member States. Given that the two services are similar in nature, there could be a better delineation of their scopes in order to ensure that the developed solutions do not overlap.

When it comes to the relationship between **Horizon 2020** and ISA², half of the respondents (31 out of 63) identify synergies to a high extent or to the fullest extent, while only 12% (6 out of 51) indicate the existence of overlaps to a high extent or to the fullest extent. Synergies are seen especially with regard to the once-only principle, as Horizon 2020 provides funding related to this principle and several ISA² actions are contributing to the implementation of the principle. For instance, Horizon 2020 is currently funding the Once-Only Principle Project (TOOP)⁶⁹, which aims to explore and demonstrate the applicability of the once-only principle across borders. Actions such as "Access to Base Registries", "Catalogue of services", "European Interoperability Architecture", "European public procurement interoperability initiative" and "SEMIC" are supporting the implementation of the same principle (see ANNEX B – SUPPORTING EVIDENCE FROM DESK RESEARCH for further details). The situation is similar for **SRSP**, with 52% of respondents (22 out of 42) pointing out that there are synergies between ISA² and SRSP either to a high extent or the fullest extent, and only 6% (2 out of 32) indicating a high or very high degree of overlaps. In particular, it was pointed out that SRSP contributes to supporting Member States in the effort they have to make in order to align with and integrate European cross-border services. In the case of detected overlaps between ISA² and other programmes, a measure to mitigate overlaps that was mentioned during the consultation activities is to reinforce the central IT governance programme at the Commission level so as to provide better coordination of actions; this would both reduce the risk of developing very similar IT solutions under different spending programmes and facilitate the reuse of existing solutions.

At the opposite end of the spectrum, out of the four programmes listed above, the **ESF** tends to be the least relevant programme when it comes to external coherence. Only 26% of respondents (6 out of 23) indicate the existence of synergies between the ESF and ISA² to a high extent or to the fullest extent. Further details on external coherence are presented in ANNEX A – CONSULTATION ACTIVITIES.

Respondents also pointed to **synergies and overlaps with "other" EU initiatives**. More specifically three additional programmes and initiatives at the EU level were mentioned⁷⁰: the European Regional Development Fund (ERDF)⁷¹, Corporate IT Governance⁷² and the Single Digital Gateway⁷³.

- While the synergies between ESF and ISA² appear to be more limited, two respondents pointed to the existence of high synergies between **ERDF** and ISA². An additional respondent indicated that there are high synergies between the European Structural and Investment Funds (ESIF) and ISA², most likely due to the more prominent role played by ERDF (both ESF and ERDF are part of **ESIF**). At the same time, one respondent indicated that there could be overlaps between ISA²

⁶⁹ For further details see: <http://www.toop.eu/>

⁷⁰ Respondents also mentioned a trans-European IT system, Value Added Tax Information Exchange System (VIES). Two respondents consider that **VIES** (part of the Fiscalis2020 programme of DG TAXUD) has high synergies with ISA².

⁷¹ See footnote 21.

⁷² For further details, please see: https://ec.europa.eu/info/departments/informatics/it-governance_en.

⁷³ For further details, please see: https://ec.europa.eu/growth/single-market/single-digital-gateway_en.

and ERDF. Overlaps in this case could arise from lack of coordination; more specifically, national IT systems developed using ERDF funds could be incompatible with ISA² solutions, thus preventing the adoption of such solutions.

- One respondent also mentioned the existence of high synergies with the **Single Digital Gateway**. In fact, this is clear, given that an action dedicated to the interoperability requirements of the Single Digital Gateway (“Interoperability requirements for the Single Digital Gateway implementation”) was implemented by ISA² in Q1 and Q2 of 2018.⁷⁴ ISA² helped detail the IT architecture of the Single Digital Gateway and identify functional, technical and semantic interoperability challenges in its implementation. Further ISA² solutions like “eForms”⁷⁵ or “e-Documents”⁷⁶ are supporting the implementation of the Single Digital Gateway.
- A high degree of complementarity can also be identified between the **Corporate IT Governance** of the Commission and ISA², as explained by one respondent. The Corporate IT Governance Team ensures that the proposed IT investments of the Commission take into consideration the reuse of IT solutions that have already been developed. In this sense, the work of the Team enhances synergies between ISA² and other initiatives, ensuring that ISA² solutions and any other IT solution developed so far are reused in the future.

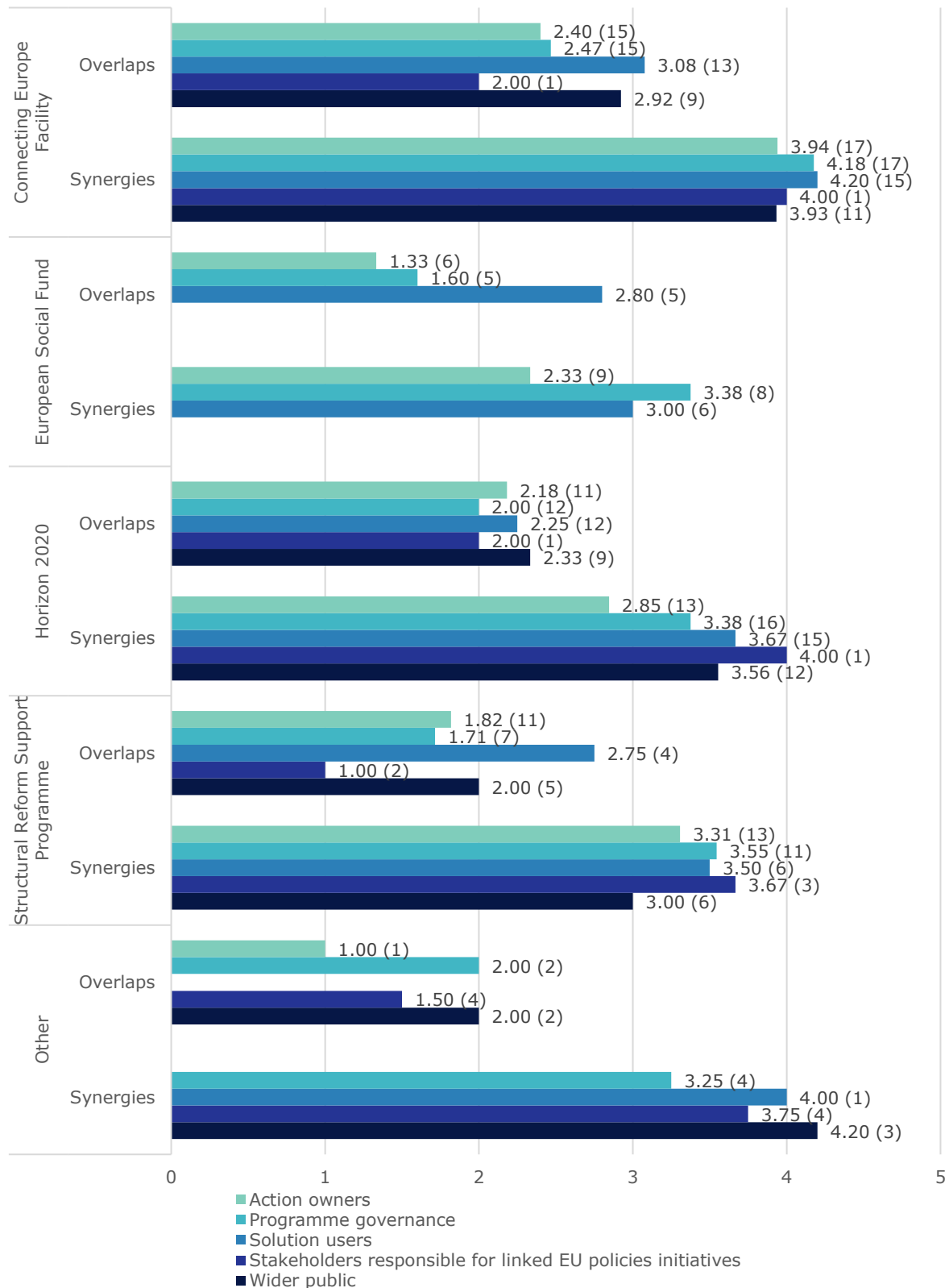
Examining the instances of reuse between ISA² actions and other EU programmes / policies / initiatives can also contribute to the assessment of the external coherence of the programme. The summary table below (Table 10), based on information from the ISA² Dashboard, shows that **ISA² actions have multiple links outside of the programme**, as they rely on other EU programmes / policies / initiatives to deliver their results and their solutions are used by other programmes / policies / initiatives.

⁷⁴ The ISA² action mentioned is “2017.05 Interoperability requirements for the Single Digital Gateway implementation”. More information can be accessed online: https://ec.europa.eu/isa2/actions/common-architecture-single-digital-gateway_en

⁷⁵ For further details about this solution, please see the description of the solution “ABCDE - Administrations, business and citizens’ data exchanges in the domain of case management” in the 2018 rolling work programme: https://ec.europa.eu/isa2/library/isa%C2%B2-work-programme_en.

⁷⁶ For further details about this solution, please see: https://ec.europa.eu/isa2/solutions/e-documents-reference-architecture_en.

Figure 18 Extent to which synergies / overlaps between ISA² and other relevant EU programmes exist (average score of answers, number of respondents)



Score: 1 - not at all; 2 - to a limited extent; 3 - to some extent; 4 - to a high extent; 5 - to the fullest extent.

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

Source: Authors' elaboration on data collected via consultation activities.

Table 10 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 Member States	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**
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: Authors' elaboration on information from ISA² Dashboard.

Beyond examining the alignment with the initiatives mentioned above, it is worth analysing the degree of alignment of ISA² with other initiatives or broader policies, like the Digital Single Market Strategy, the eGovernment Action Plan, ICT standardisation or the Tallinn Declaration on eGovernment.

When it comes to the **Digital Single Market Strategy**⁷⁷, the desk review of the rolling work plan reveals that ISA² is contributing to all three pillars of the Strategy: (i) better access for consumers and businesses to digital goods and services across Europe; (ii) creating the right conditions and a level playing field for digital networks and innovative

⁷⁷ See footnote 15.

services to flourish; and (iii) maximising the growth potential of the digital economy. Based on the 20 sampled actions, ISA² is contributing in particular to the third pillar of the Strategy through:

- The revision and implementation of the new European Interoperability Framework, which is explicitly mentioned in the “Communication on a Digital Single Market Strategy for Europe”⁷⁸;
- The work on supporting the implementation of the once-only principle done as part of several actions such as “SEMIC” or “European Interoperability Architecture”;
- The support for the implementation of the Single Digital Gateway.

Further details on the contribution of the 20 sampled actions to the Digital Single Market Strategy are presented in Table B - 10, Table B - 11 and Table B - 12, ANNEX B – SUPPORTING EVIDENCE FROM DESK RESEARCH.

Together with the launch of the Digital Single Market Strategy for Europe a new **eGovernment Action Plan** was announced for 2016-2020⁷⁹, aiming to “remove existing digital barriers to the Digital Single Market and to prevent further fragmentation arising in the context of the modernisation of public administrations”.⁸⁰ The contributions that ISA² brought to implementing the Digital Single Market Strategy directly relate to the eGovernment Action Plan as well. In particular, the revised version of the EIF and the ISA² actions monitoring its implementation in the Member States (“EIF Implementation and governance models” and “NIFO”) address Action 4 of the eGovernment Action Plan. Furthermore, ISA² is also contributing to Actions 1 and 6 through the work in the field of eProcurement. For instance, the action “European public procurement interoperability initiative” facilitates the implementation of eProcurement for European Public Administrations and supports the EU project TOOP⁸¹ by adjusting the necessary tools for the once-only principle.

In the field of ICT standardisation, the **Rolling Plan for ICT Standardisation**⁸² provides a good overview of the main initiatives and the list of EU priorities in the field. The Rolling Plan is drafted by the Commission in collaboration with the European Multi-Stakeholder Platform on ICT Standardisation, which includes representatives of the Member States, EFTA countries, European and international standardisation organisations, industry, SMEs and consumers. The 2018 Rolling Plan on ICT Standardisation points out two main areas with highly relevant synergies between ISA² and ICT standardisation: eGovernment and Open Data.

- **eGovernment.** The Rolling Plan emphasises that in order to leverage the applicability of technical specifications developed under ISA², one solution would be to suggest using them as standards by the relevant standardisation organisations for the specifications in question. In this respect, it is worth noting that some ISA² solutions are being discussed in an international standardisation forum. For instance:

⁷⁸ Ibid.

⁷⁹ Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: EU eGovernment Action Plan 2016-2020. Accelerating the digital transformation of government, Brussels, 19.04.2016, COM(2016)179.

⁸⁰ Ibid, p.1.

⁸¹ See footnote 69.

⁸² For further details please see: <https://ec.europa.eu/digital-single-market/en/rolling-plan-ict-standardisation>.

- The “ADMS” specification is currently being discussed by the WC3 Linked Government Data Working Group⁸³ and is published as a W3C note.⁸⁴
- The W3C Linked Government Data Working Group is also discussing the “Registered Organization Vocabulary”, which is based on the ISA² “Business Core Vocabulary”. The “Registered Organization Vocabulary” has been published as a W3C Note.⁸⁵
- **Public Sector Information, Open Data and Big Data.** The Rolling Plan also mentions the usefulness of introducing a common standard for the referencing of open data in the European open data portals. As an ISA² solution that is already used by several open data portals across the EU, the “DCAT Application Profile” stands out as a candidate for this purpose. In this regard, the Rolling Plan invites the CEN “to support and assist the DCAT-AP standardisation process”.

However, **feedback from the Evaluation Team’s experts** identifies potential issues that may arise with regard to standardisation. More specifically, there is a potential issue with the **intellectual property rights policy for CEN/CENELEC standards** that needs to be clarified and resolved before the standardisation system can be fully applied. This issue has two dimensions:

1. Standards have a purchasing cost, meaning that potential standards that would stem from ISA² solutions could not be distributed free of charge, even if they are of general public interest;
2. The “derivative use” of standards, i.e. the possibility to create derivative works (for instance, to develop software and to publish specifications, documents in general and training material based on standards) is not guaranteed, even if standards are purchased, and the rules differ by country.

Experts consulted for this assignment stressed that focusing on open source solutions may simplify the complex debates around the issues identified in the relationship with standardisation organisation.

In order to gain a comprehensive understanding of the EU-level coherence, it is also useful to analyse the alignment of ISA² with the priorities set at the highest political level in the **Tallinn Declaration on eGovernment**.⁸⁶ The Tallinn Declaration, representing the commitment of Member States to a series of principles and policy action lines on eGovernment, complements the 2016-2020 eGovernment Action Plan. Box 6 presents the main contributions of ISA² to the principles embraced within the Tallinn Declaration, based on the **feedback from the technical experts in the Evaluation Team**.

Box 6 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

⁸³ For further details please see: https://www.w3.org/standards/techs/gld#w3c_all

⁸⁴ For further details about the W3C note process please see: <https://www.w3.org/Consortium/Process/NOTE.html>

⁸⁵ For further details please see: https://www.w3.org/standards/techs/gld#w3c_all

⁸⁶ Tallinn Declaration on eGovernment, Ministerial meeting during the Estonian Presidency of the Council of the EU, 6 October 2017.

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.

Moreover, 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);
- 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**, even though with different scope and aims, **they proceed in the same direction and share common intents**. Synergies may be present in the above-mentioned points, but they can also turn into overlaps and duplications, or even worse, misalignments, if there is no strong coordination.

It should be noted that, while the ISA² programme is by its very nature multi-national, the Declaration also affects each country individually; therefore, initiatives and projects may be promoted separately by individual countries in order to fulfil the commitments agreed upon by the Member States. The Declaration also included specific calls to EU institutions to enhance interoperability within the EU framework. Overall, this document stresses the need for increased efforts, both at the level of EU institutions and at the Member State level, to achieve citizen-centric eGovernment as well as interoperability.

Finally, the annex of the Tallinn Declaration highlights the importance of principles like the "Protection of personal data and privacy", "Incentives for digital service use", thus

better coherence would be ensured if the evolution of the ISA² programme were to include some of these principles in its actions.

Finally, an analysis of the alignment between ISA² and global initiatives in the field of interoperability completes the assessment of the 'external coherence'. In this regard, the **OECD Digital Government Initiative**⁸⁷ is relevant. The initiative involves **high-level statements** of principles and objectives, which aim to stimulate the member countries to design and develop their plans for transformation toward a digital government. The initiative is organised into **six work areas**:

- Open Government Data;
- Recommendation on Digital Government;
- Digital Government Toolkit;
- E-Leaders Meeting;
- Open Data & Anti-corruption;
- Social Media Use by Governments.

Based on expert assessment, the following **synergies** were identified between ISA² and the OECD Digital Government Initiative:

- Open Government Data, which is a topic present in several actions of ISA²;
- Recommendation on Digital Government, which among other things encourages:
 - The coherent use of digital technologies across policy areas and levels of government;
 - The reviewing of legal and regulatory frameworks to allow digital opportunities to be taken.

Nevertheless, **experts consulted for this assignment** noted that the OECD Initiative runs **the risk that solutions are developed independently resulting in further fragmentation of the landscape**. Coordination between the initiatives is needed to formulate shared starting points and avoid duplication of efforts. In fact, the OECD initiative encourages countries to adopt standards and solutions designed to increase interoperability; but it does not outline a determined path for doing so. By contrast, ISA² aims to address this issue by developing solutions that can be adopted across Member States, thus enhancing cross-border interoperability.

⁸⁷ For further details see: OECD, "Digital Government", available at: <http://www.oecd.org/gov/digital-government/>.

8 EU Added Value

KEY FINDINGS

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

- In the absence of the programme, national and/or sub-national interventions would not be able to achieve the general and specific objectives in the field of interoperability at which ISA² is aiming. The **level of coordination ensured by the programme plays an important role** in enhancing the overall interoperability among European public administrations. In addition, **ISA² is able to achieve its objectives at a lower cost** than comparable national or sub-national initiatives. These conclusions hold true across the different stakeholder groups and are further corroborated by expert assessment.
- National or sub-national interventions would be able to provide some contributions in the absence of an EU level programme, however, when it comes to the development of a more effective, simplified and user-friendly e-administration at the national, regional and local levels. This is the specific objective where the ISA² programme appears to be less effective, thus showing some **complementarities between EU and national initiatives**, as confirmed by the primary data from consultation activities and the independent assessment of the technical experts that are part of the Evaluation Team.
- In addition, national initiatives related to the ICT modernisation of the public sector are very important in **improving the performance of the programme** by increasing the capacity for the take-up of ISA² solutions, as stakeholders from all groups have stressed both when it comes to the EU added value of the programme as well as to its effectiveness.
- ISA² has contributed to **enhancing cross-border interoperability** in the EU, as confirmed by the consulted stakeholders, the desk review of secondary data and expert assessment. For example, it raises the awareness about interoperability across EU Member States and helps put the topic on national agendas. It also brings people together, thus creating networks, helping national organisations meet their counterparts in different countries and facilitating exchanges between Member States in the field of interoperability.
- ISA² has also contributed to the **advancement of common EU policies** or initiatives, as shown by the review of secondary data shows and confirmed by all stakeholder groups and the independent technical experts that are part of the Evaluation Team. For instance, it plays a central role in the implementation of the EIF (including its 2017 revision) and supports the establishment of the Digital Single Market. In addition, the programme fully meets the objective of advancing common shared policies within EU, as stated in the Tallinn Declaration.

8.1 Evaluation framework for EU added value

Article 13.6 of the ISA² Decision requires the assessment of “the benefits of the actions to the Union for the advancement of common policies”. The **EU added value** captures the additional impacts generated by the programme at the EU level, as opposed to leaving the issues addressed by ISA² solely in the hands of national and sub-national authorities. This evaluation criterion seeks to answer the following EQ:

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

In line with the Evaluation Framework presented in ANNEX D – EVALUATION FRAMEWORK, answering EQ8 requires the analysis of **four judgment criteria**:

- 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;
- Achievements in terms of cross-border interoperability; and
- The contribution to the advancement of common EU policies.

This chapter presents both primary data collected via consultation activities and secondary data gathered via desk research in order to assess the EU added value of the programme.

8.2 Analysis

Achievement of objectives that could not be otherwise achieved

The majority of respondents believe that **national or sub-national interventions would not be able to achieve or would achieve only to a limited extent the general and specific objectives in the field of interoperability that ISA² is pursuing** (Figure 19). This observation is particularly evident when it comes to the specific objective of developing, maintaining and promoting a holistic approach to interoperability in the Union (specific objective 1), as 83% of respondents (95 out of 115) believe that national or sub-national interventions would not be able to achieve or would achieve only to a limited extent this objective. Additionally, 72% of respondents (83 out of 116) also point to limited achievements or no achievement from national or sub-national initiatives with regard to facilitating the 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 hand (specific objective 2). It follows from these examples that the coordination provided by a unique EU-level programme plays an important role in enhancing the overall interoperability among European public administrations. The **technical experts** who are part of the Evaluation Team have unanimously confirmed this conclusion.

There is, however, **one specific area to which national or sub-national interventions would be able to provide some contribution in the absence of an EU level programme**. A quarter of the respondents (29 out of 115) believe that national or sub-national interventions would be able to contribute to a high extent or to the fullest extent to the development of a more effective, simplified and user-friendly e-administration at the national, regional and local levels (specific objective 3). This result is quite interesting and shows important complementarities between EU and national initiatives if one considers that specific objective 3 is the one where the ISA² programme shows the worst performance in terms of effectiveness (Figure 8; Chapter 5 Effectiveness).

In this context, it is worth emphasising that while national initiatives related to the ICT modernisation of the public sector cannot achieve the objectives pursued by ISA², they are still very important in **enhancing the performance of the programme by increasing the capacity for the take-up of ISA² solutions**, as noted in Chapter 5 Effectiveness. Initiatives pursued by Member States in this field signal that interoperability is among their priorities, thus making them more likely to engage with ISA². In addition, such initiatives also put Member States in a better position, from the point of view of ICT development, to use the solutions provided by ISA².

Figure 19 Extent to which national or sub-national interventions would be able to achieve the ISA² objectives in the absence of the programme (average score of answers, number of respondents)



Score: 1 - not at all; 2 - to a limited extent; 3 - to some extent; 4 - to a high extent; 5 - to the fullest extent.

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

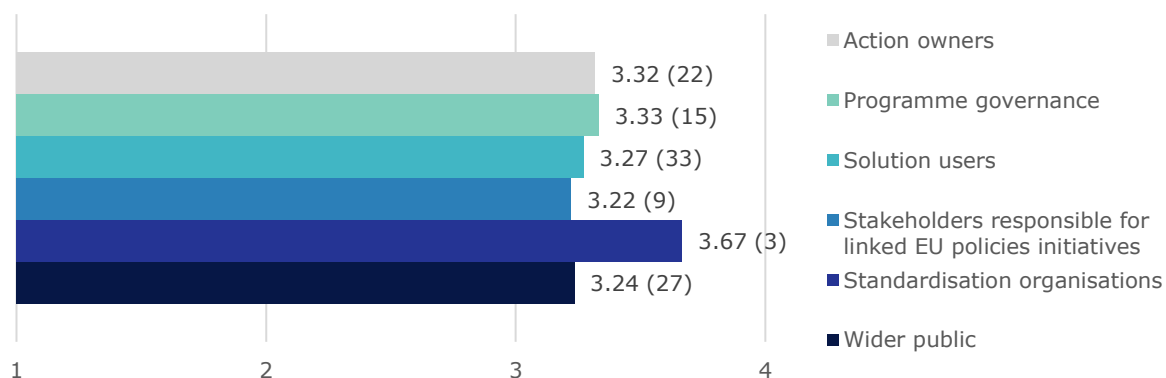
Source: Authors' elaboration on data collected via consultation activities.

Achievement of objectives at a lower cost

In addition, 83% of the respondents (91 out of 109) emphasised that ISA² is probably or definitely able to achieve its objectives at a **lower cost than comparable national or sub-national initiatives** (Figure 20). An EU-level programme providing coordination and a shared platform for exchanges in the field of interoperability generates **economies of**

scale, which are recognised and appreciated by the main stakeholders of the programme, as well by the **technical experts** who are part of the Evaluation Team.

Figure 20 Ability of ISA² to achieve the relevant objectives at a lower cost than comparable national or sub-national interventions (average score of answers, number of respondents)



Score: 1 – definitely would not; 2 – probably would not; 3 – probably would; 4 – definitely would.

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

Source: Authors' elaboration on data collected via consultation activities.

Achievements in terms of cross-border interoperability

ISA² focuses on providing both cross-border and cross-sectoral interoperability solutions. From the point of view of the EU added value, the contribution to cross-border interoperability is particularly relevant, as it reveals the extent to which the programme works towards achieving a holistic approach to interoperability in the EU.

Over half of the respondents (50 out of 93) believe that **ISA² has contributed to a high extent or to the fullest extent to enhancing cross-border interoperability in the EU**, a result that holds true across the consulted stakeholder groups, in comparison to less than 6% (6 out of 93) who only see a limited contribution in this respect (Figure 21 provides an overview of the average scores; further details can be consulted in ANNEX A – CONSULTATION ACTIVITIES). Several respondents also indicated specific contributions in this respect. The following aspects were mentioned numerous times:

- **Awareness:** ISA² raises the awareness about interoperability in the EU and helps put the topic on national agendas; without this, little progress would be made in the field.
- **Organisational contribution:** ISA² brings people together, creating networks and helping national organisations meet their counterparts in different countries, thus facilitating exchanges between Member States.

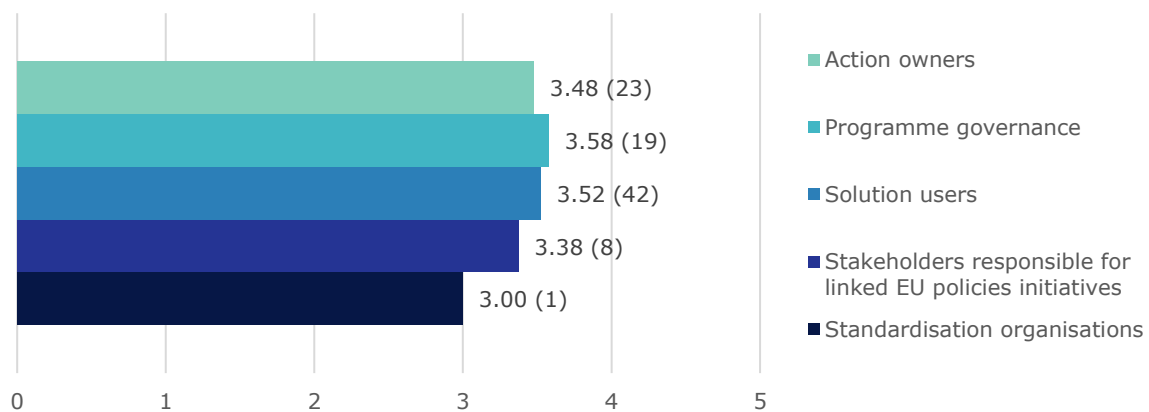
The two examples mentioned above are supported by analysing the **communication activities** that are part of the programme as well as the participation of Member States in the ISA² Committee and Coordination Group meetings. With an average of 211 participants in the ten events organised between 2016 and 2017 (not accounting for remote participants), ISA² has reached a large number of stakeholders and Member States, promoting interoperability among them (further details are provided in Chapter 5 Effectiveness and ANNEX B – SUPPORTING EVIDENCE FROM DESK RESEARCH).

In addition, meetings at the programme level, as part of the ISA² Committee and the ISA² Coordination Group, bring together representatives of Member States responsible for

topics related to digitalisation, thus contributing to **the creation of a network of officials working on the topic**. Between 2016 and 2018, five ISA² Committee meetings and three Coordination Group meetings were organised. In the majority of the meetings, all 28 Member States were represented by at least one participant (with a maximum of three participants per meeting per Member State). In addition, Norway was represented in all Coordination Group meetings and in four of the five Committee meetings, Iceland was represented in three Committee meetings and one Coordination Group meeting, and finally Montenegrin representatives were present in three Committee meetings and one Coordination Group meeting.

In fact, ISA² is open to countries in the European Economic Area and to the Candidate Countries to the EU and there is also the possibility for countries beyond this group to cooperate with the programme. A full overview of the presence in these meetings is provided in ANNEX B – SUPPORTING EVIDENCE FROM DESK RESEARCH). The fact that countries beyond the EU have either become members of ISA² or cooperate with the programme shows that the **cross-border benefits of the programme do not stop at the borders of the EU**. An additional example in this regard is the close cooperation between ISA² and Uruguay, consisting of delegation visits, exchanges of experts, workshops, and sharing of best practices among others, that officially started on 26 March 2018.

Figure 21 Extent to which ISA² contributed to enhancing cross-border interoperability in the EU (average score of answers, number of respondents)



Score: 1 - not at all; 2 - to a limited extent; 3 - to some extent; 4 - to a high extent; 5 - to the fullest extent.

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

Source: Authors' elaboration on data collected via consultation activities.

Further evidence comes from analysing the contribution of the specific actions of the programme. In this respect, **multilingualism is an aspect that stands out** in a Union of 24 official languages. There are different ways in which cross-border interoperability is reinforced by focusing on multilingualism, for instance:

- The actions on semantic interoperability, through their work on providing common frameworks, contribute to addressing multilingual challenges in the cross-border interaction of European public administrations; an example in this sense is the translation of the six "Core Vocabularies" into 23 official languages of the EU⁸⁸;

⁸⁸ For further details see: https://ec.europa.eu/isa2/news/interested-semantic-interoperability-read-about-semantic-highlights-second-half-2018_en

- Tools developed by ISA² with the specific purpose of being ready for use in all official languages of the Union, such as “EUSurvey”;
- CPSV-AP is used, for instance, in Finland and Estonia to create cross-border federated catalogues of public services.

Nevertheless, one potential improvement would be to further increase the focus of the programme on multilingualism by providing more information about ISA² in different EU official languages, as the current website is only available in English.

In addition to the examples mentioned above under multilingualism, key ISA² achievements in terms of cross-border interoperability, based on the 20 sampled actions, include:

- The “e-TrustEx” platform is a key enabler of secure information exchange for seven pan-European projects in which over 200 public administrations in all Member States participate;
- The creation of working groups with different Member States participating, as is the case for the “Big Data for Public Administrations” action: the Czech Republic, Estonia, Hungary, Malta, Norway, Slovenia, Spain, and Portugal participated in a working group to assess the needs in the area for Big Data analytics for policy making as part of this action.

Further details are provided in Table B - 8, ANNEX B – SUPPORTING EVIDENCE FROM DESK RESEARCH.

Contribution to the advancement of common EU policies

When it comes to common EU policies, half of the respondents (44 out of 84) indicate that **ISA² has contributed to a high extent or to the fullest extent to the advancement of common EU policies or initiatives** (Figure 22). For instance, stakeholders noted that ISA² plays **a central role in the implementation of the EIF** (including its 2017 revision⁸⁹) by abiding by its principles and tracking its implementation. In this respect, the review of secondary data provides additional evidence. The Communication on the revised EIF is accompanied by an “Interoperability Action Plan”, laying down five focus areas and 22 actions to be undertaken in order to tackle existing interoperability issues during the 2017-2020 period. In addition, the Communication is also accompanied by 47 concrete recommendations for improving interoperability in the EU. ISA² actions can be clearly linked to the focus areas, actions, and recommendations as outlined in the revised EIF. Examples based on the 20 sampled actions include:

- The “e-TrustEx” action, by providing a solution used by the European Commission as well as 25 Member States and facilitating the secure exchange of information between public administrations, contributes particularly to *Recommendation 15: Define a common security and privacy framework and establish processes for public services to ensure secure and trustworthy data exchange between public administrations and in interactions with citizens and businesses.*
- The “SEMIC” and “PMKI” actions, through their focus on semantic interoperability and multilingualism, respond to *Recommendation 16: Use information systems and technical architectures that cater for multilingualism when establishing a European public service. Decide on the level of multilingualism support based on the needs of the expected users.*

⁸⁹ See footnote 14.

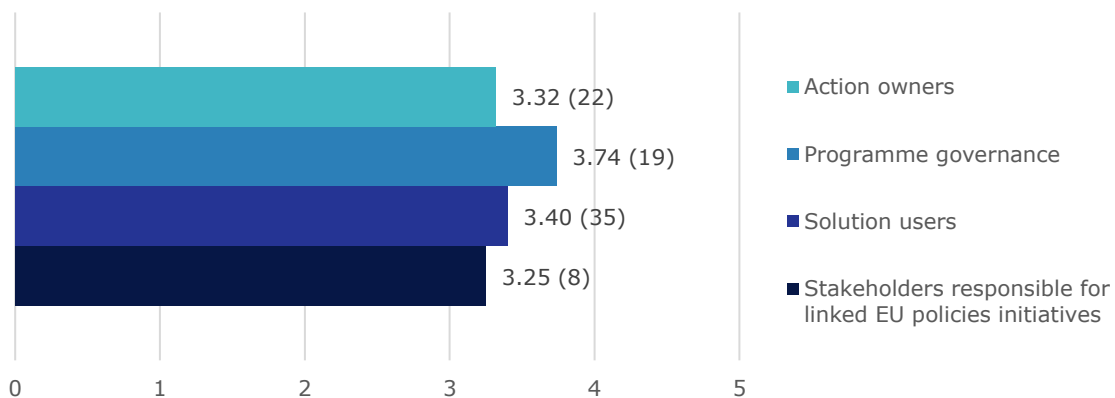
- The “Legal interoperability” action, which develops tools for checking the ICT and interoperability impacts of legislation, ensures the implementation of *Recommendation 27: Ensure that legislation is screened by means of ‘interoperability checks’, to identify any barriers to interoperability. When drafting legislation to establish a European public service, seek to make it consistent with relevant legislation, perform a ‘digital check’ and consider data protection requirements.*
- The “NIFO” action oversees the implementation of the EIF by the Member States and thus contributes to Actions 4 and 5 of the EIF Action Plan, which aim “to ensure the execution and monitoring of EIF implementation”.

Further details are provided in Table B - 13, ANNEX B – SUPPORTING EVIDENCE FROM DESK RESEARCH.

In addition, stakeholders emphasised that ISA² has also contributed to specific areas of the Digital Single Market Strategy.⁹⁰ As pointed out in Chapter 7 Coherence, the Communication on the Digital Single Market Strategy recognised the central role played by interoperability in enabling the “effective connections across borders, between communities and between public services and authorities” and noted the need for an “updated and extended” EIF. By contributing to the implementation of the revised EIF, ISA² is thus also **contributing to the establishment of the Digital Single Market.**

The results from the feedback gained through the consultation activities is **confirmed by the experts’ assessments**, which note that the programme has increased the attention to the importance of interoperability and cross-border e-services for sustaining the Digital Single Market and, more generally, in contributing to an internal open space within the EU. In this sense, the programme fully meets the aims of **advancing common shared policies within the EU in accordance with the Tallinn Declaration.** Further details are provided in Chapter 7 Coherence.

Figure 22 Extent to which ISA² contributed to the advancement of common EU policies (average score of answers, number of respondents)



Score: 1 - not at all; 2 - to a limited extent; 3 - to some extent; 4 - to a high extent; 5 - to the fullest extent.

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

Source: Authors’ elaboration on data collected via consultation activities.

⁹⁰ See footnote 15.

9 Utility

KEY FINDINGS

EQ9: How do the ISA² programme's actions and results, achieved and anticipated, compare with the needs they are supposed to address?

- Solutions developed or maintained by ISA² have **contributed to addressing the original needs and problems** identified in the field of interoperability, as feedback from the consulted stakeholders at the EU and Member State level shows. As the programme is still ongoing, **the way solutions meet user needs may improve** as the implementation of the programme comes closer to the end. In particular, with more extensive adoption of ISA² solutions across European public administrations, the needs and problems are expected to be better addressed.
- Whereas **some of the new needs and problems experienced by consulted stakeholders are addressed** by the programme, some others fall beyond the scope of the programme as it is currently defined. Therefore, the solutions developed so far cannot respond to these particular needs and problems.
- The feedback received from respondents in terms of **user satisfaction** tends to be **positive**. Nevertheless, by relying on both primary and secondary data, several measures were identified to increase the utility of the programme:
 - Placing more emphasis on the **sharing of best practices** and **providing support to users**;
 - **Improving the quality of existing solutions** by better considering user needs;
 - Strengthening the **promotion of ISA² solutions** at national and subnational levels as well as among specific groups of professionals (e.g. standards development organisations).
 - **Involving users** not only in the testing phase of solutions, but also in the design phase and establishing a co-creation process; and
 - Ensuring the **Member States' commitments** to using ISA² solutions.

9.1 Evaluation framework for Utility

In addition to the evaluation criteria usually assessed according to the Better Regulation Guidelines⁹¹ (effectiveness, efficiency, relevance, coherence and EU added value), Article 13.4 of the ISA² Decision also requires the assessment of the **utility of the programme**. Utility refers to (i) the extent to which the results of ISA² meet stakeholders' needs and (ii) the level of stakeholder satisfaction with the solutions of ISA². This criterion translates into the following EQ:

- EQ9: How do the ISA² programme's actions and results, achieved and anticipated, compare with the needs they are supposed to address?⁹²

The assessment of this EQ is based on primary data collected via consultation activities as well as on evidence gathered via desk research and relies on the following **judgment criteria** (see ANNEX D – EVALUATION FRAMEWORK):

⁹¹ European Commission (2017), Better Regulation Guidelines, SWD(2017) 350, Brussels, 7 July 2017.

⁹² The terms of reference included an additional EQ under the utility criterion: "To what extent could measures be taken to improve the utility of the ISA² programme's actions, and what measures would these be?". As, *stricto sensu*, future measures are not part of an interim evaluation, which is mostly a backward-looking exercise, this EQ was not covered by the Evaluation Framework prepared for this Assignment. However, in order to draft policy recommendations, feedback on measures to improve the utility of the ISA² programme have been collected and presented in this Chapter in the section discussing user satisfaction.

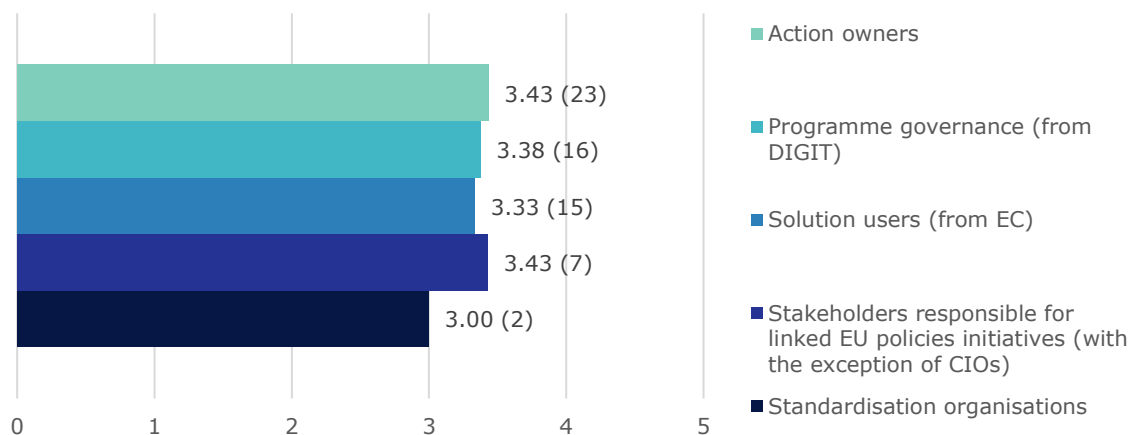
- Alignment between stakeholders' perception of needs and problems at national and sub-national levels and the results of the programme;
- Alignment between stakeholders' perception of needs and problems at the EU level and the results of the programme; and
- User satisfaction, with a breakdown by stakeholder group.

9.2 Analysis

Alignment between needs and problems at the Member State and EU levels and the results of the programme

Respondents from both EU and Member State public administrations confirm that **the solutions developed or maintained by ISA² have contributed to addressing the original needs and problems identified in the field of interoperability** (Figure 23 and Figure 24).⁹³ Overall, 42% of respondents at the EU level (38 out of 91) and 46% of respondents at the Member State level (13 out of 28) consider that the solutions have contributed to a high extent or to the fullest extent to addressing the needs and problems originally covered by the programme, in comparison to only 5% of EU-level respondents (5 out of 91) and 11% of Member State-level respondents (3 out of 28) who only see a limited or no contribution.

Figure 23 Extent to which ISA² solutions contributed to addressing the needs and problems originally addressed by the programme: EU-level respondents (average score of answers, number of respondents)



Score: 1 - not at all; 2 - to a limited extent; 3 - to some extent; 4 - to a high extent; 5 - to the fullest extent.

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

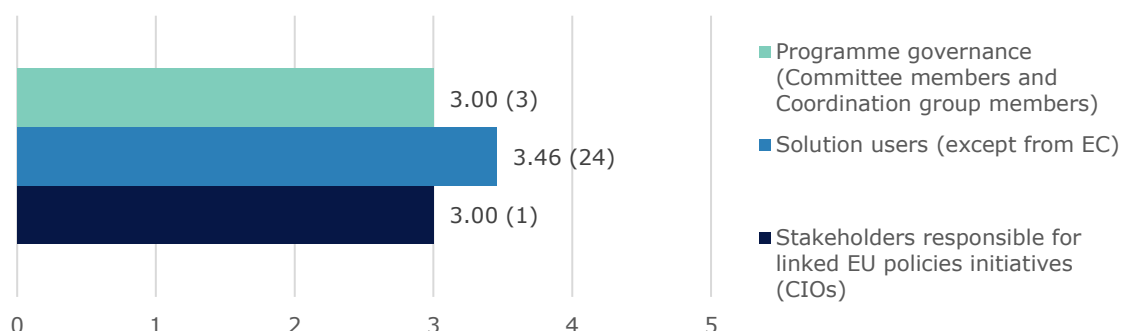
Source: Authors' elaboration on data collected via consultation activities.

As the programme is still ongoing, the ways in which solutions meet user needs may improve beyond this level as the implementation of the programme comes closer to the end. It is expected that the take-up rate of solutions will increase over time, especially for the newer solutions of the programme, a conclusion that was spelled out in Chapter 5 Effectiveness. **With a higher adoption rate of ISA² solutions across European public administrations, the needs and problems would be increasingly better**

⁹³ Need 1: The need for cooperation among public administrations with the aim to enable more efficient and secure public services; Need 2: The need for exchanging information among public administrations to fulfil legal requirements or political commitments; Need 3: The need for sharing and reusing information among public administrations to increase administrative efficiency and cut red tape for citizens and businesses; Problem: Administrative e-barriers are leading to the fragmentation of the Internal Market.

addressed, thus leading to higher user satisfaction. The current level of take-up of solutions can be consulted in Table B - 3, ANNEX B – SUPPORTING EVIDENCE FROM DESK RESEARCH.

Figure 24 Extent to which ISA² solutions contributed to addressing the needs and problems originally addressed by the programme: respondents from the Member States (average score of answers, number of respondents)



Score: 1 - not at all; 2 - to a limited extent; 3 - to some extent; 4 - to a high extent; 5 - to the fullest extent.

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

Source: Authors' elaboration on data collected via consultation activities.

The feedback from consultation activities is further supported by secondary data.

When it comes to the *need for exchanging information among public administrations to fulfil legal requirements or political commitments*, the "Open e-TrustEx" solution, for instance, provides a platform for the secure exchange of information between public administrations in the EU and in the Member States. It is used in seven pan-European projects, including the e-Prior Open Source e-Procurement platform⁹⁴ and the European eJustice Portal⁹⁵, contributing to cross-border interoperability. Further, the "Joinup" platform contributes to addressing the *need for sharing and reusing information among public administrations to increase administrative efficiency and cut red tape for citizens and businesses*. "Joinup" provides a collaborative space where solutions can be shared between stakeholders. Additionally, the platform also hosts a number of national repositories where five Member States have made national solutions available to other interested parties. More details about the sampled solutions can be consulted in Table B - 8, ANNEX B – SUPPORTING EVIDENCE FROM DESK RESEARCH.

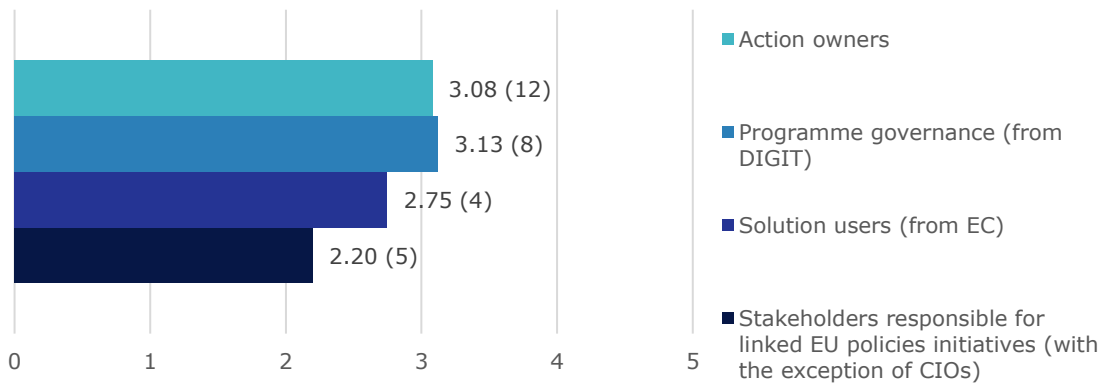
In addition, several respondents indicated that they experience needs and problems additional to those explicitly mentioned in the intervention logic of the programme (the most prominent examples of additional needs and problems are listed in Chapter 5 Effectiveness). In this respect, 27% of EU-level respondents (11 out of 41) and 50% of Member State-level respondents (6 out of 12) indicated that solutions have contributed to addressing these additional needs and problems to a high extent or to the fullest extent, in comparison to 22% of EU-level respondents (9 out of 41) and 25% of Member State-level respondents (3 out of 12) who believe the contribution has been either limited or absent (Figure 25 and Figure 26). **Some of the new needs and problems indicated (such as the changing political priorities in the Member States) fall beyond the scope of**

⁹⁴ See: <http://ec.europa.eu/isa2/library/eprior/>

⁹⁵ See: <https://e-justice.europa.eu/home.do?action=home>

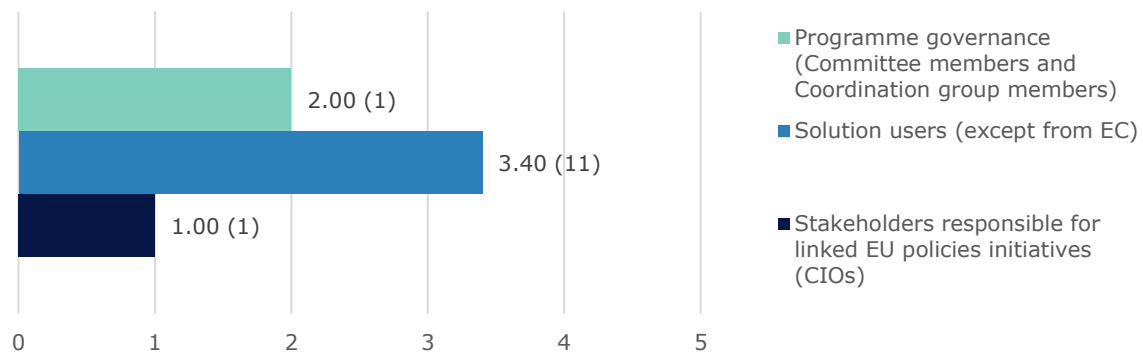
the programme as it is currently defined, therefore the solutions developed so far cannot respond to these particular needs and problems.

Figure 25 Extent to which ISA² solutions contributed to addressing additional needs and problems identified by consulted stakeholders: EU-level respondents (average score of answers, number of respondents)



Score: 1 - not at all; 2 - to a limited extent; 3 - to some extent; 4 - to a high extent; 5 - to the fullest extent.
 Note: Averages do not account for respondents answering "don't know/no opinion" (DK/NO).
 Source: Authors' elaboration on data collected via consultation activities.

Figure 26 Extent to which ISA² solutions contributed to addressing additional needs and problems identified by consulted stakeholders: respondents from the Member States (average score of answers, number of respondents)

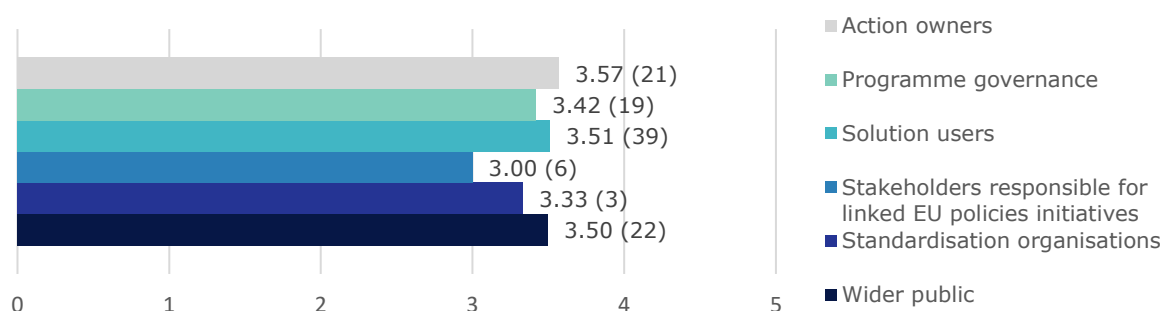


Score: 1 - not at all; 2 - to a limited extent; 3 - to some extent; 4 - to a high extent; 5 - to the fullest extent.
 Note: Averages do not account for respondents answering "don't know/no opinion" (DK/NO).
 Source: Authors' elaboration on data collected via consultation activities.

Stakeholder satisfaction

The feedback received from respondents regarding user satisfaction tends to be positive (Figure 27). More specifically, half of the respondents (57 out of 110) indicate that they are satisfied with the way solutions meet user needs to a high extent or to the fullest extent, while only 6% (7 out of 110) indicated limited satisfaction. The **technical experts** who are members of the Evaluation Team also indicated that they are satisfied with the ISA² solutions.

Figure 27 Extent to which ISA² solutions are meeting users' needs in the fields of cross-border and cross-sectoral interoperability of digital public services (average score of answers, number of respondents)



Score: 1 - not at all; 2 - to a limited extent; 3 - to some extent; 4 - to a high extent; 5 - to the fullest extent.

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

Source: Authors' elaboration on data collected via consultation activities.

Respondents also provided feedback on **measures that could be taken to improve the utility of the programme**. The feedback received is centred on the following aspects that show important complementarities with the measures proposed to enhance the relevance of ISA² (also see Chapter 4 Relevance):

- 1. Best practices and user support.** An increased focus on sharing best practices and providing support to users would have a beneficial effect on user satisfaction.
- 2. More focus on already existing solutions.** According to the feedback from the consultation activities, another way to better address user needs would be to focus more on the already existing solutions and on improving their quality. This would allow for a better consideration of user needs in further developing a smaller group of actions.
- 3. Promotion.** Respondents indicated that they would like to see more activities promoting ISA² at the Member State level in order to increase the level of take-up of solutions. The increased level of take-up would contribute to addressing the needs identified in the field of interoperability, thus improving overall satisfaction levels. Furthermore, feedback received from standardisation organisations shows that more awareness is needed among practitioners as well, particularly in the field of standards. Organising workshops targeted to specific groups of professionals could be useful; besides workshops, formal presentations made at standards development organisations' plenaries could provide the needed exposure.
- 4. Co-creation.** Another measure could be to involve users not only in the testing phase of solutions, but also in the design phase, and to establish a co-creation process. This includes more extensive on-boarding services (ensuring that users are provided with extensive information about the developed solutions), an increased focus on the sustainability of (re)user communities, as well as the integration of different solutions and services into one service, thus offering a canvas for easier user navigation of the landscape of solutions.
- 5. Commitment.** The ISA² Committee could reinforce the results of the programme by using it as a means to establish clear commitments to interoperability in the future. In this regard, Member States could show their commitment to use the solutions stemming from ISA² actions beyond simply participating in the selection of actions for the rolling work programme.

The first three measures could be at least partially implemented in **the current edition of the programme** by relying on the existing network of national stakeholders to share

best practices, steering the implementation of current actions to address user needs (for instance, by encouraging the sharing of best practices on Joinup through dedicated collaborative spaces) and by engaging in additional communication activities targeted to national stakeholders and professionals. The fourth measure may be **tested when preparing the 2020 rolling work programme** and then mainstreamed, if effective, in the next edition of the programme. A **longer-term strategy** may be required to implement the fifth measure and enhance Member States' commitment to interoperability of digital public services.

10 Sustainability

KEY FINDINGS

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

- Overall, consulted stakeholders tend to have a **positive view of the sustainability of results** achieved so far. Nevertheless, while the global results of the programme are expected to last (as the progress made in the field of interoperability will not be lost), certain issues may arise when considering the specificities of different solutions and future steps towards enhanced interoperability. In fact, there are solutions requiring both **operations and maintenance costs** as well as **technical and operational support**, which would render the solutions unable to deliver further results if the programme were terminated. Additional obstacles to the sustainability of the programme include:
 - **Lack of development** for existing solutions.
 - **Lack of coordination** between national administrations.
 - **Limited dissemination and communication** about interoperability of digital public services.
- Users are accustomed to having access to ISA² solutions free of charge. Changing this system to one based on **pay-for-access** may lead users to **search for other solutions that are free of charge**, except for the more mature solutions. At any rate, Member States would be put in the position to **follow public procurement rules** should a fee be requested in exchange for access to ISA² solutions; therefore, there is no guarantee they will be able to pay to use such solutions.
- The ISA² programme plays a **central role in enhancing the interoperability landscape in the Union**: the ICT-based modernisation of the public sector in Europe and the possibility to address the needs of businesses and citizens via improved interoperability of European public administrations would be jeopardised, should ISA² (and any similar EU initiative) be terminated.

10.1 Evaluation framework for Sustainability

Sustainability is the final evaluation criterion that has to be assessed as part of the interim evaluation according to Article 13 of the ISA² Decision. Sustainability measures the likelihood that the results of the ISA² programme last beyond its completion. This criterion is encapsulated in the following EQ:

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

The evidence base for assessing the sustainability of ISA² consists of primary data collected via the consultation activities, complemented by expert assessment. The evaluation relies on the following **judgment criteria** (see ANNEX D – EVALUATION FRAMEWORK):

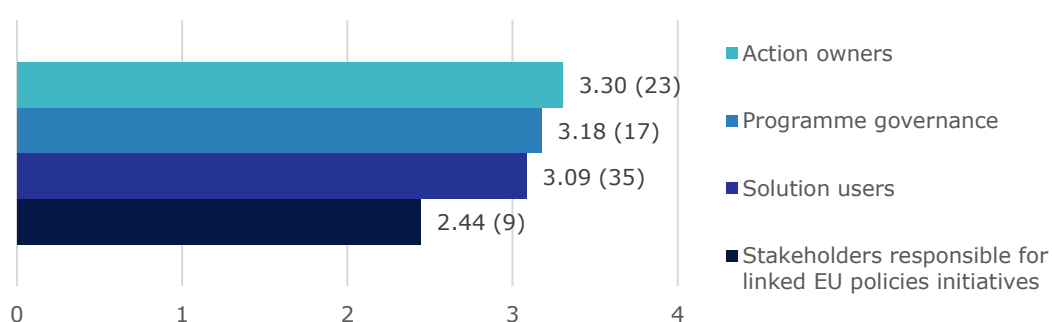
- Extent to which the results achieved by the ISA² programme are expected to last if funding for the actions covered by the programme would not be available in the future; and
- Extent to which 'cost recovery' solutions could be introduced.

10.2 Analysis

Results lasting if funding for actions would not be available in the future

This part of the assessment relies on the hypothetical scenario in which, after the completion of ISA², no other similar programme is implemented at the EU level. Overall, the consulted stakeholders tend to have a **positive outlook on the sustainability of results achieved so far** (Figure 28), with 79% of respondents (66 out of 84) believing that the programme results probably would or definitely would last in the absence of future funding for the actions currently supported by ISA².

Figure 28 Likelihood that results achieved so far would last if funding for actions covered by the programme would not be available in the future (average score of answers, number of respondents)



Score: 1 – definitely would not; 2 – probably would not; 3 – probably would; 4 – definitely would.

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

Source: Authors' elaboration on data collected via consultation activities.

While the global results of the programme are expected to last (as the progress made in the field of interoperability will not be undone), certain issues may arise when considering the specificities of different solutions and future steps towards interoperability. In this sense, over half of the consulted stakeholders also agree that there are factors that would have a negative effect on how solutions deliver their results if ISA² were to be terminated (Figure 29). In fact, 65% of respondents (55 out of 85) consider that **operations and maintenance costs**⁹⁶ required for the existing solutions would have a highly or fully negative effect on the ability of solutions to deliver their results once the programme ends. In addition, 56% (48 out of 85) hold the same opinion about the **technical and operational support**⁹⁷ needed for the solutions. Beyond these two factors, respondents indicated other aspects that would have a negative effect on the solutions once ISA² came to an end and no other programme replaced it:

- **Lack of further development for existing solutions.** Given the rapid pace of changes in the field of ICT, solutions that do not benefit from continued development support and updating face the risk of becoming obsolete over time.

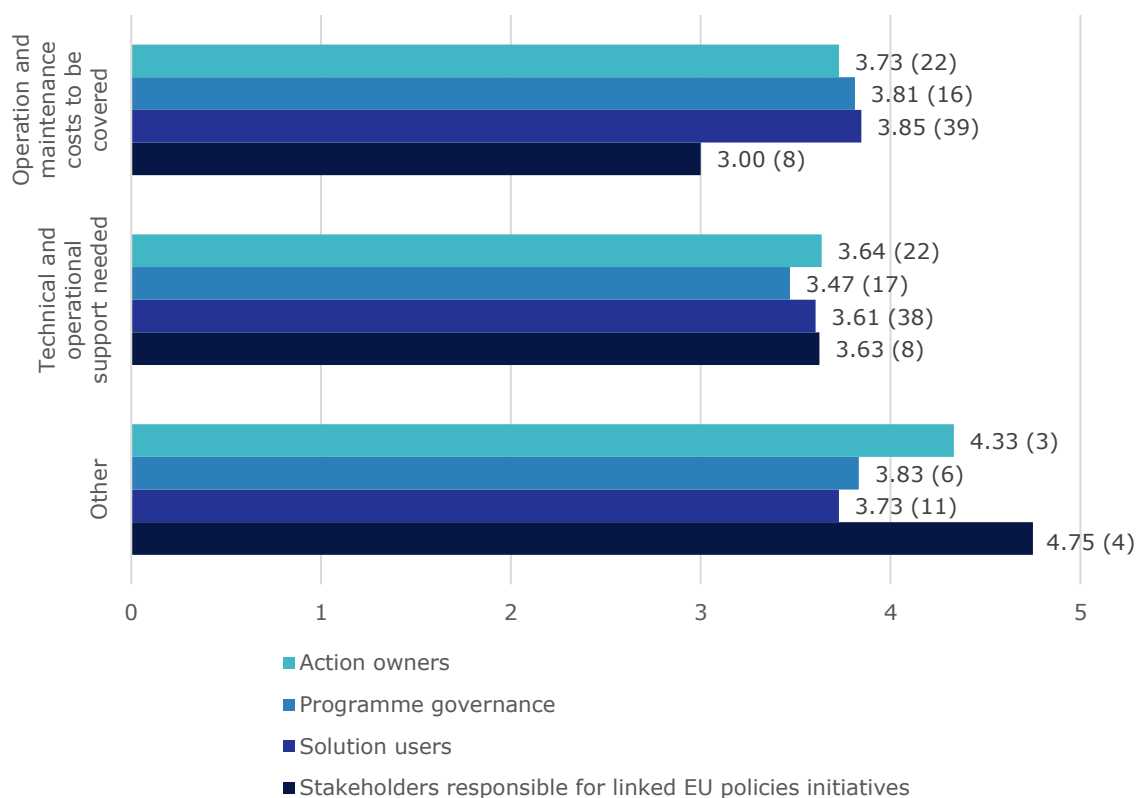
⁹⁶ Operations and maintenance costs consist of the monetary costs incurred to run, monitor, and ensure the proper functioning of a solution.

⁹⁷ Technical and operational support refers to the human resources mobilised in activities such as helpdesks or providing IT support for users.

This factor emerged from the consultation activities and was mentioned by the **technical experts** who are part of the Evaluation Team.⁹⁸

- **Lack of coordination.** In the absence of a single programme overseeing the development of solutions, future changes to solutions might lead to diverging results between public administrations or bilateral solutions between countries and a large variety of outcomes. This would be contrary to the goal of achieving a holistic landscape of interoperability in the Union.
- **Dissemination and communication.** ISA² also plays an important role in promoting interoperability and creating a space for discussions on the topic, as outlined by consulted stakeholders and technical experts. Without such a programme, the interest in a common approach to interoperability would be jeopardised.

Figure 29 Extent to which financial, technical and operational aspect would prevent ISA² solutions from delivering their results if the programme was terminated (average score of answers, number of respondents)



Score: 1 - not at all; 2 - to a limited extent; 3 - to some extent; 4 - to a high extent; 5 - to the fullest extent.

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

Source: Authors' elaboration on data collected via consultation activities.

Cost recovery

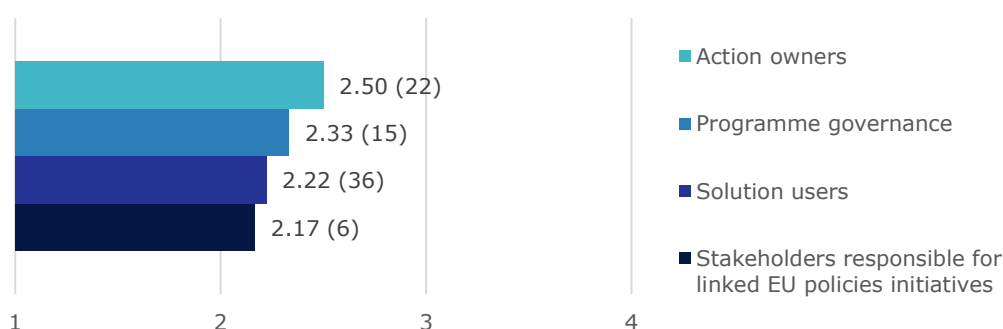
Given the adverse effects of operations and maintenance costs as well technical and operational support, stakeholders were asked to assess the feasibility of **introducing a fee for users in order to gain access to ISA² solutions**, in the event that funding

⁹⁸ In addition, the technical experts that are part of the Evaluation Team noted that for most solutions the continued updating and maintenance may be more expensive than the initial development.

would no longer be provided for the actions currently carried out by ISA². Over half of the respondents (47 out of 79) would probably or definitely not pay such a fee, in comparison to 40% of respondents (32 out of 79) who indicated that they would probably or definitely pay a fee in order to use the solutions (Figure 30 presents the average score of answers per respondent group; further details are presented in ANNEX A – CONSULTATION ACTIVITIES).

There are several reasons underlying these responses. First, users are accustomed to having access to ISA² solutions free of charge. Changing this system to one based on pay-for-access may lead users to **search for other solutions that are open source and free of charge**, depending on the level of the fee requested. Nevertheless, for some of the more mature solutions, a fee could be acceptable if the level of take-up is already quite high, making the solution indispensable to some extent. Second, for some solutions the legal basis might not allow for the introduction of such a fee. For instance, the “Inter-Institutional Register of Delegated Acts (RegDel)” was set up in order to respond to one of the provisions included in the 2016 Inter-Institutional Agreement on Better Law-Making⁹⁹ and to increase the transparency of the delegated acts process. Charging a fee in this case could conflict with purpose of increasing transparency. Third, Member States would be put into a situation in which they would have to **follow public procurement rules should a fee be requested for access to ISA² solutions**; therefore, there is no guarantee that they will be able to use ISA² solutions rather than competing solutions provided by private companies.

Figure 30 Likelihood that users would accept to pay a fee to continue accessing ISA² solutions (average score of answers, number of respondents)



Score: 1 – definitely would not; 2 – probably would not; 3 – probably would; 4 – definitely would.

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

Source: Authors’ elaboration on data collected via consultation activities.

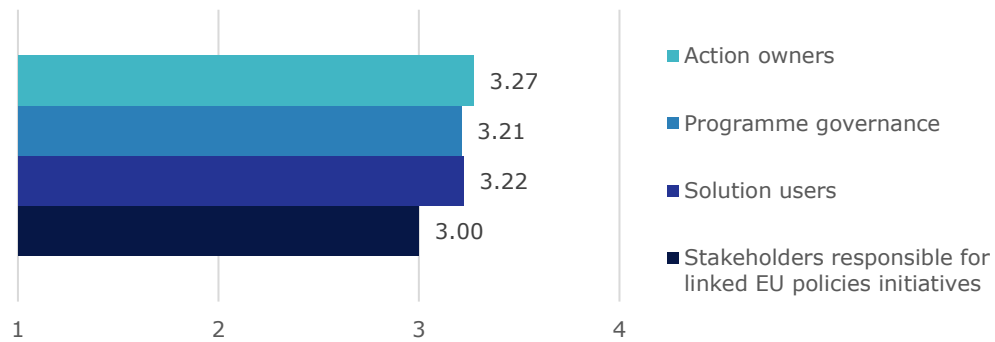
Impact on interoperability

Finally, according to the majority of respondents, **the ISA² programme plays a central role in enhancing the interoperability landscape in the Union**. In fact, 87% of respondents (75 out of 86) believe that the ICT-based modernisation of the public sector in Europe and the possibility to address the needs of businesses and citizens via improved interoperability of European public administrations would (either probably or definitely) be

⁹⁹ Interinstitutional Agreement between the European Parliament, the Council of the European Union and the European Commission on Better Law-Making, 13.04.2016, available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32016Q0512%2801%29>

jeopardised, should ISA² be terminated without any similar EU programme being established in its place.

Figure 31 Likelihood that the ISA² general objective would be jeopardised if the programme was terminated (average score of answers, number of respondents)



Score: 1 – definitely would not; 2 – probably would not; 3 – probably would; 4 – definitely would.

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

Source: Authors' elaboration on data collected via consultation activities.

11 Concluding remarks

The Assignment confirms that **ISA² performs well in all the seven evaluation criteria under investigation**. Therefore, the overall evaluation of the programme is positive. Nonetheless, some improvements, which are discussed below, could be introduced to improve the performance of ISA² and future editions of the programme.

The programme's **relevance** is confirmed by the fact that the objectives pursued by ISA² are still pertinent in relation to the evolving needs and problems in the field of interoperability of digital public services. More specifically, the original needs and problems that ISA² intended to address are still relevant and the programme has the full potential to contribute to addressing such needs and problems. There are additional needs and problems, however, that are currently experienced by consulted stakeholders both at the EU and national levels and can only be partially addressed by ISA². Hence, in order to further increase the relevance of the programme, the following **measures** could be taken into account for future actions or editions of the programme: i) ensuring more collaboration and exchanges with regional and local administrations; ii) improving the sharing of best practices among public administrations; iii) performing studies focused on the sharing of best practices among public administrations; iv) making sure that that interoperability of digital public services progressively becomes a priority for all EU Member States; and v) designing a more binding legal framework for interoperability.

While the first three measures could already be implemented, at least to some extent, either in the current edition of the programme or as soon as a new programme is launched, the fourth and fifth measures target more the political level rather than the operational aspects of the programme and require a longer-term strategy and a strong political commitment. The fifth measure, a more binding legal framework for interoperability, could take the form of conditionalities related to interoperability or entail the use of the European Semester process to further the modernisation of public administrations. Interoperability could be strengthened through the introduction of a system based on conditionalities whereby funding is awarded to public administrations contingent upon their use of interoperable solutions. The system of conditionalities could be linked to the awarding of financial assistance under the Cohesion Fund: national administrations relying on cohesion funding would be required to provide interoperable cross-border and cross-sectoral services. To achieve this, administrations would also rely on ISA² solutions to the extent possible, thus ensuring a wider and more uniform use of EU interoperability solutions. Such a system could only be introduced under the next multi-annual financial framework and would require a strong political commitment. In addition, the European Semester process could provide further impetus to the modernisation of public administrations. Introducing the reform of the public administration, including the digital modernisation, as a key area in the European Semester would ensure that progress is tracked and concrete recommendations are issued for each Member State with a view to enhance, *inter alia*, the cross-border and cross-sectoral interoperability of public administrations in the EU.

The results achieved so far by ISA² are aligned with the objectives of the programme and this corroborates its **effectiveness**. However, the performance of the programme is relatively lower in its contribution to the development of a more effective, simplified and user-friendly e-administration at the national, regional and local levels of public administration, where the initiatives of Member States play a greater role that could in turn contribute to enhancing interoperability. Turning to the results of the programme, the 20 sampled actions under investigation have so far generated 35 solutions, some of which are used by all 28 EU Member States as well as by EU institutions. When comparing performance indicators for actions continued from ISA to those for actions started during ISA², one conclusion becomes apparent: more time is needed for actions and their

solutions to achieve the expected results, as most of the actions are ongoing and solutions are in the process of being developed. In this respect, the final evaluation of ISA² is likely to provide more conclusive evidence of the programme's effectiveness. Finally, the rolling work programme process ensures that ISA² actions are largely compliant with the principles listed in Article 4 of the ISA² Decision.

Whereas the general **awareness** of the programme is quite high across consulted stakeholders, there are areas that could benefit from more promotion, such as the efforts made so far to attain legal interoperability, as the feedback from consultation activities and desk research revealed. Both the assessment of the programme's achievements and their promotion could benefit from studies aiming to quantify the impact of interoperability solutions on the efficiency and productivity of public administrations. The limited participation in consultation activities from businesses and citizens confirms that they are indirect beneficiaries of the programme, through their interactions with public administrations, and that understanding the functioning of the programme requires specific knowledge in the field. Interestingly, some **external factors** are affecting the effectiveness of ISA². For instance, the call for common standards and frameworks from public administrations is certainly contributing to the performance of ISA². By contrast, institutional complexity in the form of multiple layers of governance and differences between national public administrations in various Member States and between local public administrations within Member States creates coordination issues hampering actions aimed at establishing cross-border and cross-sectoral interoperability. These external factors need to be accounted for by the programme when selecting new actions or designing future editions of the programme.

The selection process for actions funded by ISA² is considered relatively **efficient** and fit for purpose. On average, 6 person-days at most are required to prepare and submit a proposal for actions already included in previous rolling work programme. In contrast, between 10 and 30 person-days are required to prepare a proposal for a new action. In financial terms, the effort required is relatively small when considering the funding resources allotted to successful proposals. Nevertheless, this process could be further improved by simplifying both the rolling work programme (e.g. making the template more flexible, setting up an electronic data input system) and launching thematic calls for actions, thus ensuring that the selection process is driven by objectives (with positive spill overs in terms of programme effectiveness). The heterogeneity of performance indicators makes it difficult to draw conclusions about the overall **cost-effectiveness** of the programme. In this respect, monitoring and evaluation reports should converge towards some common metrics in order to better measure the performances of all such actions. Examples of aligned indicators could include the number of EU public administrations using a solution, the number of public administrations participating in pilots, a consistent approach to reporting the number of downloads from the "Joinup" platform for solutions that can be downloaded, and the number of single users per solution. For those ISA² packages where it was possible to aggregate performance of different actions, the costs per end-user (e.g. business, citizens, etc.) have been estimated as very low. When it comes to **progress made in implementing the programme**, all packages are either on track or close to achieving the planned level of work.

Substantial synergies and limited overlaps among ISA² actions paint a positive picture of the **internal coherence** of the programme. In fact, multiple instances of internal reuse of ISA² solutions have been identified, with actions like "SEMIC" or "Joinup" playing a pivotal role in the system. At the same time, some actions such as "EUSurvey" and "European Citizens' Initiative and European Parliament Election" tend to be less interconnected, as they are mainly aimed at addressing the needs of final users, including

businesses and citizens. When it comes to **external coherence** with other EU programmes operating in similar fields, strong synergies are identified between ISA² and CEF. In contrast, of the EU programmes that interact with ISA², the ESF tends to be the least synergistic. Some overlaps between specific solutions under ISA² and CEF have been perceived (e.g. "TESTA" and "e-Delivery") and could be addressed by better delineating the scope of each solution. More generally, the identified overlaps with e.g. Horizon 2020-funded projects or IT systems developed using ERDF funds could be reduced by improving cross-programme cooperation. Synergies exist also between ISA² and other broader EU initiatives or policies, such as the Single Digital Gateway, the Digital Single Market Strategy, the eGovernment Action Plan 2010-2020, the Tallinn Declaration on eGovernment, and the Rolling Plan for ICT standardisation. In particular, it is worth noting that both the eGovernment Action Plan and the Tallinn Declaration emphasise the principles of "citizen-centricity" and "interoperability-by-default", thus reinforcing synergies with a programme like ISA² and contributing to enhancing the general interoperability landscape. Yet when it comes to standardisation, **feedback from the Evaluation Team's technical experts** suggests that potential obstacles may arise with regard to the intellectual property rights policy for CEN/CENELEC standards; such obstacles need to be removed before the standardisation system can be fully engaged. Synergies have also been found between ISA² and the OECD Digital Government Initiative, although the latter may not necessarily foster cross-border interoperability, as it encourages countries to adopt standards and solutions designed to increase interoperability, though it does not define a determined path for doing so.

The **EU added value** of the programme is significant. In the absence of ISA², national and/or sub-national interventions would not be able to achieve the general and specific objectives in the field of interoperability that the programme is targeting. The level of coordination ensured by ISA² is crucial in promoting and enhancing the overall interoperability among European public administrations. In addition, ISA² generates strong **economies of scale**, thus potentially achieving its objectives at a lower cost than any comparable national or sub-national initiatives. Interestingly, in the absence of an EU level programme, national or sub-national interventions would still be able to develop a more effective, simplified and user-friendly e-administration at the national, regional and local levels. This is the specific objective where the ISA² programme appears to be less effective, thus suggesting some complementarities between EU and national initiatives. In this respect, while national initiatives cannot achieve the objectives pursued by ISA², they are still very important in facilitating the performance of the programme by increasing the capacity for the take-up of ISA² solutions.

It is apparent that ISA² has contributed to enhancing **cross-border interoperability** in the EU. For instance, it raises awareness about interoperability across EU Member States and helps put the topic on national agendas. It also brings people together, creating networks and facilitating exchanges between Member States in the field of interoperability. In this respect, multilingualism is another important feature of the programme, as it allows the development of contacts with local authorities and the promotion of existing tools to stakeholders at the national and subnational levels, thus promoting a pan-European approach to interoperability. Multilingualism could, however, be further enhanced by providing more information about ISA² in different EU official languages, including on the ISA² website, which currently is only available in English. ISA² has also contributed to the **advancement of common EU policies**. For instance, it plays a central role in the implementation of the EIF and supports the establishment of the Digital Single Market. Finally, the programme contributes to the objective of advancing common shared policies within EU as stated in the Tallinn Declaration.

With regard to the **utility** criterion, ISA² solutions have contributed so far to addressing the original needs and problems summarised in the intervention logic of the programme. In the same vein, ISA² performs quite well when it comes to **user satisfaction**. As the programme is ongoing, it is expected that the take-up of the programme's solutions will rise, thus improving the way solutions meet user needs and, in turn, increasing overall user satisfaction. Whereas some of the new needs and problems experienced by the consulted stakeholders are addressed by the programme, others fall outside the current scope of ISA². In this context, a number of **measures** have been suggested to increase the utility of the programme: i) placing more emphasis on sharing best practices and providing support to users; ii) improving the quality of existing solutions by better considering user needs; iii) strengthening the promotion of ISA² solutions at the Member State level as well as among specific groups of professionals; iv) involving users also in the design phase of the solutions and establishing a co-creation process; and iv) ensuring the commitment of Member States to using ISA² solutions. While the first three measures could be at least partially implemented in the current edition of the programme, the fourth one may be tested when preparing the 2020 rolling work programme. A longer-term strategy may be required to enhance Member States' commitment to interoperability of digital public services.

When it comes to the programme's **sustainability**, the findings of the assessment are mixed, as this dimension depends on the specific features of each funded action. Overall, consulted stakeholders have a positive view of the sustainability of results achieved so far and are confident that the progress made in the field of interoperability will not be undone. However, certain issues may arise when considering specific solutions. In particular, operations and maintenance costs and the technical and operational support needed for some ISA² solutions are likely to have a negative impact on their ability to deliver results if the programme were to end. Additional obstacles to the sustainability of the programme include: i) lack of development support for existing solutions; ii) lack of coordination between national administrations, especially when they attempt to develop new solutions and maintain the existing ones; iii) limited dissemination and communication on the interoperability of digital public services, thus limiting the number of potential users. Currently users have access to ISA² solutions free of charge. **Introducing a fee** in order to gain access to ISA² solutions may lead users to search for other free of charge solutions, except for the more mature solutions. In addition, charging a fee for ISA² solutions would put Member States in the position of having to apply national public procurement rules; therefore, there would be no guarantee that they will be able to purchase ISA² solutions rather than competing solutions provided by private companies. On a more general note, it is confirmed that the ISA² programme plays a crucial role in **enhancing the interoperability landscape in the Union**. In fact, should ISA² (and any similar EU initiative) be terminated, the ICT-based modernisation of the public sector in Europe and the possibility to address the needs of businesses and citizens via improved interoperability of European public administrations would most likely be jeopardised.

Against this background and in light of the main limitations affecting this Assignment, future evaluations of ISA² and subsequent programmes in the field of interoperability could be facilitated by ensuring that all users of ISA² are requested to provide their consent to be contacted by Commission's staff and contractors for evaluation purposes.

Table 11 Overview of recommendations and expected timeline for implementation

Nr	Recommendation	Expected timeline
Relevance		
1	Ensure more collaboration and exchanges with regional and local administrations	Short term
2	Improve the sharing of best practices among public administrations	Short term
3	Perform studies focused on the impacts of new ICT developments (blockchain, self-sovereign identities etc.)	Short to medium term
4	Ensure that that interoperability of digital public services progressively becomes a priority for all EU Member States and that the priorities set are followed up	Long term
5	Design a more binding legal framework for interoperability, which could take the form of conditionalities related to interoperability or the use of the European Semester process to further the modernisation of public administrations	Long term
Effectiveness		
6	Both the assessment of the programme's achievements and their promotion could benefit from studies aiming to quantify the impact of interoperability solutions on the efficiency and productivity of public administrations.	Short to medium term
Efficiency		
7	Improve the selection process for actions funded by ISA ² by simplifying both the rolling work programme (e.g. making the template more flexible, setting up an electronic data input system) and launching thematic calls for actions, thus ensuring that the selection process is driven by objectives.	Short to medium term
8	Monitoring and evaluation reports should converge towards some common metrics in order to better measure the performances of all such actions. Examples of aligned indicators could include the number of EU public administrations using a solution, the number of public administrations participating in pilots, a consistent approach to reporting the number of downloads from the "Joinup" platform for solutions that can be downloaded, and the number of single users per solution.	Medium term
Coherence		
9	Enhance the synergies between ISA ² and CEF by clarifying the scope of each solution to users.	Short term
10	Assess the potential obstacles to ISA ² technical specifications that may arise with regard to the intellectual property rights policy for CEN/CENELEC standards	Short to medium term
EU added value		
11	Further enhance the focus on multilingualism by providing more information about ISA ² in different EU official languages, including on the ISA ² website, which currently is only available in English.	Short to medium term
Utility		
12	Place more emphasis on sharing best practices and providing support to users	Short term
13	Further improve the quality of existing solutions by better considering user needs	Short term
14	Strengthen the promotion of ISA ² solutions at the Member State level as well as among specific groups of professionals	Short to medium term
15	Involve users also in the design phase of the solutions and establishing a co-creation process	Medium term

16	Ensure the Member State commitment to using ISA ² solutions	Long term
General		
17	Ensure that all users of ISA ² are requested to provide their consent to be contacted by Commission's staff and contractors for evaluation purposes.	Short term

Source: Authors' own elaboration.

ANNEXES

ANNEX A – CONSULTATION ACTIVITIES

SECTION 1: Consultation Strategy

This Annex details the consultation strategy applied in the context of this Assignment. More specifically, it summarises the following items:

- Background information;
- Objectives and scope;
- Identification and mapping of stakeholders;
- Selection of consultation activities and their accessibility;
- Consultation website and communication activities.

Table A - 1 Background

Title:	Interim evaluation of the programme on interoperability solutions for administrations, business and citizens (ISA²)
Background information:	<p>ISA² (Interoperability Solutions for European Public Administrations, Businesses and Citizens) is an EU spending programme which supports 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.</p> <p>By identifying, creating and facilitating the reuse of interoperability solutions, ISA² aims at promoting a holistic approach to interoperability¹⁰⁰ in the European Union and thus – as a key enabler – it supports the implementation of various Union policies and activities. ISA² is also the principal instrument to implement the revised European Interoperability Framework (EIF) and its annex, the Interoperability Action Plan.</p> <p>The primary stakeholders of the programme are the European public administrations at Union, national and regional levels. The circle of affected stakeholders is however much broader, as shown in the section "Identification and mapping of stakeholders" below.</p> <p>ISA² is opened to EU Member States, other countries of the European Economic Area and Candidate Countries. In addition to the 28 EU Member States, three other countries take part in the programme: Iceland, Norway (since 2016) and Montenegro (since 2018). The programme also encourages cooperation with other third countries and with international organisations or bodies.</p> <p>The ISA² programme has a budget of € 130.9 million and runs for five years from 1 January 2016 until 31 December 2020. It has been established by the 'ISA² Decision': Decision (EU) 2015/2240 of the European Parliament and of the Council. According to Article 13(3) of this decision, the Commission shall carry out an interim evaluation of the ISA² programme by 30 September 2019. This interim evaluation was announced by the Commission on 29 May 2018 through this evaluation roadmap.</p>

¹⁰⁰ 'Interoperability' means the ability of diverse organisations to interact towards mutually beneficial and agreed common goals, involving 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. [Source: Article 2(1) of the [ISA² Decision](#).]

Table A - 2 Objectives and scope

Objectives :	<p>The evaluation process entails a number of consultation activities in order to:</p> <ul style="list-style-type: none"> • Collect views and opinions on seven evaluation criteria: <ul style="list-style-type: none"> ○ Relevance, i.e. the alignment between the objectives of the programme and the current needs and problems experienced by stakeholders; ○ Effectiveness, i.e. the extent to which the programme has achieved its objectives; ○ Efficiency, i.e. the extent to which the programme’s objectives are achieved at a minimum cost. ○ Coherence, i.e. the alignment between the programme and comparable EU initiatives as well as the overall EU policy framework; ○ EU added value, i.e. the additional impacts generated by the programme, as opposed to leaving the subject matter in the hands of Member States; ○ Utility, i.e. the extent to which the programme meets stakeholders’ needs; ○ Sustainability, i.e. the likelihood that the programme’s results will last beyond its completion. • Identifying areas of potential improvement and devising policy recommendations to improve the functioning of the programme and bring more value to its stakeholders. 																																																																															
Scope:	<p>For each consultation activity, the following tables present the targeted stakeholder groups and the addressed evaluation criteria.¹⁰¹</p> <p>Consultation activity: In-depth interviews</p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th style="width: 40%;"></th> <th style="width: 10%;">Relevance</th> <th style="width: 10%;">Effectiveness</th> <th style="width: 10%;">Efficiency</th> <th style="width: 10%;">Coherence</th> <th style="width: 10%;">EU-added value</th> <th style="width: 10%;">Utility</th> <th style="width: 10%;">Sustainability</th> </tr> </thead> <tbody> <tr> <td>Programme governance</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> </tr> <tr> <td>Action owners</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> </tr> <tr> <td>Solution users – EC</td> <td>✓</td> <td>✓</td> <td>✗</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> </tr> <tr> <td>Solution users – Member States</td> <td>✓</td> <td>✓</td> <td>✗</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> </tr> <tr> <td>Stakeholders responsible for linked EU policies/ initiatives</td> <td>✓</td> <td>✗</td> <td>✗</td> <td>✓</td> <td>✗</td> <td>✓</td> <td>✗</td> </tr> <tr> <td>Experts</td> <td>✗</td> <td>✗</td> <td>✗</td> <td>✗</td> <td>✗</td> <td>✗</td> <td>✗</td> </tr> <tr> <td>Stakeholders related to linked EU policies/ initiatives</td> <td>✓</td> <td>✓</td> <td>✗</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> </tr> <tr> <td>Indirect beneficiaries and wider public</td> <td>✗</td> <td>✗</td> <td>✗</td> <td>✗</td> <td>✗</td> <td>✗</td> <td>✗</td> </tr> </tbody> </table>									Relevance	Effectiveness	Efficiency	Coherence	EU-added value	Utility	Sustainability	Programme governance	✓	✓	✓	✓	✓	✓	✓	Action owners	✓	✓	✓	✓	✓	✓	✓	Solution users – EC	✓	✓	✗	✓	✓	✓	✓	Solution users – Member States	✓	✓	✗	✓	✓	✓	✓	Stakeholders responsible for linked EU policies/ initiatives	✓	✗	✗	✓	✗	✓	✗	Experts	✗	✗	✗	✗	✗	✗	✗	Stakeholders related to linked EU policies/ initiatives	✓	✓	✗	✓	✓	✓	✓	Indirect beneficiaries and wider public	✗	✗	✗	✗	✗	✗	✗
	Relevance	Effectiveness	Efficiency	Coherence	EU-added value	Utility	Sustainability																																																																									
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Indirect beneficiaries and wider public	✗	✗	✗	✗	✗	✗	✗																																																																									

¹⁰¹ The Evaluation Team also includes several experts in interoperability who provided an expert assessment of the programme.

Consultation activity: Targeted online survey

	Relevance	Effectiveness	Efficiency	Coherence	EU-added value	Utility	Sustainability
Programme governance	✓	✓	✓	✓	✓	✓	✓
Action owners	✓	✓	✓	✓	✓	✓	✓
Solution users – EC	✓	✓	x	✓	✓	✓	✓
Solution users – Member States	✓	✓	x	✓	✓	✓	✓
Stakeholders responsible for linked EU policies/ initiatives	✓	x	x	✓	x	✓	x
Experts	x	x	x	x	x	x	x
Standardisation organisations	✓	✓	x	✓	✓	✓	✓
Indirect beneficiaries and wider public	x	x	x	x	x	x	x

Consultation activity: Public consultation

	Relevance	Effectiveness	Efficiency	Coherence	EU-added value	Utility	Sustainability
Programme governance	x	x	x	x	x	x	x
Action owners	x	x	x	x	x	x	x
Solution users – EC	x	x	x	x	x	x	x
Solution users – Member States	x	x	x	x	x	x	x
Stakeholders responsible for linked EU policies/ initiatives	x	x	x	x	x	x	x
Experts	✓	✓	x	✓	✓	✓	x
Standardisation organisations	x	x	x	x	x	x	x
Indirect beneficiaries and wider public	✓	✓	x	✓	✓	✓	x

Consultation activity: Short questionnaire for the ISA² Mid-Term Conference

	Relevance	Effectiveness	Efficiency	Coherence	EU-added value	Utility	Sustainability
Programme governance	x	x	x	x	x	x	x
Action owners	x	x	x	x	x	x	x
Solution users – EC	x	x	x	x	x	x	x
Solution users – Member States	x	x	x	x	x	x	x
Stakeholders responsible for linked EU policies/ initiatives	x	x	x	x	x	x	x
Experts	✓	✓	x	✓	✓	✓	x
Standardisation organisations	x	x	x	x	x	x	x
Indirect beneficiaries and wider public	✓	✓	x	✓	✓	✓	x

Consultation activity: Kick-off workshop

The workshop was open to the public, registration was required. It aimed to present the rationale, objectives and scope of the interim evaluation and to discuss the role that stakeholders can play in contributing to the study and improving the overall quality of the programme.

Table A - 3 Stakeholders

Stakeholders:	<p>The ISA² programme aims at making public administrations more interoperable, thus enabling them to provide more user-centric digital public solutions to businesses and citizens. Consequently, besides the European public administrations, the programme may have positive impacts on citizens and businesses as well. Moreover, as the interoperability solutions, developed by ISA² and by its predecessor programme ISA, are made available for use free of charge they can reach a broader audience – like researchers, ICT communities or practitioners. Relevant stakeholders’ categories are outlined in the following table.</p>	
	Category	Stakeholder
	<p>Programme governance Commission and Member States representatives who are directly involved in the governance of ISA² and thus possess a comprehensive knowledge of the programme in its entirety</p>	<ul style="list-style-type: none"> • DIGIT.D2 • Members of the ISSG • Members of the ISA² Committee • Members of ISA² Coordination Group
	<p>Action Owners Commission representatives in charge of specific actions defined under ISA²</p>	<ul style="list-style-type: none"> • DG DIGIT • Other Commission services in charge of ISA² actions
	<p>Solution Users – European Commission Commission representatives who are using/reusing ISA² solutions</p>	<ul style="list-style-type: none"> • Commission services using/reusing ISA² solutions • Commission services that are potential users of ISA² solutions
	<p>Solution Users - Member States Member States representatives who are using/reusing ISA² solutions</p>	<ul style="list-style-type: none"> • National, regional, and local public administrations using/reusing ISA² solutions • National, regional and local public administrations that are potential users of ISA² solutions • Members of the National Interoperability Framework Observatory
	<p>Stakeholders responsible for linked EU policies/initiatives Commission representatives who are responsible for expert groups linked to ISA² or are in charge of EU initiatives potentially linked to ISA²</p>	<ul style="list-style-type: none"> • Commission services coordinating expert groups on topics related to the ISA² programme (e.g. eGovernment, eInvoicing, etc.) • Commission services in charge of other EU initiatives with potential links to the ISA² programme (e.g. CEF, SRSP, etc.) • Corporate IT Governance of the European Commission • Member States’ Chief Information Officers
<p>Experts Experts in IT and eGovernment¹⁰²</p>	<ul style="list-style-type: none"> • Academia and research institutes • eGovernment expert groups • IT experts and practitioners • International institutions (e.g. OECD, UNPAN) 	

¹⁰² The Evaluation Team includes four technical experts in the field of interoperability who performed an expert assessment of the programme.

	<p>Standardisation organisations Standardisation organisations, as a stakeholder group, are relevant in what concerns the uptake of programme outputs as standards</p>	<ul style="list-style-type: none"> • Examples of standardisation organisations: CEN, ETSI, ISO, OGC, W3C, OASIS • DG GROW.B3 Standards for growth
	<p>Indirect beneficiaries and wider public Other beneficiaries of the programme or parties who are involved in or affected by the ISA² programme in any way</p>	<ul style="list-style-type: none"> • Other EU, local and regional administrations who are involved in, or affected by, the ISA² programme in any way. • Administrations from other countries (candidate countries, EEA countries, third countries) • Chambers of Commerce • Industry groups • IT industry representatives (especially GovTech sector) • Public affairs consultancies • Private businesses • Consumer and citizen's groups • NGOs • Citizens

Table A - 4 Consultation activities and their accessibility

Selection of consultation activities & their accessibility	
Consultation activities:	<p>Given the scope and the composition of the stakeholder base, the following activities are included in the consultation process. All consultation activities took place between Q4 2018 and Q1 2019.</p> <ul style="list-style-type: none"> • In-depth interviews with selected stakeholders from the following categories identified above: programme governance, action owners, solution users (from both the European Commission and Member States), stakeholders responsible for linked EU policies/initiatives and standardisation organisations. • An online survey targeted to all stakeholders belonging to the following categories identified above: programme governance, action owners, solution users (from both the European Commission and Member States), stakeholders responsible for linked EU policies/initiatives and standardisation organisations. • A short questionnaire administered during the ISA² Mid-Term Conference to all stakeholders participating in the conference and belonging to the following categories identified above: experts, indirect beneficiaries and the wider public. • A half-day 'Kick-off' workshop, open to all interested stakeholders. • A 12-week long, Internet-based public consultation, which collected feedback from stakeholders belonging to the following categories identified above: experts, indirect beneficiaries and the wider public.
Accessibility:	<ul style="list-style-type: none"> • In-depth interviews were conducted in English, either face-to-face (in Brussels) or via teleconference, based on a written questionnaire that was provided to interviewees in advance. Some interviewees were randomly selected from those who participated in the targeted online survey or public consultation and who confirmed their availability for a follow-up interview. • The targeted online survey was accessible on the EUSurvey platform via a dedicated link. The survey was drafted in English and only answers in English were accepted. However, guidance to complete the survey was available in other EU official languages. The link to the survey was distributed as widely as possible to the targeted categories of stakeholders. On the consultation webpage, a call for interest was published in advance to allow stakeholders to express their interest in being consulted through the targeted online survey. • The short questionnaire was distributed at the ISA² Mid-Term Conference, held on 29 November 2018 in Brussels. The questionnaire was drafted in English and only answers in English were accepted. However, guidance to complete the survey was available in other EU official languages. • The 'Kick-off' workshop was held in Brussels in the morning of 30 November 2018. Participation in the event was open to the public and free of charge; registration was required. Remote participation was arranged upon request. • The public consultation was accessible on the Commission's central public consultations page, where replies can be made in 23 EU languages. It was open to everyone. The public consultation questionnaires were made accessible to visually impaired respondents. The public consultation questionnaires were written in plain language and translated from English into 22 EU languages (Gaelic excluded). All additional documentation was provided in English. Written contributions in other EU official languages were accepted and treated in the same manner as the ones written in English, and this was clearly indicated on the consultation webpage. The public consultation questionnaire contained at the beginning a statement explaining that answers in the 23 EU languages were accepted on equal terms.

Table A - 5 Consultation website and communication activities

The consultations activities were promoted at a dedicated consultation page under the [ISA² website](#) and through the programme's social media accounts on Twitter and LinkedIn. The very same channels are used to share the results of the consultation activities with the public.

The public consultation was accessible on the [Consultations site of Europa](#). At the end of the consultation process, a synopsis report of the consultation activities was prepared, summarising the outcome of the consultation. This report is available in English.

SECTION 2: Synopsis report of the consultation activities

Background

The consultation activities aimed to collect stakeholders' views and opinions, thus contributing to the evidence base needed to achieve the two main objectives of the interim evaluation of the ISA² programme:

- **Evaluating the implementation of the programme** by considering seven evaluation criteria:
 - **Relevance** – the alignment between the objectives of the programme 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 Member States;
 - **Utility** – the extent to which the programme meets stakeholders' needs; and
 - **Sustainability** – the likelihood that the programme's results will last beyond its completion.
- **Identifying areas of potential improvement** and devising recommendations to improve the functioning of the programme and **bring more value to its stakeholders**.

Types of consultation activities conducted

Before the interim evaluation was launched, one stakeholder provided feedback on the ISA² evaluation roadmap¹⁰³, noting that the "initiative is good, well planned, and funded", but also that "it could have benefitted from more advertising".¹⁰⁴ The input was received in June 2018.

During the evaluation process, a mix of consultation activities was chosen in order to reach out to a variety of stakeholders of the programme. To this end, seven stakeholder groups were identified:

- **Programme governance:** Commission representatives from the Interoperability unit of DIGIT and members of the ISA² Committee and Coordination Group;
- **Action owners:** Commission representatives in charge of specific actions defined under ISA²;
- **Solution users:** Commission and Member States representatives who are using/reusing ISA² solutions;
- **Stakeholders responsible for linked EU policies / initiatives:** Commission representatives who are in charge of EU initiatives linked to ISA², and who are thus in a position to provide feedback, *inter alia*, on the external coherence of the programme;

¹⁰³ For further details, please see: https://ec.europa.eu/info/law/better-regulation/initiatives/ares-2018-2768206_en

¹⁰⁴ For further details, please see: https://ec.europa.eu/info/law/better-regulation/initiatives/ares-2018-2768206/feedback_en?p_id=239250

- **Experts:** experts in IT and eGovernment able to perform an expert assessment of the programme and of the issues and developments in the field of interoperability;
- **Standardisation organisations:** Representatives of standardisation organisations who can provide feedback on the ISA² activities related to standards and technical specifications; and
- **Indirect beneficiaries and wider public:** Other beneficiaries of the programme or parties who are involved in or affected by the ISA² programme in any way, including the private sector and citizens.

Between 29 November 2018 and 1 March 2019, five consultation activities were conducted:

- **Targeted online surveys** (14.12.2018 – 23.01.2019)

Five online surveys were made available via EUSurvey, targeting the following stakeholder groups: programme governance, action owners, solution users, stakeholders responsible for linked EU policies/initiatives, and standardisation organisations.

The online surveys were initially set to close on 18 January 2019, but the deadline was extended to 23 January in order to accommodate last-minute requests received from stakeholders interested in participating in this consultation activity.

- **Targeted in-depth interviews** (12.12.2018 – 24.01.2019)

Interviews were conducted with stakeholders from the five groups targeted by the online surveys: programme governance, action owners, solution users, stakeholders responsible for linked EU policies/initiatives, and a standardisation expert. The interviews, based on questionnaires very similar to those used for the online surveys, facilitated the collection of additional qualitative data to complement data collected via such surveys.

The in-depth interviews were initially set to conclude on 18 January 2019. However, as some stakeholders were not available in the timeframe originally set, additional interviews were conducted up until 24 January 2019 to accommodate the different schedules of stakeholders.

- **Public consultation** (07.12.2018 – 01.03.2019)¹⁰⁵

This activity gave all relevant parties, including primarily citizens, businesses, stakeholders associations and public administrations, the opportunity to express their opinions and views on the achievements of the ISA² programme. Experts were able to participate in the public consultation and report their level of expertise in the programme and in interoperability of digital public services. The public consultation was available in 23 EU languages on EUSurvey.¹⁰⁶

¹⁰⁵ For further details, please see: https://ec.europa.eu/info/law/better-regulation/initiatives/ares-2018-2768206/public-consultation_en

¹⁰⁶ The public consultation yielded a relatively low response rate due to two main reasons. First, ISA² is a technical programme producing solutions addressed mainly to European public administrations; therefore, the direct contact between the average citizen/business and the programme is limited. Second, stakeholder groups that are in direct contact with the programme (e.g. solution users, action owners, etc.) were consulted via targeted online surveys and interviews.

- **ISA² Mid-Term Conference short questionnaire** (29 – 30.11.2018)

A short questionnaire based on the public consultation questionnaire was distributed during the ISA² Mid-Term Conference (29 November 2018)¹⁰⁷ and during the Kick-off workshop (30 November 2018) of the interim evaluation.

- **Kick-off workshop**

The workshop was held on 30 November 2018 at CEPS and aimed to present the interim evaluation and the planned consultation activities to the different stakeholder groups of the ISA² programme.¹⁰⁸

The questionnaires used throughout the consultation activities were mainly based on Likert scale questions. Respondents were thus asked to provide their feedback by referring to a scale from (1) to (5) or (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 high extent; 5 - to the fullest extent; or
- 1 – definitely would not; 2 – probably would not; 3 – probably would; 4 – definitely would.

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

With **a total of 129 respondents**, the consultation activities reached all stakeholders from the following groups: programme governance, action owners, solution users, stakeholders responsible for linked EU policies / initiatives, standardisation organisations and the wider public (Table A2 - 1). The results of the public and targeted consultation activities have been combined and analysed jointly in the final evaluation report.

Table A2 - 1 Number of consulted stakeholders by consultation activity and stakeholder category

Stakeholder category	In-depth interview	Online survey	Public consultation	Short questionnaire	TOTAL
Programme Governance	4	15	-	-	19
Action owners	3	20	-	-	23
Solution users	6	37	-	-	43
Stakeholders related to linked EU policies / programmes / initiatives	6	4	-	-	10
Standardisation organisations	1	4	-	-	5
Wider public	-	-	14	15	1
TOTAL	20	80	14	15	129

Note: Four technical experts performed an independent assessment of the programme. In addition, most of the respondents from the consulted stakeholder groups are experts of interoperability and of ISA², as shown in

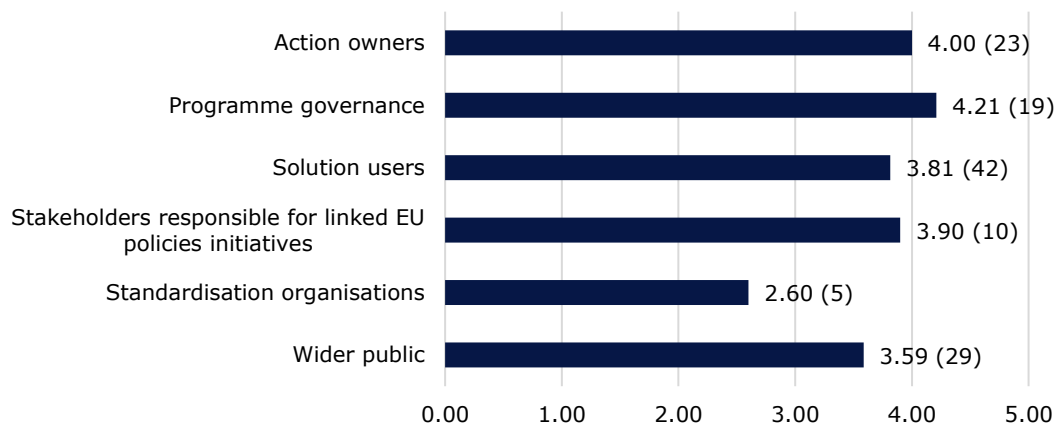
*Figure A2 - 1 and Figure A2 - 2.
Source: Authors' own elaboration.*

¹⁰⁷ For further details, please see: https://ec.europa.eu/isa2/isa2conf18_en

¹⁰⁸ For further details, please see: <https://www.ceps.eu/events/interim-evaluation-isa2-programme-final-workshop> and https://ec.europa.eu/isa2/events/isa%C2%B2-interim-evaluation-kick-workshop_en

The consulted stakeholders reported **high levels of expertise** both when it comes to the interoperability of public services (Figure A2 - 1) as well as to the ISA² programme as a whole (Figure A2 - 2). A slight exception appears in the case of solution users, who reported a relatively more limited knowledge of the programme in its entirety in comparison to the other stakeholder groups consulted. Even so, most respondents are familiar with at least five packages out of the total of nine ISA² packages of actions (Figure A2 - 3). In addition, the Evaluation Team included a **team of technical experts** who performed an expert assessment of the programme; their conclusions are presented throughout the final evaluation report.

Figure A2 - 1 Knowledge of digital public services and interoperability (average score of answers, number of respondents)

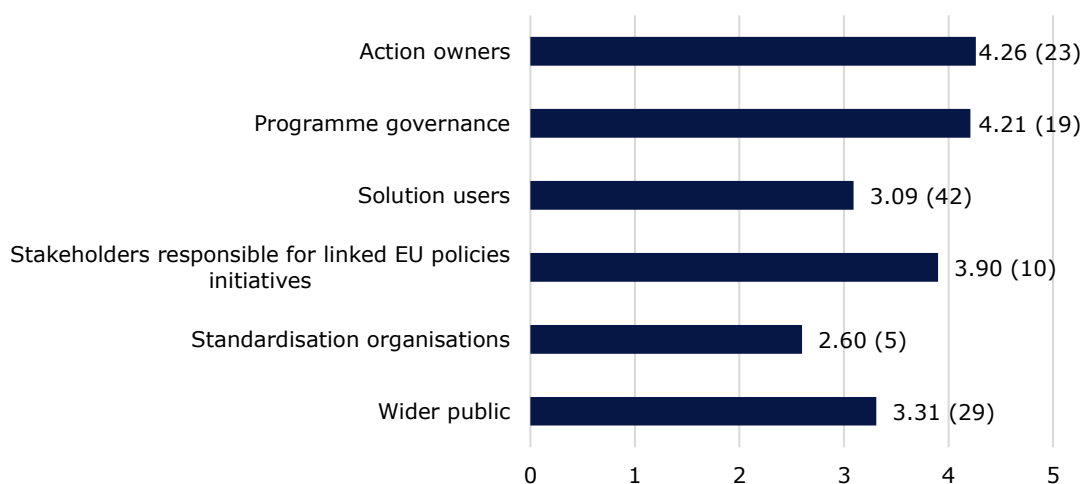


Score: (1) not at all; (2) to a limited extent; (3) to some extent; (4) to a high extent; or (5) to the fullest extent.

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

Source: Authors' elaboration on data collected via consultation activities.

Figure A2 - 2 Knowledge of ISA² (average score of answers, number of respondents)

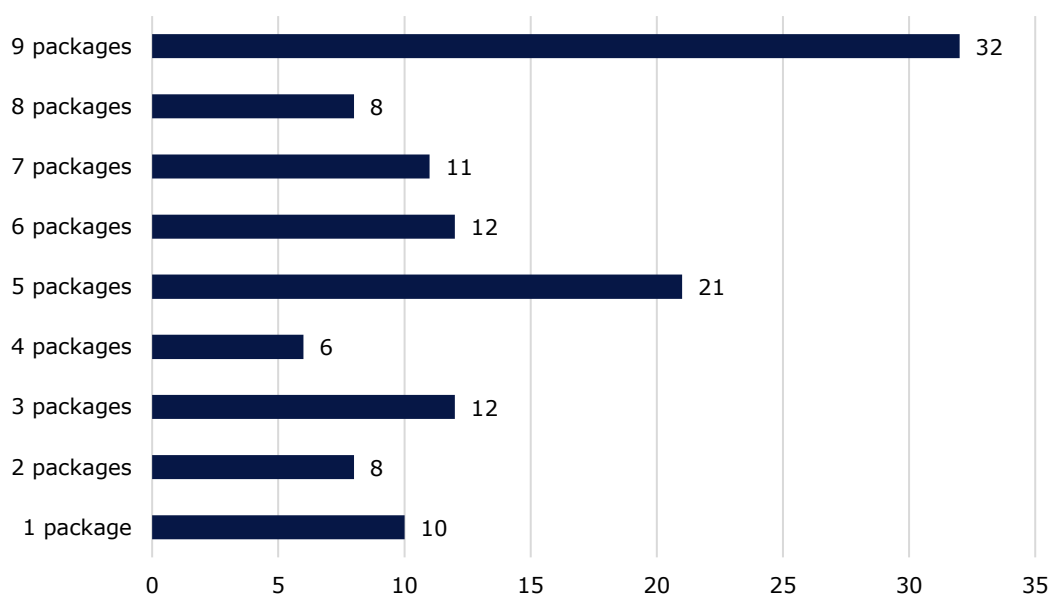


Score: (1) not at all; (2) to a limited extent; (3) to some extent; (4) to a high extent; or (5) to the fullest extent.

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

Source: Authors' elaboration on data collected via consultation activities.

Figure A2 - 3 Knowledge of ISA² action packages (number of respondents familiar with a given number of packages)¹⁰⁹



Source: Authors' elaboration on data collected via consultation activities.

In terms of geographic distribution, solution users from different Member States provided their input via the in-depth interviews and the online surveys:

- At the EU level, solution users who responded to the consultation activities work in EU institutions located in different EU countries: Belgium, the Czech Republic, France, Hungary, Italy, Luxembourg, Poland, Portugal, and Sweden;
- At the national and regional levels, solution users (including respondents who answered as individuals) who provided their feedback come from the following 13 countries: Belgium, Bulgaria, Croatia, the Czech Republic, France, Germany, Greece, Hungary, Italy, Luxembourg, the Netherlands, Portugal, and Sweden.

During the public consultation, feedback was received from individuals residing in **six Member States** (Belgium, France, Germany, Greece, Spain, and the United Kingdom) and from public administrations from **three Member States** (the Czech Republic, Greece, and Spain).

Results

The consultation activities revealed a **general consensus among the different stakeholder groups** consulted and confirmed that **ISA² performs well in all seven evaluation criteria under investigation**. The feedback received during the consultation activities is summarised in what follows.

Relevance

The respondents to the consultation activities emphasised that **ISA² is fully relevant with respect to the evolving needs and problems in the field of interoperability**.

¹⁰⁹ 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.

The majority of respondents indicate that: i) the **needs and problems originally addressed by the programme** are still experienced by European public administrations, businesses and/or citizens; and ii) by achieving its general objective, ISA² can address the needs and problems identified at the time the programme was established.

Respondents pointed out that there are **other needs and problems currently experienced** by stakeholders in the field:

- The need for a more binding legal framework for interoperability and a more prescriptive approach to designing interoperable public services;
- The need to improve the way administrations communicate with one another;
- The need to share best practices;
- The resource constraints experienced by national and local public administrations;
- The different political priorities among Member States hindering a consistent approach to interoperability in the EU; and
- The limited awareness of ISA² and other initiatives related to interoperability, especially at the regional and local levels.

On average, respondents to the consultation activities believe that the programme, through its general objective, could **address these new needs and problems to some extent**, as some of the issues mentioned fall outside the scope of the programme.

Effectiveness

The results achieved so far by ISA² are aligned with the objectives of the programme according to the consulted stakeholders, in particular when it comes to:

- Developing, maintaining and promoting a holistic approach to interoperability in the Union; and
- Facilitating the reuse of interoperability solutions by European public administrations.

However, the achieved results still do not fully match the expected results, as most of the actions are ongoing and solutions are still being developed. For instance, respondents emphasised that relatively more could be done to achieve the expected result of improved efficiency and productivity of the European public administrations.

External factors could improve but also jeopardise the way in which the programme achieves its objectives and delivers its results. The great 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 Member States and local public administrations within Member States could lead to coordination issues hampering cross-border and cross-sectoral interoperability.

Efficiency

Respondents from the programme governance as well as action owners provided feedback regarding the efficiency of the process for selecting actions funded by ISA². The process is considered **relatively efficient** and **fit-for-purpose** by the respondents from the two stakeholder groups. However, there are some measures that could be taken to further streamline the selection process, such as:

- Simplifying the rolling work programme;
- Simplifying the overall process by launching thematic calls for actions.

In addition, respondents from the same groups also outlined the amount of **time they spent on preparing and submitting a proposal** for an action to be considered by the ISA² programme. On average, six person-days are required to renew a proposal for actions already included in previous rolling work programme. In contrast, between 10 and 30 person-days are required to prepare and submit a proposal for a new action.

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

ISA² actions are characterised by **substantial synergies among each other and limited overlaps**. During the consultation activities, respondents also provided examples of synergies to support their assessment. Examples mentioned include:

- Solutions developed under the "SEMIC" actions are reused by the "Catalogue of Services" and the "Access to Base Registries" actions.
- The "Re3gistry" solution, part of the "ELISE" action, is used to share the codes for the "Core Vocabularies", part of the "SEMIC" action.
- The solutions developed as part of the "e-TrustEx" actions are reused by the action "European Public Procurement Interoperability Initiative".

External coherence

When it comes to external coherence, respondents to the consultation activities identified the highest level of synergies between ISA² and **CEF**. In contrast, among the EU programmes interacting with ISA², the **ESF** tends to be the least synergistic. Respondents indicated that **Horizon 2020** (in particular the work related to the once-only principle) and the SRSP (through the support given to Member States to align and integrate with cross-border services) also have some synergies with ISA².

Respondents also pointed at synergies and overlaps with other EU initiatives such as ERDF, Corporate IT Governance and the Single Digital Gateway.

EU added value

The majority of respondents believe that national or sub-national interventions would not be able to achieve or would achieve only to a limited extent the general and specific objectives in the field of interoperability that ISA² is pursuing. The consulted stakeholders consider that **ISA² plays an important role in ensuring a level of coordination that enhances interoperability among European public administrations**.

In addition, respondents emphasised that ISA² is able to **achieve its objectives at a lower cost** than comparable national or sub-national initiatives. Respondents also believe that ISA² has contributed to **enhancing cross-border interoperability** in the EU. Recurrent examples mentioned by stakeholders are the work done in the field of semantic interoperability and the fact that ISA² raises the awareness about interoperability in the EU, without which little progress would be made in the field.

When it comes to the **advancement of common EU policies**, consulted stakeholders noted that ISA² plays a central role in the implementation of the EIF (including its 2017 revision) by abiding by its principles and tracking the implementation. In addition,

stakeholders emphasised that ISA² has also contributed to specific areas of a broader EU policy, namely the Digital Single Market.

Utility

Respondents in both EU and Member State public administrations confirm that the solutions developed or maintained by ISA² have **contributed to addressing the original needs and problems identified in the field of interoperability**. Respondents emphasised that while some of the new needs and problems experienced in the field are addressed by the solutions provided by ISA², others, such as the changing political priorities in the Member States, fall beyond the scope of the programme as it is currently defined.

The feedback received from respondents in terms of user satisfaction tends to be positive. Nevertheless, a number of measures were identified to increase the utility of the programme:

- Placing more emphasis on sharing best practices and providing support to users;
- Establishing a co-creation process with users;
- Improving the quality of existing solutions by better considering user needs;
- Ensuring the Member State commitment to use ISA² solutions; and
- Strengthening the promotion of ISA² solutions at the Member State level as well as among specific groups of professionals (e.g. standards development organisations).

Sustainability

Overall, consulted stakeholders have a **positive view of the sustainability of results** achieved so far. Nevertheless, while the global results of the programme are expected to last (as the progress made in the field of interoperability will not be lost), certain issues may arise when considering the specificities of different solutions and future steps towards enhanced interoperability. In fact, there are solutions requiring both **operations and maintenance costs** as well as **technical and operational support**, which would be unable to deliver further results if the programme were terminated. Additional obstacles to the sustainability of the programme include:

- Lack of development for existing solutions;
- Lack of coordination between European public administrations; and
- Limited dissemination and communication related to interoperability.

Further, **introducing a fee for users** in order to gain access to ISA² solutions is not considered a feasible solution in the event that funding would no longer be provided for the actions currently carried out by ISA². Finally, the vast majority of respondents, from all stakeholder groups, stressed that the **ICT-based modernisation of the public sector in Europe and the possibility to address the needs of businesses and citizens via improved interoperability of European public administrations** would be jeopardised, should ISA² be terminated without any similar EU programme being established in its place.

SECTION 3: Supporting evidence from consultation activities

This section summarises the results of the consultation activities and provides supporting evidence to answer the EQs that are spelled out in the Evaluation Framework (ANNEX D – EVALUATION FRAMEWORK).

During the evaluation process, various consultation activities were carried out in order to (i) collect views and opinions on the seven evaluation criteria¹¹⁰ and (ii) identify areas for potential improvement and devise policy recommendations to improve the functioning of the programme and bring more value to its stakeholders. To this end, seven stakeholder groups were identified:

- **Programme governance:** Commission representatives from the Interoperability unit of DIGIT and members of the ISA² Committee and Coordination Group;
- **Action owners:** Commission representatives in charge of specific actions defined under ISA²;
- **Solution users:** Commission and Member States representatives who are using/reusing ISA² solutions;
- **Stakeholders responsible for linked EU policies / initiatives:** Commission representatives who are in charge of EU initiatives linked to ISA²;
- **Experts:** experts in IT and eGovernment;
- **Standardisation organisations:** Representatives of standardisation organisations who can provide feedback on the ISA² activities related to standards and technical specifications;
- **Indirect beneficiaries and wider public:** Other beneficiaries of the programme or parties who are involved in or affected by the ISA² programme in any way, including the private sector and citizens.

Between 29 November 2018 and 1 March 2019, five consultation activities were performed:

- **Targeted online surveys:** Five online surveys were made available via EUSurvey, targeting the following stakeholder groups: programme governance, action owners, solution users, stakeholders responsible for linked EU policies/initiatives, and standardisation organisations.
- **Targeted in-depth interviews:** Interviews were conducted with stakeholders from the five groups targeted by the online surveys: programme governance, action owners, solution users, stakeholders responsible for linked EU policies/initiatives, and a standardisation expert. The interviews, based on questionnaires very similar to those used for the online surveys, facilitated the collection of additional qualitative data to complement data collected via such surveys.
- **Public consultation:** This activity gave all relevant parties, primarily citizens, businesses, stakeholders associations and public administrations, the opportunity to express their opinions and views on the achievements of the ISA² programme. The public consultation was available in 23 EU languages on EUSurvey.
- **ISA² Mid-Term Conference short questionnaire:** A short questionnaire based on the public consultation questionnaire was distributed during the ISA² Mid-Term Conference (29 November 2018) and during the Kick-off workshop (30 November 2018).

¹¹⁰ Relevance, effectiveness, efficiency, coherence, EU-added value, utility and sustainability.

- **Kick-off workshop:** The workshop aimed to present the interim evaluation and the planned consultation activities to the different stakeholder groups of the ISA² programme.

With a total of **129 respondents**, the consultation activities reached all stakeholders from the following groups: programme governance, action owners, solution users, stakeholders responsible for linked EU policies / initiatives, standardisation organisations and the wider public. The Evaluation Team included a team of experts who provided expert assessments which are mentioned throughout the analysis of the evaluation results in Part II.

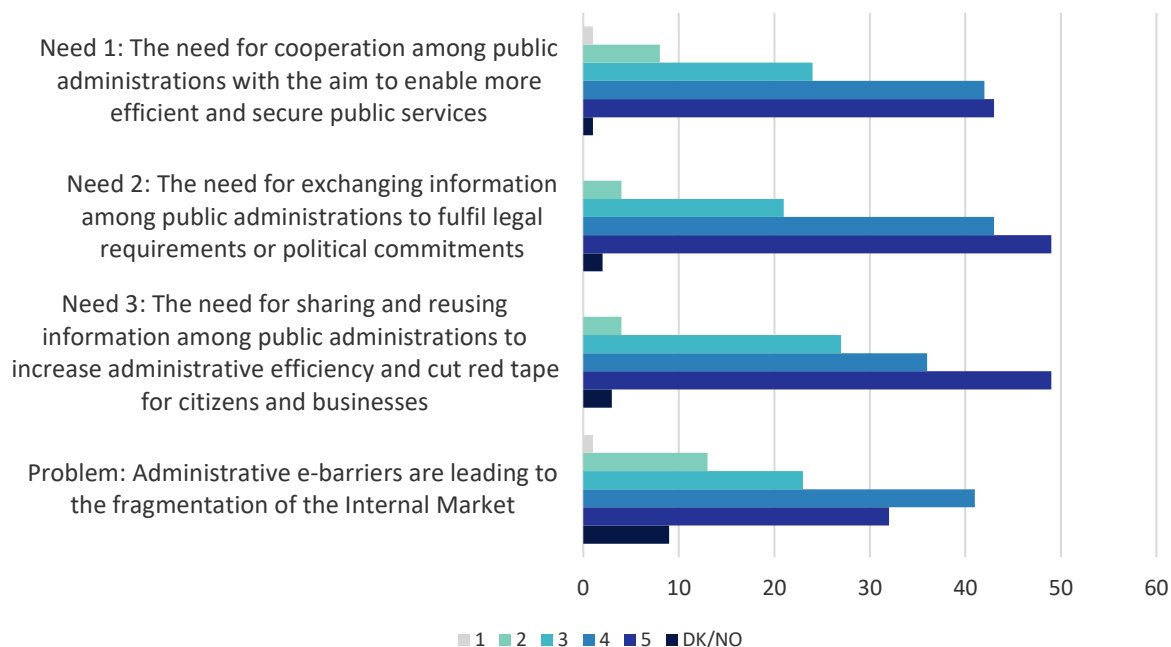
Further details on consulted stakeholders and consultation activities are presented in Chapter 3 Data, methods and limitations. The consultation strategy implemented in the context of this Assignment is detailed in this annex in SECTION 1: Consultation Strategy. In the following tables and figures, the **aggregated results** of the consultation activities are presented by evaluation criterion and question. More specifically, results are presented by showing:

- **Frequency distributions.** Frequency distributions complement the bar charts with averages that were presented in Part II. These charts show the distribution of answers for each of the six options per question, from (1) "not at all" to (5) "to the fullest extent", presenting also the respondents who answered (DK/NO) "don't know/no opinion". The chart thus provides the full picture of the total number of answers received.
- **Top-two Box/Bottom-two Box table.** Each frequency distribution chart is followed by a Top-two Box/Bottom-two Box table. The Top-two Box/Bottom-two Box approach is a survey analysis technique that summarises the positive and negative responses from a Likert scale survey by combining the highest two and lowest two responses of the scale to create a single number (in this case, the percentage of respondents who provided the two highest and two lowest responses). It simplifies the analysis and allows for a better comparison of the results. In addition, a colour scale from red to green provides a swift overview of the results. For the Top-two box, red is assigned to lower shares of respondents and green to higher shares of respondents. For the Bottom-two box approach the colour scale is reversed: red is assigned to higher shares of respondents and green to lower shares of respondents. In both cases, the intermediate colours (orange-yellow-light green) signal various intensities of the shares of respondents.

Relevance

- EQ.1: 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?

Figure EQ1 - 1 Extent to which needs and problems originally addressed by ISA² are currently experienced by European public administrations, businesses and/or citizens (total number of respondents)



Score: (1) not at all; (2) to a limited extent; (3) to some extent; (4) to a high extent; or (5) to the fullest extent; (DK/NO) don't know/no opinion.

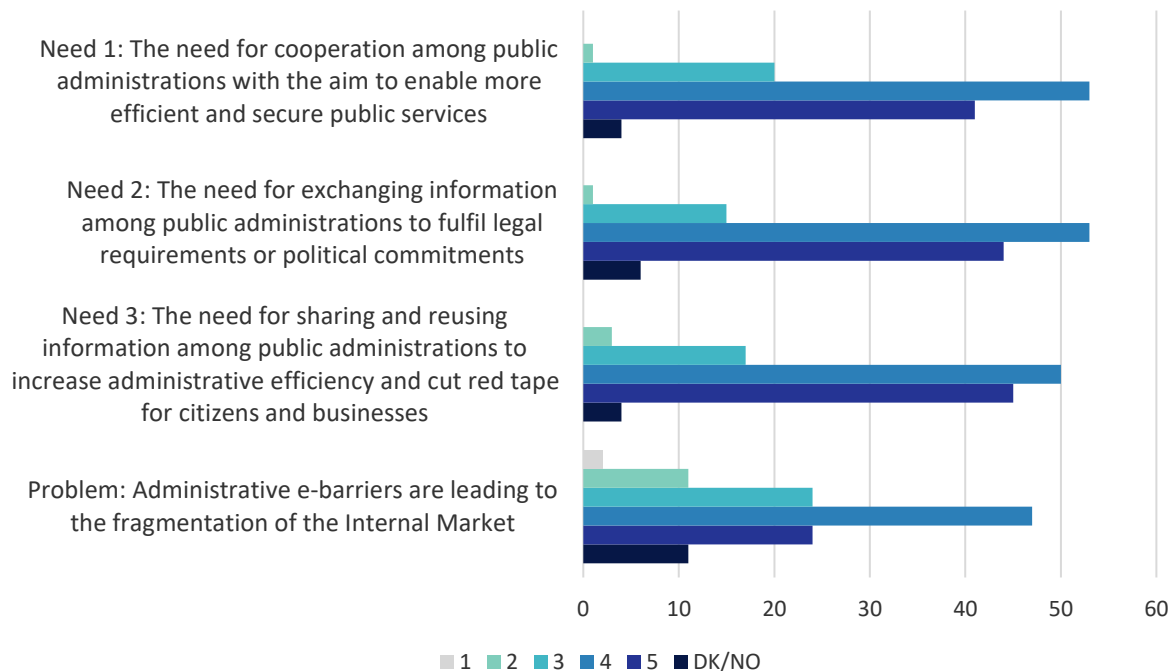
Source: Authors' elaboration on data collected via consultation activities.

Table EQ1 - 1 Extent to which European public administrations, businesses and/or citizens currently experience needs and problems originally addressed by ISA² (Top /Bottom 2 Box score)

Needs and problems	Need 1: The need for cooperation among public administrations with the aim to enable more efficient and secure public services		Need 2: The need for exchanging information among public administrations to fulfil legal requirements or political commitments		Need 3: The need for sharing and reusing information among public administrations to increase administrative efficiency and cut red tape for citizens and businesses		Problem: Administrative e-barriers are leading to the fragmentation of the Internal Market	
	Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom
Stakeholders								
Action owners	73.91%	4.35%	78.26%	0.00%	73.91%	0.00%	80.95%	4.76%
Programme governance	68.42%	5.26%	84.21%	0.00%	63.16%	5.26%	68.42%	10.53%
Solution users	78.57%	4.76%	78.57%	4.76%	76.19%	2.38%	58.97%	10.26%
Stakeholders responsible for linked EU policies initiatives	90.00%	10.00%	80.00%	10.00%	90.00%	0.00%	77.78%	11.11%
Standardisation organisations	20.00%	40.00%	100.00%	0.00%	75.00%	0.00%	75.00%	0.00%
Wider public	63.16%	10.53%	68.42%	5.26%	66.67%	11.11%	55.56%	33.33%
Total	72.03%	7.63%	78.63%	3.42%	73.28%	3.45%	66.36%	12.73%

Note: Top = To the fullest extent + to a high extent; Bottom = To a limited extent + not at all.
 Source: Authors' elaboration on data collected via consultation activities.

Figure EQ1 - 2 Extent to which achieving ISA² objectives contributes to addressing the needs and problems originally addressed by the programme (total number of respondents)



Score: (1) not at all; (2) to a limited extent; (3) to some extent; (4) to a high extent; or (5) to the fullest extent; (DK/NO) don't know/no opinion.

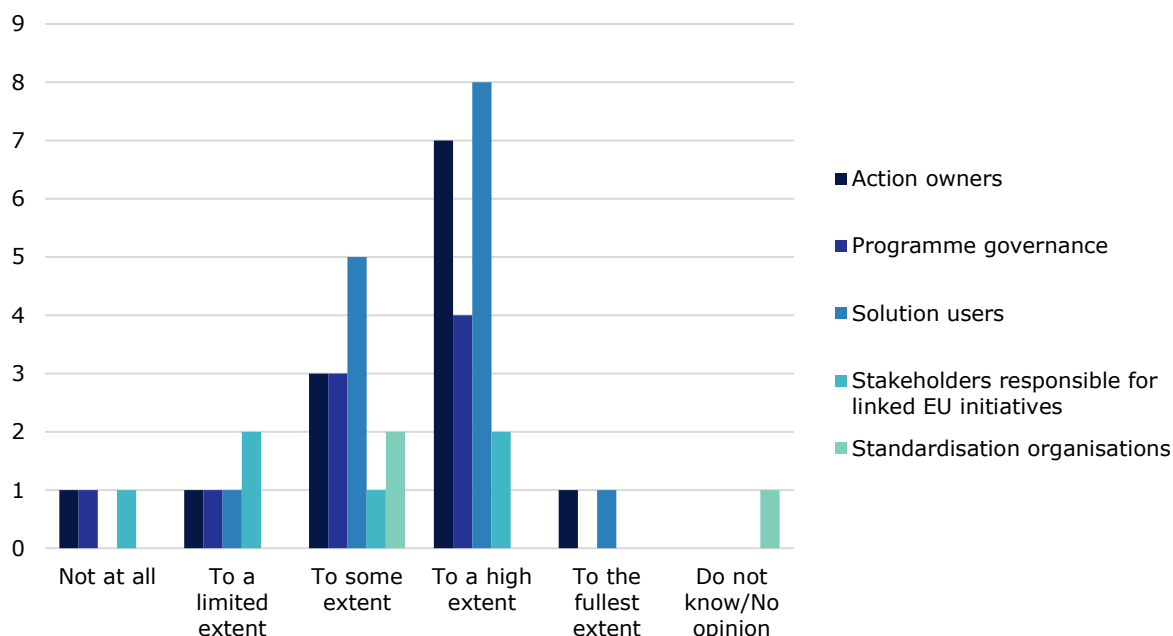
Source: Authors' elaboration on data collected via consultation activities.

Table EQ1 - 2 Extent to which achieving ISA² objectives contributes to addressing the needs and problems originally addressed by the programme (Top/Bottom 2 Box score)

Needs and problems	Need 1: The need for cooperation among public administrations with the aim to enable more efficient and secure public services		Need 2: The need for exchanging information among public administrations to fulfil legal requirements or political commitments		Need 3: The need for sharing and reusing information among public administrations to increase administrative efficiency and cut red tape for citizens and businesses		Problem: Administrative e-barriers are leading to the fragmentation of the Internal Market	
	Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom
Stakeholders								
Action owners	69.57%	0.00%	86.96%	0.00%	69.57%	4.35%	66.67%	4.76%
Programme governance	89.47%	0.00%	89.47%	0.00%	78.95%	0.00%	72.22%	11.11%
Solution users	85.37%	0.00%	92.50%	0.00%	87.80%	0.00%	60.53%	15.79%
Stakeholders responsible for linked EU policies initiatives	70.00%	0.00%	77.78%	0.00%	90.00%	0.00%	66.67%	11.11%
Standardisation organisations	100.00%	0.00%	100.00%	0.00%	100.00%	0.00%	50.00%	0.00%
Wider public	83.33%	5.56%	66.67%	5.56%	83.33%	11.11%	72.22%	16.67%
Total	81.74%	0.87%	85.84%	0.88%	82.61%	2.61%	65.74%	12.04%

Note: Top = To the fullest extent + to a high extent; Bottom = To a limited extent + not at all.
 Source: Authors' elaboration on data collected via consultation activities.

Figure EQ1 - 3 Extent to which achieving ISA² objectives contributes to addressing additional (current) needs and problems identified by consulted stakeholders (number of respondents by stakeholder category)



Score: (1) not at all; (2) to a limited extent; (3) to some extent; (4) to a high extent; or (5) to the fullest extent; (DK/NO) don't know/no opinion.
 Source: Authors' elaboration on data collected via consultation activities.

Table EQ1 - 3 Extent to which achieving ISA² objectives contributes to addressing additional (current) needs and problems identified by consulted stakeholders (Top/Bottom 2 Box score)

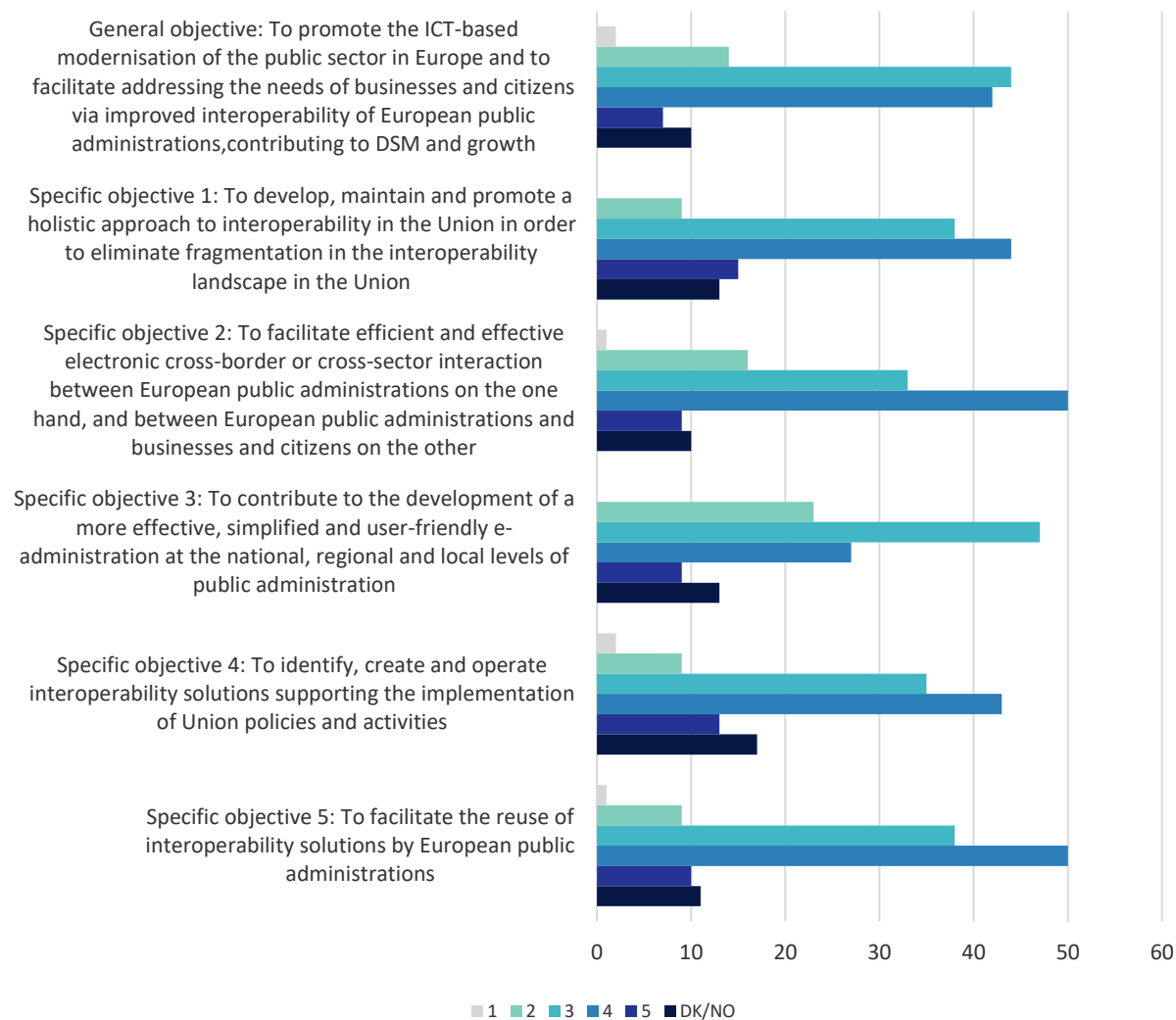
Stakeholders \ Top/Bottom 2 boxes	Top	Bottom
Action owners	61.54%	15.38%
Programme governance	44.44%	22.22%
Solution users	60.00%	6.67%
Stakeholders responsible for linked EU policies initiatives	33.33%	50.00%
Standardisation organisations	0.00%	0.00%
Total	51.11%	17.78%

*Note: Top = To the fullest extent + to a high extent; Bottom = To a limited extent + not at all.
Source: Authors' elaboration on data collected via consultation activities.*

Effectiveness

- EQ2: How far are the ISA² programme's results in the process of achieving the programme's objectives?
- EQ3: Are there aspects that are more or less effective than others, and if so, what lessons can be drawn from this?

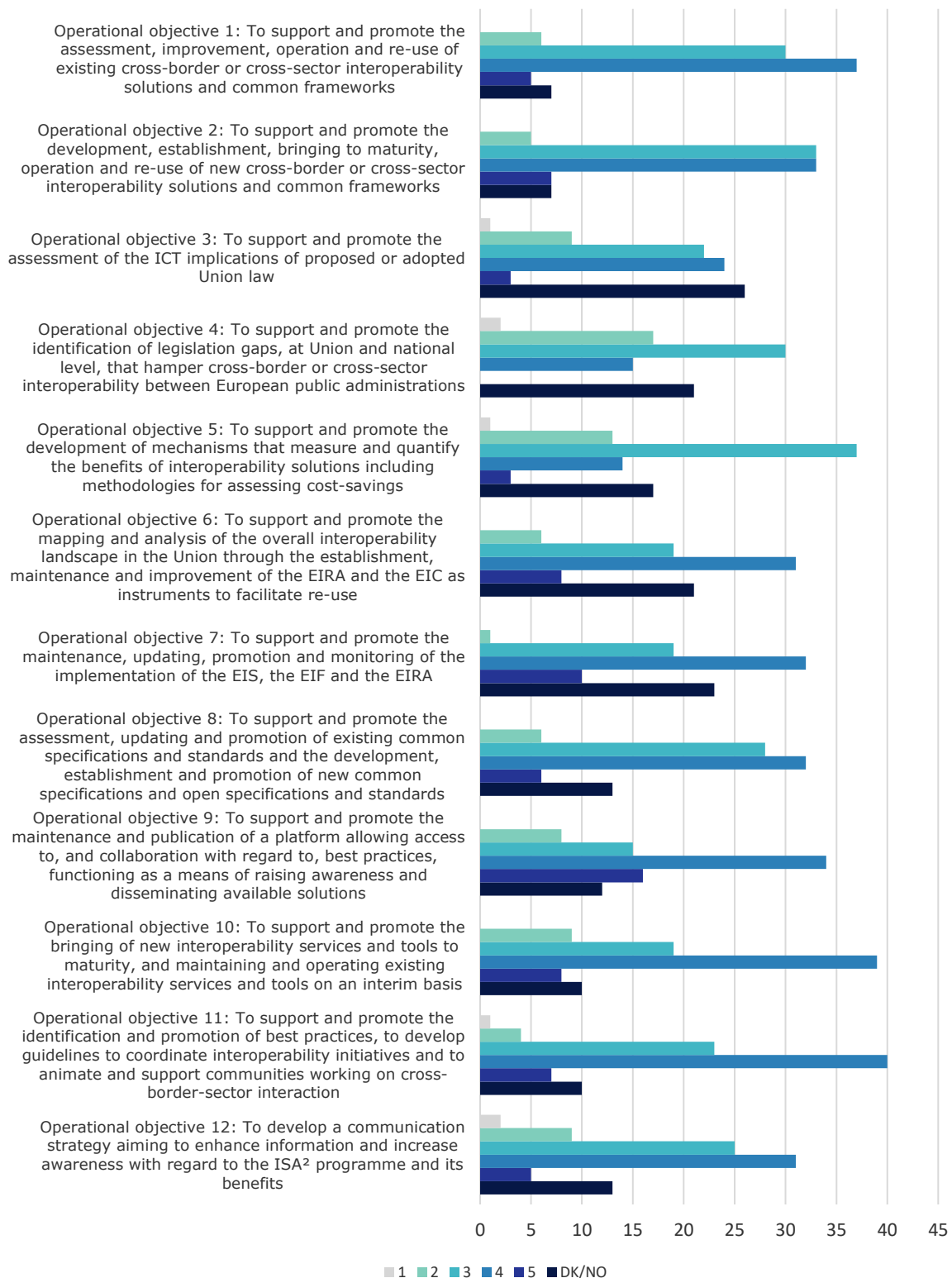
Figure EQ2&3 - 1 Extent to which ISA² solutions contributed to achieving the programme's objectives (total number of respondents)



Score: (1) not at all; (2) to a limited extent; (3) to some extent; (4) to a high extent; or (5) to the fullest extent; (DK/NO) don't know/no opinion.

Source: Authors' elaboration on data collected via consultation activities.

Figure EQ2&3 - 2 Extent to which ISA² solutions contributed to achieving the programme’s operational objectives (total number of respondents)



Score: (1) not at all; (2) to a limited extent; (3) to some extent; (4) to a high extent; or (5) to the fullest extent; (DK/NO) don't know/no opinion.

Source: Authors' elaboration on data collected via consultation activities.

Table EQ2&3 - 1 Extent to which ISA² solutions contributed to achieving the programme's objectives (Top/Bottom 2 Box score)

		Action owners	Programme governance	Solution users	Standardisation organisations	Wider public	Total
General objective	Top	38.10%	47.37%	50.00%	0.00%	44.44%	45.45%
	Bottom	14.29%	5.26%	10.00%	0.00%	27.78%	13.13%
Specific objective 1	Top	65.00%	73.68%	47.37%	0.00%	50.00%	56.25%
	Bottom	5.00%	0.00%	7.89%	0.00%	22.22%	8.33%
Specific objective 2	Top	38.10%	68.42%	55.00%	0.00%	50.00%	52.53%
	Bottom	9.52%	15.79%	15.00%	0.00%	27.78%	16.16%
Specific objective 3	Top	15.79%	21.05%	46.15%	0.00%	44.44%	34.38%
	Bottom	26.32%	26.32%	20.51%	0.00%	22.22%	22.92%
Specific objective 4	Top	47.37%	66.67%	54.29%	0.00%	57.89%	55.43%
	Bottom	5.26%	5.56%	11.43%	0.00%	15.79%	9.78%
Specific objective 5	Top	45.00%	57.89%	65.00%	0.00%	50.00%	56.12%
	Bottom	5.00%	5.26%	10.00%	0.00%	11.11%	8.16%

Note: Top = To the fullest extent + to a high extent; Bottom = To a limited extent + not at all.

Source: Authors' elaboration on data collected via consultation activities.

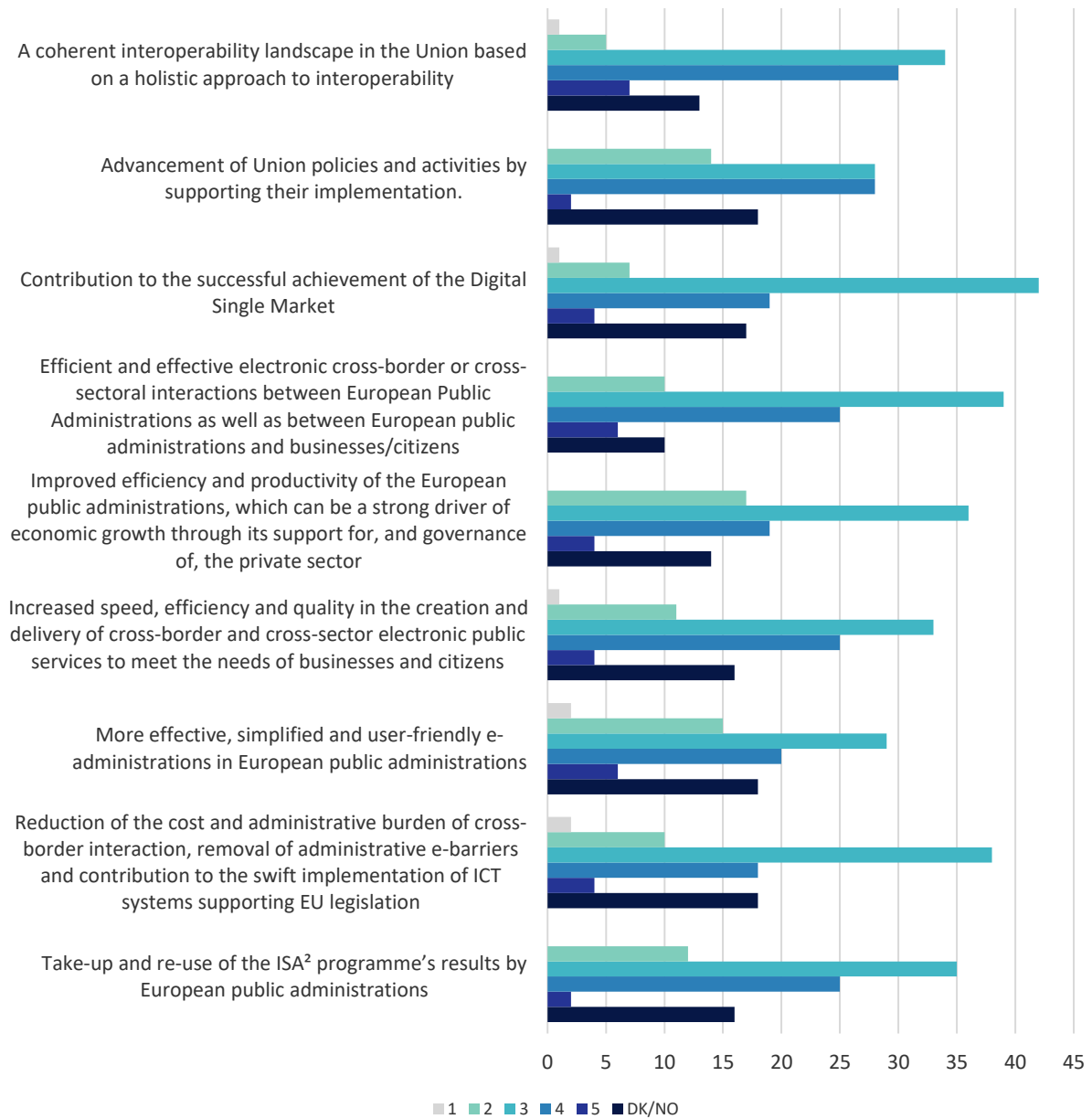
Table EQ2&3 - 2 Extent to which ISA² solutions contributed to achieving the programme's operational objectives (Top/Bottom 2 Box score)

		Action owners	Programme governance	Solution users	Total
Operational objective 1	Top	40.00%	68.42%	53.85%	53.85%
	Bottom	0.00%	5.26%	12.82%	7.69%
Operational objective 2	Top	35.00%	73.68%	48.72%	51.28%
	Bottom	0.00%	5.26%	10.26%	6.41%
Operational objective 3	Top	47.06%	46.67%	44.44%	45.76%
	Bottom	5.88%	20.00%	22.22%	16.95%
Operational objective 4	Top	12.50%	18.75%	31.25%	23.44%
	Bottom	37.50%	37.50%	21.88%	29.69%
Operational objective 5	Top	5.56%	11.76%	42.42%	25.00%
	Bottom	33.33%	29.41%	9.09%	20.59%
Operational objective 6	Top	57.89%	68.42%	57.69%	60.94%
	Bottom	5.26%	5.26%	15.38%	9.38%
Operational objective 7	Top	73.68%	73.68%	58.33%	67.74%
	Bottom	0.00%	0.00%	4.17%	1.61%
Operational objective 8	Top	38.89%	73.68%	48.57%	52.78%
	Bottom	5.56%	10.53%	8.57%	8.33%
Operational objective 9	Top	63.16%	89.47%	60.00%	68.49%
	Bottom	5.26%	10.53%	14.29%	10.96%
Operational objective 10	Top	55.00%	84.21%	55.56%	62.67%
	Bottom	15.00%	5.26%	13.89%	12.00%
Operational objective 11	Top	65.00%	63.16%	61.11%	62.67%
	Bottom	5.00%	5.26%	8.33%	6.67%
Operational objective 12	Top	55.00%	50.00%	47.06%	50.00%
	Bottom	5.00%	16.67%	20.59%	15.28%

Note: Top = To the fullest extent + to a high extent; Bottom = To a limited extent + not at all.

Source: Authors' elaboration on data collected via consultation activities.

Figure EQ2&3 - 3 Extent to which ISA² solutions achieved the expected results of the programme (total number of respondents)



Score: (1) not at all; (2) to a limited extent; (3) to some extent; (4) to a high extent; or (5) to the fullest extent; (DK/NO) don't know/no opinion.

Source: Authors' elaboration on data collected via consultation activities.

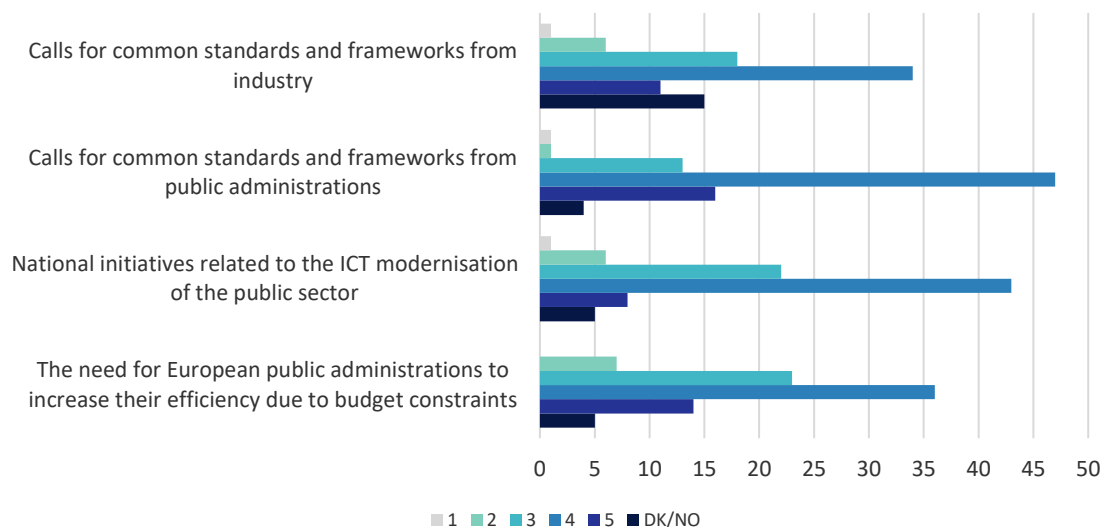
Table EQ2&3 - 3 Extent to which ISA² solutions achieved the expected results of the programme (Top/Bottom 2 Box score)

		Action owners	Pro-gramme gover-nance	Solution users	Standardi-sation organisa-tions	Total
A coherent interoperability landscape in the Union based on a holistic approach to interoperability	Top	45.00%	52.63%	48.65%	0.00%	48.05%
	Bottom	5.00%	10.53%	8.11%	0.00%	7.79%
Advancement of Union policies and activities by supporting their implementation.	Top	47.37%	61.11%	29.41%	0.00%	41.67%
	Bottom	26.32%	11.11%	20.59%	0.00%	19.44%
Contribution to the successful achievement of the Digital Single Market	Top	23.81%	21.05%	43.75%	0.00%	31.51%
	Bottom	14.29%	5.26%	12.50%	0.00%	10.96%
Efficient and effective electronic cross-border or cross-sectoral interactions between European Public Administrations as well as between European public administrations and businesses/citizens	Top	33.33%	47.37%	38.46%	0.00%	38.75%
	Bottom	4.76%	15.79%	15.38%	0.00%	12.50%
Improved 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	Top	25.00%	16.67%	40.54%	0.00%	30.26%
	Bottom	30.00%	22.22%	18.92%	0.00%	22.37%
Increased 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	Top	27.78%	35.29%	47.37%	0.00%	39.19%
	Bottom	16.67%	17.65%	15.79%	0.00%	16.22%
More effective, simplified and user-friendly e-administrations in European public administrations	Top	29.41%	17.65%	48.65%	0.00%	36.11%
	Bottom	23.53%	35.29%	18.92%	0.00%	23.61%
Reduction of the cost and administrative burden of cross-border interaction, removal of administrative e-barriers and contribution to the swift implementation of ICT systems supporting EU legislation	Top	30.00%	11.11%	42.42%	0.00%	30.56%
	Bottom	30.00%	11.11%	12.12%	0.00%	16.67%
Take-up and re-use of the ISA ² programme's results by European public administrations	Top	45.00%	36.84%	32.35%	0.00%	36.49%
	Bottom	10.00%	10.53%	23.53%	0.00%	16.22%

Note: Top = To the fullest extent + to a high extent; Bottom = To a limited extent + not at all.

Source: Authors' elaboration on data collected via consultation activities.

Figure EQ2&3 - 4 Extent to which the following external factors are contributing to the performance of ISA² (total number of respondents)



Score: (1) not at all; (2) to a limited extent; (3) to some extent; (4) to a high extent; or (5) to the fullest extent; (DK/NO) don't know/no opinion.

Source: Authors' elaboration on data collected via consultation activities.

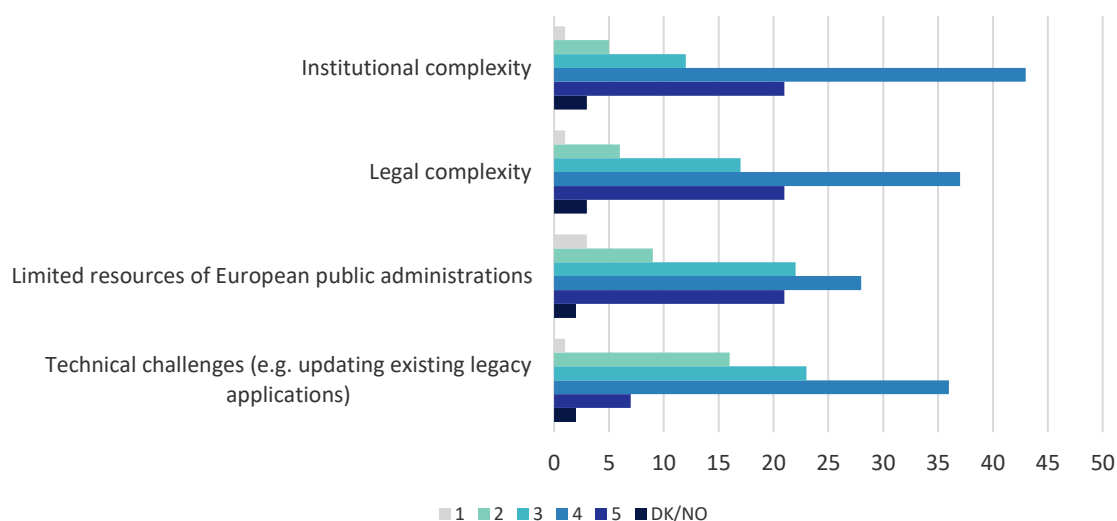
Table EQ2&3 - 4 Extent to which the following external factors are contributing to the performance of ISA² (Top/Bottom 2 Box score)

		Action owners	Programme governance	Solution users	Total
Calls for common standards and frameworks from industry	Top	44.44%	56.25%	77.78%	64.29%
	Bottom	16.67%	12.50%	5.56%	10.00%
Calls for common standards and frameworks from public administrations	Top	75.00%	89.47%	79.49%	80.77%
	Bottom	0.00%	0.00%	5.13%	2.56%
National initiatives related to the ICT modernisation of the public sector	Top	60.87%	73.68%	60.53%	63.75%
	Bottom	4.35%	5.26%	13.16%	8.75%
The need for European public administrations to increase their efficiency due to budget constraints	Top	61.90%	66.67%	60.98%	62.50%
	Bottom	14.29%	11.11%	4.88%	8.75%

Note: Top = To the fullest extent + to a high extent; Bottom = To a limited extent + not at all.

Source: Authors' elaboration on data collected via consultation activities.

Figure EQ2&3 - 5 Extent to which the following external factors are jeopardising the performance of ISA² (total number of respondents)



Score: (1) not at all; (2) to a limited extent; (3) to some extent; (4) to a high extent; or (5) to the fullest extent; (DK/NO) don't know/no opinion.

Source: Authors' elaboration on data collected via consultation activities.

Table EQ2&3 - 5 Extent to which the following external factors are jeopardising the performance of ISA² (Top/Bottom 2 Box score)

		Action owners	Programme governance	Solution users	Total
Institutional complexity	Top	78.26%	84.21%	75.00%	78.05%
	Bottom	13.04%	5.26%	5.00%	7.32%
Legal complexity	Top	69.57%	78.95%	67.50%	70.73%
	Bottom	8.70%	10.53%	7.50%	8.54%
Limited resources of European public administrations	Top	69.57%	57.89%	53.66%	59.04%
	Bottom	8.70%	26.32%	12.20%	14.46%
Technical challenges (e.g. updating existing legacy applications)	Top	69.57%	47.37%	43.90%	51.81%
	Bottom	13.04%	15.79%	26.83%	20.48%

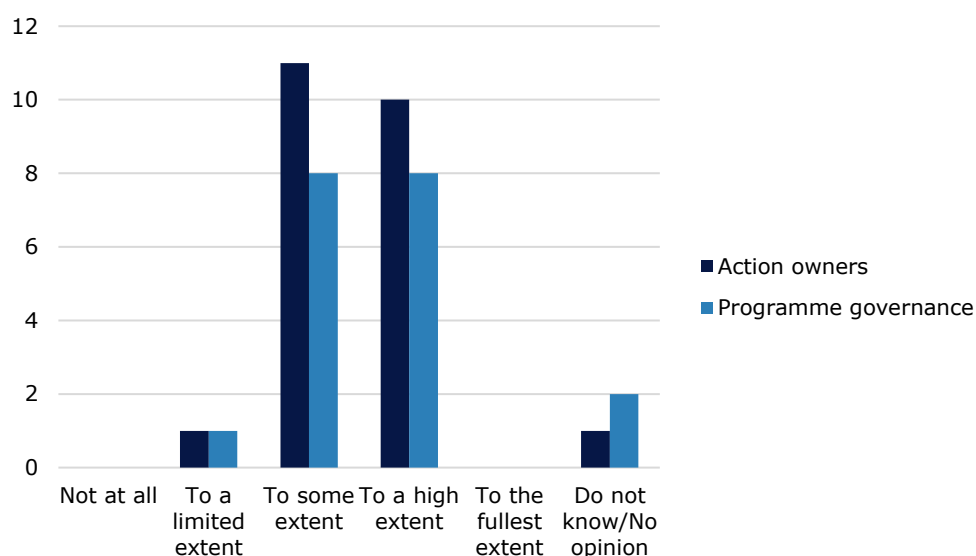
Note: Top = To the fullest extent + to a high extent; Bottom = To a limited extent + not at all.

Source: Authors' elaboration on data collected via consultation activities.

Efficiency

- EQ4: To what extent has the programme been cost-effective?
- EQ5: Which aspects of the programme are the most efficient or inefficient, especially in terms of resources mobilised?
 - EQ5.1: How is the programme performing relative to the planned work and budget?

Figure EQ4&5 - 1 Extent to which the selection process of the actions is fit-for-purpose (number of respondents by stakeholder category)



Source: Authors' elaboration on the data collected during the consultation activities.

Table EQ4&5 - 1 Extent to which the selection process of the actions is fit-for-purpose (Top/Bottom 2 Box score)

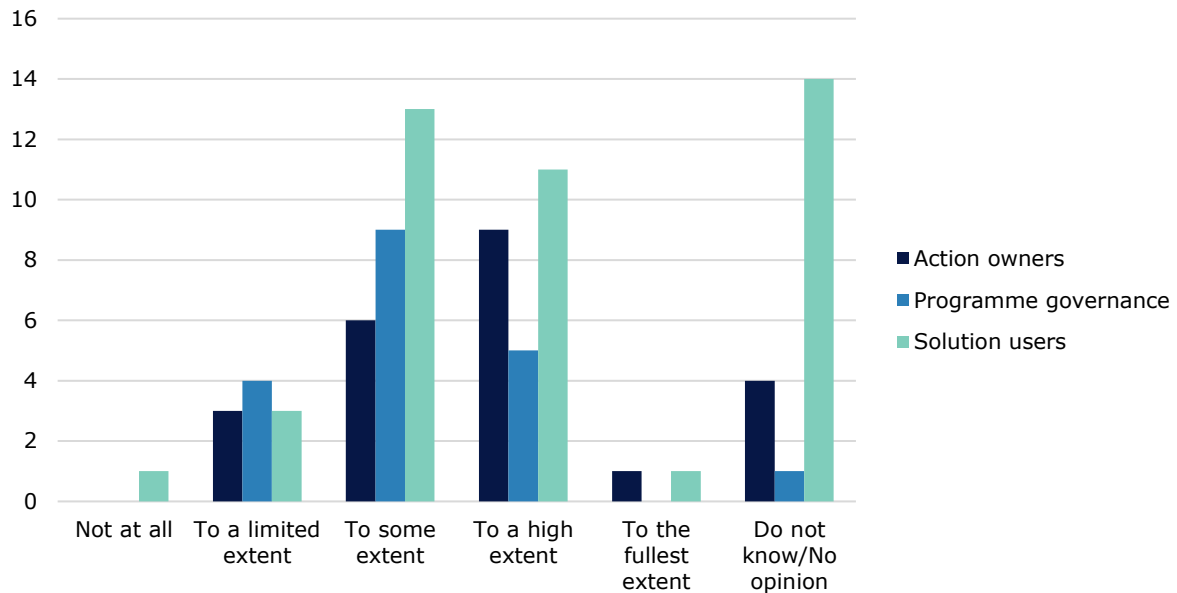
	Top	Bottom
Action owners	45.45%	4.55%
Programme governance	47.06%	5.88%
Total	46.15%	5.13%

Note: Top = To the fullest extent + to a high extent; Bottom = To a limited extent + not at all.
Source: Authors' elaboration on data collected via consultation activities.

Coherence

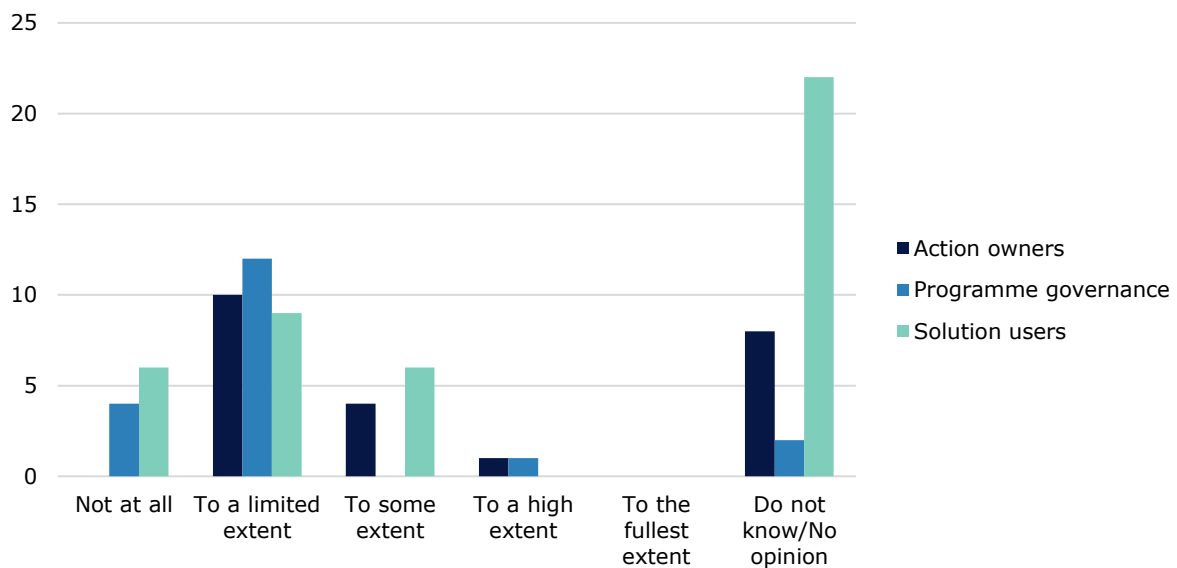
- EQ6: To what extent do the ISA² actions form part of a "holistic" approach within the framework of the programme? (Internal coherence)

Figure EQ6 - 1 Extent to which synergies between ISA² actions exist (number of respondents by stakeholder category)



Source: Authors' elaboration on data collected via consultation activities.

Figure EQ6 - 2 Extent to which overlaps between ISA² actions exist (number of respondents by stakeholder category)



Source: Authors' elaboration on data collected via consultation activities.

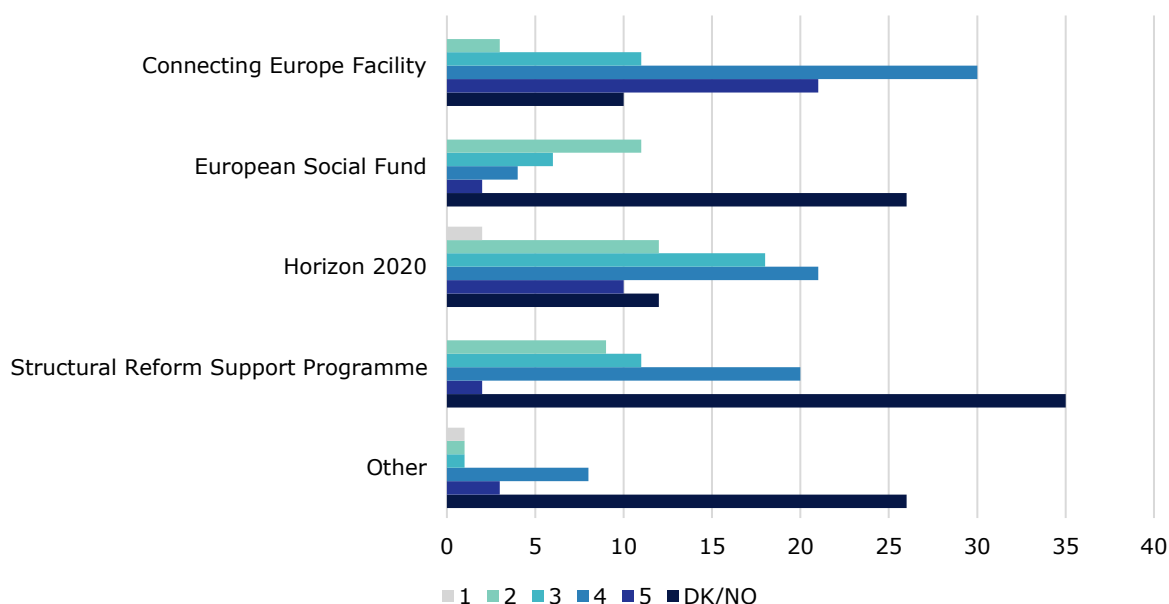
Table EQ6 - 1 Extent to which synergies / overlaps between ISA² actions exist (Top/Bottom 2 Box score)

	Synergies		Overlaps	
	Top	Bottom	Top	Bottom
Solution users	41.38%	13.79%	0.00%	71.43%
Programme governance	27.78%	22.22%	5.88%	94.12%
Action owners	52.63%	15.79%	6.67%	66.67%
Total	40.91%	16.67%	3.77%	77.36%

Note: Top = To the fullest extent + to a high extent; Bottom = To a limited extent + not at all.
 Source: Authors' elaboration on data collected via consultation activities.

- EQ.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? (External coherence)

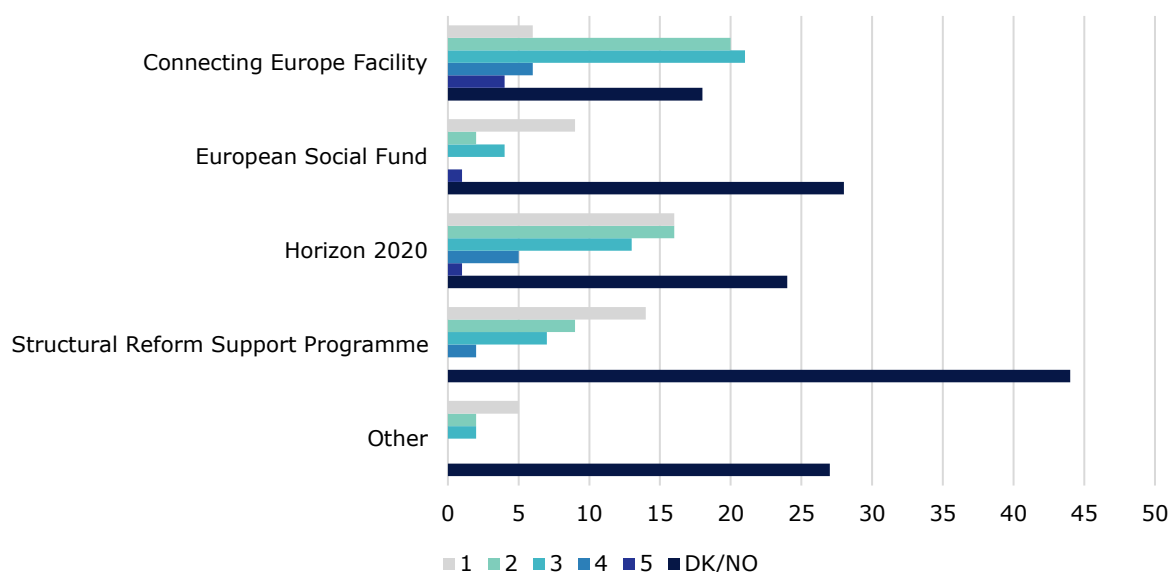
Figure EQ7 - 1 Extent to which synergies between ISA² and other relevant EU programmes exist (total number of respondents)



Score: (1) not at all; (2) to a limited extent; (3) to some extent; (4) to a high extent; or (5) to the fullest extent; (DK/NO) don't know/no opinion.

Source: Authors' elaboration on data collected via consultation activities.

Figure EQ7 - 2 Extent to which overlaps between ISA² and other relevant EU programmes exist (total number of respondents)



Score: (1) not at all; (2) to a limited extent; (3) to some extent; (4) to a high extent; or (5) to the fullest extent; (DK/NO) don't know/no opinion.

Source: Authors' elaboration on data collected via consultation activities.

Table EQ7 - 1 Extent to which overlaps between ISA² and other relevant EU programmes exist

			Action owners	Programme governance	Solution users	Stakeholders responsible for linked EU initiatives	Wider public	Total
CEF	Synergies	Top	64.71%	88.24%	86.67%	100.00%	73.33%	78.46%
		Bottom	5.88%	0.00%	0.00%	0.00%	13.33%	4.62%
	Overlaps	Top	13.33%	6.67%	23.08%	0.00%	30.77%	17.54%
		Bottom	53.33%	60.00%	23.08%	100.00%	38.46%	45.61%
ESF	Synergies	Top	0.00%	50.00%	33.33%	-	-	26.09%
		Bottom	66.67%	37.50%	33.33%	-	-	47.83%
	Overlaps	Top	0.00%	0.00%	20.00%	-	-	6.25%
		Bottom	83.33%	80.00%	40.00%	-	-	68.75%
Horizon 2020	Synergies	Top	15.38%	56.25%	66.67%	100.00%	50.00%	49.21%
		Bottom	38.46%	25.00%	13.33%	0.00%	16.67%	22.22%
	Overlaps	Top	18.18%	0.00%	8.33%	0.00%	20.00%	11.76%
		Bottom	63.64%	66.67%	66.67%	100.00%	53.33%	62.75%
SRSP	Synergies	Top	53.85%	54.55%	50.00%	66.67%	44.44%	52.38%
		Bottom	30.77%	9.09%	0.00%	0.00%	44.44%	21.43%
	Overlaps	Top	0.00%	0.00%	25.00%	0.00%	12.50%	6.25%
		Bottom	81.82%	71.43%	25.00%	100.00%	75.00%	71.88%
Other	Synergies	Top	-	50.00%	100.00%	75.00%	100.00%	78.57%
		Bottom	-	25.00%	0.00%	25.00%	0.00%	14.29%
	Overlaps	Top	0.00%	0.00%	-	0.00%	0.00%	0.00%
		Bottom	100.00%	50.00%	-	75.00%	100.00%	77.78%

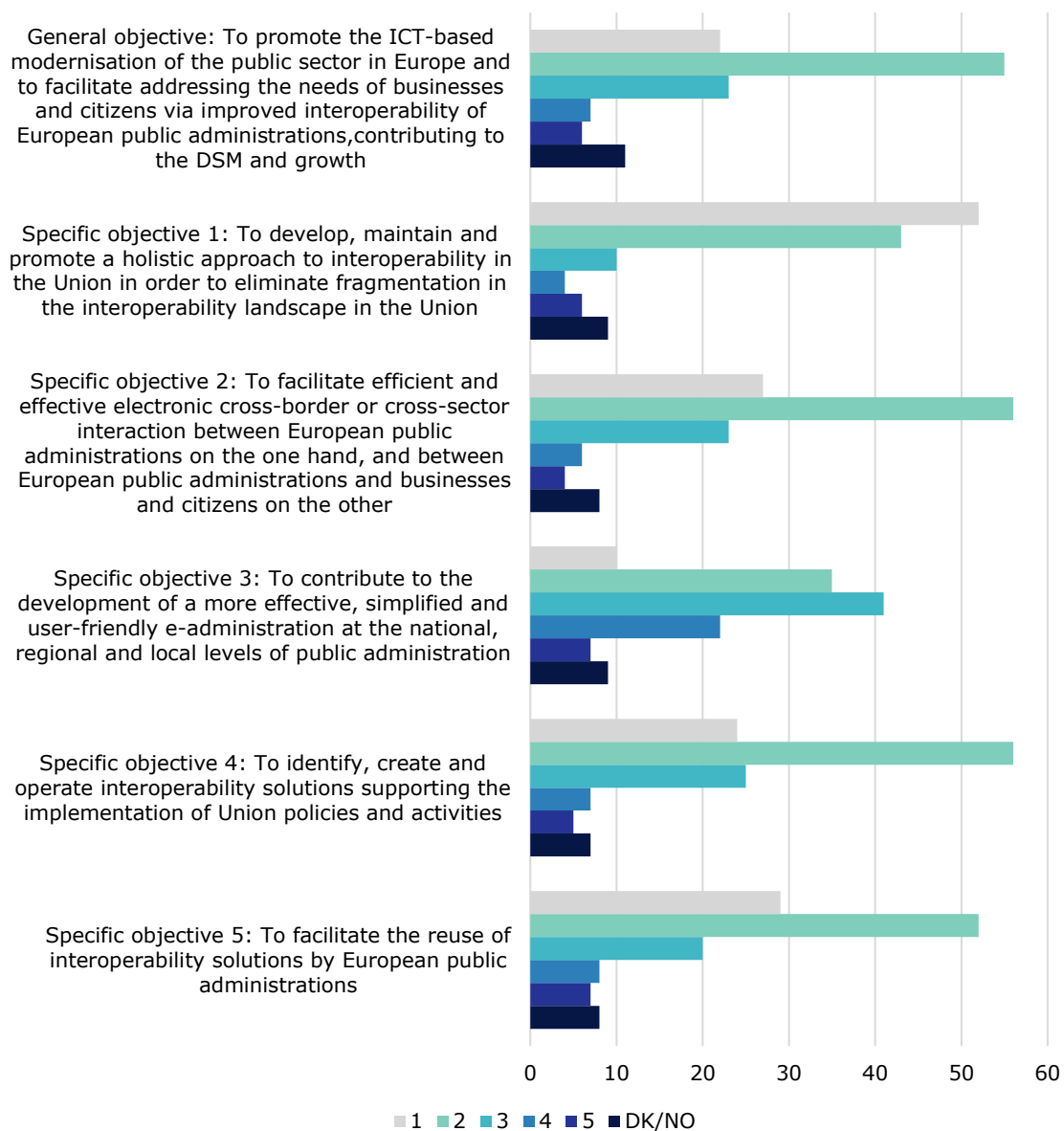
Note: Top = To the fullest extent + to a high extent; Bottom = To a limited extent + not at all.

Source: Authors' elaboration on data collected via consultation activities.

EU Added Value

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

Figure EQ8 - 1 Extent to which national or sub-national interventions would be able to achieve the ISA² objectives in the absence of the programme (total number of respondents)



Score: (1) not at all; (2) to a limited extent; (3) to some extent; (4) to a high extent; or (5) to the fullest extent; (DK/NO) don't know/no opinion.

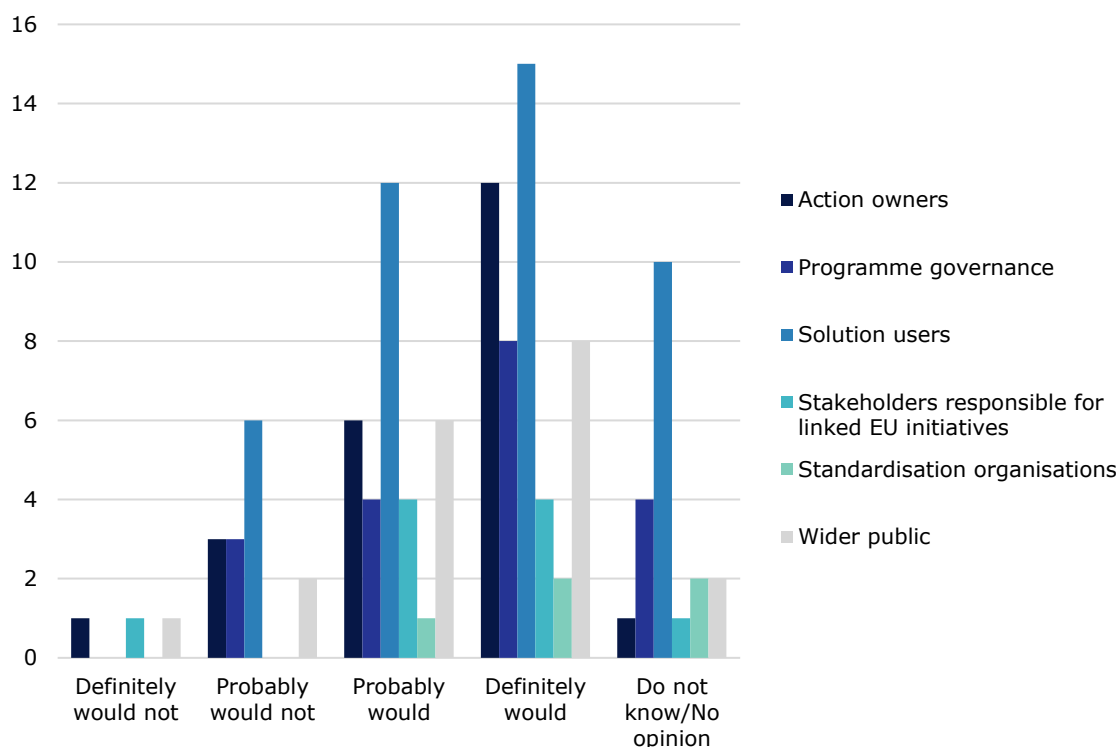
Source: Authors' elaboration on data collected via consultation activities.

Table EQ8 - 1 Extent to which national or sub-national interventions would be able to achieve the ISA² objectives in the absence of the programme (Top /Bottom 2 Box score)

		Action owners	Programme governance	Solution users	Stakeholders responsible for linked EU initiatives	Wider public	Total
General objective	Top	18.18%	0.00%	10.53%	0.00%	19.23%	11.50%
	Bottom	54.55%	77.78%	71.05%	77.78%	65.38%	68.14%
Specific objective 1	Top	9.09%	0.00%	7.69%	0.00%	18.52%	8.70%
	Bottom	72.73%	94.44%	84.62%	100.00%	74.07%	82.61%
Specific objective 2	Top	9.09%	0.00%	10.26%	0.00%	14.29%	8.62%
	Bottom	63.64%	83.33%	66.67%	88.89%	71.43%	71.55%
Specific objective 3	Top	28.57%	33.33%	22.50%	22.22%	22.22%	25.22%
	Bottom	23.81%	44.44%	45.00%	33.33%	40.74%	39.13%
Specific objective 4	Top	4.55%	5.56%	12.50%	0.00%	17.86%	10.26%
	Bottom	54.55%	77.78%	72.50%	77.78%	64.29%	68.38%
Specific objective 5	Top	9.09%	5.56%	15.00%	11.11%	18.52%	12.93%
	Bottom	68.18%	83.33%	72.50%	55.56%	62.96%	69.83%

*Note: Top = To the fullest extent + to a high extent; Bottom = To a limited extent + not at all.
Source: Authors' elaboration on data collected via consultation activities.*

Figure EQ8 - 2 Extent to which EU intervention would be able to achieve the objectives of ISA² at a lower cost than comparable national or sub-national interventions (number of respondents per stakeholder category)



Source: Authors' elaboration on data collected via consultation activities.

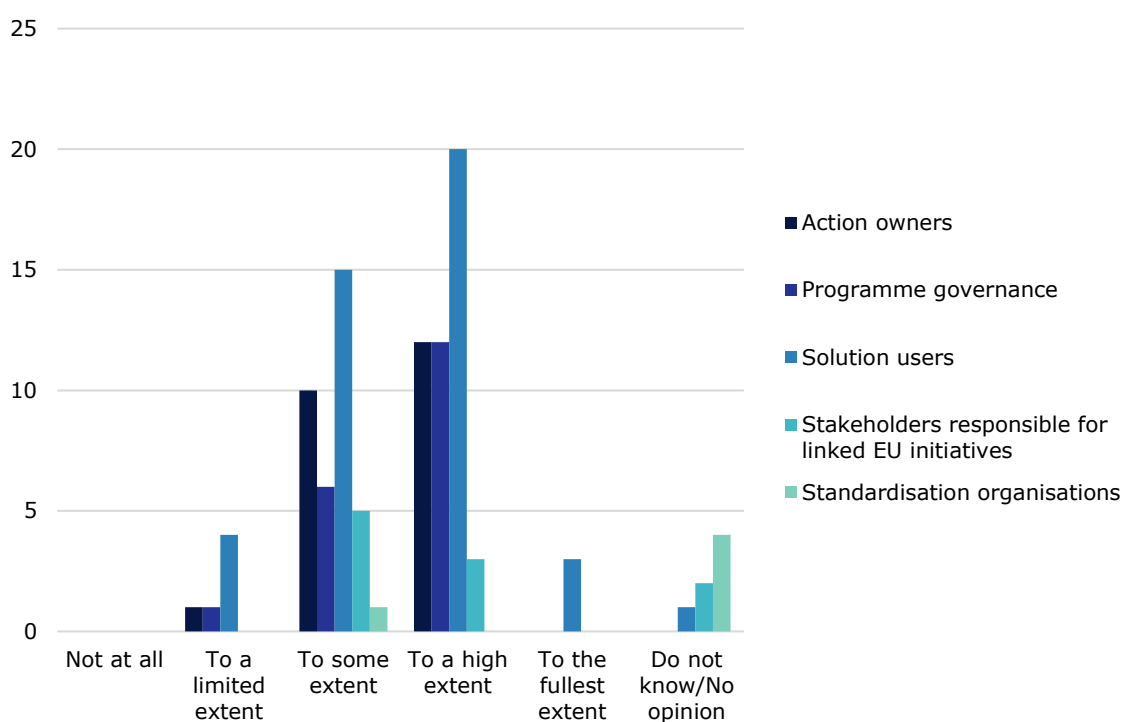
Table EQ8 - 2 Extent to which EU intervention would be able to achieve the objectives of ISA² at a lower cost than comparable national or sub-national interventions (Top /Bottom 2 Box score)

	Top	Bottom
Action owners	81.82%	18.18%
Programme governance	80.00%	20.00%
Solution users	81.82%	18.18%
Stakeholders responsible for linked EU policies initiatives	88.89%	11.11%
Standardisation organisations	100.00%	0.00%
Wider Public	85.19%	14.81%
Total	83.49%	16.51%

Note: Top = To the fullest extent + to a high extent; Bottom = To a limited extent + not at all.

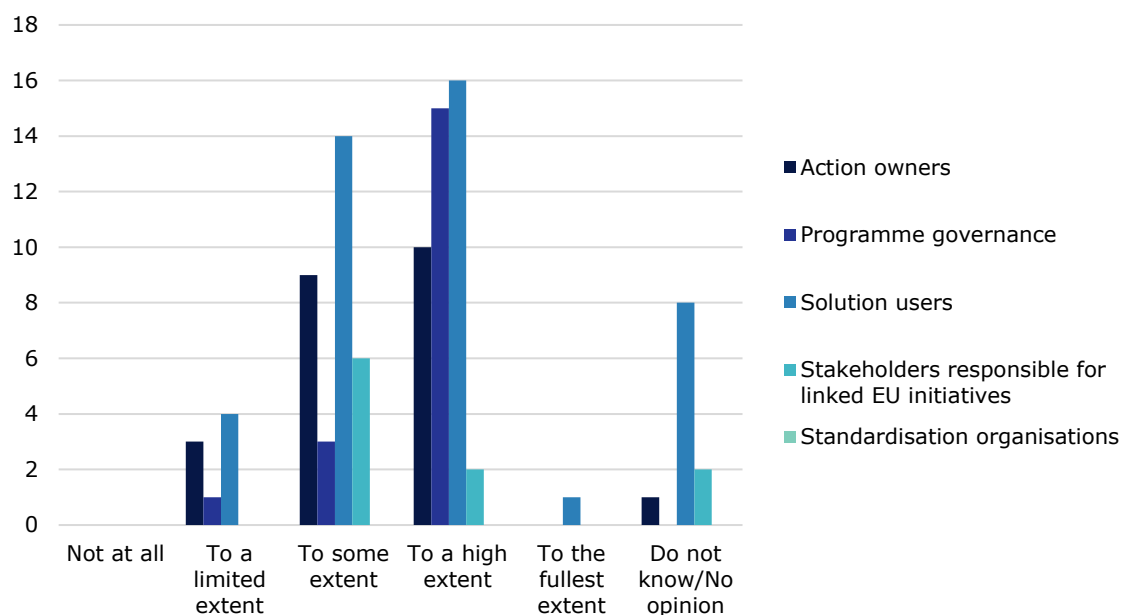
Source: Authors' elaboration on data collected via consultation activities.

Figure EQ8 - 3 Extent to which ISA² contributed to enhancing cross-border interoperability in the EU (number of respondents by stakeholder category)



Source: Authors' elaboration on data collected via consultation activities.

Figure EQ8 - 4 Extent to which ISA² contributed to the advancement of common EU policies (number of respondents by stakeholder category)



Source: Authors' elaboration on data collected via consultation activities.

Table EQ8 - 3 Extent to which ISA² contributed to enhancing cross-border interoperability in the EU and to the advancement of common EU policies (Top /Bottom 2 Box score)

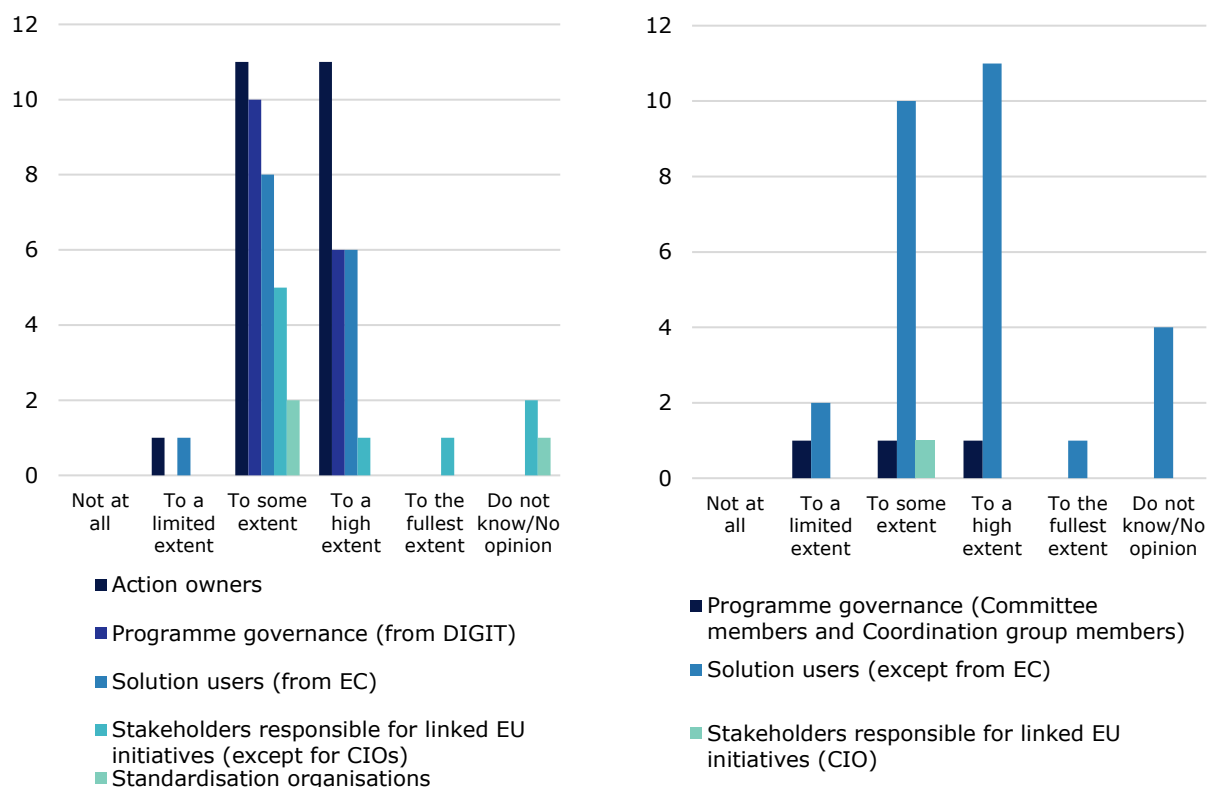
	Cross-border interoperability		Advancement of common EU policies	
	Top	Bottom	Top	Bottom
Action owners	52.17%	4.35%	45.45%	13.64%
Programme governance	63.16%	5.26%	78.95%	5.26%
Solution users	54.76%	9.52%	48.57%	11.43%
Stakeholders responsible for linked EU initiatives	37.50%	0.00%	25.00%	0.00%
Standardisation organisations	0.00%	0.00%	-	-
Total	53.76%	6.45%	52.38%	9.52%

Note: Top = To the fullest extent + to a high extent; Bottom = To a limited extent + not at all.
Source: Authors' elaboration on data collected via consultation activities.

Utility

- EQ9: How do the ISA² programme's actions and results, achieved and anticipated, compare with the needs they are supposed to address?

Figure EQ9 - 1 Extent to which ISA² solutions contributed to addressing the needs and problems originally addressed by the programme (number of respondents by stakeholder category; left: EU level; right: Member State level)



Score: (1) not at all; (2) to a limited extent; (3) to some extent; (4) to a high extent; or (5) to the fullest extent; (DK/NO) don't know/no opinion.

Source: Authors' elaboration on data collected via consultation activities.

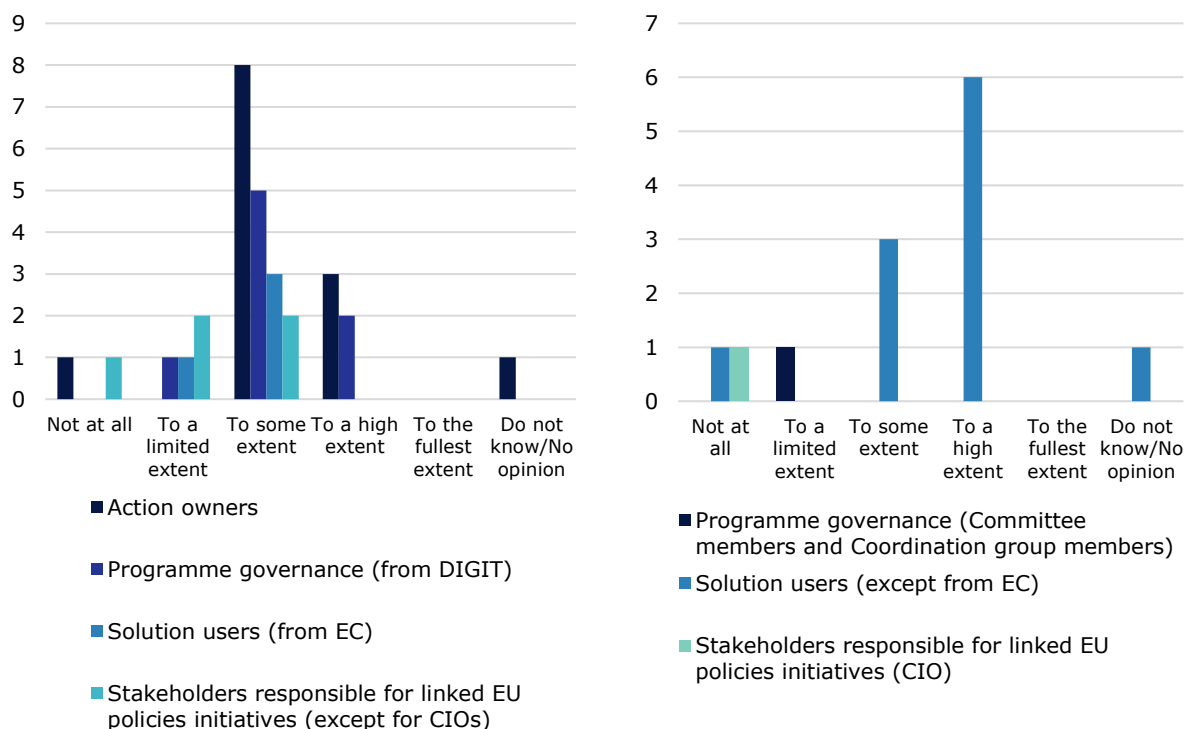
Table EQ9 - 1 Extent to which ISA² solutions contributed to addressing and original needs and problems / additional (current) needs and problems identified by respondents at the EU level (Top /Bottom 2 Box score)

	Alignment between the results of the programme and additional (current) needs and problems at national and sub-national levels		Alignment between the results of the programme and original needs and problems at national and sub-national levels	
	Top	Bottom	Top	Bottom
Action owners	25.00%	8.33%	47.83%	4.35%
Programme governance (from DIGIT)	25.00%	12.50%	37.50%	0.00%
Solution users (from EC)	0.00%	25.00%	40.00%	6.67%
Standardisation organisations	-	-	0.00%	0.00%
Stakeholders responsible for linked EU policies initiatives (exception of CIOs)	0.00%	60.00%	28.57%	0.00%
Total	26.83%	21.95%	41.76%	5.49%

Note: Top = To the fullest extent + to a high extent; Bottom = To a limited extent + not at all.

Source: Authors' elaboration on data collected via consultation activities.

Figure EQ9 - 2 Extent to which ISA² solutions contributed to addressing additional needs and problems identified by consulted stakeholders (number of respondents by stakeholder category; left: EU level; right: Member State level)



Source: Authors' elaboration on data collected via consultation activities.

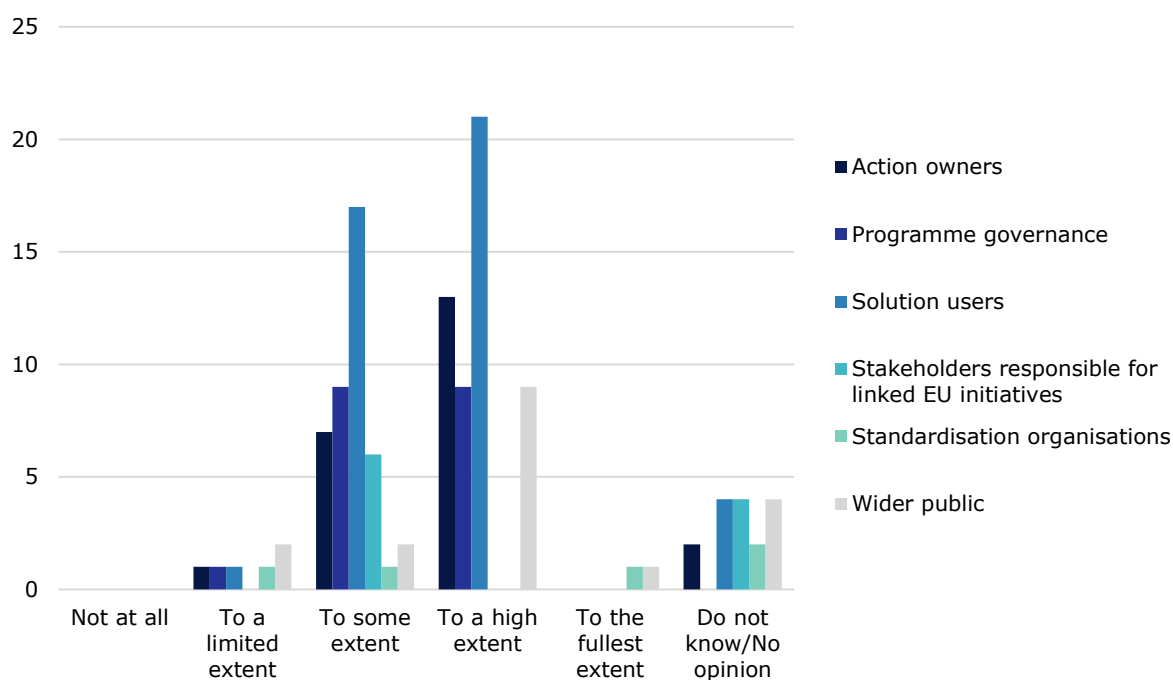
Table EQ9 - 2 Extent to which ISA² solutions contributed to addressing original needs and problems / additional (current) needs and problems identified by respondents at the Member State level (Top /Bottom 2 Box score)

	Alignment between the results of the programme and additional (current) needs and problems at national and sub-national levels		Alignment between the results of the programme and original needs and problems at national and sub-national levels	
	Top	Bottom	Top	Bottom
Programme governance (Committee members and Coordination group members)	0.00%	100.00%	33.33%	33.33%
Solution users (except from EC)	60.00%	10.00%	50.00%	8.33%
Stakeholders responsible for linked EU policies initiatives (CIO)	0.00%	100.00%	0.00%	0.00%
Total	50.00%	25.00%	46.43%	10.71%

Note: Top = To the fullest extent + to a high extent; Bottom = To a limited extent + not at all.

Source: Authors' elaboration on data collected via consultation activities.

Figure EQ9 - 3 Extent to which ISA² solutions are meeting users' needs in the fields of cross-border and cross-sectoral interoperability of digital public services (number of respondents by stakeholder category)



Source: Authors' elaboration on data collected via consultation activities.

Table EQ9 - 3 Extent to which ISA² solutions are meeting users' needs in the fields of cross-border and cross-sectoral interoperability of digital public services (Top /Bottom 2 Box score)

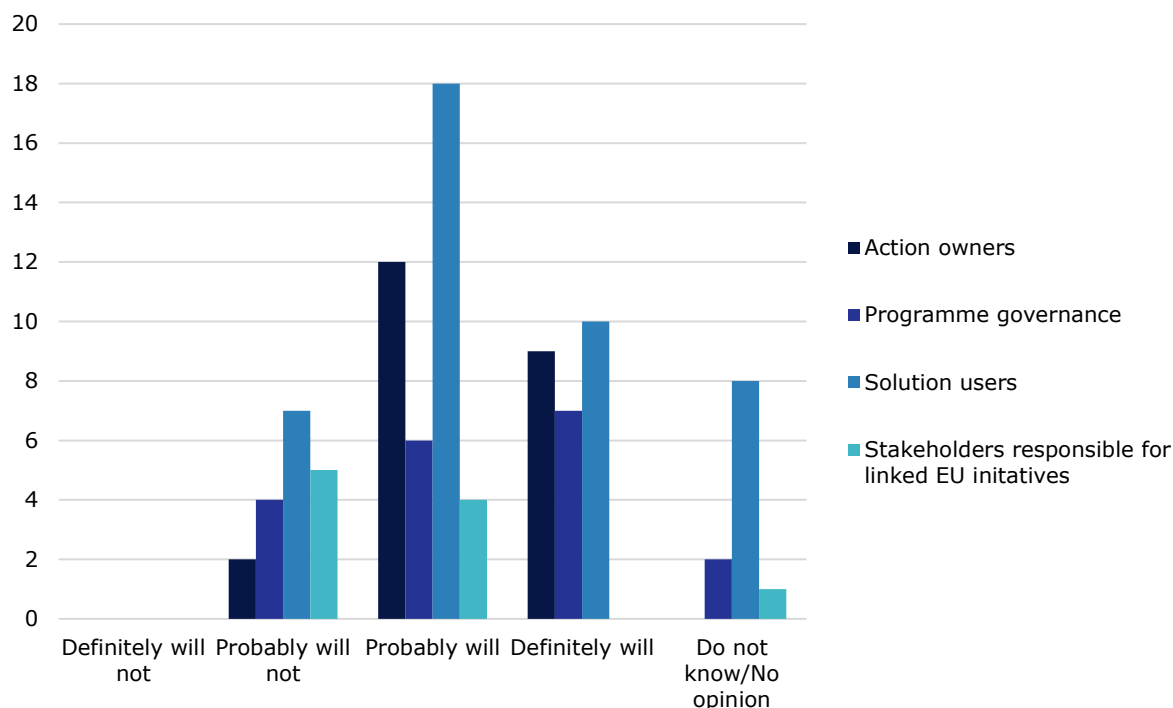
	Top	Bottom
Action owners	61.90%	4.76%
Programme governance	47.37%	5.26%
Solution users	53.85%	2.56%
Stakeholders responsible for linked EU policies initiatives	0.00%	0.00%
Standardisation organisations	33.33%	33.33%
Wider public	59.09%	13.64%
Total	51.82%	6.36%

Note: Top = To the fullest extent + to a high extent; Bottom = To a limited extent + not at all.
Source: Authors' elaboration on data collected via consultation activities.

Sustainability

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

Figure EQ10 - 1 Likelihood that results achieved so far would last if funding for actions covered by the programme would not be available in the future (number of respondents by stakeholder category)



Source: Authors' elaboration on data collected via consultation activities.

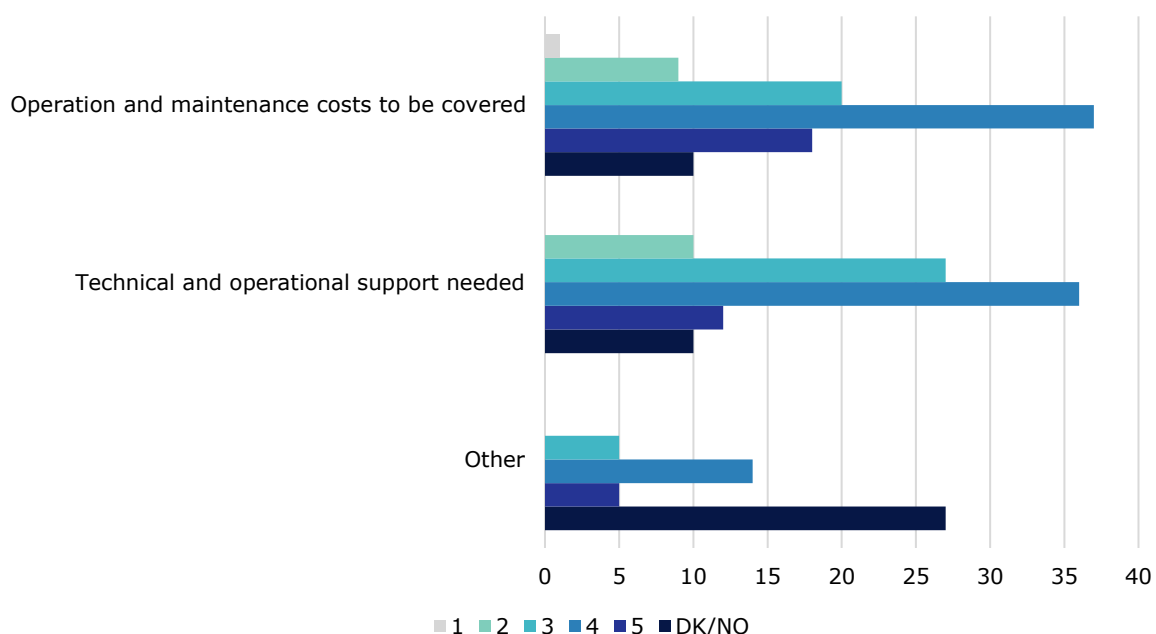
Table EQ10 - 1 Likelihood that results achieved so far would last if funding for actions covered by the programme would not be available in the future (Top /Bottom 2 Box score)

	Top	Bottom
Action owners	91.30%	8.70%
Programme governance	76.47%	23.53%
Solution users	80.00%	20.00%
Stakeholders responsible for linked EU initiatives	44.44%	55.56%
Total	78.57%	21.43%

Note: Top = To the fullest extent + to a high extent; Bottom = To a limited extent + not at all.

Source: Authors' elaboration on data collected via consultation activities.

Figure EQ10 - 2 Extent to which financial, technical and operational aspects would prevent ISA² solutions from delivering their results if the programme was terminated (total number of respondents)



Score: (1) not at all; (2) to a limited extent; (3) to some extent; (4) to a high extent; or (5) to the fullest extent; (DK/NO) do not know/no opinion.

Source: Authors' elaboration on data collected via consultation activities.

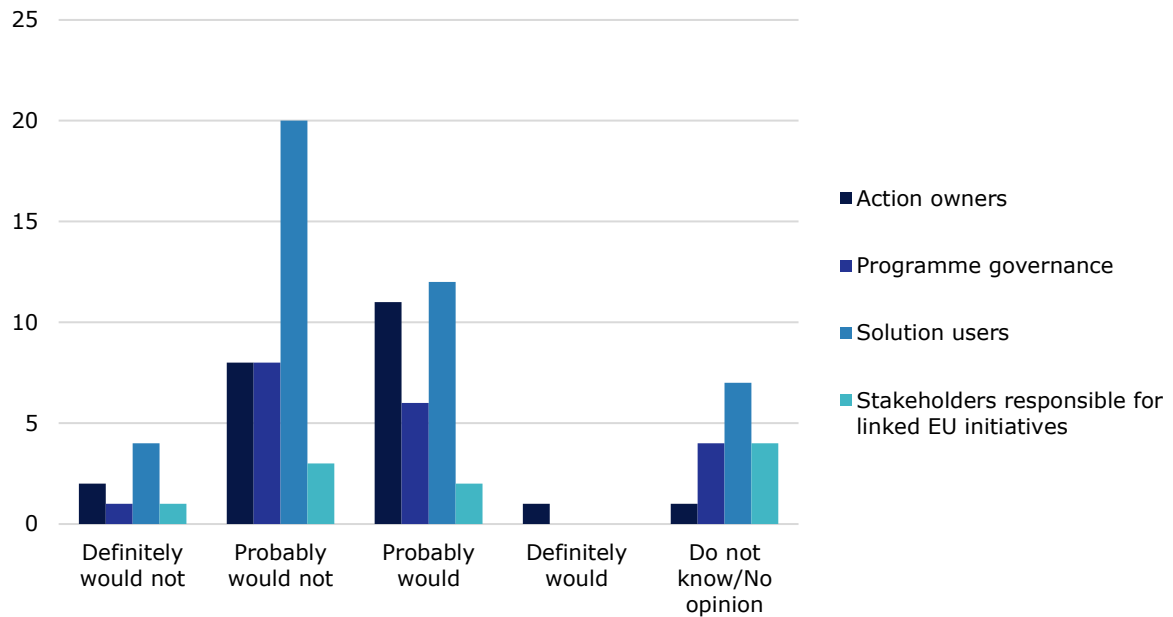
Table EQ10 - 2 Extent to which financial, technical and operational aspects would prevent ISA² solutions from delivering their results if the programme was terminated (Top /Bottom 2 Box score)

	Operation and maintenance costs to be covered		Technical and operational support needed		Other	
	Top	Bottom	Top	Bottom	Top	Bottom
Action owners	72.73%	13.64%	68.18%	13.64%	100.00%	0.00%
Programme governance	68.75%	6.25%	52.94%	17.65%	83.33%	0.00%
Solution users	64.10%	7.69%	52.63%	10.53%	63.64%	0.00%
Stakeholders responsible for linked EU policies initiatives	37.50%	37.50%	50.00%	0.00%	100.00%	0.00%
Total	64.71%	11.76%	56.47%	11.76%	79.17%	0.00%

Note: Top = To the fullest extent + to a high extent; Bottom = To a limited extent + not at all.

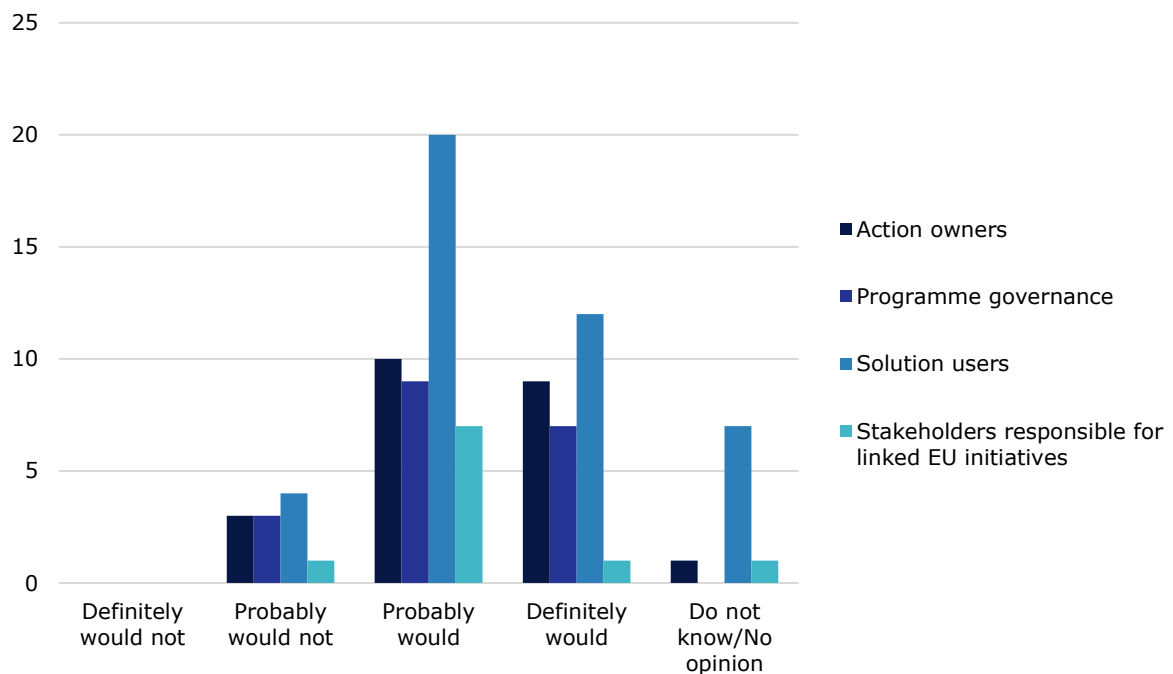
Source: Authors' elaboration on data collected via consultation activities.

Figure EQ10 - 3 Likelihood that users would accept to pay a fee to continue accessing ISA² solutions (number of respondents by stakeholder category)



Source: Authors' elaboration on data collected via consultation activities.

Figure EQ10 - 4 Likelihood that the ISA² general objective would be jeopardised if the programme was terminated (number of respondents by stakeholder category)



Source: Authors' elaboration on data collected via consultation activities.

Table EQ10 - 3 Likelihood that the ISA² general objective would be jeopardised if the programme was terminated and likelihood that users would accept to pay a fee to continue accessing ISA² solutions (Top / Bottom 2 Box score)

	Share of stakeholders who would pay to keep on using specific ISA2 solutions.		Impact on interoperability if the programme was terminated	
	Top	Bottom	Top	Bottom
Action owners	54.55%	45.45%	86.36%	13.64%
Programme governance	40.00%	60.00%	84.21%	15.79%
Solution users	33.33%	66.67%	88.89%	11.11%
Stakeholders responsible for linked EU policies initiatives	33.33%	66.67%	88.89%	11.11%
Total	40.51%	59.49%	87.21%	12.79%

Note: Top = To the fullest extent + to a high extent; Bottom = To a limited extent + not at all.

Source: Authors' elaboration on data collected via consultation activities.

ANNEX B – SUPPORTING EVIDENCE FROM DESK RESEARCH

This Annex presents evidence collected via desk research in order to answer the EQs that are spelled out in the Evaluation Framework (ANNEX D – EVALUATION FRAMEWORK). In the following section, evidence is presented by evaluation criterion and question.

Effectiveness and EU added value

- EQ2: How far are the ISA² programme's results in the process of achieving the programme's objectives?
- EQ3: Are there aspects that are more or less effective than others, and if so, what lessons can be drawn from this?
- EQ8: What is the additional value resulting from the ISA² programme, compared to what could reasonably have been expected from Member States acting at national, regional and/or local levels?

Types and geographical distribution of users

Table B - 1 EU Member States 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	UK	TOT.
ADMS					x				x			x																	3
Core Vocabularies	x					x		x	x			x							x							x			7
CPSV-AP	x					x			x			x							x							x			6
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	x	23
EIRA	x		x	x		x			x							x			x										7
e-PRIOR	x																												1
ESPD*	X	X		x	x	X	x	x	x	x	x	x			X		X	x	x	x	X	x	x		x	x	x	x	23
Open e-TrustEx	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
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	x	28
EUSurvey									x																				1
GeoDCAT-AP					x																								1
IMAPS			x					x																			x		2
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	x	26

	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	UK	TOT.
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	x	26
OCS for ECIs																x													1
Re3gistry									x	x		x								x					x	x		6	

*Note: Information provided by DG GROW and based on the following Commission document on the CEF eProcurement Digital Service Infrastructure (November 2018):

https://ec.europa.eu/inea/sites/inea/files/dsi_fiche_eprocurement.pdf

Source: Authors' elaboration on the overview of solutions available on the ISA² Solutions webpage.

Table B - 2 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
eCertis	x					x	2
EIRA and CarTool	x	x		x			3
e-TrustEx	x			x			2
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	2	2	9	1	1	26

Source: Authors' elaboration on the overview of solutions available on the ISA² Solutions webpage and on stakeholders' feedback.

Performance indicators

Table B - 3 Overview of performance indicators for sampled ISA² actions

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	Public administrations in the 28 Member States	8,800,000	Number of documents exchanged between the EC, the Council, the Member States, and companies
1. Key and generic interoperability enablers	ISA	2016.29	CPSV-AP	12	Public administrations in Member States, including cross-border catalogues	2,511	Number of downloads on Joinup (up until March 2019)
2. Semantic interoperability	ISA	2016.07	ADMS	9	Public administrations (Member States, EC), company	4,700	Number of interoperability solutions on Joinup described using ADMS
2. Semantic interoperability	ISA	2016.07	Core vocabularies	11	Public administrations (in the Member States and EC)		
2. Semantic interoperability	ISA	2016.07	DCAT-AP	29	Public administrations (in the Member States and EC) and their data portals, associations, universities.		
2. Semantic interoperability	ISA	2016.07	VocBench3	14	Number of public administrations (in the Member States and EC), universities, institutes, international organisations using the previous versions of VocBench.		
2. Semantic interoperability	ISA ²	2016.16	PMKI Core data model for multilingual taxonomies/terminologies	2 journal articles; 5 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 national language resources and EuroVoc (3 Member States and the EP)		
3. Access to data/data sharing/open data	ISA ²	2016.06	ESS Service Catalogue	10	Number of registered contributors	13	Number of statistical organisations listed

Package	ISA/ISA ²	Action number	Solution	Value performance indicator 1	Performance indicator 1	Value performance indicator 2	Performance indicator 2
4. Geospatial solutions	ISA	2016.10	Re3gistry	13	Public administrations (Member States, EC)		
5. eProcurement/ eInvoicing - Supporting instruments	ISA	2016.05	Open e-Prior	70	Public administrations (EC and other EU institutions)	306	Number of suppliers connected via the web portal
5. eProcurement/ eInvoicing - Supporting instruments	ISA	2016.05	eCertis	44	Public administrations (Member States, EU institutions), contracting authorities		
5. eProcurement/ eInvoicing - Supporting instruments	ISA	2016.05	ESPD	195,652	Number of page visits in January 2019	23	Number of Member States implementing the ESPD data model;
6. Decision making and legislation - Supporting instruments	ISA	2016.23	Digital screening mention in Tool #27 of the Better Regulation Toolbox: The digital economy and society & ICT issues	280	Number of Commission proposals screened for ICT impacts since 2015		
6. Decision making and legislation - Supporting instruments	ISA	2016.23	ICT Impact Assessment Guidelines	13	Instances of use since 2014		
6. Decision making and legislation - Supporting instruments	ISA ²	2017.03	REFIT Platform IT Tool	Not yet operational.			
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
7. EU Policies - Supporting instruments	ISA	2016.14	Online Collection Software to support European Citizens' Initiative	38	Number of ECIs launched using the Online Collection Software	1	Public administration in the Member States

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	European Parliament Crypto Tool	28	Number of Member States using the solution		
8. Supporting instruments for public administrations	ISA	2016.20	Joinup	13,440	Professionals working in the field of eGovernment registered on Joinup	2,815	Solutions created within the 109 Collections (thematic collaborative spaces) on Joinup.
8. Supporting instruments for public administrations	ISA	2016.21	NIFO	193	Number of users for Q3 2018, according to ISA ² Dashboard - Effectiveness Indicator (approximately equal to the number of members of the NIFO community on Joinup)	34	Number of countries covered (32 countries covered by NIFO factsheets and 34 by the Interoperability State of Play reports)
8. Supporting instruments for public administrations	ISA	2016.32	EIRA and CarTool	8	Number of public administrations in Member States deploying the solution	1,364	Number of downloads of EIRA on Joinup up to February 2019
8. Supporting instruments for public administrations	ISA	2016.35	EUSurvey	17,443	Number of surveys created (sum for 2016, 2017, Q1 and Q3 of 2018), based on the ISA ² solutions webpage and the 2018 Rolling Work Programme.		
8. Supporting instruments for public administrations	ISA	2016.37	IMAPS	17	Trans-European Systems assessed with IMM	68 (in 2017); 51 (in 2018)	Public services benchmarked (Q3 2017)
8. Supporting instruments for public administrations	ISA ²	2017.01	Study on Standard-based Archival Data Management, Exchange, and Publication	80	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	58	Unique visitors/downloads since the publication (2018)		

Source: Authors' elaboration on the overview of solutions available on the ISA² Solutions webpage and on data received from action owners.

Communication activities

Table B - 4 Events funded by ISA² between 2016 and 2018

Year	ISA ² workshops/conferences	Location	Total participants onsite	Total remote participants	Number of international participants	Number of Member States represented	Number of EEA and acceding countries represented	Number of EC officials (non-DIGIT)
2016	From ISA to ISA ²	Brussels, Belgium	300	-	-	-	-	-
2016	SEMIC2016*	Rome, Italy	206	-	-	25	3	-
2017	Workshop on the EIF	Thessaloniki	N/A	-	-	-	-	-
2017	Sharing and reuse Conference	Lisbon, Portugal	220	810	204	21	0	-
2017	SEMIC2017	Valletta, Malta	224	609	195	18	2	-
2018	Open PM2 Conference (partially funded by ISA ²)	Brussels, Belgium	538	1800 (connections to web streaming)	-	-	-	-
2018	SEMIC 2018	Sofia, Bulgaria	220	701	204	19	2	-
2018	ISA2CONF18	Brussels, Belgium	325	-	249	26	7	120
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	-	-	-	-	-

Source: Authors' elaboration on information from the database of communication activities provided by DIGIT.D2, the SEMIC2016 Conference webpage on Joinup¹¹¹

Table B - 5 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

¹¹¹ The webpage can be accessed here: <https://joinup.ec.europa.eu/event/semic-2016-semantic-interoperability-conference>.

Year	Events	Location	Total participants
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
2017	Paris Open Source Summit 2017	Paris, France	150
2017	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

Year	Events	Location	Total participants
2018	eGov High Level Conference 2018	Vienna, Austria	N/A
2018	Infofest Montenegro	Podgorica, Montenegro	150
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

Source: Authors' elaboration on information from the database of communication activities provided by DIGIT.D2.

Table B - 6 Number of participants in the ISA² Coordination Group meetings (per Member State)

Member State	Coordination Group Meeting 13/10/2017 Presence	Coordination Group Meeting 19/10/2016 Presence	Coordination Group Meeting 24/10/2018 Presence
Belgium	1	1	1
Bulgaria	1	2	0
Czech Republic	2	2	1
Denmark	1	1	2
Germany	2	2	3
Estonia	2	2	1
Ireland	2	1	1
Spain	2	3	0
France	1	1	0
Croatia	2	2	1
Italy	1	1	1
Cyprus	2	2	1
Latvia	2	2	1
Lithuania	1	1	1
Luxembourg	2	2	1
Hungary	2	2	1
Malta	3	2	1
Netherlands	3	2	1
Austria	2	2	1
Poland	3	2	0
Portugal	2	2	0
Romania	2	2	0
Slovenia	1	1	0

Member State	Coordination Group Meeting 13/10/2017 Presence	Coordination Group Meeting 19/10/2016 Presence	Coordination Group Meeting 24/10/2018 Presence
Slovakia	2	2	1
Finland	2	2	1
Sweden	2	2	2
United Kingdom	1	2	1
Norway	1	1	1
Iceland	1	0	0
Montenegro	0	0	1
Greece	0	0	0

Source: Authors' elaboration on information from the presence lists provided by DIGIT.D2.

Table B - 7 Number of participants in the ISA² Committee meetings (per Member State)

Member State	Committee Meeting 02/03/2016 Presence	Committee Meeting 09/06/2016 Presence	Committee Meeting 19/01/17 Presence	Committee Meeting 20/06/2018 Presence	Committee Meeting 24/01/2018 Presence
Belgium	2	1	2	1	1
Bulgaria	3	2	2	1	2
Czech Republic	3	3	2	1	3
Denmark	1	2	3	1	2
Germany	3	4	3	1	3
Estonia	5	2	2	1	1
Ireland	1	2	3	1	2
Spain	3	3	3	1	3
France	1	1	1	1	1
Croatia	2	2	2	1	2
Italy	2	2	2	1	2
Cyprus	2	2	2	1	2
Latvia	2	3	2	1	2
Lithuania	3	2	2	1	2
Luxembourg	3	3	3	1	3
Hungary	2	2	2	1	2
Malta	2	2	2	1	2
Netherlands	3	2	2	1	2
Austria	3	2	2	1	3
Poland	2	2	2	1	2
Portugal	2	1	2	1	2
Romania	2	2	2	1	2
Slovenia	2	2	2	1	2
Slovakia	2	2	2	1	4
Finland	3	2	3	1	2
Sweden	1	1	1	1	1

Member State	Committee Meeting 02/03/2016 Presence	Committee Meeting 09/06/2016 Presence	Committee Meeting 19/01/17 Presence	Committee Meeting 20/06/2018 Presence	Committee Meeting 24/01/2018 Presence
United Kingdom	3	2	2	1	1
Norway	2	0	3	1	3
Iceland	0	0	1	1	1
Montenegro	0	0	1	2	1
Greece	0	0	0	1	3

Source: Authors' elaboration on information from the presence lists provided by DIGIT.D2.

Other cross-border impacts

Table B - 8 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), eJustice Portal (JUST), OPOCE (OP), EU-CEG (DG SANTE), ESDEN (ESTAT). Around 200 public institutions across the 28 Member States 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 Member States	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 France, Italy, the Netherlands and Scotland and interest has been expressed from public administrations in Belgium and Slovenia.
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 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 Member States 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. Member States 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.

Package	Action number	Action Name	Contribution to cross-border interoperability
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 Member States are actively involved in a Task Force and a consortium of six Member States (FR, PT, UK, LT, DE, SI) has been set up to provide input and take part in the development of the guidelines for sharing of statistical services and to implement the reuse of 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 Member States.
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	Member States can consult and reuse 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 Member States using CEF funds, with more rollouts planned. INSPIRE Registry services have 450k accesses per quarter.*
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 Member States have participated in the CEF eProc DSI Others are using Structural Funds to implement an ESPD service. They all have implemented or are currently implementing an ESPD service (incl. NO) using the ESPD data model or the open source code developed under the ISA ² project. In more than 20 Member States, there is already at least one ESPD service available.
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 Member States are represented, and a Stakeholder group with representatives of businesses, social partners, civil society organisations in various Member States, the Economic and Social Committee and the European Committee of the Regions.
7. EU Policies - Supporting instruments	2016.14	European Citizens' Initiatives and European Parliament Elections	ECI-OCS serves the citizens and public administrations in all Member States 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 Member States
8. Supporting instruments for public administrations	2016.20	Joinup – European Collaborative Platform and Catalogue	The end-users of Joinup are from different EU Member States and countries outside the EU (USA, Canada, 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 reused by various Member States. 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	2016.32	European Interoperability Architecture (EIA)	EIRA has been deployed in EE, NL, DK, ES, CZ and PL.

Package	Action number	Action Name	Contribution to cross-border interoperability
public administrations			
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 instruments for public administrations	2017.01	Standard-Based Archival Data Management, Exchange and Publication	The action addresses the semantic interoperability 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	2016.3	Raising Interoperability Awareness – Communication Activities	This action contributes to the promotion of interoperability across the EU.

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

Source: Authors' elaboration on information from the Rolling Work Programme.

Efficiency

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

Table B - 9 Labour costs per hour in euro, services in 2017

Country	€/h
Belgium	41.1
Bulgaria	5.2
Czech Republic	11.5
Denmark	43.8
Germany	31.5
Estonia	12.5
Ireland	28.9
Greece	14.3
Spain	20.0
France	36.4
Croatia	11.4
Italy	27.4
Cyprus	16.5
Latvia	8.8
Lithuania	8.5
Luxembourg	40.6
Hungary	9.3
Malta	13.5
Netherlands	32.9
Austria	33.5
Poland	9.3
Portugal	14.5
Romania	6.7
Slovenia	17.5
Slovakia	11.4
Finland	32.0
Sweden	40.9
United Kingdom	25.2

Note: The table details the hourly labour costs for the service sector at the Member State level. Such costs include wage and non-wage costs net of subsidies; they do not include vocational training costs or other expenditures such as recruitment costs, spending on working clothes, etc.¹¹²

Source: Eurostat.

¹¹² For further details see: https://ec.europa.eu/eurostat/statistics-explained/index.php/Hourly_labour_costs#Source_data_for_tables_and_figures_on_this_page_.28MS

Coherence

- 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)

Alignment with the DSM Strategy

Table B - 10 ISA² contribution to Pillar I¹¹³ 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
2016.29	Catalogue of Services	Obliges Member States to create Points of Single Contact with combined information for business setup and other citizen formalities.
2016.07	SEMIC: Promoting Semantic Interoperability Amongst the European Union Member States	Semantic interoperability is a prerequisite for enacting most levels of systems' interoperability, including the once-only principle and ensuring open data.

Source: Authors' elaboration on information from the Rolling Work Programme.

Table B - 11 ISA² contribution to Pillar II¹¹⁴ of the DSM Strategy

Action number	Action name	Contribution to Pillar II: Creating the right conditions for digital networks and services to flourish
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
2016.05	European Public Procurement Interoperability Initiative	The activities supported by this proposal will help to further create or improve standards regarding public procurement and encourage Member States to shift towards full eProcurement
2016.20	Joinup-European Collaborative Platform and Catalogue	Joinup creates a central platform for observatory functionalities, collaborative features, and interoperability solutions

Source: Authors' elaboration on information from the Rolling Work Programme.

Table B - 12 ISA² contribution to Pillar III¹¹⁵ of the DSM Strategy

Action number	Action name	Contribution to Pillar III: Maximising the growth potential of our European Digital Economy
2016.19	e-TrustEX	Acts as a broker in the exchange of data and documents to foster greater interaction across heterogeneous systems
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.
2016.15	FISMA: Financial Data Standardization	Looks to work on ICT standardisation to reduce administrative costs of legacy and data systems in the financial sector.
2016.18	Development of an Open Data Service, Support, and Training Package in the Area of Linked	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

¹¹³ Access: better access for consumers and businesses to digital goods and services across Europe.

¹¹⁴ Environment: creating the right conditions and a level playing field for digital networks and innovative services to flourish.

¹¹⁵ 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
	Open Data, Data Visualisation and Persistent Identification	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.
2016.03	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.
2016.10	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.
2016.23	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.
2016.32	European Interoperability Architecture (EIA)	The EIA looks to maintain the EIRA, an interoperability reference that is key to the once-only principle
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.
2016.35	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.
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, but also the Open Data Initiative of the European Union and INSPIRE, among other.

Source: Authors' elaboration on information from the rolling work programme.

Alignment with the EIF

Table B - 13 ISA² contribution to the EIF, based on the sample of 20 actions

Package	Action number	Action Name	Contribution to the EIF
1. Key and generic interoperability enablers	2016.19	Trusted Exchange Platform (e-TrustEx)	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. The action thus contributes particularly to Recommendation 15 of the revised EIF, through enabling the secure exchange of documents.
1. Key and generic interoperability enablers	2016.29	Catalogue of Services	The action addresses Recommendation 44 of the revised version of the EIF on the catalogue of public services. Catalogue of Public services is one of the interoperability enablers for integrated public services according to the conceptual model defined by the revised 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.
2. Semantic interoperability	2016.07	SEMIC: Promoting Semantic	The Action supports the implementation of the EIF and the EIS by promoting semantic interoperability, through the definition and use of common specifications, thus contributing primarily

Package	Action number	Action Name	Contribution to the EIF
		Interoperability Amongst the European Union Member States	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.
2. Semantic interoperability	2016.16	Public Multilingual Knowledge Management Infrastructure for the Digital Single Market	The action meets the recommendations and principles of the new EIF, in particular regarding multilingualism, accessibility, administrative simplification, transparency, and reusability of the solutions. 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 allowing SMEs to sell goods and service cross-border in a digital single market.
3. Access to data/data sharing/open data	2016.03	Big Data for Public Administrations	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 Member States 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.
3. Access to data/data sharing/open data	2016.06	Sharing Statistical Production and Dissemination Services and Solutions in the European Statistical System	The project contributes to the new EIF and the Interoperability Action Plan by 1) developing, maintaining and promoting interoperable solutions for the production and dissemination of statistics by EU public administrations (including the EC) EIF (Focus Area 4); 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. (Focus Area 5) 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.
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	The action contributes to the new EIF, namely the interoperability principles: openness, transparency, reusability, user-centricity and multilingualism. The action contributes to priorities: organisational interoperability (Focus Area 2); sharing of good practices (Focus Area 3); governance structure (Focus Area 1) and key enablers: EU open data initiative (Focus Area 4).
4. Geospatial solutions	2016.10	European Location Interoperability Solutions for e-Government (ELISE)	ELISE will deepen the understanding of location interoperability enablers and barriers related to the transition towards digital government. As such, it is intended to provide technical assessments and recommendations for the new EIF and contribute to the implementation of the Interoperability Action Plan, particularly when it comes to Actions 4, 6, 17 & 19.
6. Decision making and legislation - Supporting instruments	2016.23	Legal interoperability (former ICT Implications of EU Legislation)	The action contributes to all EU policies, as it is about ensuring that EU legislation, no matter what the policy area, takes into account interoperability, ICT aspects and related impacts. The action implements Recommendation 27 on legal interoperability of the new EIF and the interoperability Action Plan action 3 of Focus Area 1 and actions 19 and 20 of Focus Area 5.
6. Decision making and legislation -	2017.04	Inter-Institutional Register of	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.

Package	Action number	Action Name	Contribution to the EIF
Supporting instruments		Delegated Acts (RegDel)	
8. Supporting instruments for public administrations	2016.20	Joinup – European Collaborative Platform and Catalogue	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, thus contributing to the reusability principle of the EIF.
8. Supporting instruments for public administrations	2016.21	National Interoperability Framework Observatory	This action will fulfil Objectives 4 and 5 of the Action Plan for interoperability. The observatory will monitor the implementation of the EIF Recommendations by Member States and the achievement of the roadmap of actions proposed in the EIF-IS and AP. It will also provide ad hoc and support training to Member States' public administrations to ensure EIF implementation across all levels of their national administrations.
8. Supporting instruments for public administrations	2016.35	EUSurvey	EUSurvey contributes primarily to the multilingualism principle of the EIF.
8. Supporting instruments for public administrations	2017.01	Standard-Based Archival Data Management, Exchange and Publication	The action follows the line of the second pillar of EIF (Core interoperability principles: Openness, Transparency, Reusability, Technological neutrality and data portability) and of the fourth pillar of EIF (Foundation principles for cooperation amongst public administrations: Preservation of information, Effectiveness and Efficiency) by proposing the creation of a standard-based approach for facilitating the preservation and the exchange of archival information of the public administrations in an open, transparent and reusable way. It also aims at creating a set of recommendations for the publication of archival information as open data mainly for the usage of citizens, focusing thus on the principles of the third pillar of EIF (Principles related to generic user needs and expectation: User-centricity, Inclusion and accessibility, Multilingualism).
9. Accompanying measures	2016.30	Raising Interoperability Awareness – Communication Activities	This action contributes to the principles of inclusion, accessibility and transparency by disseminating information about interoperability and the work of ISA ² .

Source: Authors' elaboration on information from the rolling work programme.

ANNEX C – INTERVENTION LOGIC

This Annex presents the intervention logic of the ISA² programme, comprising the rationale, the inputs, and the expected results of the intervention. This step aims to clarify the logic followed by EU decision-makers when establishing the ISA² programme. The intervention logic 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 **inputs/activities** of the programme, the **expected outputs, outcomes and impacts** of the programme and the logical links between these components.

The rationale for the intervention: “why did the EU establish the ISA² programme?”

A correct identification of the intervention logic starts from the understanding of **the rationale underlying the ISA² programme**. At this stage, the reasons that justified its establishment were identified by first assessing the needs and problems that it aims to address. As a second step, the main objectives pursued by EU decision-makers were outlined.

Needs and Problems¹¹⁶

The DSM Strategy¹¹⁷ recognises interoperability as a prerequisite for “*efficient connections across borders, between communities and between public services and authorities*”. Moreover, as the Digital Agenda for Europe¹¹⁸ highlights, 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 interoperability¹¹⁹:

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

When it comes to **problems**, the ISA² Proposal outlines one main issue, namely the existence of administrative e-barriers leading to a fragmented market.¹²⁰

¹¹⁶ 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.

¹¹⁷ 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

¹¹⁸ 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.

¹¹⁹ 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.

¹²⁰ See Section 1.2 of the ISA² Proposal.

This particular problem is affected by **eight drivers** (as pointed out in a series of documents: the ISA² Proposal, the Final Evaluation of the ISA programme¹²¹, the Commission Staff Working Document accompanying the DSM Strategy¹²²):

- Limited governance and coordination among Commission DGs and between Member States 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;
- Cultural fragmentation.¹²³

Objectives

The objectives of the ISA² 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, 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;
- **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?”.

Based on the ISA² Proposal and the ISA² Decision, the three levels of objectives have been identified.

General Objective:

¹²¹ Kurt Salmon, KPMG (2015), Final evaluation of the ISA programme, Final report v2.06, 1 December 2015.

¹²² 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.

¹²³ 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).

- 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.¹²⁴

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).

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

Table C- 1 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 • Users' satisfaction • Number of new sectors covered by existing solutions (cross-sector / cross-border dimension)

¹²⁴ See recitals 34, 36 and 45 of the ISA² Decision and Section 1.1 of the ISA² Proposal.

Operational objectives	Expected outputs	Performance indicators
<p>Operational Objective (2):</p> <p>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 ISA² Decision)</p>	<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 Member States Delivery of new services and common frameworks in time Increased availability of tools that meet the needs of sectors and Member States 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
<p>Operational Objective (3):</p> <p>To support and promote the assessment of the ICT implications of proposed or adopted Union law (Article 3 (c) of the ISA² Decision)</p>	<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
<p>Operational Objective (4):</p> <p>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 ISA² Decision)</p>	<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)¹²⁵ 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
<p>Operational Objective (5):</p> <p>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 ISA² Decision)</p>	<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.
<p>Operational Objective (6):</p> <p>To support and promote the mapping and analysis of the overall interoperability landscape in the Union</p>	<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 	<ul style="list-style-type: none"> Usage of EIRA by European public administrations Usage of EIC/EICart by European public administrations

¹²⁵ European Commission (2017), Better Regulation Guidelines, SWD(2017) 350, Brussels, 7 July 2017.

Operational objectives	Expected outputs	Performance indicators
<p>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 the areas where such solutions are still lacking (Article 3 (f) of the ISA² Decision)</p>	<p>Interoperability Reference Architecture (EIRA)</p> <ul style="list-style-type: none"> EIRA used by European public administrations EIC/EICart facilitating the deployment of interoperable solutions within and between European public administrations 	<ul style="list-style-type: none"> Number of references in implementations of interoperable solutions Number of interoperable solutions documented in the EIC/EICart
<p>Operational Objective (7):</p> <p>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 ISA² Decision)</p>	<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
<p>Operational Objective (8):</p> <p>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 ISA² Decision)</p>	<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 Member States 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)
<p>Operational Objective (9):</p> <p>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</p>	<ul style="list-style-type: none"> All existing ready-for-use interoperable and best practice solutions are documented in and accessible via Joinup¹²⁶ 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

¹²⁶ For further details see: <https://joinup.ec.europa.eu/>

Operational objectives	Expected outputs	Performance indicators
to avoid duplication of efforts while encouraging the re-usability of solutions and standards (Article 3 (i) of the ISA ² Decision)		
<p>Operational Objective (10):</p> <p>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 ISA² Decision)</p>	<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
<p>Operational Objective (11):</p> <p>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 ISA² Decision)</p>	<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
<p>Operational Objective (12):</p> <p>To develop a communication strategy [...], aiming to enhance information and increase awareness with regard to the ISA² programme and its benefits, targeting businesses, including SMEs, and citizens, and employing user-friendly means on the ISA² programme's website (Article 3 of the ISA² Decision)</p>	<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: Authors' own elaboration on the ex-ante evaluation of ISA² (Kurt Salmon (2015), Final evaluation of the ISA programme – Ex-ante evaluation of ISA²)

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 used to address the needs and problems, and to achieve the objectives identified in the intervention logic. In this context, these means largely correspond to the **actions of the ISA² programme**, as defined in the ISA² Rolling Work Programme.¹²⁷ The ISA² actions are grouped into nine packages as outlined below.

- **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 TESTA¹²⁸ and Open e-TrustEx¹²⁹.
- **The semantic interoperability package** consists of initiatives to establish and enhance semantic interoperability among public administrations through information standards and specifications. Examples include Core Vocabularies¹³⁰ and DCAT Application Profile for data portals in Europe¹³¹.
- 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. Example include "Providing big data opportunities for public administrations"¹³² and "FISMA: Financial Data Standardisation"¹³³.
- **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 Re3gistry¹³⁴ 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-Prior¹³⁵, ESPD¹³⁶ and eCertis¹³⁷.
- **The decision-making and legislation package** covers actions that support the decision-making process, in particular by enhancing interoperability between EU institutions and between them and the Member States. These actions address several processes – ranging from the collection of feedback provided by various

¹²⁷ European Commission (2016), ISA² Work Programme 2016 – Summary.

¹²⁸ https://ec.europa.eu/isa2/solutions/testa_en

¹²⁹ https://ec.europa.eu/isa2/solutions/open-e-trustex_en

¹³⁰ https://ec.europa.eu/isa2/solutions/core-vocabularies_en

¹³¹ https://ec.europa.eu/isa2/solutions/dcat-application-profile-data-portals-europe_en

¹³² https://ec.europa.eu/isa2/actions/providing-big-data-opportunities-public-administrations_en

¹³³ https://ec.europa.eu/isa2/actions/towards-better-financial-data-reporting_en

¹³⁴ https://ec.europa.eu/isa2/solutions/re3gistry_en

¹³⁵ https://ec.europa.eu/isa2/solutions/open-e-prior_en

¹³⁶ https://ec.europa.eu/isa2/solutions/european-single-procurement-document-espd_en

¹³⁷ https://ec.europa.eu/isa2/solutions/e-certis_en

stakeholders to the drafting of new legislation and monitoring that this legislation is implemented. The package led to the LEOS¹³⁸ 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.¹³⁹
- **The supporting instruments for public administrations package** map the interoperability landscape in the EU and provides support solutions for enhancing interoperability, ranging from sharing best practices to supporting the reuse of solutions. Examples include EUSurvey¹⁴⁰, Joinup – European Collaborative Platform and Catalogue¹⁴¹ and the National Interoperability Framework Observatory (NIFO)¹⁴².
- **The accompanying measures package** consists of activities related to raising awareness of interoperability and monitoring and evaluating the programme implementation. Examples include the annual SEMIC Conference¹⁴³, the ISA² Mid-Term Conference¹⁴⁴ and the ISA² Dashboard¹⁴⁵.

The expected results of the intervention: “what are the expected effects of the actions supported by the ISA² programme?”

At the time of enactment, the ISA² programme was expected to generate certain effects (i.e. to cause changes) on certain categories of stakeholders. These **effects** can be **classified into three** different **categories** (i.e. outputs, outcomes and impacts) based on the timeframe of their occurrence and the groups of addressees involved. It is worth noting that external factors and other EU policies may influence the performance of the ISA² programme.

(i) 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, it is necessary to identify the outputs that were expected to stem from the programme when it was initially adopted. It needs to be emphasised 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 C- 1 above summarises the expected outcomes and a series of key performance indicators related to each operational objective of the ISA² programme.

¹³⁸ https://ec.europa.eu/isa2/solutions/leos_en

¹³⁹ https://ec.europa.eu/isa2/solutions/ocs-ecis-0_en

¹⁴⁰ https://ec.europa.eu/isa2/solutions/eusurvey_en

¹⁴¹ https://ec.europa.eu/isa2/solutions/joinup_en

¹⁴² https://ec.europa.eu/isa2/solutions/nifo_en

¹⁴³ https://ec.europa.eu/isa2/news/save-date-semic-2018_en

¹⁴⁴ https://ec.europa.eu/isa2/events/isa%C2%B2-mid-term-conference-linking-public-administrations-businesses-and-citizens_en

¹⁴⁵ <https://ec.europa.eu/isa2/dashboard/>

(ii) Outcomes (expected)

The outcomes represent the **short-term and medium-term changes that occur at the level of the direct addressees of the programme**. Outcomes are usually connected to the specific objectives; therefore, they can be summarised as the following:

- 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;
- Take-up and re-use of the ISA² programme's results by European public administrations.

(iii) Impacts (expected)

As mentioned above, the intervention logic includes also the so-called **impacts**, i.e. the changes caused by an EU intervention **over a longer period** and also **affecting the entire society** 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 expected impacts can be identified:

- 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;
- Contributing to the successful achievement of the DSM.

ANNEX D – EVALUATION FRAMEWORK

This Annex presents the Evaluation Framework on which the entire Assignment is based.

Table D- 1 Evaluation Framework

Evaluation questions	Success/judgment criteria	Indicators	Data sources	Data collection / analysis methods
Evaluation criterion #1: Relevance				
<p>1. 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?</p>	<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 – Member States. ○ Stakeholders responsible for linked EU policies/initiatives. ○ 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 factsheets. ○ Study on the role of eGovernment and interoperability in the European Semester. 	<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 – Member States. ○ Stakeholders responsible for linked EU policies/initiatives. ○ Standardisation organisations. • 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 – Member States. ○ Stakeholders responsible for linked policies/initiatives. • Short questionnaire to be administered during the ISA² Mid-Term Conference. • Public consultation.

Evaluation questions	Success/judgment criteria	Indicators	Data sources	Data collection / analysis methods
			<ul style="list-style-type: none"> ○ State of Play of Interoperability in Europe. ○ Data on the digital economy from Eurostat. ○ Interim review of the DSM Strategy. 	<ul style="list-style-type: none"> • 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 criterion #2: Effectiveness				
<p>2. How far are the ISA² programme's results in the process of achieving the programme's objectives?</p> <p>3. Are there aspects 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 outputs. • Qualitative assessment of the alignment with principles 	<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 – Member States. ○ 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 Reports. ○ ISA² Dashboard. ○ Documentary evidence on funded actions (e.g. 	<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 – Member States. ○ Standardisation organisations. • 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 – Member States. • Short questionnaire to be administered during the ISA² Mid-Term Conference. • Public consultation. • Quantitative assessment of responses to interviews and surveys (Likert scale). • Qualitative assessment of responses to interviews and surveys and data and

Evaluation questions	Success/judgment criteria	Indicators	Data sources	Data collection / analysis methods
		spelled out in Article 4 of the ISA ² Decision.	deliverables, final reports).	information collected via desk research. <ul style="list-style-type: none"> Multicriteria analysis. Success stories/lessons learnt.
Evaluation criterion #3: Efficiency				
<p>4. To what extent has the programme been cost-effective?</p> <p>5. Which aspects of the programme are the most efficient or inefficient, especially in terms of resources mobilised?</p> <p>5.1 How is the programme performing relative to the planned work and budget?</p>	<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.¹⁴⁶ 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). 	<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 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.
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? (internal coherence)</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 	<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 	<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. 	<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.

¹⁴⁶ 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
<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? (external coherence)</p>	<ul style="list-style-type: none"> • 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 (forthcoming), ICT standardisation, Single digital gateway, eGovernment Action Plan, Tallinn Declaration on eGovernment. • 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 and the UNPAN. • 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 	<p>relevant EU programmes/policies.</p> <ul style="list-style-type: none"> • 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"> ◦ Solution Users – European Commission. ◦ Solution Users – Member States. • 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 – Member States. ◦ Stakeholders responsible for linked EU policies/initiatives. ◦ Experts. ◦ Indirect beneficiaries and wider public. • 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 Evaluation Reports. ◦ ISA² Quarterly Monitoring Reports. ◦ Documentary evidence on funded actions (e.g. official deliverables, final reports). ◦ Legal texts establishing other relevant programmes 	<ul style="list-style-type: none"> ◦ Solution Users – Member States. ◦ Stakeholders responsible for linked EU policies/initiatives. ◦ Standardisation organisations. • 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 – Member States. ◦ Stakeholders responsible for linked policies/initiatives. • Short questionnaire to be administered during the ISA² Mid-Term Conference. • 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. • Success stories/lessons learnt.

Evaluation questions	Success/judgment criteria	Indicators	Data sources	Data collection / analysis methods
	EU programmes (external coherence).		accompanying documents. <ul style="list-style-type: none"> ○ Legal texts devising other relevant EU policies and accompanying documents. ○ Documents describing global initiatives in the same field. 	
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 Member States 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 interoperability. • Contribution to the advancement of common EU policies. 	<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 contribution to the advancement of common EU policies. • Quantitative assessment of indicators summarising cross-border outputs of the programme. 	<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 – Member States. ○ Experts. ○ Indirect beneficiaries and wider public. • 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 Evaluation Reports. ○ ISA² Quarterly Monitoring Reports. 	<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 – Member States. ○ Standardisation organisations. • 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 – Member States. • Short questionnaire to be administered during the ISA² Mid-Term Conference. • Public consultation. • Quantitative assessment of responses to interviews and surveys (Likert scale).

Evaluation questions	Success/judgment criteria	Indicators	Data sources	Data collection / analysis methods
			<ul style="list-style-type: none"> ○ Documentary evidence on funded actions (e.g. official deliverables, final reports). 	<ul style="list-style-type: none"> • Qualitative assessment of responses to interviews and surveys and of data and information collected via desk research. • Success stories/lessons learnt.
Evaluation criterion #6: Utility¹⁴⁷				
<p>9. How do the ISA² programme's actions and results, achieved and anticipated, compare with the needs they are supposed to address?¹⁴⁸</p>	<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. • User satisfaction, with a breakdown by stakeholder group. 	<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 of the programme and current needs and problems. • Quantitative assessment of users' satisfaction (Likert Scale). • Quantitative assessment of the take-up by EU, national and sub-national 	<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 – Member States. ○ Stakeholders responsible for linked EU policies/initiatives. ○ Experts. ○ Indirect beneficiaries and wider public. • 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. 	<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 – Member States. ○ Stakeholders responsible for linked EU policies/initiatives. ○ Standardisation organisations. • 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 – Member States.

¹⁴⁷ 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.

¹⁴⁸ In order to draft policy recommendations, feedback on measures to improve the utility of the ISA² programme's actions has been collected. However, *stricto sensu*, future measures are not part of the interim evaluation, which is mostly a backward-looking exercise.

Evaluation questions	Success/judgment criteria	Indicators	Data sources	Data collection / analysis methods
		administrations of ISA2 outputs.	<ul style="list-style-type: none"> ○ ISA² Annual Monitoring and Evaluation Reports. ○ ISA² Quarterly Monitoring Reports. ○ Documentary evidence on funded actions (e.g. official deliverables, final reports). 	<ul style="list-style-type: none"> ○ Stakeholders responsible for linked policies/initiatives. • Short questionnaire to be administered during the ISA² Mid-Term Conference • 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.
Evaluation criterion #7: Sustainability				
10. To what extent is the financial, technical and operational sustainability of the developed solutions – maintained and operated through the ISA ² programme –ensured?	<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 – Member States. ○ Experts. ○ Indirect beneficiaries and wider public. • 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. 	<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 – Member States. ○ Standardisation organisations. • 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 – Member States.

Evaluation questions	Success/judgment criteria	Indicators	Data sources	Data collection / analysis methods
			<ul style="list-style-type: none"> ○ ISA² Annual Monitoring and Evaluation Reports. ○ ISA² Quarterly Monitoring Reports. ○ Documentary evidence on funded actions (e.g. official deliverables, final reports). 	<ul style="list-style-type: none"> • 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. • Success stories/lessons learnt.

ANNEX E – SAMPLE OF ACTIONS

The aim of this evaluation 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.¹⁴⁹ More specifically, the evaluation is conducted on a sample of 20 actions selected out of the total of 53 actions included in the 2018 Rolling Work Programme. **Four 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. **Action start date:** to provide the evaluation with enough data, no action started in 2018 should be selected.
4. **Action end date:** to the extent possible, actions that have already ended should be included in the sample.

To build the sample, a number of steps were followed. First, the 53 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 created under ISA². Third, a target sample size of 20 actions (i.e. more than one-third of the total) was set to ensure the feasibility of the evaluation while allowing for a comprehensive sample of typical actions. Then the Evaluation Team identified the **number of actions to be selected** in order to reflect: i) the proportions of actions from each package relative to the total action population; and ii) the proportion of old and new actions compared to the total number of actions per package. The relative proportions were rounded off, taking into consideration the third and fourth sampling criteria, namely the exclusion of actions started in 2018 and, to the extent possible, the inclusion of actions that have already ended (Table E - 1). The final sample is presented in Table E - 2 , which also provides an overview of the solutions stemming from selected actions. Sampled actions have been randomly selected to avoid any selection bias.

¹⁴⁹ Stakeholders related to all 53 actions were invited to answer the online surveys. However, desk research (review of documentary evidence) and interviews focused only on sampled actions.

Table E - 1 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	8%	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	0	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	16	11	5	30%	6	5	1
9. Accompanying measures	2	0	2	4%	1	0	1
TOTAL	53	29	24	100%	20	13	7

Note: The column "Number of ISA actions" denotes the number of actions continued under ISA² from previous editions of the programme. The column "Number of ISA² actions" denotes the number of actions newly started under ISA², which are not a direct continuation of any actions of the previous editions of the programme.

Source: Authors' elaboration on Rolling Work Programme.

Table E - 2 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 Interoperability Amongst the European Union Member States	ISA	Common framework (data models, data standards): Core vocabularies	Common specification/standard: Asset Description Metadata Schema (ADMS)	Common specification: DCAT Application Profile for data portals in Europe (DCAT-AP), GeoDCAT-AP, StatDCAT-AP	Common tool/service: VocBench3
2. Semantic interoperability	2016.16	Public Multilingual Knowledge Management Infrastructure for	ISA ²	Common framework: PMKI Core data model for multilingual taxonomies/terminologies	Common specification/standard: Semantic links - core dataset with additional semantic links between		

Package	Action number	Action Name	ISA/ ISA ²	Solutions			
		the Digital Single Market			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 the Area of Linked Open Data, Data Visualisation and Persistent Identification	ISA ²	Common tool/service: Catalogue of data visualisation tools (part of EU Open Data portal)			
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	
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		

Package	Action number	Action Name	ISA/ ISA ²	Solutions			
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)			
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.		
9. Accompanying measures	2016.3	Raising Interoperability Awareness - Communication Activities	ISA ²	Events organised by ISA ²	Events in which ISA ² participated		

Source: Authors' elaboration on information from the rolling work programme and the ISA² website

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