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Recommendations for organising and governing integrated public services

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FOREWORD



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The digital transformation of the public sector has been a priority of both European Institutions and Member State governments for a number of years due to its crucial role in enabling effective public administrations, which provide responsive and targeted services to citizens and businesses. This focus stretches back through the duration of the ISA² Programme, the Commission's initiative on interoperability solutions and common frameworks for European public administrations, as well the programmes preceding it.

In the present day, this focus on digitalisation has only intensified, with a renewed appreciation that a holistic approach needs to be taken if efforts to provide digital public services at both the level of Member States and in cross-border contexts are to be successful. One aspect of this holistic approach is an increased focus on organisation and governance of digital transformation projects. This is underlined, for example, in the Commission's recent Digital Strategy, which emphasises the centrality of enabling actions including governance if digital projects are to be successful.

The political commitments represented in the Tallinn Declaration reaffirm the commitment of the Member States (and EFTA countries) to the digital transformation if they are to increase the competitiveness of their economies, the well-being of their societies and the value of their services for their citizens. In implementing these commitments, including through European projects such as the Single Digital Gateway and new financing initiatives such as the Digital Europe Programme, it will be vital that all parties endorse a common focus on the effective governance and organisation of these efforts. The following report offers insights and recommendations as to how this can be approached.

1. INTRODUCTION

1.1. Scope and rationale of the study

This study has been carried out under the ISA² Programme launched in 2016 as the successor to the ISA Programme. The objective of this “Interoperability Solutions for Public Administrations, Businesses and Citizens” (ISA²) programme is to support 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. The programme’s objective is to put in place, support and operate public services and common frameworks for its main beneficiaries, namely public administrations at EU, national, regional and local level, as well as citizens and businesses interacting with those administrations.

Under this programme, the ISA² action “EIF Implementation and Governance Models” contributes to the Commission's efforts to pursue a consistent strategic approach to interoperability and provide concrete recommendations on how Member States should govern and implement interoperability actions.

As stipulated in the Technical Annex for the Specific Contract for ISA² Action 2016.33: European Interoperability Framework (EIF) Implementation and governance models under Framework contract DI/07624 - ABC IV Lot 3, the project team was requested to deliver a “Publishable final report grouping the mains result of the contract” (D06.03), as part of the execution of Task 6 - User Engagement and Awareness raising.

The outcome of this task will contribute to the implementation of the following actions of the Interoperability Action Plan (IAP) (European Commission, 2017 (1)):

- Action 2: *“Identify and describe governance structures and good practices for interoperability coordination”;*
- Action 6: *“Clarify and propose ways to formalise public administrations’ organisational relationships as part of the establishment of European public services. Identify and develop common process models to describe business processes. Identify best practices”*

This action plan was adopted in 2017 as part of the Communication “European Interoperability Framework – Implementation Strategy” (European Commission, 2017 (2)) to respond to the call for revision in the Digital Single Market strategy (DSM) (European Commission, 2015 (1)). The DSM identified interoperability as a major enabler for digital integration in Europe. At the same time, a revised European Interoperability Framework (EIF) was put forward, aiming to support public administrations develop integrated public services. The EIF provides a conceptual model representing the main aspects that must be addressed in order to ensure that digital systems are interoperable as well as the main components that must be combined in order to provide an integrated public service.

Building on previous work, this study **analyses and provides recommendations** on the implementation of two concepts from the European Interoperability Framework (EIF): **integrated public service governance (IPSG)** and **organisational interoperability (OI)**. More effective implementation of these concepts will enable public administrations to work together to develop more user-centric, accessible, and effective digital public services.

1.2. Purpose and structure of the document

This study summarises the work done over the course of this project and presents the main outcomes and findings. It aims to provide guidance and recommendations to public administrations developing and operating integrated public services on how to approach organisational and governance issues related to the development of these services.

In order to support this objective, the study presents a theoretical understanding of **organisational interoperability** and **integrated public service governance**. It provides concrete examples of how issues related to these concepts can be addressed through the presentation of five case studies describing the development and delivery of five different integrated public services.

In order to address these objectives and present this content, the study is structured in the following sections:

1. **Foreword:** Presentation of the context of the study by the European Commission;
2. **Introduction:** The scope, rationale, purpose and structure of the study;
3. **Executive Summary:** An overview of the main findings of the study, the approach used to reach them and recommendations;
4. **Theoretical section:** Defining **integrated public service governance** and **organisational interoperability**, introducing the context in which they emerged, and presenting a framework through which to understand them;
5. **Methodology:** The methodological steps in the study: literature review, first workshop, survey, development of case studies, second workshop and development of recommendations;
6. **Recommendations:** A series of recommendations for both **integrated public service governance** and **organisational interoperability** to be applied by public administrations developing and delivering new integrated public services;
7. **Conclusions and next steps:** A summary of the main outcomes of the study, and suggestions on directions and questions for future work in these areas.

2. EXECUTIVE SUMMARY

This study puts forward **recommendations for public administrations on how to implement** two components described in the European Interoperability Framework (EIF) – **integrated public service governance and organisational interoperability**¹. These recommendations aim to help public entities to develop and deliver more effective integrated public services, combining data sources and shared IT resources from multiple sources in order to provide users with a seamless experience.

The development of integrated public services, accessible through a digital channel, can lead to **more user-centric services for both citizens and businesses**. These services can reduce administrative burden for users, preventing repeat submissions of the same documentation, and ensure secure data transmission. In this context, issues of governance and organisation come to the fore as part of efforts to coordinate the work and resources of different public organisations.

Integrated public service governance is defined as providing the **framework for decision-making**² for **the provision of an integrated public service**. It relates to who makes the necessary decisions at each stage of the development, delivery and maintenance of this service, and how these decisions are made. **Organisational interoperability** is understood as involving “**integrating or aligning cross-organisational business processes and formalising relationships**” (European Commission, 2017 (2), p. 6)) between the organisations delivering an integrated public service. It is also understood to cover the selection and implementation of the organisational model used to deliver the integrated public service.

The report follows a **multiple case study approach** to develop its recommendations. It makes use of a **roadmap for integrated public services** to present in more detail the key phases that must be passed through and decisions that must be made in order to provide an integrated public service. This in turn is used to provide a more fine-grained understanding of **integrated public service governance**, providing detail on what decisions are within the scope of this concept. The roadmap is also used to build a more comprehensive understanding of **organisational interoperability**, identifying the points in the development of an integrated public service when decisions related to this concept are made.

The phases defined in the roadmap are:

- 1. Identify the need for change;**
- 2. Plan and select** (the data sources and services to be used, and basic organisational model to be followed);
- 3. Provide framework and set standards** (including the organisational and legal framework, business processes and interfaces, and semantic and technical standards);

¹ The study continues on from previous work in this area focussed on interoperability governance and the models that national governments and European programmes follow in order to ensure a consistent approach towards interoperability. See (European Commission, 2018)

² This definition of governance as a framework for decision making was also put forward by Pardo, Burke, & Nam (2011, p. 12)

4. Monitor and maintain (the overall performance of the integrated service and each of the elements described in the previous phase). The case studies are developed using this roadmap as a framework.



The five case studies are:

- Transfer of business register data over X-Road (**X-Road BR**) from *Estonia and Finland*: cross-border transfer of data between two business registers using the existing X-Road infrastructure;
- Standard Business Reporting (**SBR**) from the *Netherlands*: implementing standards for system-to-system submission of business reports to public and private organisations;
- Digital application for social security (**Digisos**) from *Norway*: national-level digital channel for applications for a social benefit provided at municipality level;
- Municipality Application Service Provider (**Municipality ASP**) from *Hungary*: central digital platform for local administrative management and the provision of local e-Government services;
- Automated Social Energy Tariff (**ASET**) from *Portugal*: automated assessment of citizen eligibility for a reduced energy tariff based on data held by different state administrations.

The lessons learnt and common approaches identified in these case studies were the basis for the following **recommendations on integrated public service governance and organisational interoperability**.



Integrated public service governance

- 1 take an incremental approach to developing integrated public services – assessing how governance structures and stakeholders involved need to change as the project progresses
- 2 consider whether and how to involve the private sector from the start of the project
- 3 assess whether and how the planned integrated public service can be delivered within the existing legal framework
- 4 involve political stakeholders to facilitate the creation of new infrastructure and resolve roadblocks, but avoid involving them directly in implementation
- 5 balance flexibility and consistency when selecting standards – gather sufficient input from stakeholders affected in order to make this judgement



Organisational interoperability

- 1 pursue administrative burden minimisation to facilitate the delivery of more effective integrated public services – for example through the provision of template agreements between organisations
- 2 consider a mix of different types of interoperability agreements and legislation to formalise organisational relationships
- 3 make use of existing technical infrastructure where possible – simplifying the organisational cooperation and relationships required to deliver the integrated service
- 4 pursue standardisation at the process level and allocate the resources to maintain these process standards
- 5 design processes in a user-centric manner – including by selecting a “proactive” organisational model for the integrated service so that the service can be instigated without action from the user

Recommendations for organising and governing integrated public services

These recommendations were developed on the basis of an analysis conducted at the level of individual integrated public services. Their implementation can help public administrations **develop and deliver more effective integrated services**. Although the study has touched upon national level policies such as the provision of a national data exchange infrastructure, it did not conduct a comprehensive comparison of such policies. Future work could focus further on **what can be done at the national level** in order support the development of integrated public services.

Organisation and governance issues pose significant challenges for public entities. The recommendations proposed in this study can provide initial responses to some of these challenges. Future work could further elaborate on the challenges related to the delivery of integrated public services, and build up a **checklist of targeted solutions** at both the level of central government and individual public service providers.

3. THEORETICAL SECTION: KEY CONCEPTS

This section introduces the definitions of both **integrated public service governance** and **organisational interoperability**. The section covers:

- **The origin of both concepts:** The documents and literature through which these concepts emerged and the definitions provided in the EIF and the context in which they were developed;
- **The delivery of integrated public services:** A roadmap for integrated public services is developed in order to provide a framework for understanding the governance and organisational issues public administrations must address. The definitions and working understanding of both **integrated public service governance** and **organisational interoperability** are developed in accordance with this roadmap;
- **The concept of integrated public service governance:** A definition and the main aspects of **integrated public service governance** are put forward, drawing on the framework provided by the roadmap for integrated public services.
- **The concept of organisational interoperability:** A definition and the main aspects of **organisational interoperability** are put forward, drawing on the framework provided by the roadmap for integrated public services.

3.1. The origin of both concepts

3.1.1. The focus on integrated public services

Both **integrated public service governance** and **organisational interoperability** were **developed as concepts in the context of efforts by public administrations to provide integrated public services and ensure the interoperability of the digital systems and components** provided by different public organisations. An integrated public service “refers to the result of bringing together – and fitting together – government services so that citizens can access them in a single seamless experience based on their wants and needs” (Kernaghan, 2012, p. 1). Initiatives to provide integrated services are being implemented all across the world, including in Europe, where the European Commission has called attention in its Communication on the European Interoperability Framework Implementation Strategy to the “great potential to further improve public services through end-to-end integration and automation” (European Commission, 2017 (2), p. 2).

The provision of integrated services requires organisations to work together to perform different tasks and provide data in order to provide one seamless experience for the user. For this to be successful, the **digital components and systems drawn upon by each organisation must be interoperable**. This allows data to be exchanged between the systems, information and knowledge to be shared, and enables the organisations involved to work together towards their mutual goals (European Commission, 2017 (3), p. 4).

There are several Communications from the European Commission and statements from the EU’s leaders which confirm Europe’s commitment to providing interoperable digital public services:

- **Digital Single Market Strategy:** The European Commission emphasised the need to do more “to modernise public administration, achieve cross-border interoperability and facilitate easy interaction with citizens” (European Commission, 2015 (1), p. 16)
- **Communication on the EU eGovernment Action Plan 2016-2020: Accelerating the digital transformation of government:** The European Commission reiterated that digital public services should adhere to the principle of “interoperability by default”, meaning that “public services should be designed to work seamlessly across the Single Market and across organisational silos, relying on the free movement of data and digital services in the European Union” (European Commission, 2016, p. 4)
- **Tallinn Declaration on eGovernment:** The Ministers of EU Governments responsible for eGovernment policy and coordination reaffirmed their common vision to “strive to be open, efficient and inclusive, providing borderless, interoperable, personalised, user-friendly, end-to-end digital public services to all citizens and businesses – at all levels of public administration” (EU Ministers for eGovernment, 2017, p. 3);
- **European Commission Digital Strategy:** This presents a series of initiatives with the overall objective of “[supporting] European public administrations’ ability to embrace a convergent and interoperable digital transformation that will enable them to be more effective in implementing EU policies” (European Commission, 2018, p. 17).

3.1.2. The European Interoperability Framework

It is in the context of this ongoing push to provide integrated and interoperable digital public services, that **the Commission in 2017 put forward its revised European Interoperability Framework (EIF)** (European Commission, 2017 (3)). One of the objectives of the EIF is to “inspire European public administrations in their efforts to design and deliver seamless European public services” as well as to “contribute to the establishment of the digital single market by fostering cross-border and cross-sectoral interoperability for the delivery of European public services” (European Commission, 2017 (3), p. 5). In support of these objectives, the **EIF provides an interoperability model and a conceptual model for integrated public service provision**, each of which addresses different aspects that public administrations should take into account when developing and providing integrated public services.

The **EIF interoperability model** consists of four “layers” of interoperability – legal, organisational, semantic and technical. Each layer represents a different aspect which must be addressed when attempting to provide a new interoperable digital service. In this model, **organisational interoperability** refers to “integrating or aligning cross-organisational business processes and

Recommendations for organising and governing integrated public services

formalising relationships between service providers and consumers of European public services.” (European Commission, 2017 (3), p. 6).

The **conceptual model for integrated public service provision** outlines the main components that should be combined to provide an integrated public service. This includes both internal and external data sources and services. Included in this conceptual model is **integrated public service governance**, which refers to the mechanisms and structures put in place to enable “different public administrations to work together to meet end users’ needs and provide public services in an integrated way” (European Commission, 2017 (3), p. 21). This governance will have to cover decisions and issues at “all layers: legal, organisational semantic and technical” (European Commission, 2017 (3), p. 22).

These two elements are combined below in Figure 1 which shows that public administrations must both put in place the necessary components for integrated public service provision and address issues at each interoperability layer. In summary, when setting up new integrated public services, public authorities must ensure that **integrated public service governance** is provided for in order for different organisations contributing data sources and services to be able to collaborate. In addition, they must address **organisational interoperability** issues so that the business processes by which these different organisations share data and perform tasks are properly integrated and aligned, and the organisational relationships defining the respective tasks and responsibilities are formalised.

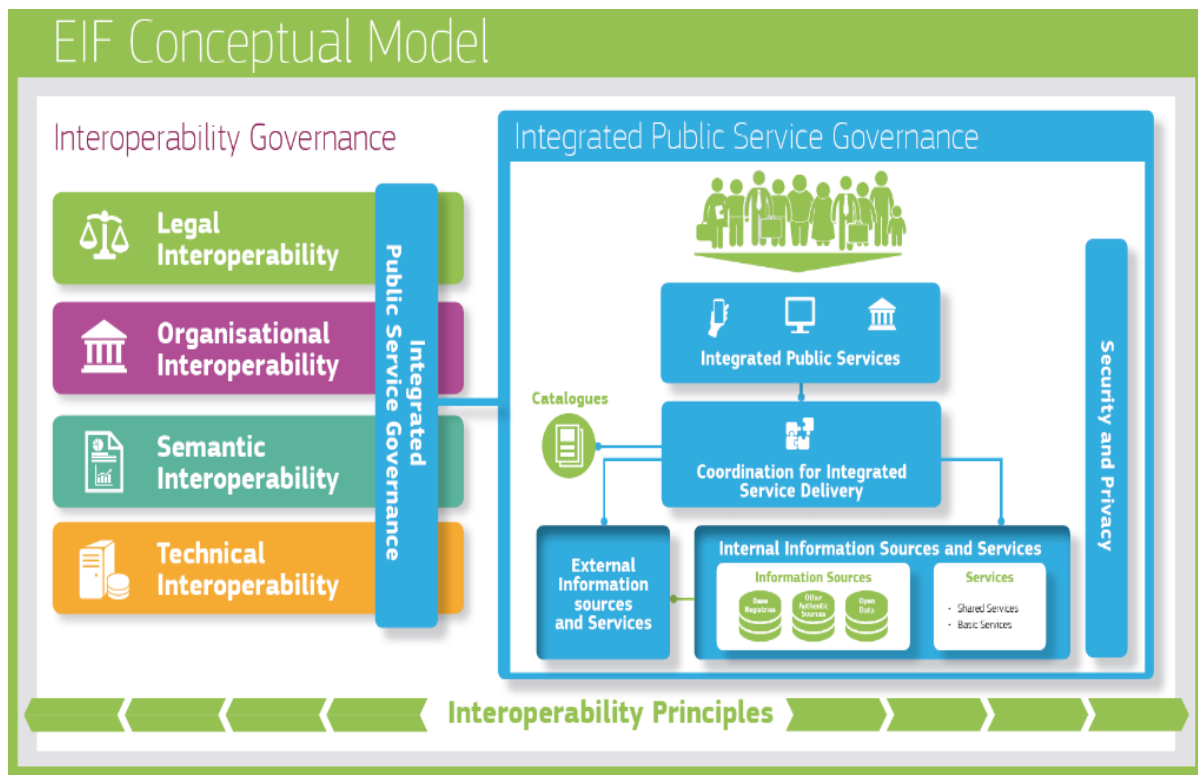


Figure 1: EIF conceptual model

Source: (European Commission, 2017 (3), p. 38)

3.2. The delivery of integrated public services

This section provides a framework for understanding the steps that must be taken and decisions that must be made to develop and provide an integrated public service. It presents a roadmap for integrated public services and demonstrates that this roadmap is compatible with the approach to interoperability and integrated public service provision provided in the EIF.

3.2.1. [A roadmap for integrated public services](#)

To guide the work on **integrated public service governance** and **organisational interoperability**³, this study makes use of a modified⁴ version of the roadmap for integrated public services provided by Kubicek, Cimander and Scholl (2011, p. 128). This roadmap presents four phases through which integrated public services are developed and delivered:

1. Identify the need for change;
2. Plan and select;
3. Provide framework and set standards;
4. Monitor and maintain.

The roadmap features a focus on interoperability aspects and the selection and maintenance of standards (phases 3 and 4). It shows the main decisions that the public authorities responsible for the integrated public service have to make at each phase. The roadmap describes a recurring process, as the provision of the new service affects the demand for additional services. When the fourth phase is completed, the first phase begins again, with stakeholders calling for additional integration and digitalisation and the provision of more effective public services. The roadmap is depicted in **Figure 2** below. Each phase is described in additional detail in the sections below.

³ The roadmap for integrated public services developed during the study (drawing on the previous work cited) is an important part of the study methodology, providing the basis for the development of the case studies presented later. It is put forward at this early stage in the report because it is an important tool for understanding the definitions of both integrated public service governance and organisational interoperability in this chapter.

⁴ This version has been modified from the original to align the terminology with the EIF. In addition, the four headings have been added to distinguish between different phases: 1. Identify the need for change; 2. Plan and select; 3. Provide framework and set standards; 4. Monitor and maintain. The “business process standards and interfaces”, “semantic standards”, and “technical standards” have also been expanded to continue to the “monitor and maintain” phase in order to show that continued attention is required to the maintenance of these standards. Finally, the focus on shared IT services has been shifted into the “plan and select” phase. The visual layout of the roadmap has also been altered.

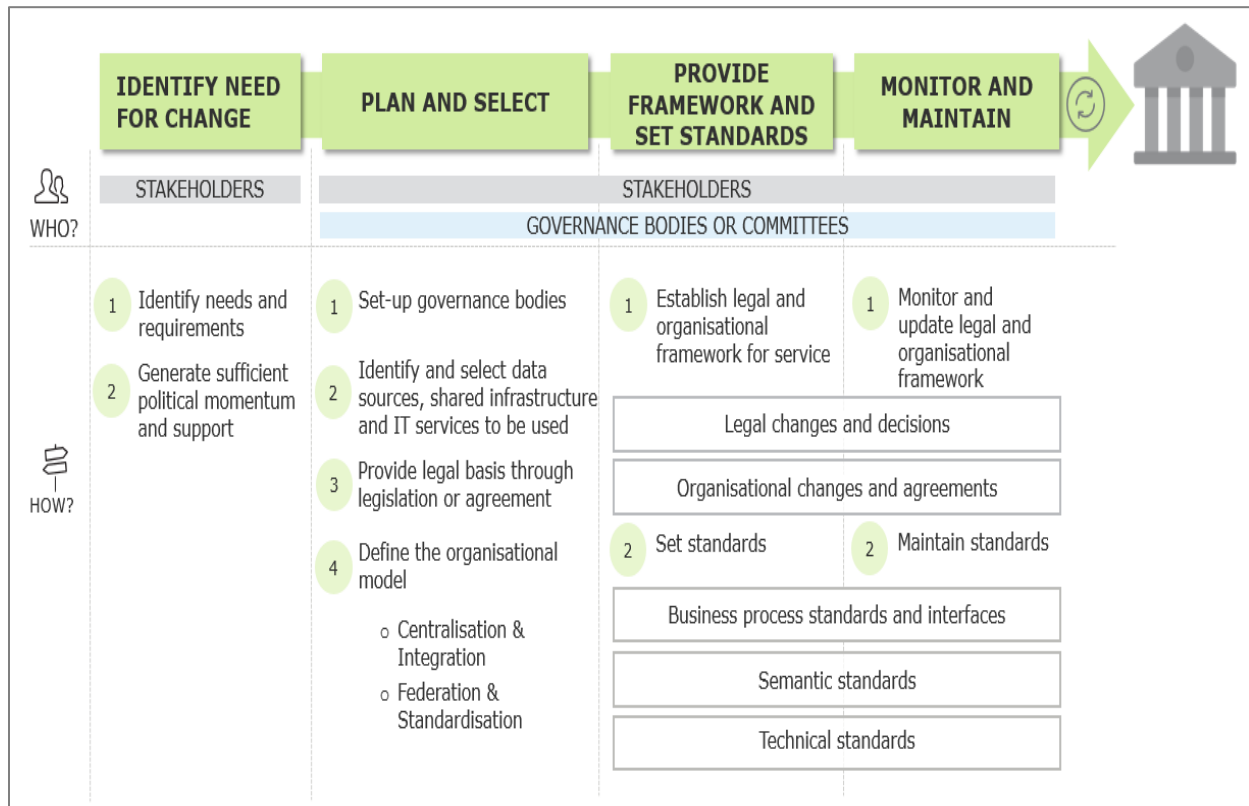


Figure 2: Roadmap for integrated public services

Source: adapted from Kubicek, Cimander, & Scholl, 2011, p. 128

3.2.1.1. Identify the need for change

During this phase, **the demand for a new integrated public service arises**, as a range of stakeholders (citizens, businesses, civil society, public administrations) push it onto the political agenda and generate political support and momentum for the service.

3.2.1.2. Plan and select

When sufficient political momentum and support is generated, **a planning committee or body needs to be set up to provide a governance structure for the new service**. This body plays an important role in the **early planning decisions, such as those on which services, infrastructure and data sources could be combined** to deliver the new integrated service. In addition, the planning body will make decisions on which stakeholders will be involved in delivering the service and how they will work together, **determining the organisational model that will be pursued**⁵. A key decision involves the choice between a federalisation and standardisation approach, or a centralisation and integration approach⁶. In some situations, centralisation and integration may not be politically desirable even if it would be a more efficient solution.

⁵ This is not to rule out the possibility that in the early stages the service could be developed through a more bottom-up approach, with the organisations involved beginning to collaborate informally to improve or pilot the service. However, for the type of fully developed service we are interested in, at some point it will be necessary to go through the planning stages for the longer term future and basis for the service, even if the service's origins are informal.

⁶ Both approaches are presented in Section 3.3 below.

During this phase, **a legal basis for the service and its governance bodies may be required**. In some cases, existing governmental institutions have the legal authority to lead this process. In other cases, where there has been no previous cooperation between the stakeholders involved, these bodies have to be established by laws, directives or regulations issued at national or at European level, or by agreements and contracts negotiated between all stakeholders. In some cases, it is the initial provision of a new legislative act which creates the drive and activity to develop the new service and its governance structures, as with the Regulation for a Single Digital Gateway (European Parliament and Council, 2018).

3.2.1.3. Provide framework and set standards

The **next step involves the selection and implementation of standards across the different layers of interoperability** – technical, semantic and business process. To develop an effective service, the process standards provided should take into account principles including administrative simplification and pro-active service design.

Further legal and organisational changes and agreements may also be required to set up and operate the service. On the legal side, this involves passing the necessary legislation to ensure that the organisations involved have the necessary rights to perform the roles and that data can flow between them. This could involve the use of instruments such as implementing acts at the European level. At the organisational level, this involves ensuring that the organisations have the necessary capabilities and resources (including human resources) to perform the tasks assigned to them. In the case of centralisation, a shift from tasks that have been fulfilled by multiple administrations to a central unit has to be managed, while in the case of a federated system, there will be a need for a liaison officer to deal with compliance with standards and to act as the contact person for all partners in the federation. During this phase, the organisational agreements that ensure a clear distribution of responsibilities in the development and delivery of the integrated service will be concluded.

3.2.1.4. Monitor and maintain

During this final phase of the roadmap, **it will be necessary to monitor the standards and agreements developed during the previous stages** across all the domains to which they apply: legal, organisational, business process, semantic, technical. This will ensure that the new integrated service provides an adequate level of performance, and that the different components are properly maintained. These duties may be overseen by the same organisations responsible for the development of the integrated service in the previous phases, or other organisations may be allocated this role.

3.2.2. The roadmap for integrated public services and the EIF

The roadmap for integrated public services described above is compatible with the understanding of interoperability presented in the EIF interoperability model as well as with the account of integrated public service provision provided in the EIF conceptual model for integrated public service provision.

Table 1 below shows how the roadmap aligns with the understanding of interoperability provided in the EIF Interoperability Model, with its four interoperability layers – legal, organisational, semantic, and technical, as well as two components related to governance – interoperability governance

Recommendations for organising and governing integrated public services

and **integrated public service governance**. Interoperability governance refers to efforts to provide a “holistic approach to interoperability” (European Commission, 2017 (3), p. 20). It entails providing “frameworks, institutional arrangements, organisational structures, roles and responsibilities, policies, agreements and other aspects” that promote a common understanding and implementation of interoperability. When developing an integrated public service, public authorities will draw upon this understanding of interoperability in order to ensure that the different components of the integrated service can interoperate. They may, for example, draw on suggested or mandated approaches to selecting standards that are provided at a central level as part of interoperability governance.

For each of the interoperability layers provided in the EIF, **Table 1** shows how decisions related to these layers are covered at each of the last three phases⁷ of the roadmap.

⁷ The first phase of the roadmap “identify the need for change” refers to the actions taken by stakeholders to initially impress on public authorities the need for a new integrated public service. It is not presented in this mapping as the actions by stakeholders in this phase precede the interoperability decisions taken by public authorities (i.e. as part of interoperability governance, integrated public service governance, and the different interoperability layers) and do not overlap with them.

Table 1: EIF interoperability model mapped to the roadmap for integrated public services

		ROADMAP FOR INTEGRATED PUBLIC SERVICES		
		Plan and select	Provide framework and set standards	Monitor and maintain
EIF INTEROPERABILITY MODEL	Interoperability governance	Interoperability governance refers to the documents and artefacts promoting a common understanding and implementation of interoperability and the entity or entities responsible for updating and deciding on these positions. These resources are drawn on at each stage of the roadmap (e.g. re-use of common approach to selecting standards promoted by the central administration).		
	Integrated public service governance	Integrated public service governance provides the framework for decision-making at each stage of the roadmap (who makes the decisions at each stage, and how).		
	Legal interoperability	Provide legal basis through legislation or agreement.	Establish implementing rules to the legal basis.	Make legal changes and decisions as needed.
	Organisational interoperability	Identify and select data sources, shared infrastructure and services to be used; Define the organisational model; Assess what reorganisation of business processes is necessary.	Establish organisational changes and agreements; Set business process standards and interfaces.	Update organisational changes and agreements; Maintain business process standards and interfaces.
	Semantic interoperability	Identify potential semantic standards from existing national, international and EU options	Set semantic standards.	Maintain semantic standards.
	Technical interoperability	Identify potential technical infrastructure to be used	Set technical standards; Establish technical infrastructure.	Maintain technical standards and infrastructure.

In addition, **Table 2 shows how the roadmap aligns with the understanding of the delivery of integrated public services provided in the EIF Conceptual Model for Integrated Public Service Provision**⁸. For each component described in the conceptual model, the table shows how it is affected by the decisions made during the final three phases⁹ of the roadmap.

Table 2: EIF conceptual model for integrated public services mapped to the roadmap for integrated public services

		Roadmap for integrated public services		
		Plan and select	Provide framework and set standards	Monitor and maintain
EIF CONCEPTUAL MODEL FOR INTEGRATED PUBLIC SERVICES	Coordination function	Define what coordination <i>function</i> is required to integrate the information sources and services used to provide the integrated public service.	Establish coordination function integrating information sources and services.	Monitor and maintain the performance of the <i>coordination function</i> and the overall integrated public service.
	Internal information sources and services	Identify the <i>internal and external information sources and services</i> that can be used to provide the integrated public service.	Establish legal and organisational frameworks, and standards, processes, and interfaces by which the different <i>information sources and services</i> will be integrated.	Monitor and maintain the legal and organisational framework, and standards, processes, and interfaces by which the <i>information sources and services</i> are integrated.
	External information sources and services			
	Catalogues	Identify and draw on <i>catalogues</i> to find potential information sources and services to be used. Create catalogues if they are not yet in place.	-	Refer to <i>catalogues</i> for opportunities to incorporate new functionalities. Update <i>catalogues</i> with information on the new integrated service.
	Security and privacy	Focus on ensuring <i>security and privacy</i> at each step of the roadmap.		

⁸ European Commission, 2017, Annex to the European Interoperability Framework - Implementation Strategy, p. 29, https://eur-lex.europa.eu/resource.html?uri=cellar:2c2f2554-0faf-11e7-8a35-01aa75ed71a1.0017.02/DOC_3&format=PDF

⁹ The first phase of the roadmap “identify the need for change” refers to the actions taken by stakeholders to initially impress on public authorities the need for a new integrated public service. It is not presented as the actions described in this phase precede the decisions taken by public authorities to provide a new service (developing a coordination function and drawing on the available resources) and do not overlap with them.

3.3. The concept of integrated public service governance

According to the conceptual structure provided by the EIF, **integrated public service governance** is about ensuring the **different organisations** contributing data sources and services in order to provide an integrated public service **are able to collaborate** (European Commission, 2017 (3), p. 21). The EIF also includes the “establishment and management of interoperability agreements” within the scope of **integrated public service governance**. However as this topic overlaps substantially with that of the “organisational agreements” that are treated as part of **organisational interoperability** (see section 3.3), this issue is not addressed in this section.

This understanding can be expanded upon drawing on other contributions from the academic literature and other European projects. For example, according to a report on governance models for the e-Sens project¹⁰, “**governance is about decision-making** and ensuring that stakeholders are involved and take on their different roles” (DIGST and ICTU, 2014, p. 32). Other work echoes this focus on decision-making, positing that governance involves “proper delegation of power and decision-making authority” (Flumian, 2018, p. 7) or providing “the framework for decision rights and accountability” (Pardo, Burke, & Nam, 2011, p. 12).

Building on this focus on collaboration between organisations and the provision of a framework for decision-making, the roadmap for integrated public service can again be used to provide a more detailed picture of what **integrated public service governance** entails. In order to set up and deliver an integrated public service, the decisions and issues described at each point of this roadmap need to be addressed by the relevant public authorities and other stakeholders. **Integrated public service governance refers to who makes these decisions and how, from the planning phase onwards.** It therefore entails the decision-making and oversight of each of the final three phases described in the roadmap above in order to ensure the provision of an integrated public service. **Figure 3** below illustrates this point.

¹⁰ e-Sens was a European project that aimed to promote and facilitate the provision of cross-border digital public services. For more information, see <https://www.esens.eu/>

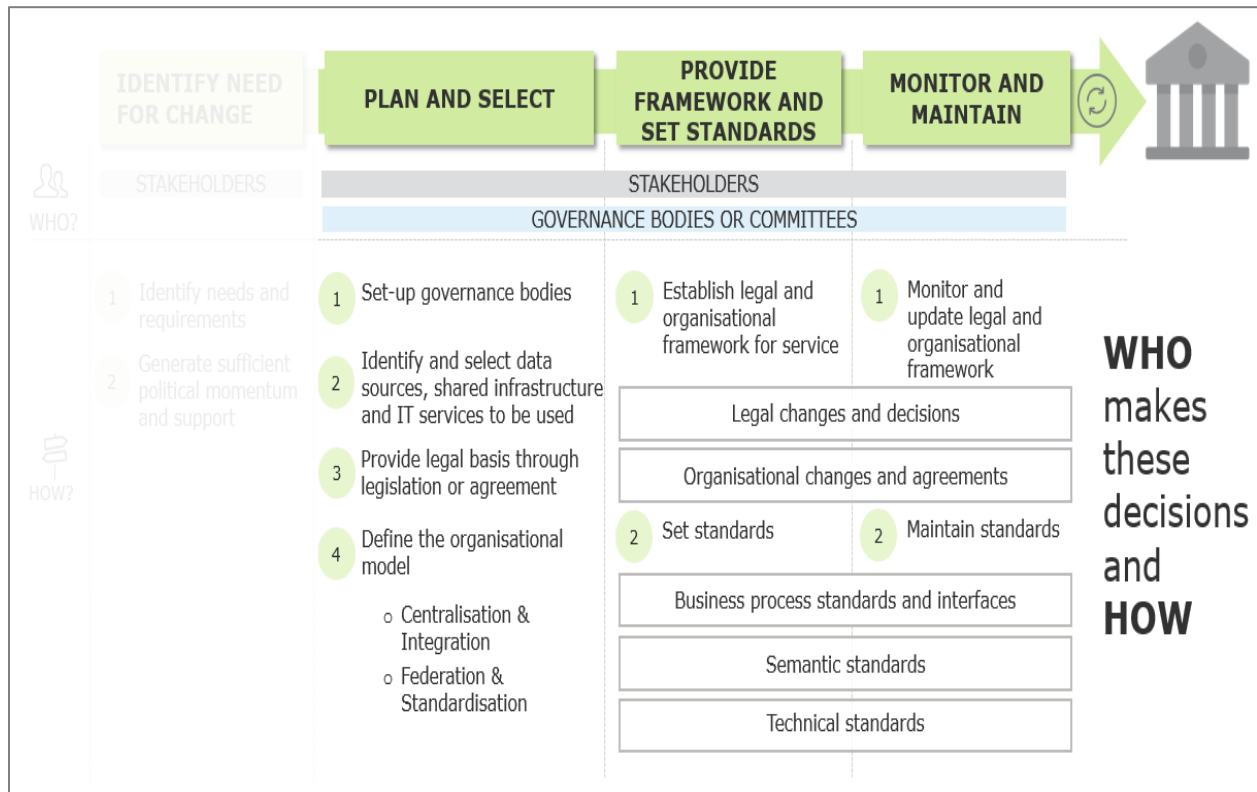


Figure 3: Integrated public service governance according to the roadmap

Different bodies and procedures may be involved at each of the stages as well as within them. For example, different organisations may be involved for the selection, authorisation and maintenance of the necessary standards across the different interoperability layers. **Integrated public service governance** covers the decision-making procedures and bodies responsible for each of these.



To summarise, **integrated public service governance refers to who makes the decisions and how the decisions are made in relation to:**

- *The “plan and select” phase* – including the steps taken to define the organisational model for the service, to provide a legal basis for it, and to identify and select the data sources, infrastructure and shared IT services that could support it;
- *The “provide framework and set standards” phase* – including the steps taken to establish a legal and organisational framework, and develop or select the necessary standards on the business process, semantic and technical layers;
- *The “monitor and maintain” phase* – including any steps to maintain or update the organisational and legal framework and the standards that have been selected.

3.4. The concept of organisational interoperability

As already presented in Section 3.1, the EIF defines **organisational interoperability** as being about “**integrating or aligning cross-organisational business processes and formalising relationships**” (European Commission, 2017, p. 6) between the organisations involved in developing and delivering a public service. This study expands on and draws upon this definition to enable a further exploration of this concept and how it can be implemented effectively.

As explained in the United Nations’ Compendium of Innovative e-Government Practices, the provision of digital services also necessitates “redesigning organizational structures ... according to the citizens’ and businesses’ needs” (United Nations, 2013, p. iii). This redesign of the organisational structure can take a number of key forms, but as argued by Kubicek, Cimander and Scholl (2011, p. 28), two basic models can be distinguished¹¹:

- **Centralisation and integration:** Formerly separate databases or workflows are integrated into a single database or business process, and the organisational authority over it is centralised;
- **Federation and standardisation:** Different organisations continue to maintain separate databases and systems in a decentralised manner. Common interfaces and standards are agreed upon in order to enable the exchange of data between these systems.

The decision on the organisational model has a decisive impact on the business processes that are aligned and the formal agreements reached between organisations to deliver an integrated service. This study treats the choice of organisational model together with other organisational changes as an aspect of **organisational interoperability**.

The roadmap for integrated public services presented in the previous section can be used to depict the stages in the development and delivery of an integrated public services at which decisions on **organisational interoperability** must be made. **Figure 4** below shows at which stages in the roadmap decisions related to **organisational interoperability** are made.

¹¹ An additional model followed could theoretically also be to split a service that was previously provided centrally into several different distinct services (e.g. provided regionally). However, the concept of organisational interoperability is being assessed in the context of the development of *integrated* public services, the focus is put on efforts to bring together resources rather than split them apart. This option is therefore not analysed further.

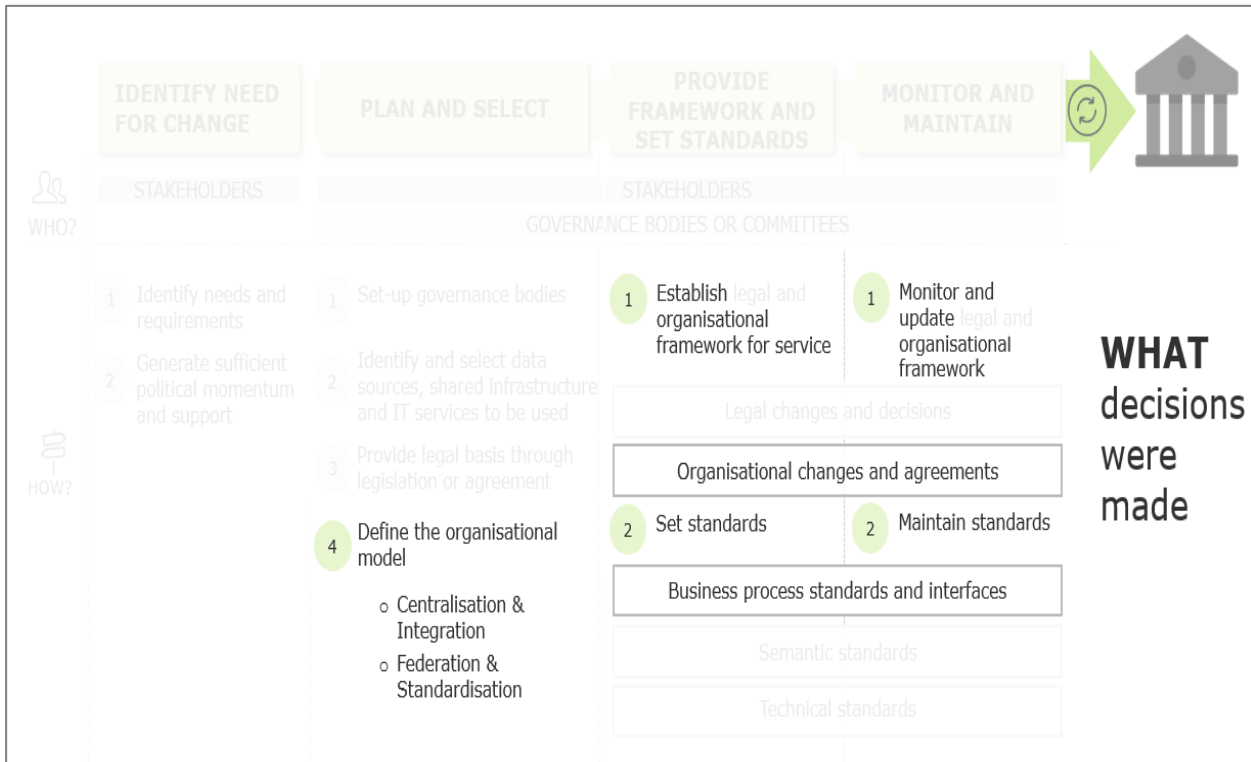


Figure 4: Organisational interoperability according to the roadmap

For the purposes of this study, **organisational interoperability** therefore refers to the following decisions made during the development and delivery of an integrated public service:

- During the “Plan and select” phase: The choice of **organisational model** for the service;
- During the “Provide framework and set standards” phase:
 - implementation of **organisational changes** (tasks and responsibilities) to support the organisational model selection;
 - definition of **organisational agreements** to formalise each entity’s responsibilities;
 - selection of the **business process standards and interfaces** used to complete each task and data exchange.
- During the “Monitor and maintain” phase: The **monitoring, maintenance and update of the solutions** defined in relation to each of the areas mentioned in the previous phase:
 - organisational changes;
 - organisational agreements;
 - business process standards and interfaces.

This chapter has provided a theoretical understanding of both **integrated public service governance** and **organisational interoperability**. Building on this, the next chapter presents the approach followed to further explore these concepts and develop recommendations for their implementation

4. METHODOLOGY

4.1. Overall approach and rationale

For this project, a **multiple case study approach was followed** in order to explore how the concepts of **integrated public service governance** and **organisational interoperability** governance are applied in concrete cases. Five case studies were developed, with the level of analysis for each being the development and delivery of an integrated public service by a number of different public authorities.

This approach was followed in order to allow insights into how public organisations approach the development of integrated public services in practice, as opposed to theoretically. This methodology also provides the possibility of drawing comparisons across the methods taken in different sectors and country settings. By analysing the approach to decision-making, collaboration and the distribution of tasks and business processes among the organisations involved in these integrated public service projects, recommendations were developed on **organisational interoperability** and **integrated public service governance**. In order to ensure robust and reliable findings, a number of different steps were taken to provide first a solid understanding of the concepts being studied, and to identify, select and develop case studies which could lead to the extraction of valuable lessons and recommendations. The steps were:

- **Build understanding** of **organisational interoperability** and **integrated public service governance**: A *literature review* was conducted in order to ensure a reliable understanding of the concepts being studied. In addition, a *first workshop* was organised which gathered information from academics, practitioners developing integrated public services and other stakeholders on the main components of these concepts.
- **Identify and select case studies**: The *first workshop* also provided a first opportunity to gather examples from participants of potential integrated public services that could be used as case studies. Building on this, a *survey* was made publicly available, and distributed to workshop participants and other stakeholders in order to gather additional examples. Finally, *desk research* was conducted to identify other examples, resulting in a longlist of 38 integrated public services. A series of selection criteria were applied to this longlist in order to narrow it down to five integrated public services to be used as case studies.
- **Develop case studies**: A series of *interviews* were conducted with “project owners” who had worked directly on the integrated public service projects used as case studies. Interview questions covered decisions made at each step of the roadmap for integrated public services presented in Section 3.2.1, who made these decisions and how. The case studies discuss how the integrated public service in question was

developed and delivered, focussing on how issues related to **organisational interoperability** and **integrated public service governance** were addressed. Lessons learnt on both concepts were developed for each case study.

- **Propose recommendations:** The case studies and lessons learnt from them were presented during a *second workshop*. Participants validated the case studies and the proposed lessons. This was then the basis for further analysis of the similarities and differences in the approaches taken to **organisational interoperability** and **integrated public service governance** in each case study. This fed into a final series of proposed recommendations on each concept.

Figure 5 below provides a visualisation of each phase of this methodology. Further details on each are provided in the sections below.

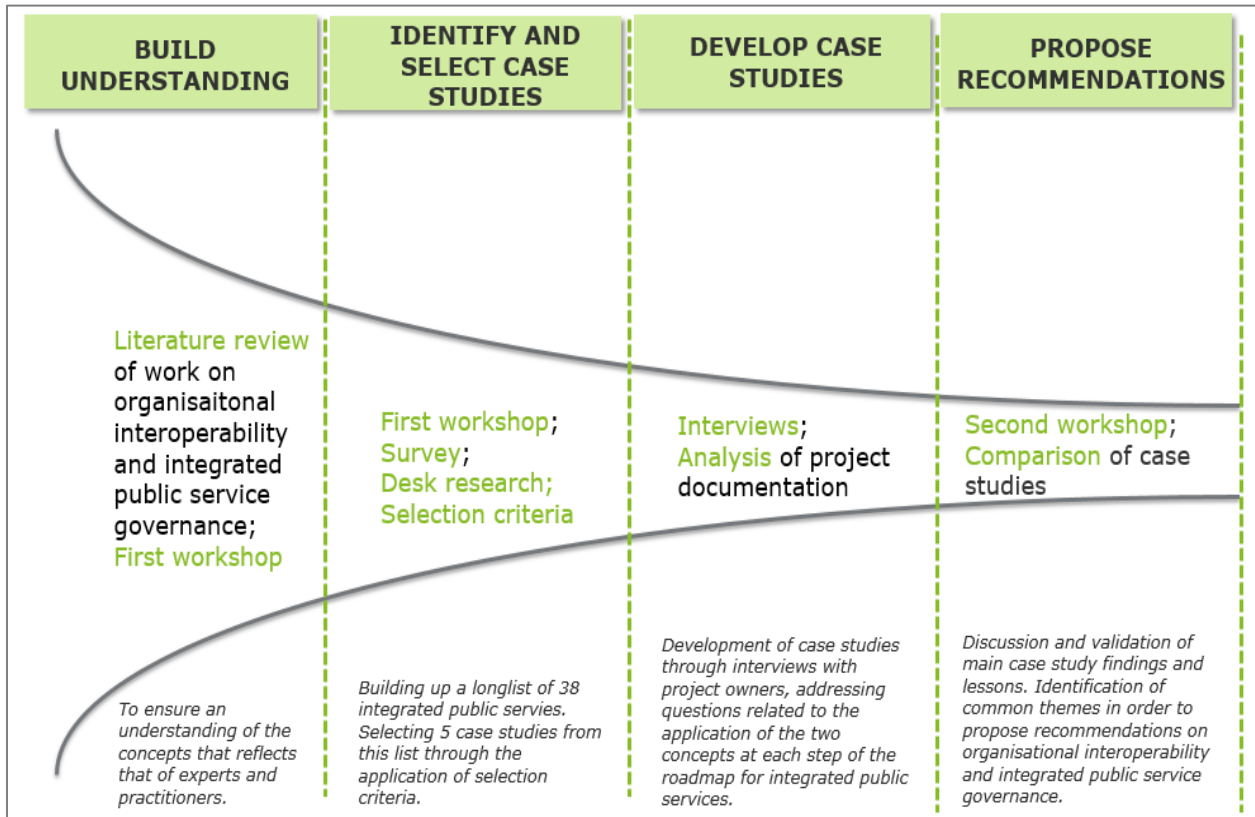


Figure 5: Overview of study approach

4.2. Building understanding of organisational interoperability and integrated public service governance

As summarised above, during this phase of the study, a solid understanding of both **organisational interoperability** and **integrated public service governance** and the issues and decisions these

concepts involved was built up. This was done firstly through a review of the available academic and institutional literature, and secondly through exchanges with experts and practitioners working on integrated public services during a project workshop.

4.2.1. Literature review

A literature review on both **organisational interoperability** and **integrated public service governance** was conducted to assess the state of knowledge on these concepts, how other researchers had approached them and to uncover any findings that could be incorporated into the study approach. Sources from both the academic and institutional literature were drawn upon. The full literature reviews can be found in Annex 10.4 (on **integrated public service governance**) and Annex 10.5 (on **organisational interoperability**).



The literature review on integrated public service governance:

- revealed a **trend** on the part of public administrations **towards the provision of integrated public services**, which aim to ensure a single, seamless experience for citizens, businesses and other users accessing public services;
- identified a focus on the delivery of integrated public services as an integral part of the new European Interoperability Framework and an important part of efforts to develop European and cross-border digital services;
- reviewed the challenges facing integration projects, which must overcome siloed structures and complex questions on organisational redesign and alignment;
- summarised the **factors that increase the likelihood of integrated public service projects succeeding**, which include shared vision and objectives, leadership, political will, and the presence of financial incentives;
- pinpointed **governance as a key enabler** of successful integrated public service projects;
- reviewed definitions of governance in different contexts (country level, corporate), identifying a common theme among these definitions that **governance is about providing a framework for decision-making**;
- identified the **development, selection and maintenance of standards** as a key decision domain for **integrated public service governance**.
- **Distinguished** the concept of **integrated public service governance from interoperability governance**, which refers to the steps taken to promote a consistent approach towards interoperability across an administration or multiple administrations. Countries have adopted many different models in order to implement interoperability governance.



The literature review on **organisational interoperability**:

- presented **organisational issues as a major challenge** for administrations attempting to develop integrated public services, due to the difficulty of promoting collaboration between entities with different structures and processes. Situated **organisational interoperability** as a challenge for current EU priorities, such as the promotion of the once-only principle;
- identified a **lack of conceptual clarity** regarding **organisational interoperability**, with different authors proposing different scopes and definitions. Nonetheless, common themes were uncovered among these definitions, including a focus on aligning business processes, defining organisational relationships and organisational models, and finding suitable instruments to formalise these relationships;
- distinguished **business process interoperability** as one component of **organisational interoperability**, and reviewed the progress made towards applying business process management and business process engineering methodologies in a public sector context. Identified the use of a service-oriented architecture as one way of promoting business process interoperability;
- distinguished between **different types of organisational models and relationships** that could be pursued for an integrated service depending on whether horizontal integration¹, vertical integration¹ or multi-area integration¹ is required;
- detected a common focus in several national and EU interoperability frameworks on the need for **instruments to formalise the organisational relationships** required to deliver integrated public services; differentiated between multilateral and bilateral interoperability agreements as different approaches to formalising these relationships.

The literature reviews were used to develop an understanding of the main issues and components related to **organisational interoperability** and **integrated public service governance**. They fed into the definitions put forward for these two concepts in Section 3.3 and Section 3.3 and into the development of the roadmap for integrated public services described in Section 3.2. They were also used to inform the discussions during the first project workshop.

4.2.2. First Workshop

The first project workshop¹² was held on 14 March 2019 and was attended by 41 participants who were members of the ISA Committee, European Commission project officers, practitioners from Member States' administrations working on integrated public services, and other stakeholders. The workshop was used to **present the study goals and approach to these stakeholders and receive their input on issues related to organisational interoperability and integrated public service governance.**

Breakout sessions were organised during the workshop in order to provide participants with a greater opportunity to discuss and explore different facets of the two concepts. Aspects discussed included the main challenges and decisions of each concept, and how they differ across different domains, and the instruments and tools that can be used to support their implementation.



On **integrated public service governance**, the main points emerging from these breakout sessions were:

- the **importance of common targets and goals** as enablers of integration projects;
- the **enabling role played by a clear leadership or hierarchy** in integrated public service projects;
- the potential **facilitating role that regulation can play in governance**, as it can help provide a common framework within which decisions are made;
- the need to **promote the re-use of common tools and building blocks** when developing integrated public services. The provision of clear registries of available tools and building blocks can help facilitate this.
- the need for a **focus on skills**. An absence of skills can lead to a reluctance to engage in new projects including integration efforts and a retreat instead into a comfort zone.

¹² An overview of the discussions and findings of the workshop can be found on JoinUp, see <https://joinup.ec.europa.eu/collection/nifo-national-interoperability-framework-observatory/event/eif-workshop-organisational-interoperability-and-public-service-governance-14-march-2019>



On **organisational interoperability**, the main points emerging during these breakout sessions were:

- the **need for a common vision** between the different organisations contributing to the integrated public service in order to align processes and activities. This is especially necessary when the organisations display significant cultural differences and there is a need to build trust;
- the advantages of **identifying a main driving organisation to push a project forward** and overcome potential lack of interest from other organisations;
- the need to **tailor business process modelling techniques to the audience** they target. Business process modelling techniques can facilitate communication and provide a common language to describe processes, but, for some audiences, it is important to ensure the language used is not too technical;
- the benefits of a **focus on organisational capabilities** rather than specifications. A focus on capabilities can help to bridge differences across domains.

These inputs and insights from the workshop were used to develop a better theoretical and practical understanding of **organisational interoperability** and **integrated public service governance**. This fed the following phases of the project, in which integrated public service projects were selected for analysis in case studies in order to assess how **organisational interoperability** and **integrated public service governance** issues should best be approached.

4.3. Identifying and selecting case studies

During this phase of the project, a **longlist of 38 integrated public service projects was built up** before being **narrowed down to 5**. The full longlist can be viewed in Annex 9.5. A first source of projects for the longlist was the first workshop, during which participants were asked to provide examples of successful integrated public service projects¹³. Two additional methods were used to identify additional projects – a survey and desk research. More information is provided on both methods in the sections below as well as on the criteria used to select five case studies from the longlist.

4.3.1. Survey

The “EIF Implementation and Governance survey”¹⁴ was made publicly available online from 29 March 2019-10 May 2019 using the EU survey tool¹⁵. Respondents included participants in the first workshop,

¹³ For integrated public service projects mentioned during the workshop, the project team followed up with desk research in order to gather additional information.

¹⁴ An article summarising and advertising the survey can be found on JoinUp, see https://joinup.ec.europa.eu/collection/nifo-national-interoperability-framework-observatory/news/participate-eif-survey#ISA_Action

¹⁵ See https://ec.europa.eu/isa2/solutions/eusurvey_en<

members of the ISA committee, civil servants and other experts on digital public services from all over Europe.

In total, **21 respondents replied to the survey**. The respondents came from seven different Member States (Czechia, Estonia, Germany, Greece, Hungary, Portugal and Sweden) as well as from Norway, Montenegro, and the European Institutions. The majority came from public administrations, with just a handful from universities, international organisations and non-profit organisations.

The survey asked respondents both for **examples of integrated public services** that represent **good practice in organisational interoperability** and examples of integrated public services that represent **good practice in integrated public service governance**. A short introduction to the survey briefly explained what was meant by each concept. In addition, respondents were asked on which points related to **organisational interoperability** or **integrated public service governance** they would be interested in additional guidance on.

In total, **19 integrated public services were put forward by these respondents**, with 14 suggested as good practice examples for **integrated public service governance** and 5 suggested as good practice examples for **organisational interoperability**.

4.3.2. Desk research

In order to expand on the examples identified through the survey and build up a longer longlist of integrated public services, **additional desk research was carried out**. This resulted in a **further 19 potential integrated public services being added to the longlist**, bringing it to a total of 38. The main sources drawn on for this desk research were:

- European Commission eGovernment factsheets¹⁶;
- European Commission web pages on European digital public services;
- Articles on Joinup¹⁷;
- OECD digital government toolkit¹⁸;
- EIF workshop¹⁹ on **organisational interoperability** and **integrated public service governance**.

4.3.3. Selection of the case studies

The next step of the project entailed the selection of projects to develop as case studies from the longlist of 38. The following selection criteria were applied:

¹⁶ See <https://joinup.ec.europa.eu/collection/nifo-national-interoperability-framework-observatory/digital-government-factsheets-2018>

¹⁷ See <https://joinup.ec.europa.eu/>

¹⁸ See <https://www.oecd.org/governance/digital-government/toolkit/>

¹⁹ The first project workshop presented in Section 4.2.2

- **Location/Country:** from across Europe, from different types of country – i.e. in terms of size and government structure;
- **Level of government:** different levels of government (cross-border, national, municipal) and involving integration across different levels of government. At least one should be a cross-border example;
- **Sector:** a range of different sectors (e.g. social security, taxation, legal, etc.)
- **Organisational structure:** examples of both centralisation¹ and decentralisation¹;
- **Maturity:** preferably fully operational (or be at the stage of an advanced pilots);
- **Good practice:** either in terms of the performance of the service, or the particular structures and processes put in place to ensure **integrated public service governance** and **organisational interoperability**. Evidence for the service being a good practice could include:
 - put forward in the survey as an example of good practice (of **integrated public service governance** and/or **organisational interoperability**);
 - promoted as a good practice by the government authority responsible;
 - included in another list of digital public service good practices;
 - operational and running as intended.

The first four selection criteria – location/country, level of government, sector, and organisational structure were applied in order to ensure that the case studies chosen represented a wide cross-section of the different contexts in which integrated public service projects can be implemented. This helps ensure that the findings are not limited to a particular sector or region. The final two selection criteria – maturity and good practice – were applied in order to identify case studies which were likely to produce a larger number of lessons for other administrations pursuing integrated public service projects.

Based on these criteria, the following five integrated public services were selected as case studies:

- Transfer of business register data over X-Road (**X-Road BR**), from Estonia and Finland;
- Municipality Application Service Provider (**Municipality ASP**), from Hungary;
- Digital application for social security (**Digisos**), from Norway;
- Standard Business Reporting (**SBR**), from the Netherlands;
- Automated Social Energy Tariff (**ASET**), from Portugal.

Figure 6 shows how the case studies are distributed across Europe, while **Table 3** shows how these five case studies fulfil the selection criteria.

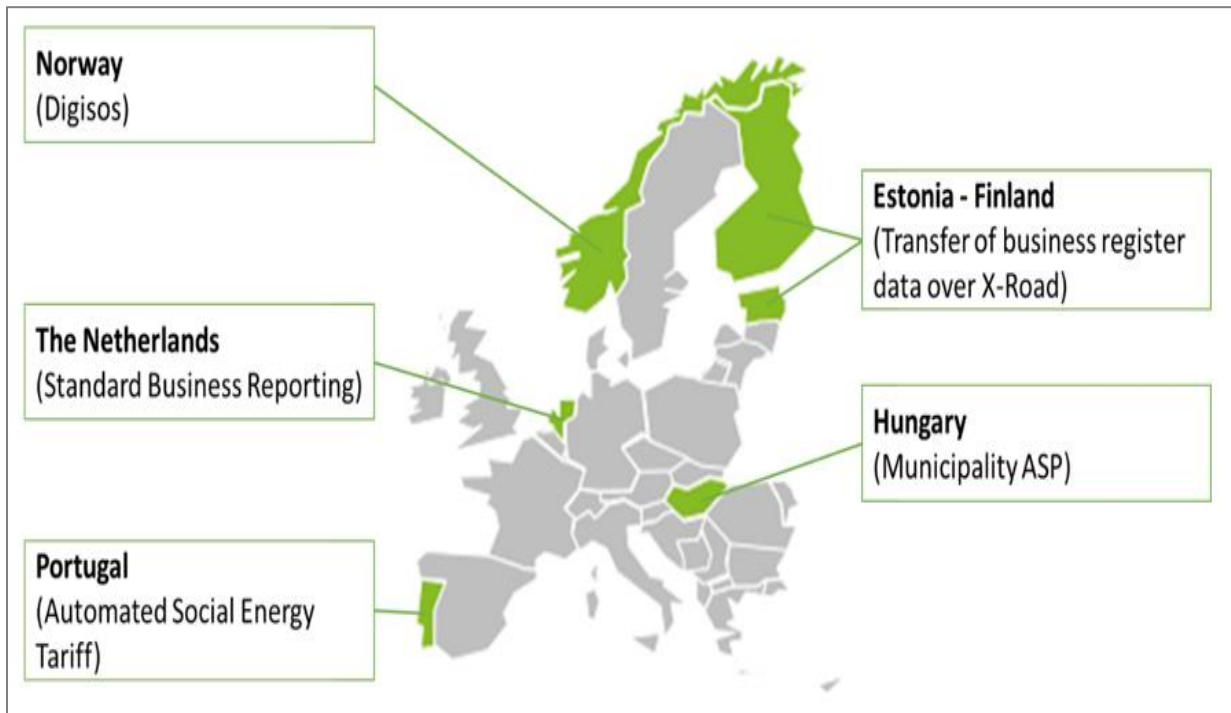



Figure 6: Location of the case studies

Recommendations for organising and governing integrated public services

The table below shows how the selected case studies fulfil the selection criteria:

Table 3: The five case studies mapped against the selection criteria



	Location	Sector	Organisational structure	Maturity	Level of government	Good practice
X-Road BR	Estonia / Finland North East Europe	Business registers	Decentralised	Operational since 2018	National, cross-border	<ul style="list-style-type: none"> • The X-Road data exchange infrastructure enabling this data exchange project is listed as a good practice in the National Interoperability Framework Observatory (NIFO) Factsheet for Estonia²⁰. • The X-Road data exchange model has been adopted and implemented in countries around the world, including Argentina, Japan, Iceland, and Vietnam.
Municipality ASP	Hungary Central Europe	Public administration	Centralised	Operational since 2016	National/ municipalities	<ul style="list-style-type: none"> • High level of take-up of the solution by municipalities (99%)²¹ • Listed as a good practice in the NIFO Factsheet for Hungary²² as it fosters standardised internal operations of local governments and a common platform-based provision of local eGovernment services to citizens and businesses.

²⁰ NIFO e-Government factsheet from 2018, Estonia, url: https://joinup.ec.europa.eu/sites/default/files/inline-files/eGovernment_in_Estonia_2018_0.pdf

²¹ By default the use of the solution is mandatory. However, municipalities are able to opt out. So the level of take-up is still evidence that municipalities see it as a well-functioning solution.

²² NIFO e-Government factsheet from 2018, Hungary, url: https://joinup.ec.europa.eu/sites/default/files/inline-files/eGovernment_in_Hungary_2018_0.pdf

Recommendations for organising and governing integrated public services

Digisos	Norway North West Europe	Social security	Decentralised	Operational since 2018	National / municipalities	<ul style="list-style-type: none"> • Adopted by substantial number of municipalities (111 of 422) on a voluntary basis. Over 50% of the population now have access to the service.
SBR	Netherlands Central West Europe	Public administration	Decentralised	Operational since 2009	National	<ul style="list-style-type: none"> • Referred to as a good practice in the NIFO Factsheet for the Netherlands²³ as it provides governments and businesses with a cost-effective, secure, adaptable method for exchange of business information between organisations.
ASET	Portugal Southern Europe	Energy sector	Decentralised	Operational since 2016	National	<ul style="list-style-type: none"> • Referred to as a good practice in the NIFO Factsheet for Portugal²⁴ as it provides a successful example of cross-sectorial collaboration between public entities using an existing interoperability platform. • Has led to a huge increase (from 150 000 to 850 000) in citizens receiving a reduced energy tariff.

²³ NIFO e-Government factsheets from 2018, Netherlands, url: https://joinup.ec.europa.eu/sites/default/files/inline-files/eGovernment_in_Netherlands_2018_0.pdf

²⁴ NIFO e-Government factsheets from 2018, Portugal, url: https://joinup.ec.europa.eu/sites/default/files/inline-files/eGovernment_in_Portugal_2018_0.pdf

4.4. Developing the case studies

The five case studies were developed via interviews with project owners together with analysis of documentation shared with or identified by the study team. For all case studies, at least three rounds of interviews were conducted, following a standardised interview template matching the information requirements for the case. Interviews were held, wherever possible with contacts who had direct experience in developing and delivering the integrated public service being analysed. In most cases, this involvement was in a project management role. Where it was not possible to gain access to an interviewee with this profile, an alternative interviewee candidate was put forward by the public administrations involved in the project. Generally this candidate had previously been selected by the public administrations as the responsible person for communications regarding the project.

For each case study, questions were put and addressed related to:


- The **background of the integrated public service**: the aims of the project, the main data sources and services being integrated, the primary organisations involved, the status and success of the service;
- **Organisational interoperability**: decisions on the organisational model selected, organisational changes implemented, organisational agreements reached, and business processes and interfaces used;
- **Integrated public service governance**: who made the decisions at each stage of the roadmap for integrated public services (presented in Section 3.2.1) and how were these decisions made.

Following the interviews, the information gathered on the case studies was analysed to ensure that a sufficient level of detail was provided on the development of the integrated public service at each phase of the roadmap for integrated public services previously presented. The main decisions and actions taken at each point of this roadmap were described in order to outline the approach taken for each case study related to **integrated public service governance** and **organisational interoperability**.

The following sections provide a summary of the case studies and the main lessons that can be drawn from them. A full description of the case studies can be found in the separate document “Annexes to the Final Report: Case studies and workshops on organising and governing integrated public services”. A summary table of the main lessons learnt from each case study on **organisational interoperability** and **integrated public service governance** is also presented in this document.

4.4.1. Case Study Fiche 1: X-Road – Exchange of information between Estonian and Finnish Business registers (X-Road BR)


Case study summary


 **Abstract:** The following case study illustrates how the Estonian and Finnish national business registers have made use of the X-Road data exchange infrastructure in order to enable automated bilateral exchange of business register data. The case study focuses on how these two organisations dealt with issues relating to **integrated public service governance** and **organisational interoperability** in setting up this service.

Both the approach to **integrated public service governance** and **organisational interoperability** were greatly influenced by the presence of an existing technical infrastructure for data exchange (X-Road) that the business registers could use. This existing infrastructure meant that a relatively informal and simple governance structure could be relied upon in developing the new service, involving just small project teams from each business register. A separate governance structure previously established for the X-Road infrastructure retains responsibility for the maintenance and update of the technical standards by which data is exchanged.

The nature of the X-Road infrastructure shaped the project's organisational model – which is decentralised, with organisations maintaining ownership of their own data. In addition, standardised X-Road business processes were used for the exchange of data, so the business registers did not have to organise any further alignment of business processes.

Key findings from the case study are that building on existing technical infrastructure can simplify governance issues and help organisations cooperate in developing a service. Starting with a relatively simple use-case is also to be encouraged, with more ambitious aspects (e.g. extending the data exchange to additional stakeholders) added only at a later stage.

 **Service description:** The national business registers of Estonia and Finland have an agreement on automatic transfer of each other's business register data via the X-Road infrastructure – a public data exchange layer used in both countries. The national X-Road infrastructures are federated, allowing X-Road members to exchange data cross-border. The data exchanged is used only in carrying out the business registers' statutory duties. It cannot be shared with other organisations. The two business registers have agreed to exchange their data free of charge.

 **Integrated public service governance features:** In order to set up the new service, a relatively simple and informal governance structure was implemented. Small project teams (+/- 6 people) from each business register negotiated the conditions of the bilateral data exchange. As both organisations own their data, they did not have to involve other organisations particularly closely (e.g. ministries). There was just a straightforward approval process. The negotiating teams included a range of profiles (technical, legal) allowing them to address interoperability issues in different domains (legal, organisational, business process, semantic, technical).

The X-Road infrastructure has its own governance structure responsible for the maintenance of the technical infrastructure and standards for data exchange. However, the stakeholders who are part of this X-Road governance structure were not directly involved in the negotiations that led to the development of the new service.



Organisational interoperability features: The organisational model for the business register project was determined by the nature of the X-Road infrastructure. This infrastructure assumes a decentralised model under which organisations maintain ownership and continue to host their own data. The business processes and interfaces used for the data exchange project were also determined by the use of X-Road, which provides standardised processes for the exchange of data between X-Road members, and the standards according to which any interfaces are developed.

The main interoperability agreement formalising the conditions of the data transfer is the bilateral “Agreement on the Exchange of Register Information” between the two business registers. However, there are also important contracts and service level agreements in the background (between the business registers and the national X-Road operators). These formalise the level of service that each register can expect from the X-Road infrastructure. In addition, a “trust federation agreement” between the Estonian and Finnish X-Road ecosystems formalises the framework for the cross-border exchange of data between organisations belonging to each national X-Road system.



Key lessons:

Integrated public service governance:

- Reduce the need for new formal governance structures when setting up services on top of existing by building on existing technical infrastructure with established governance structures. This allows relatively light and informal approaches to service development to be pursued.
- Start with relatively simple use cases before moving on to more ambitious aspects.
- Political stakeholders should play an enabling role in setting up the necessary infrastructure for these projects, but should avoid involvement in technical implementation of new services except where there are roadblocks caused by disagreements between the involved organisations.

Organisational interoperability

- Formal interoperability contracts are crucial even for relatively simple use cases.
- The presence of an established infrastructure and standardised data exchange processes can greatly facilitate exchanges between organisations. They can mean it is not necessary to “align business processes” between organisations for simple use cases.

Case study details



Lead organisation/s: Centre of Registers and Information Systems, Estonia; Finnish Patent and Registration Office; X-Road operators (Information System Authority, Estonia; Population Register Centre, Finland).



Location Estonia/Finland



Level of government: National



Level of data exchange: Cross-border



Project dates: June 2018–present



Maturity: Fully developed; not yet operational



Domain: Business registry



Use case: Cross-border access to base registry data



Contact email:


Centre of Registers and Information Systems;
Tambet.Artma@rik.ee




Website: <https://x-road.global/case-study-the-business-registers-of-estonia-and-finland>


4.4.2. Case Study Fiche 2: Standard Business Reporting (SBR)

Case study summary

 **Abstract:** This case study presents how the Standard Business Reporting (SBR) solution in the Netherlands is used to enable system-to-system submission of business reports to both public and private organisations. The case study focuses on how **integrated public service governance** and **organisational interoperability** were dealt with in setting up this solution and the SBR Programme that maintains it. In terms of **integrated public service governance**, the notable feature is the public-private structure through which decisions on the development and direction of the SBR Programme are made. This ensures expertise and input are gathered from the private sector to shape the solution going forward. Public-sector only fora are also provided to ensure public sector organisations are able to coordinate their positions on the SBR standards. In terms of **organisational interoperability**, the organisational relationships are formalised through a mix of agreements that are multilateral (SBR Framework of Agreements) and bilateral (e.g. SLAs). The Framework of Agreements includes standardised business processes for the submission of SBR reports, which greatly facilitates the take-up and use of the SBR solution.

 **Service description:** SBR (Standard Business Reporting) is a nationwide solution for system-to-system submission of business reports in the Netherlands. It is used across a range of sectors and domains (tax, business registers, education). It has also been adopted by the private sector (banks). It enables a company to submit a report (e.g. its corporate tax return) directly from its (SBR-compatible) tax software. Reports submitted to public organisations are sent via a single gateway – *Digipoort* – maintained by Logius, the national government’s IT department. To enable this, the SBR programme maintains and updates a set of technical, semantic and process standards. These are published in the Netherlands Taxonomy Architecture and the Netherlands Process Architecture.

 **Integrated public service governance features:** The SBR Programme has a public-private governance structure to take decisions on the future of the solution and the update of standards at the technical, semantic and business process level. There are different bodies at the strategic (SBR Council), tactical (SBR Platform), and technical (expert group) level that provide input to and make these decisions. In addition, public sector organisations discuss issues related to SBR in a number of public-sector only bodies so as to present a coordinated position in the public-private governance bodies. Recipient organisations (of SBR reports) retain a large degree of independence for the implementation of the SBR solution and standards, and are able to determine the data terms and content of their reports (in compliance with the Netherlands Taxonomy Architecture).

 **Organisational interoperability features:** A limited number of organisations are directly involved in any single SBR business reporting chain. These organisations are linked by their common adherence to the SBR “framework of agreements” – which defines the standards according to which SBR is implemented. This multilateral framework is complemented by bilateral agreements which enable the implementation of a specific reporting chain. Crucially, the SBR “framework of agreements” includes standardised business processes for the submission of business reports. This is a key factor for the replication of the solution across a number of different reporting chains and organisations.

 **Key lessons:**
Integrated public service governance:

Recommendations for organising and governing integrated public services

- Involve the private sector in governance to motivate them while maintaining fora or bodies for public-only discussions.
- Balance rigidity and flexibility in the development of standards.

Organisational interoperability:

- Pursue standardisation at the process level and also dedicate the necessary resources to maintain these process standards.
- Design and share standardised processes across organisations to reduce costs.
- Consider providing standard, unilateral SLAs to reduce the administrative burden.
- Assess how bilateral and multilateral agreements can be combined to formalise organisational relationships.

Case study details



Lead organisation/s: Ministry of Interior, Logius, Tax and Customs Administration, Business Register



Location: Netherlands



Level of government: National



Level of data exchange: National



Project dates: 2009-present



Maturity: Operational



Domain: Business reporting²⁵



Use case: standardised system-to-system business reporting



Contact: <https://www.sbr-nl.nl/contact/contactformulier-en-adres>





Website: <https://www.sbr-nl.nl/sbr-international>


²⁵ Business reporting refers to the reporting of operational and financial data by a company (e.g. to a tax administration or a regulator)


4.4.3. Case Study Fiche 3: Digital application for social security (Digisos)

Case study summary

 **Abstract:** This case study presents how Norway's Digisos solution was developed, providing a digital channel by which citizens can apply for a municipal-level benefit via a national-level portal. The focus of the case study is on how the project dealt with issues related to **integrated public service governance** and **organisational interoperability** in providing this service. In terms of **integrated public service governance**, the most interesting features are the pilot approach, which enabled feedback to be gathered from a limited set of users (municipalities) as the service was being developed. In terms of **organisational interoperability**, the most interesting feature is the use of template agreements to facilitate the formalisation of organisational relationships between the entities involved in providing the service. The provision of these templates speeds up the process by which the necessary agreements are reached.

 **Service description:** Digisos provides a digital channel via which citizens can apply for a certain type of social security benefit which is provided at the municipal level. Previously citizens had to apply for this benefit in person, over the phone or by post. Digisos provides a single nationwide digital portal via which the application can be made, and through which the applicants' identity is authenticated. The application is enriched with additional national-level data on the applicant, then stored on a digital platform (FIKS platform) before being sent on to the municipality in which the applicant is resident. The application is processed at the municipality level using an internal IT system that was already in use for storage and processing of applications prior to the development of the Digisos service. This has been updated to interface with the FIKS platform.

 **Integrated public service governance features:** A range of stakeholders at both municipal and national government level as well as in the private sector were involved in developing the Digisos solution. The leading stakeholders were the municipality of Bergen and the Directorate of Labour and Welfare (NAV). These entities retained the ultimate decision-making power for the project. However, the project also relied on contributions from a number of other stakeholders including for the technical development of the solution. These stakeholders, including private sector solution providers, were involved in the project from its inception, and the project team attempted to reach decisions through dialogue in regular meetings rather than through mandating them. The project also implemented a pilot phase, during which the Digisos solution was developed with the cooperation of five pilot municipalities. The inclusion of this pilot phase in the project development allowed the solution to be developed in a way that was more responsive to user needs.

 **Organisational interoperability features:** The Digisos solution requires contributions from a large number of organisations. It is characterised by a decentralised organisational structure in which standardised data is exchanged between the organisations. The role played by each organisation is determined largely by their existing competences and resources. Therefore, for example, NAV provides the portal for citizens to apply for the municipal benefits because it already provided a portal through which citizens applied for national-level benefits. The Association of Local and Regional Authorities (KS) provides the platform on which the application is stored because it already provided digital services of a similar type to the municipalities and they were comfortable with sharing their data with it. The specific business processes and interfaces used for the service likewise reflect an approach of re-using existing platforms and dividing responsibilities and tasks according to organisational

competences. With such a large number of organisations involved in the project, there was a need to facilitate the formalisation of the organisational relationships between them. This was done through the provision of standard template agreements (developed in cooperation with the pilot municipalities). This meant the necessary agreements could be reached and signed in less time.



Key lessons:

Integrated public service governance:

- Include a pilot phase in the project development in order to develop the service and ensure it meets user needs.
- Assess whether the service can be deployed without additional legislation.
- Identify mutual incentives in order to involve private solution providers in the development of the integrated public service.
- Develop supporting materials to promote solution uptake in a decentralised context.

Organisational interoperability:

- Distribute organisational tasks and roles according to existing competences.
- Develop agreement templates to facilitate the formalisation of organisational agreements that provide clear principles on data ownership, processing and storage.
- Re-use existing systems and standards where possible.

Case study details



Lead organisation/s: Bergen municipality and Directorate of Labour and Welfare (NAV).



Location: Norway



Level of government: National and local



Level of data exchange: National to local



Project dates: 2017-present



Maturity: Operational



Domain: Social security



Use-case: Digital application for social security




Contact email: Digisos@nav.no



Website: <https://tjenester.nav.no/nav-sok/?1&language=no&ord=Digisos> and <https://www.ks.no/fagomrader/digitalisering/felles/losninger/digitale-sosialtjenester-Digisos/>


4.4.4. Case study Fiche 4: Municipality Application Service Provider (Municipality ASP)


Case study summary

 **Abstract:** The following case study presents how the Hungarian Government developed a new cloud Application Service Provider, the Municipal ASP Centre (Önkormányzati ASP). This centre provides a digital platform for local administrative management and the provision of local e-Government services for end-users. The case study focusses on how the public organisations involved dealt with issues related to **integrated public service governance** and **organisational interoperability** in setting up and providing this service.

In terms of **governance**, both the stakeholders responsible and the supporting structures have shifted over time, evolving from a development phase in which a large consortium of stakeholders was actively involved, to an operational phase in which a small group of key stakeholders are involved. The project consortium played the key role in developing and deciding upon the infrastructure and standards through which the service would be delivered. This work was supported through a clear definition of roles and responsibilities in legislation²⁶.

In terms of **organisational interoperability**, the service exhibits a partially centralised organisational model, with a single centre and infrastructure serving the municipalities. However, it draws on data resources owned by other government ministries, accessing base registry data via existing technical infrastructure – the government service bus. The main responsibilities of the organisations involved in service delivery are defined in legislation. However further details or the relationships between these organisations and the services they provide to one another are defined in service agreements.

 **Service description:** The Hungarian Municipality ASP Centre is a centralised model overseen by the Hungarian State Treasury, providing modern, integrated shared services for local administrative management, ensuring standardised internal operations and a common platform for e-government service provision to end-users at the local government level. Nine sector-specific systems are included in the service portfolio (from the tax management to industrial and commercial management), as well as a framework system, providing functions such as user management, access management (authentication, roles and rights) and operating system services. The different services provided by Municipality ASP are integrated and able to exchange data with each other, but they also draw on data from 27 central base registries through the Government Service Bus (Központi Kormányzati Szolgáltatás Busz – KKSzB). The project has integrated the centrally provided regulated electronic administrative services (e.g. e-identification, e-authentication, e-delivery, intelligent online forms and the electronic payment service) to comply with e-government policy criteria and the relevant legal provisions.

 **Integrated public service and governance features:** A consortium of public stakeholders initially developed the ASP Centre. Following a pilot phase, a consortium was created in 2016 between the Ministry of Interior (project sponsor), the government IT Development Agency (project leader), the

²⁶ Government Decree No. 257/2016. (VIII. 31.), http://njt.hu/cgi_bin/njt_doc.cgi?docid=197239

Hungarian State Treasury and several state-owned companies. Decisions were made by the Project Steering Committee, representing each consortium member. Working groups provided input for the Steering Committee to decide upon. The consortium is still active as some aspects of the ASP Centre are being further developed. However, responsibility for the ASP Centre has shifted in its operational phase to a more limited number of public stakeholders (Hungarian State Treasury, Ministry of the Interior and the latter's state-owned company responsible for the IT infrastructure). The Hungarian State Treasury oversees daily operations.



Organisational interoperability features:

The ASP Centre has a partially centralised structure, with one centre providing services to multiple municipalities. However, it also draws on external data from base registries to deliver its services. It draws on pre-existing technical infrastructure in order to do this, accessing the data via the government service bus, KKSZB. The selection of business processes for the ASP Centre was developed within the project consortium's "integration and eGovernment" working group led by the State Treasury. For interconnection with base registry data, the working group worked directly with developers from the government service bus.

The principal responsibilities and tasks of each of the stakeholders involved in the ASP Centre are defined in legislation, while their responsibilities for the development of the service are further elaborated on in a project funding document. The organisational relationships required for the delivery of the service are further defined through a number of contracts. There is a service agreement between each municipality and the State Treasury covering the services that will be provided through the ASP Centre, the obligation of the municipality to connect to the system and how data will be handled. The Municipality ASP Centre has just one single contract on behalf of all connected municipalities with each of the base registries involved. This contract simply describes the data required by the Municipality ASP Centre.



Key lessons:

Integrated public service governance

- Consider combining legal acts and organisational agreements to provide a clear governance structure.
- Plan for evolution of governance structures over the course of the project, ensuring the necessary input from a wide range of stakeholders during the development phases, and narrowing down to core stakeholders during the operational phases.

Organisational interoperability

- Draw on existing technical infrastructure and resources where possible to provide the service and form the necessary connections between organisations.
- Pursue administrative simplification where possible to facilitate the formation and formalisation of organisational relationships. The case study achieved this by empowering the ASP Centre to reach a single interoperability agreement with the base registries from which data is accessed on behalf of all municipalities.

Recommendations for organising and governing integrated public services



Lead organisation/s: Ministry of Interior and Hungarian State Treasury



Location: Hungary



Level of government: National/Local



Level of data exchange: National/Local



Project dates: Pilot project ran between 2012 and 2015; project implementation started in 2016



Maturity: Ongoing and successful, with 99% of municipalities making use of the system as of August 2019 (35 of 3197 municipalities opted out)



Domain: Local administrative management (industrial, commercial, financial, local tax, property registry, inheritance, business), and related local e-government services for clients



Use case: Cloud Application Service Provider (ASP) model that provides an integrated back-office software in an SaaS model, has a standardised internal operation, use building blocks (e-identification, e-authentication, e-delivery and intelligent online forms) and a common platform for client-side e-government services accessible through Hungarian eID




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Website: Local government e-administration single point of contact portal: <https://ohp-20.asp.lgov.hu/nyitolap>


4.4.5. Case Study Fiche 5: Automated Social Energy Tariff (ASET)


Case study summary

 **Abstract:** This case study presents how the Portuguese Secretaries of State for justice, energy, tax and social security implemented the Automated Social Energy Tariff (ASET) in order to grant a social benefit to low-income families. The case study focusses on how these organisations dealt with issues related to **integrated public service governance** and **organisational interoperability** in setting up this service.

To set up ASET, the Portuguese Interoperability Platform (iAP) was used. The iAP facilitates cross-sectoral collaboration by providing a common platform for the exchange of data between public administrations. This has enabled the creation of an automated process to check the eligibility of citizens for the social benefit, drawing on data held by different parts of the public administration. This re-use of existing infrastructure is a crucial **organisational** feature used in developing the new service: its proactive design means that there is no need for an initial application from the citizen. In terms of **governance**, the key point to take from the integrated service is the shift from a governance structure that incorporates input from a range of stakeholders during the development phase to a light-touch structure in which the organisations involved in service delivery only meet if there is some clearly identified need for improvement.

 **Service description:** in 2016, the secretaries of state for justice, energy, tax, and social security decided to implement a new system – ASET – for granting the social energy tariff. The existing system was seen as inefficient as energy suppliers were not promoting the reduced tariff as much as desired and the administrative burden for citizens was a barrier for many families. The responsibility for the tariff shifted from energy providers to the Directorate-General for Energy and Geology. DGEG developed an information system to process the records from every energy supplier automatically, and drew on the existing interoperability platform (iAP) to enable an exchange of information and data with other public organisations (social security and tax authorities) in order to assess the eligibility of citizens for the reduced tariff. Citizens are able to opt out of the reduced energy tariff if they wish to.

 **Integrated public service governance features:** DGEG is the lead organisation for the Automated Social Energy Tariff, with responsibility for awarding the reduced tariff. During the development of the service, a series of working groups with other public organisations (including the Administrative Modernisation Agency responsible for the iAP) ensured the necessary expertise and input were gathered to ensure a well-designed service. The core responsibilities of each organisation involved in service delivery are defined in regulation. During the operational phase, DGEG has overall responsibility for the service, while other organisations retain responsibility for the smooth operation of the tasks allocated to them. These organisations involved in service delivery only meet in working groups if there is a specific need to do so.

 **Organisational interoperability features:** ASET is designed to be proactive, meaning that the citizen does not need to initiate an application for the reduced tariff, but instead this responsibility is allocated to the State (DGEG). The service draws on the existing interoperability platform (iAP) to ensure that data held by different public organisations (social security, tax authorities) can be used to assess whether a citizen is eligible for the tariff. Via the iAP, DGEG sends the social security and tax authorities information on citizens potentially eligible (identified using their tax identification number).

Recommendations for organising and governing integrated public services

These authorities assess whether the citizens are eligible for the tariff using the data they hold on them. They do not share this data with DGEG, but instead just tell it whether the citizen is eligible for the tariff based on the data they hold. In addition, protocols signed by each of the organisations involved define the core roles, the exact data and information to be exchanged, and how the eligibility criteria are to be applied.



Key lessons:

Integrated public service governance:

- Shift governance arrangements between the development and operational phases.
- Define key principles for e-government services in legislation.

Organisational interoperability:

- Consider a proactive service design to reduce burden on citizens.
- Agree protocols in addition to legislation in order to define organisational responsibilities in detail.
- Re-use existing infrastructure where possible to facilitate cross-sectoral collaboration.

Case study details



Lead organisation/s: Directorate-General for Energy and Geology of the ministry of economy and i-Intelligent Energy Europe, Tax Authority, IT Institute for Social Security, Administrative Modernisation Agency



Location: Portugal



Level of government: National



Level of data exchange: National



Project dates: ASET was deployed in May 2016



Maturity: High maturity, around 14% of all Portuguese households benefit from this measure (764,000 households receive the social tariff for electricity and 34,200 receive it for natural gas)



Domain: energy/electricity and natural gas



Use-case: The Automated Social Energy Tariff, (ASET), provides an automated assessment of citizens' eligibility for a reduced energy tariff



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4.5. Proposing Recommendations

4.5.1. Second Workshop

The second project workshop²⁷ was held on 2 October 2019. It was attended by 60 participants, who were members of the ISA Committee, European Commission project officers, practitioners from Member States' administrations working on integrated public services, and other stakeholders. The objective of this workshop was to validate and discuss the lessons on **organisational interoperability** and **integrated public service governance** that could be drawn from the five case studies, and compare and contrast them in order to feed more general recommendations on these concepts.

During the workshop, each of the five case studies was presented by project owners who had worked on developing and delivering the integrated public service examined in the case study. Breakout sessions on each case study were then organised to enable participants to discuss the projects and findings for each in more detail and provide their input on the initial lessons learnt proposed by the study team. Participants' reactions and feedback on the lessons learnt from the case studies were used to draw up an initial list of common themes and points on **organisational interoperability** and **integrated public service governance**.

The main findings of these breakout sessions were:



Organisational interoperability:

- **Minimise the administrative burden:** Participants agreed that minimisation of the administrative burden was a principle around which digital public services should be organised. They pointed out that this principle should especially be taken into account when drafting the legislation establishing a new service.
- **Use interoperability agreements:** Participants agreed that formal interoperability agreements should be pursued for even the simplest of integrated public services.
- **Standardise at the process level:** Participants agreed that standardisation of business conduct should be the starting point for digital public services (both on the semantic and process level).

²⁷ A full description of the workshop agenda, presentations, and discussions can be found in the workshop report available at <https://joinup.ec.europa.eu/collection/nifo-national-interoperability-framework-observatory/news/eif-workshop-report-published>



Integrated public service governance:

- **Take a gradual approach to development of digital public services** (including pilots): Participants strongly endorsed this principle, while acknowledging that sometimes there could be political pressure to pursue large projects.
- **Involve the private sector:** Participants agreed that, for some types of service, the involvement of the private sector could be crucial (for example the use of a specific technology or for the overall functioning of the project). Additionally, the private sector can be a positive influence in promoting innovation. There were, however, some concerns about the need to avoid lock-in risks when involving the private sector.
- **Provide a legal framework for new digital services:** Participants noted that working within an existing legal framework can speed up progress initially. However, it is likely that legal changes will eventually be necessary. They emphasised that legislation should not be too restrictive, allowing a level of flexibility. Close collaboration between the business team developing a service and the legal department was recommended.
- **Re-use existing technical infrastructure:** It was generally agreed that existing technical infrastructure should be re-used where possible, as much for cost reasons as for reasons of improved governance. If the re-use of the infrastructure is not possible, the use of common architectural principles should be considered.
- **Involve policy makers (political stakeholders):** Participants agreed that political stakeholders should enable a digital service project (e.g. by promoting the creation of the necessary infrastructure) but then for the most part step back. Participants noted that the intervention of these stakeholders could be required again in order to overcome barriers and blocking factors.
- **Balance flexibility and consistency in standards:** In general, there was agreement that integrated public services need to balance requirements for flexibility and rigidity when developing and maintaining standards. Rigidity is required to limit the impact on other parties of constant changes. However, it is necessary to provide flexibility to develop additional codes and capabilities, or changes to meet new legislative requirements.

The discussion during the workshop of the lessons that can be drawn from the case studies on **organisational interoperability** and **integrated public service governance**, together with the main common points identified above, fed into the findings of the study. They were used to help guide and shape the assessment of the common themes emerging from the case studies presented in Chapter 5 as well as the recommendations on **organisational interoperability** and integrated public service governance presented in Chapter 6.

4.6. Limitations of the methodological approach

In order to fulfil the study aims of developing recommendations on **integrated public service governance** and **organisational interoperability**, a multiple case study approach was pursued. A number of intermediary steps were followed in order to ensure a solid understanding of the concepts being studied, to identify and select appropriate case studies, and to validate the main findings. The approach nonetheless had its limitations. In the interests of transparency, the main limitations to the methodology followed are outlined below:

- **Non-systematic literature review:** The literature review was not systematic. Because of time constraints it focused on the main institutional and academic literature addressing issues related to **organisational interoperability** and **integrated public service governance**;
- **Limited reach of survey:** Only 21 respondents provided answers to the survey questions. They came from seven Member States, two non-EU states, and the EU Institutions. Due to the limited response, a number of good practice integrated public service projects (both from Member States represented and not represented among the survey respondents) will have been missed;
- **Limited size of longlist:** The low response to the survey was mitigated through the identification of additional integrated public service projects through desk research. However, this approach relies on the information being publicly available and so will miss projects for which there has been little publicity. The inclusion of 38 cases in the final longlist ensured that there were a number of good practice examples that could be developed into case studies. However, more promising examples might have been found had the longlist been extended further;
- **Low number of case studies:** Five case studies is a relatively small number from which to draw general recommendations on the implementation of **organisational interoperability** and **integrated public service governance**. This is especially so when considering the wide range of contexts within which integrated public services are developed and delivered. With this in mind, the recommendations should be treated as guidelines and points to consider rather than definitive rules;
- **Validation of lessons learnt during workshop:** The main lessons and recommendations drawn from the case study were presented during a 2nd project workshop in October 2019. During the limited time available it was challenging for participants to fully analyse and react to the content presented on five separate case studies.

5. COMPARISON OF THE CASE STUDIES: THEMES AND COMMON APPROACHES TO ORGANISATIONAL INTEROPERABILITY AND INTEGRATED PUBLIC SERVICE GOVERNANCE

In the following section, the five case studies presented in the previous section are compared in order to draw out common themes in the approaches taken to **integrated public service governance** and **organisational interoperability**. On the basis of this overview and the common themes identified, a series of recommendations for the implementation of **integrated public service governance** and **organisational interoperability** are presented. These recommendations are intended to help public authorities develop more effective integrated public services.

The roadmap for integrated public services (see **Figure 2**, p.22) is drawn upon in order to provide an **overview and comparison of the five case studies**. The section indicates the different decisions and issues that apply to both **integrated public service governance** and **organisational interoperability** at each step of the roadmap.

5.1. Summary of integrated public service governance features

The five case studies exhibit a range of different approaches to **integrated public service governance**. The following section presents an overview of these approaches. It first compares similarities in the general approach. It then considers the key features of the approach to governance (understood as who makes decisions and how) in the following stages of integrated public service delivery:

- Plan and select
- Provide framework and set standards
- Monitor and maintain.

5.1.1. Integrated public service governance - overview

A number of common themes in the treatment of **integrated public service governance** in case studies emerge which are cross-cutting and transcend the different phases of the roadmap for integrated public service. The cross-cutting points include:

- The **complexity and development of governance structures**: The level of complexity of the structures identified across the case studies varies. A common trend, however, is that these structures shift over time as the projects move from the planning to operational phases.
- The **involvement of specific stakeholder groups**:
 - **Private sector**: Not all the projects described require significant input from the private sector, However, those that do ensure the close involvement of these private sector stakeholders from an early phase;
 - **High-level political stakeholders**: These stakeholders tend to be involved only in an enabling role at the beginning of the project.

- **Issues across different interoperability layers:** There is a common theme that issues related to technical, semantic, organizational (business process standards) tend to be dealt with by the same project team and under the same governance structure, while decisions related to the legal layer are more likely to involve different governance structures and stakeholders.

5.1.1.1. Complexity and development of governance structures

Within the five case studies there is considerable **variation in the complexity and formality of the governance structures** overseeing the development and delivery of the integrated public service. At one end of the spectrum, the governance structure of X-Road BR is very simple – with a bilateral agreement between the two business registers arrived at and overseen by two small project teams from each organisation. This is in large part possible because there is an established governance structure for the underlying X-Road infrastructure. SBR on the other hand exhibits a highly developed governance structure, formalised in its framework of agreements, with input on the general maintenance and update of the solution sourced from multiple stakeholders and approved by representative decision-making bodies. Digisos, meanwhile, has a single project team with representatives of the different stakeholders involved to provide governance for the project. Input and feedback from stakeholders is gathered on an ad hoc basis as issues arise as the solution is further developed. ASET and Municipality ASP have governance structures defined and formalised in law. For ASET, the approach to governance is light-touch, the responsibilities for delivering the service are clearly defined, and the performance of the service is only reviewed if a problem arises.

When it comes to how formal the **integrated public service governance** is, X-Road BR appears to be the outlier, with a less formalised approach than the other projects. The project draws on a well-established and well-functioning infrastructure – X-Road – with its own governance structure, separate from that of the new service. This suggests that the establishment of a data exchange infrastructure with a reliable governance structure can facilitate the integration of value-added services on top of this infrastructure. It becomes easier, from a governance point of view, to develop these services as they can draw upon the governance structures and processes already provided.

A number of the case studies also feature **changes in the governance structures and stakeholders involved as they evolve over time**. Both ASET and Municipality ASP involved a large number of stakeholders during the development of the project, with Municipality ASP setting up a consortium in order to involve all relevant organisations. However, as the projects progressed, the governance structure shifted in the implementation stage, with responsibilities allocated to a smaller number of main organisations. Digisos featured a different type of shift in its governance structure, moving from a set-up in which two separate project teams worked on different aspects of the solution to an arrangement in which one unified project team held responsibility for the overall project. Neither SBR nor X-Road BR feature these types of shifts in governance structure. For SBR, any such shift would have to be approved by the leading decision-making body for the solution – the SBR Council – which represents all the main project stakeholders. X-Road BR is at a relatively early stage in its development and it could be that there will be such a shift in governance structures in future, for example, if a decision is taken to expand the data exchange to other organisations.

5.1.1.2. Involvement of specific stakeholder groups

The **five case studies differ in the extent to which they involve both the private sector and high-level political stakeholders**. SBR, Digisos and ASET all feature high levels of **private sector** involvement, whereas Municipality ASP features a lower level of involvement, and X-Road BR exhibits very little involvement.

SBR as a project made the choice to actively involve the private sector in the governance of the project. SBR depends for its success on a “coalition of the willing” and on input, development and expertise from the private sector. By actively involving the private sector in the governance of the solution, the project leaders aimed to give companies more of a stake in the project and increase their level of motivation and commitment. The development of Digisos also required active contributions from a number of private companies. Their involvement and input in the project from an early stage, and representation within the project team, was therefore an important project success factor. Municipality ASP involves some contributions from private sector contractors. However, the technical implementation of the project is carried out predominantly by state-owned companies. The level of private sector involvement required can therefore differ substantially depending on the nature of the project and the context (e.g. whether private companies are already active stakeholders providing existing systems, as was the case for Digisos). If private sector involvement is required, it is advisable to build this in from an early stage.

In terms of **high-level political stakeholders**, ASET and Municipality ASP initially featured high levels of involvement, while Digisos, SBR and X-Road BR featured little direct involvement. In the case of ASET and Municipality ASP, this political involvement was stimulated by the need to pass legislation in order to provide a legal basis for the new services. For X-Road BR no such new legislation was required. High-level political involvement (up to prime ministerial level) was required to set up the earlier federation of X-Road infrastructures between Estonia and Finland that enabled the X-Road BR project. However, this political involvement was not necessary for the new service itself, and the business registers were able to lead the development and implementation themselves. Digisos also features little direct input from political figures – the service was developed within existing legal boundaries, so there has not been any need for this. SBR has featured little initial political involvement, except at key moments where a change is required, for example mandating the use of SBR for a particular reporting chain.

5.1.1.3. Issues across different interoperability layers

All five case studies had to address issues and questions related to different interoperability layers – legal, organisational (business process), semantic, and technical – in order to develop and deliver an integrated public service. In the case of X-Road BR, issues around each of these interoperability layers were dealt with by the same small project team. This featured a mix of profiles (lawyers, IT experts) in order to be able to address these questions. The SBR case study takes a quite different approach to dealing with issues and developing solutions related to different interoperability layers. SBR features distinct and separate working groups dealing with issues related to technology (technical interoperability layer), data (semantic interoperability layer) and business processes (**organisational interoperability** layers). It has previously also had a temporary legal taskforce to deal with legal interoperability issues. The approval process for the decisions taken in each of these different working groups is the same, with the proposals put forward by each technical level body requiring the assent of the strategic and tactical decision-making bodies of SBR – the SBR Council and SBR Platform. Digisos

and Municipality ASP also addressed issues related to the different EIF layers within one team – Digisos within the project team and Municipality ASP within the project consortium.

Of the interoperability layers, **it is the legal one that seems to most clearly involve different governance structures**. Whereas the governance of the other layers in the five case studies tends to be led by the same overlapping project teams, the legal layer – entailing legislative change – involves quite different stakeholders. Namely, these are the political stakeholders required to drive through new legislation. In some cases – Digisos and X-Road BR – as mentioned previously, there is no need to involve these political stakeholders in legal interoperability questions, as the projects were developed within existing legal frameworks and there was no need to make changes to the law. In the SBR case, involvement of these political stakeholders is sporadic, for example, when they are required to mandate the use of a particular SBR reporting chain. Their involvement in such cases comes via creation of a task force within the SBR Programme’s public-private governance structure to provide expert advice on how legal changes can facilitate the implementation of the SBR solution. Finally, new legislation was required for ASET and Municipality ASP to provide a legal basis for the service. For the Municipality ASP project, this work was led by the Ministry of the Interior, which also plays a supervisory role in the entire project. The Secretary of State for Energy was a key stakeholder in driving through the necessary legislation to enable ASET. In cases in which a legal framework is not previously established, there is a need for exchanges between the stakeholders involved in the implementation and organisation of the integrated public service and the legal and political stakeholders that make decisions at this legal level.

5.1.2. “Plan and select” phase

This section considers the approach taken to **integrated public service governance** during the early “plan and select” phase of developing a new integrated public service. During this phase, decisions are taken on which services, infrastructure and data sources should be combined to deliver a new integrated public service, which organisations should be involved in the implementation, and what the legal basis for the service should be.

In the case studies, we see **different approaches on whether to involve a wide or narrow range of stakeholders during this phase**. In the case of X-Road BR, the number of stakeholders involved was limited, just representatives from the two business registers, reflecting the limited scope of the service provided. Digisos and Municipality ASP both involved a wider range of organisations, reflecting the multi-stakeholder nature of the services to be developed. However, they both also limited the number of organisations closely involved in this phase as they pursue a pilot approach. Finally, ASET and SBR involved a wide range of stakeholders at this phase, before narrowing the number of organisations involved in actual implementation of the service during the later phases. In general, stakeholders directly affected by the redesign of business processes are involved in each of the case studies from the start of the project.

It is also apparent that during this phase, several of the case studies (Digisos, Municipality ASP and X-Road BR,) share **an incremental approach to service development**²⁸. They developed the service

²⁸ This can be likened to an agile project management methodology, in which products are developed through short cycles and revised regularly as necessary.

gradually rather than trying to find the ideal solution immediately. As mentioned above, Digisos and Municipality ASP initially went through a pilot stage. During this phase, the number of stakeholders involved was limited in order to reduce complexity. Similarly, the X-Road BR project was deliberately kept simple in the early stages of the project – with just a bilateral exchange of data – so as to increase the chances of success by testing the concept before moving onto more demanding multilateral scenarios. SBR did not feature a pilot approach, but the project did evolve out of earlier similar efforts by the Dutch Tax and Customs Administration, so the developers of the solution had experience to draw upon. ASET did not feature this gradual approach in part because the system it was replacing was not functioning well and a change was necessary.

Digisos and X-Road BR stand out as the cases in which no changes were made to the legislative framework at this stage in order to provide the service. In both cases, this was more because it was possible to deliver the service as envisaged within the existing legal framework, rather than the result of any explicit strategy to design the service in such a way as to avoid any need to make legislative changes. In the case of Digisos, the Ministry of Labour and Social Affairs was provided with regular feedback as the service was being developed, and if any legal barriers had delayed the project, action to update the law could have been taken.

5.1.3. “Provide framework and set standards” phase

During this phase, **the standards to be used in providing the service are selected and implemented.** One common feature of the case studies was the re-use of standards and definitions at the technical and semantic layers. X-Road BR drew on the existing X-Road communication standards at the technical level and made use of the data definitions already in use by the two business registers. SBR draws upon and has further developed existing semantic standards (XBRL) in its data working group. Digisos likewise draws upon pre-existing technical and semantic standards, as does ASET with its canonical data model (semantic standard) and iAP platform (technical standard). Finally, Municipality ASP drew upon technical standards developed by the government service bus as well as the data definitions used by the national base registries.

SBR is the only case study in which new groups were set up for the development of the standards to be used. In the SBR example, working groups were set up to select, develop and maintain the standards for the technology, data and processes that would be used in order to submit a business report. These working groups built on the existing standards, notably xbrl, in order to develop and maintain the SBR solution. They included representation of organisations responsible for the maintenance of the existing standards, such as xbrl international.

For the other case studies, the standards drawn upon were developed by existing, separate governance structures. In the case of X-Road BR, for example, the existing Nordic Institute for Interoperability Solutions is responsible for the development and update of the X-Road technical communication standards, while the X-Road operators in each country are responsible for implementation. The underlying standards for the FIKS platform used to transfer data for Digisos are maintained by KS (the Association of Local and Regional Authorities). For Municipality ASP, a state-owned company maintains the government service bus used for the necessary data exchange with national

base registries, and for ASET, the iAP interoperability platform and canonical data model used is provided by the Administrative Modernisation Agency.

5.1.4. “Monitor and maintain” phase

During this phase, it is also necessary to **ensure that the standards used are maintained and updated**, and that the legal and organisational framework remains well suited to its aims.

In some cases we see shifts in the governance structure during this operational phase, with the numbers of stakeholders involved in the oversight and delivery of the service reduced to just a few key stakeholders. This is the case, for example, for ASET and Municipality ASP. In other cases, the same stakeholders originally responsible for selecting the standards used to deliver the integrated service remain responsible for maintenance and oversight. In the SBR case, for example, the working groups within the SBR PPP that developed the standards continue to develop and update these standards as user needs evolve.

In several cases, **the organisations responsible for the national interoperability infrastructure** being used to deliver the service **maintain the technical standards required for data exchange**. For example, X-Road has a separate governance structure (on which national ministries from both Finland and Estonia are represented), as well as a dedicated organisation – the Nordic Institute for Interoperability Studies – responsible for the maintenance and update of the X-Road standards. Likewise, for the ASET case, the Administrative Modernisation Agency, which provides the iAP interoperability platform, is responsible for the maintenance and update of the associated standards.

5.2. Summary of organisational interoperability features

The five case studies **exhibit a number of different approaches to the questions and problems posed as part of organisational interoperability**. The following section provides a summary and comparison of these different approaches. It first presents an overview of overarching and cross-cutting trends seen in the approach to **organisational interoperability** before considering in detail the choices made on:

- **organisational model** for the integrated service
- selection of **business process standards and interfaces** by which data is exchanged
- **organisational changes** required to deliver the integrated service
- **organisational agreements** that formalise the relationships and arrangements to deliver the integrated service.

5.2.1. Organisational interoperability - overview

This section considers the general approach to **organisational interoperability** in the case studies, identifying themes that recur across the areas listed above. Two such themes are:

- the impact of existing technical infrastructure on **organisational interoperability** issues
- the influence of current organisational competences and roles.

Across the case studies it is clear that **the existing infrastructure available to support the planned services plays a significant role in determining the organisational model**, organisational roles, business processes and interfaces selected (as the separate sections on these topics will describe in more detail). Almost all the case studies examined (with the exception of SBR) drew on existing infrastructure in some manner. X-Road BR made use of the established X-Road cross-border data exchange infrastructure; Digisos drew on the FIKS platform for data storage and transfer; Municipality ASP made use of an existing government service bus, and ASET used the iAP platform for data exchange. This re-use of existing infrastructure could be linked to path dependency, whereby organisations are unlikely to deviate from the decisions taken in the past and repeat the positions they have previously taken. This could mean that organisations miss out on the benefits that could be provided by new approaches. However, in this case, the re-use of existing technical data exchange infrastructures can have important benefits.

Deciding to re-use existing infrastructure can help establish trust between organisations if they are familiar with it, understand how it works and understand their role in delivering a service using it. In X-Road BR, for example, the Estonian Business Register, in particular, was highly familiar with the X-Road infrastructure. Estonia had been using a version of it internally since 2001. Because of this familiarity, the Register was comfortable with drawing on this infrastructure to develop the new cross-border service and in progressing through the necessary stages to develop the service relatively quickly. Meanwhile in the Digisos case, re-use of the FIKS platform for the Digisos service was reassuring for the municipalities who use this service as they drew on this platform for other services and also had a relationship of trust with the organisation which provided it (KS).

Beyond the data exchange infrastructures seen in the case studies, other shared resources of value could include building blocks for different types of foundational digital services such as e-Identification or e-Signature. The value of this sort of shared infrastructure points also towards the utility of a coordinated approach towards public sector digitalisation, which can ensure the coherence and scalability of digital projects.

A common theme seen in the case studies is also that **existing organisational roles and competences play a large role in influencing the tasks and responsibilities that are allocated to them for the new integrated service, and the interfaces and business processes used**. Digisos is one example of this. NAV, the Norwegian Labour and Welfare Administration, provides the portal through which citizens apply for social security benefits provided on the basis that it already provides this portal for a number of other social security benefits at national level. SBR is another example, which developed a new gateway (*Digipoort*) which businesses use to submit their SBR business reports to public organisations. This portal is based on the SBR standards, but is provided and maintained by Logius. This is the digital government service for the Netherlands' central administration, which already provides similar services to public organisations in other areas.

5.2.2. Organisational model

One basic way in which integrated public services differ in their organisational model relates to whether they **operate according to a centralised or decentralised model**. Under a centralised model, a single entity is responsible for the delivery of the service and the data associated with the service may

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also be stored centrally. Of the case studies, only Municipality ASP somewhat fits this description. In this project, a centralised cloud-based platform for municipality IT services replaces the previous system of each municipality providing their own IT systems and solutions. Even in this case, however, the service is not completely centralised. It continues to draw on data stored by other public organisations – i.e. the 27 national level base registries.

The other **four case studies operate using a decentralised model**. Different organisations maintain ownership of their own data. They have agreed to share it using common standards in order to provide a particular service. In the X-Road BR case, this choice of organisational model was determined by the decision to use the existing X-Road infrastructure. This infrastructure is set up on the assumption that the organisations who sign up to use it will maintain ownership and continue to store their own data. The X-Road infrastructure is then used to enable these organisations to exchange this data to provide new services and to enable participating organisations to identify and provide authentication that the data being shared is of the correct type and is from the correct organisation.

The other case studies also follow this decentralised model. In SBR, a common infrastructure (*Digipoot*) is used for the submission of business reports. However, the organisation that sets up the reporting chain maintains ownership of the data submitted. In Digisos, the participating municipalities maintain ownership of the data submitted by applicants for social security. The issue of ownership of and access to data also shaped other aspects of the organisational structure of Digisos. Under the model selected for Digisos, applicants for social security apply via the central NAV.no portal. The data from this application is sent to the FIKS platform, where it is processed and sent to the relevant municipality (i.e. the municipality of the applicant for social security). The choice of this intermediate step via the FIKS platform was made the FIKS platform is operated by KS, the Association of Local and Regional Authorities. Municipalities preferred to have their data stored and processed by their association, rather than by NAV.

ASET also operates on a decentralised model, with organisations maintaining ownership of their own data and exchanging via agreed standards to deliver a new service. In this case, sensitivities about data also affected how the service was designed. For the ASET project, data on citizens is shared with the tax authority and the Information Institute of Social Security in order to assess whether citizens are eligible for a reduction in the price they pay for energy. In order to minimise the amount of sensitive citizen data shared, these organisations do not share any data on the citizen's tax status or social security benefits. They just give a Yes/No answer on eligibility for the tariff.

Looking at how these five case studies provide the services, **the decentralised model is the most common structure**. This appears to be partially the result of organisations' resistance to centralisation efforts. As was demonstrated above, there is sensitivity about sharing data with other organisations.

The organisational model of these five services also differs in other ways, for example in terms of how they are set up to deal with the citizen. **The ASET service differs from the others in that it is an example of a "proactive service"**. The citizen does not have to apply for the tariff. Assessment and award are automatic (but citizens can choose to refuse it). Digisos, Municipality ASP and SBR all require the citizen or business to apply or trigger the service in some way. X-Road BR differs again, as it does not involve a direct service to a business or citizen but is instead a service between administrations.

Several of the case studies are alike, however, in that they draw directly upon base registry data. X-Road BR draws case base registry data from the business registers; Municipality ASP uses data from the 27 national base registries to facilitate the local services; ASET uses base registry data from the tax and social security authorities.

5.2.3. Business processes and interfaces

In general, **the services described in the five case studies made use of pre-existing interfaces to exchange data.** X-Road BR uses the standardised X-Road machine-to-machine interface used by all organisations participating in X-Road. Digisos makes use of the existing NAV web portal as its user interface for applications for social security. Both ASET and Municipality ASP use established interfaces to exchange data between organisations. Municipality ASP uses the government service bus to extract data from national base registries, while ASET draws on the interfaces provided by the national interoperability platform, iAP.

In terms of the business processes used, X-Road BR re-uses the standardised process for data exchange between X-Road organisations to exchange data between the two business registers. The other solutions developed new business processes in order to deliver the new service. In the case of SBR, a new standardised process was developed for the system-to-system submission of business reports. This process is now re-used by all organisations using the SBR solution. The standardised process was developed through the SBR Programme's public-private working groups and governance structures and continues to be maintained by these groups. ASET, Digisos and Municipality ASP developed entirely new business processes tailored to the new service. For Digisos, these processes were developed within the project team set up to develop the service. For ASET, these processes were developed through working meetings between the organisations contributing data and IT services for the new integrated service. For the Municipality ASP service, the new processes were developed within the project consortium. These processes were developed in accordance with EIF principles, including data minimisation and administrative simplification.

5.2.4. Organisational changes

It is also worth considering how organisational roles have changed in order to deliver the new services looked at in the five case studies. In general, the theme that comes through the case studies is that **the organisational role in the service is strongly linked to the role and tasks the organisation previously carried out.**

In several of the cases, we see few or no changes to organisational roles. In the X-Road BR case, for example, the exchange of data between the two business registers does not represent a change in competence, but is instead just a new channel for accessing the data necessary to fulfil their organisational mandate. Similarly, SBR digitises and transforms existing reporting chains. In general, the organisations involved in implementation are therefore not fulfilling new tasks of a type they were not performing before.

Digisos also represents the digitisation of an existing process – the municipalities involved therefore still have the same responsibilities they had previously. The digitisation of the service has, however,

introduced new stakeholders. This includes KS, which is now responsible for ensuring the data on applications for social security are properly transmitted to the correct municipality. Meanwhile, both ASET and Municipality ASP involved organisations taking on new responsibilities in order to deliver the new integrated public service. In the case of ASET, the Direção-Geral de Energia e Geologia took on the new task of instigating the assessment of a citizen's eligibility for the reduced energy tariff. This was previously the task of the energy operators. Meanwhile, in Municipality ASP, the Ministry of Interior and State Treasury took on new responsibilities for the provision of digital services and infrastructure to municipalities.

5.2.5. Organisational agreements

The **five case studies all used various types of instrument in order to formalise the organisational relationships required to deliver the integrated service**. The case studies differ in the nature of the organisational agreements used and how they relate to other legal instruments used to formalise the organisational relationships.

One way in which the organisational agreements differ across the case studies is in whether they are multilateral or bilateral. X-Road BR uses a single bilateral contract between the Estonian and Finnish business registers to formalise the agreement to provide the service. The standards for the SBR solution are formalised in the SBR framework of agreements, which constitutes a multilateral agreement to use these standards on the part of all users of the SBR solution. This multilateral agreement is complemented by further bilateral agreements for the delivery of individual reporting chains. ASET and Municipality ASP both make use of bilateral agreements to formalise their services. These bilateral agreements build on legislation which already defines the different organisations' main responsibilities for providing the service. ASET makes use of protocols to specify exactly what data should be transferred between organisations and how. Municipality ASP formalised the service model through bilateral service agreements between each municipality and the State Treasury (the organisation responsible for Municipality ASP). In addition, the Municipality ASP Centre has bilateral agreements with each of the base registries describing the type of data required from each. The obligation of these base registries to share their data with public organisations if required is already established in legislation.

In the case studies, we also **see a number of ways in which organisations have attempted to reduce the administrative burden associated with reaching and maintaining a large number of interoperability agreements**. Digisos provides the most obvious example of this. In order to provide the Digisos service, it is necessary for the national organisations involved (NAV and KS) to reach a number of different bilateral agreements with each municipality which signs up for the service. In order to simplify the process of reaching these organisations, both KS and NAV provide templates for these agreements. NAV allows municipalities to negotiate changes to these templates if they want to; however, in practice this rarely happens. KS, for its part, insists that the only agreement possible is one which complies with the conditions stipulated in the template. By providing these template agreements, less time is required to establish the formal organisational relationships required to deliver the service. The organisation sees this increase in efficiency as more than compensating any disadvantages due to not tailoring agreements to the needs of individual municipalities.

Recommendations for organising and governing integrated public services

Another example is Municipality ASP. As described above, the Municipality ASP Centre reaches an agreement with each national base registry in order to be able to draw on this registry data. It is empowered to do this on behalf of the municipalities that will ultimately use the data. This dramatically reduces the number of interoperability agreements required, as it avoids each municipality having to reach agreements individually with each base registry for the use of their data. SBR demonstrates another simplification measure. Logius, the organisation which provides the *Digipoort* gateway for the submission of SBR reports, also provides a standard service level agreement which it asserts and signs unilaterally to provide assurances to the organisation making use of the *Digipoort* gateway on the level of service they will receive. The organisation receiving the service from Logius does not need to sign this service level agreement. If necessary for a particular service, the organisation can request a service level agreement committing to higher levels of performance.

6. RECOMMENDATIONS FOR INTEGRATED PUBLIC SERVICE GOVERNANCE AND ORGANISATIONAL INTEROPERABILITY

6.1. Introduction

On the basis of the case studies presented in the preceding section, and the common themes and approaches identified across them, a number of recommendations for **organisational interoperability** and **integrated public service governance** are presented below. These recommendations have been developed for public authorities, with the intention of helping them develop and deliver more effective integrated public services.

The EIF itself also makes a number of recommendations on **integrated public service governance**, as listed in the table below. Where applicable, attention is drawn to the links between the recommendations provided in this study and those in the EIF, and to how the newly proposed recommendations expand on and add to the EIF recommendations.

Table 4: EIF recommendations on integrated public service governance and organisational interoperability

EIF recommendation number	Concept	Recommendation
25	Integrated public service governance	Ensure interoperability and coordination over time when operating and delivering integrated public services by putting in place the necessary governance structure.
26	Integrated public service governance	Establish interoperability agreements in all layers, complemented by operational agreements and change management procedures.
28	Organisational interoperability	Document your business processes using commonly accepted modelling techniques and agree on how these processes should be aligned to deliver a European public service.
29	Organisational interoperability	Clarify and formalise your organisational relationships for establishing and operating European public services.

6.2. Recommendations for integrated public service governance

The five recommendations for **integrated public service governance** below provide guidance to public authorities on *who* to involve when setting up and providing a new integrated public service, and *how* to approach and take the necessary decisions to provide the integrated service.

6.2.1. Integrated Public Service Governance Recommendation 1: Take an incremental approach to developing digital public services

A common theme from several of the good practice digital public services (X-Road BR, Digisos, Municipality ASP) is that the approach to developing them was incremental. This approach, described in Section 5.1.2, was an important contributor to the success of these projects. Where such an approach was not followed, it was either because the service evolved out of the previous efforts and experience of the organisation involved (SBR) or because there was a need for a quick replacement for a system that was not functioning adequately (ASET). In general, such an approach reduces the chance of the service failing and increases the likelihood that it will match the users' needs, by allowing time for feedback from stakeholders and for making the necessary adjustments.

Integrated public service governance is defined in this study as being related to *who* takes the decisions to set up and maintain a new integrated public service and *how* these decisions are taken. The incremental approach to governance implies that often at the start a more limited set of stakeholders will be closely involved in laying the foundations and defining the initial model for the new service (during a pilot phase). This pilot service is later validated by a wider group of stakeholders before it is rolled out. Alternatively, it may be that a wide range of stakeholders are involved from the start of the project but that they discuss and make decisions on a more limited scope of the service in the initial phases. At a later stage, this scope may be extended. Public organisations should consider adopting this gradual approach when developing new integrated public services. Stakeholders who are directly affected by the development of integrated public services should nevertheless be given the opportunity to be involved in the project, with varying levels of input, from the start.

As the integrated public service is developed, public administrations should also ensure that the governance structures and stakeholders involved evolve as the project moves from the planning to the operational phases. This should be done to ensure that the appropriate input is received from stakeholders and the appropriate decision makers are in place to drive the project forward and implement it.

Link to EIF Recommendation 25

This EIF recommendation calls on public administrations to put in place the necessary governance structures in order to ensure coordination and interoperability over time. The recommendation above suggests that the integrated public services be developed according to a gradual approach. In line with this gradual approach, the governance structures required to oversee the integrated service may change over time, prioritising input from different stakeholders. These governance structures should be adapted as appropriate to match the different scope and level of deployment as the service is developed.

6.2.2. Integrated Public Service Governance Recommendation 2: Consider whether and how to involve the private sector from the start of the project

Integrated public services can differ in the extent to which private sector involvement is required. This may be related to the sector – for example, the SBR solution required private sector involvement because the solution needed to interface with the tax and accountancy software provided by private vendors. It may also be a question of context – for example, Digisos required private sector involvement simply because private providers were already providing solutions to the municipalities for the management of social security applications. These solutions needed to interoperate with whatever service was developed by Digisos for the submission of the relevant social security applications. At the other end of the spectrum, other projects require little involvement from the private sector. For example, the private sector plays only a supporting role in Municipality ASP, with state-owned IT companies providing the necessary expertise for the development and maintenance of the solution.

Given the variation in the level of private sector involvement required, public authorities should assess at the start of the project the extent and nature of the support from the private sector they would require. If this assessment reveals the need for a high level of private sector support, public authorities should take the necessary steps to involve private companies from the start of the project.

Link to EIF Recommendation 25

The EIF recommends that governance structures are set up to ensure interoperability and coordination over time for integrated public services. This new recommendation clarifies that public administrations should assess whether and how to involve private sector organisations in these governance structures.

6.2.3. Integrated Public Service Governance Recommendation 3: Assess whether and how the planned digital public service can be delivered within the existing legal framework

A decision must be made by the governing public authorities at the start of the project on the extent to which the new services can be delivered within existing legal frameworks or whether a new legal basis will be required. There are a number of factors to weigh when taking this decision. In general, it will be possible to move more quickly in developing the new service if it can be based on existing legislation. The legislative process can be time consuming and it can be burdensome to build the necessary political support for a new service. At the start of a project, especially if an initial pilot phase is foreseen, it may therefore be preferable to attempt to develop the service within the existing legislative framework. This has the advantage of speed and of providing support (i.e. through the efficacy of the pilot) for any later legislative steps required. In some cases, of course, proceeding within the existing legal framework will not be possible – for example, because organisations do not have the legal right to access the necessary data to provide the integrated public service. The assessment of the need for a new legal basis should take place as early as possible.

Link to EIF Recommendation 26

The EIF recommends that interoperability agreements be established at all interoperability layers. This recommendation suggests an early assessment of the need for agreement on legal changes in order to enable the provision of the integrated public service.

6.2.4. Integrated Public Service Governance Recommendation 4: Involve political stakeholders as necessary to facilitate the creation of new infrastructure and resolve roadblocks, but avoid involving them directly in implementation

The five case studies considered within this study differ in the extent to which high-level policy-makers and political stakeholders were involved. In general, the involvement of these policy-makers is required at the beginning of substantial infrastructure projects where a new legal basis or significant investment is required. In two of the case studies – ASET and Municipality ASP – these stakeholders were indeed involved at the start of these projects, providing the necessary political support to lay the foundations and legal basis for the new service.

At later stages, the direct involvement of such stakeholders is not necessary, unless there are roadblocks or disagreements between the organisations involved that require resolution at the political level. This is the approach that is taken in the case studies. In X-Road BR, political stakeholders initially supported the federation of the X-Road infrastructure in Estonia and Finland, but they were not directly involved in the development of the data exchange between the business registers. This provides a model to follow for other public authorities developing integrated public services. They should limit the involvement of political stakeholders to providing support for the deployment of a new service and resolving roadblocks.

Link to EIF Recommendation 25

The EIF recommendation proposes that governance structures be set up to ensure coordination and interoperability over time. This new recommendation suggests that political stakeholders should potentially be involved in the governance structure for an integrated public service during the early planning stages. However, they should be progressively less involved as the project moves into the development and operational phases, unless there are issues or roadblocks that require resolution at the political level.

6.2.5. Integrated Public Service Governance Recommendation 5: Balance flexibility and consistency when selecting standards

A key issue for **integrated public service governance** is the selection and maintenance of the standards which will be used in delivering a new integrated public service. The organisations involved in providing a solution have a number of needs related to these standards. On the one hand, they require the consistency and stability of the standards to be assured so that they can provide a basis for solution development. On the other hand, user needs and requirements change and the IT environment around them also changes. This is likely to require a degree of flexibility that allows for updates to and changes in the standards in order to meet the new user needs. The case study that best reflects this need to balance stability and flexibility in standards is SBR. In the SBR Programme, working groups of

stakeholders provide their input to ensure that needs in terms of consistency and flexibility of standards are met. The governance structures that are set up should therefore ensure that input is received from a wide range of stakeholders to ensure that the right balance between consistency and flexibility is found, as well as alignment with existing standards.

Link to EIF Recommendation 26

The EIF recommends that interoperability agreements be established at all interoperability layers. This recommendation clarifies that agreements reached on the technical, semantic, and process standards to use for an integrated public service should balance stakeholder needs for both consistency and flexibility.

6.3. Recommendations for organisational interoperability

The five recommendations for **organisational interoperability** described below provide guidance to public administrations on how they should approach and formalise their relationships with the other organisations involved in the delivery of an integrated public service. In addition, they provide guidance on how processes should be developed together with these other organisations in order to provide these services.

6.3.1. Organisational Interoperability Recommendation 1: Pursue administrative burden minimisation to facilitate the delivery of more effective integrated public services

There are a number of ways in which the public organisations involved in the case studies described above reduce administrative requirements in order to streamline their back-office operations and ultimately provide a more effective service. One aspect of this is the effort to reduce the number of individual, tailored agreements that have to be reached between the organisations providing an integrated service. An example is the use of standardised template agreements (Digisos) establishing the conditions under which data will be processed and the tasks necessary for the delivery of the service will be completed. An alternative approach (pursued in the Municipality ASP case) is to empower a central organisation to reach a single agreement for the processing of base registry data on behalf of a number of local authorities. This can drastically reduce the number of agreements that need to be reached. A final approach comes from the SBR case, in which standardised service level agreements are used (unless there is a specific reason to tailor them). All these examples reduce the complexity associated with formalising organisational relationships in order to provide digital services. Public authorities should investigate and pursue similar ways of reducing the administrative burden when they are developing integrated public services.

Link to EIF Recommendation 29

This EIF recommendation posits that administrations should formalise their relationships when providing an integrated service. The new recommendation elaborates on ways to simplify and reduce the burden associated with reaching these agreements, including by developing template organisational agreements that each of the organisations involved in the integrated public service delivery sign up to by default.

6.3.2. Organisational Interoperability Recommendation 2: Consider a mix of different types of interoperability agreement and legislation to formalise organisational relationships

Organisational relationships can be formalised in a number of ways, including bilateral agreements, multilateral agreements, and through legislation. Examples of each are seen in the five case studies, and commonly a combination of these forms is used. SBR, for example, makes use of both a multilateral “framework of agreements” in order to establish what the associated standards are for all organisations using the solution, and bilateral agreements to establish the relationships in any particular reporting chain. However, Municipality ASP uses legislation to establish the main tasks that different organisations are responsible for. Bilateral agreements are then used in addition to provide a solid legal basis for the data exchanges between the organisations necessary to provide the services. In general, therefore, different types of instrument can be used to formalise organisational relationships. Public administrations should consider the different options available to them. They should assess how they can establish a framework that ensures that all organisations have a common understanding of the service to be provided and the different organisational roles associated with it through multilateral agreements or legislation, and further tailor the necessary organisational relationships through bilateral agreements. If considering legislation, organisations should also keep the principle of minimisation of administrative burden at the front of mind in order to ensure that they are not imposing any requirements that are too inflexible.

Link to EIF Recommendation 29

The EIF recommends that administrations formalise their relationships when providing an integrated service. This new recommendation expands on this, suggesting that when formalising these organisational relationships, administrations should consider the combination of multiple different forms of agreement.

6.3.3. Organisational Interoperability Recommendation 3: Make use of existing technical infrastructure where possible

A common feature in four of the five projects presented as case studies is that they re-use existing technical infrastructure in order to create and provide a new service. X-Road BR, Municipality ASP, Digisos, and ASET all follow this approach in one way or another. In several cases (X-Road, ASET), the organisations that provide this shared infrastructure are also responsible for the maintenance of the technical standards that enable data exchange.

Making use of an existing technical infrastructure can greatly simplify the organisational relationships required to deliver a new service and the selection and alignment of the business processes to follow in order to provide this service. The availability of a shared digital infrastructure for multiple services and projects requires a coordinated approach towards digitalisation across the public sector more broadly.

To take X-Road BR as an example, the X-Road infrastructure was re-used for the data exchange between the Estonian and Finnish business registers. This X-Road infrastructure was well known to and trusted by the Estonian business register in particular, as the X-Road infrastructure was first developed and has functioned for many years in Estonia. The re-use of this infrastructure therefore immediately created a

degree of confidence in the feasibility of the new service and helped establish trust between the two organisations. The re-use of the X-Road infrastructure also implied the re-use of the standardised business processes developed for the exchange of data over this infrastructure. This reduced the number of elements that the two business registers had to agree on in order to establish the new service and facilitated the formalisation of their relationship. Similarly, in the Digisos case, the re-use of the FIKS platform in order to exchange data with the municipalities involved facilitated the development of the new service. The FIKS platform is operated by KS (the Association of Local and Regional Authorities), making it known and trusted by municipalities. The re-use of existing technical infrastructure simplifies organisational cooperation and the relationships required to deliver an integrated public service and should be encouraged where possible.

Link to EIF Recommendation 28

This EIF recommendation establishes that organisations need to agree on how their processes should be aligned to provide an integrated public service. The new recommendation above posits that the re-use of technical infrastructure can help facilitate this alignment.

6.3.4. Organisational Interoperability Recommendation 4: Pursue standardisation at the process level and allocate the resources to maintain these process standards

This recommendation comes through particularly strongly from the SBR case. In this case, the development of a standardised process for the system-to-system submission of business reports has enabled the uptake of the solution across many different public and private organisations. The provision of such a standardised process means that the organisations involved in individual reporting chains do not have to define and align on their own process for this submission but can instead adopt the existing one. In the X-Road BR case, a standardised process for data exchange is also provided by the organisations responsible for the maintenance of the X-Road infrastructure. This greatly simplifies the establishment of the data exchange between the two business registers involved in the project.

A key point is that the processes standardised upon should take into account other key principles for integrated public service delivery. This includes administrative simplification as well as pro-active service design. Appropriate resources must also be allocated to maintain the standardised process – which will have to be adapted as technology and user requirements change. In the SBR case study, this was ensured through the creation of a dedicated working group, involving representatives from both private and public organisations. In the X-Road BR case, the Nordic Institute for Interoperability Studies has responsibility for the update and maintenance of the X-Road standards and processes.

Link to EIF Recommendation 28

The EIF recommends that organisations align their business processes in order to provide an integrated public service. This new recommendation clarifies that initially selecting a given business process and aligning on this is not sufficient. It is also necessary to commit resources to updating and maintain the selected processes.

6.3.5. Organisational Interoperability Recommendation 5: Design processes in a user-centric manner

A common feature of the case studies featured in this study is that attention was paid to designing the processes by which the service would be delivered in a user-centric way. This is exhibited in a number of different ways and has contributed to the take-up and success of these services. For the ASET case study, for example, the new service for the assessment of citizen eligibility for the reduced energy tariff was designed as a proactive service. This means that it is not necessary for the citizen to apply directly for the reduced tariff, but that instead the DGEG (the organisation with overall responsibility for the new service) is accountable for beginning the process by which each citizen's eligibility is assessed.

Another example is provided by the SBR case study. The solution developed aims to make the submission of business reports as simple as possible for the user – enabling their submission via accounting or tax software that they are already familiar with. In addition, the process for the submission of these reports was designed to minimise the risk for the user of the submission being interrupted by any technical glitch midway through, forcing them to have to resubmit their report. This was done by dividing the initial session in which the report is submitted into two separate Simple Object Access Protocol (SOAP) sessions. In the first, the business report is submitted, while in the second the report on the status of the report (i.e. whether it was properly received and processed) is returned from the receiving organisation. Splitting the process in this manner reduces the risk of losing the connection midway through and forcing a restart.

Whether looking at the overall design of the service (such as conceiving it as a proactive service), the division of processes into modular components, or practical questions on how to design particular data exchanges, public authorities should design their processes in such a way as to ensure they provide a user-centric service.

Link to EIF Recommendation 28

This EIF recommendation proposes that organisations agree on how to align their business processes to provide an integrated public service. This new recommendation elaborates on this, proposing that when updating and aligning business processes, administrations should ensure that these processes are user-centric.

6.4. The recommendations mapped against the roadmap for integrated public service governance

The tables below provides an overview of the recommendations proposed for **integrated public service governance** and **organisational interoperability**. These recommendations apply to different points in the roadmap for integrated public services.

Table 5: Overview of recommendations on integrated public service governance

Recommendation number	Recommendation	Link to EIF Recommendation
Integrated public service governance		
IPSG Rec 1	Take an incremental approach to developing integrated public services	25
IPSG Rec 2	Consider whether and how to involve the private sector from the start of the project	25
IPSG Rec 3	Assess whether and how the planned integrated public service can be delivered within the existing legal framework	26
IPSG Rec 4	Involve political stakeholders as necessary to facilitate the creation of new infrastructure and resolve roadblocks, but avoid involving them directly in implementation	25
IPSG Rec 5	Balance flexibility and consistency when selecting standards	26

Table 6: Overview of recommendations on organisational interoperability

Recommendation number	Recommendation	Link to EIF Recommendation
Organisational interoperability		
OI Rec 1	Pursue administrative burden minimisation where possible to facilitate the delivery of more effective integrated public services	29
OI Rec 2	Consider a mix of different types of interoperability agreement and legislation to formalise organisational relationships	29
OI Rec 3	Make use of existing technical infrastructure where possible	28
OI Rec 4	Pursue standardisation at the process level and allocate the resources to maintain these process standards	28
OI Rec 5	Design processes in a user-centric manner	28

For **integrated public service governance**, some of the recommendations apply horizontally across the entire process. IPSP Rec 1 on a gradual approach has implications at each stage, as does IPSP Rec 2 on the involvement of political stakeholders. This involvement is advisable at the beginning but should be limited at later stages. IPSP Rec 2 and 3 are both focussed on the “plan and select” phase of the roadmap, when the involvement of private stakeholders should be assessed, as should the extent to which the service can be developed within the existing legal framework. Finally, IPSP Rec 5 on balancing consistency and flexibility for standards is applicable to the later stages of the roadmap, both the “provide framework and set standards” phase and the “monitor and maintain” phase.

For **organisational interoperability**, OI Rec 1 on minimising the administrative burden applies to the organisational changes and agreements section of the roadmap, cutting through both the “provide framework” and “monitor and maintain” phases when the organisational agreements are first set up and then updated as necessary. OI Rec 2 on types of interoperability agreement to consider applies primarily to the “provide framework” phase in which the instruments to formalise the organisational agreements are selected. OI Rec 3 on re-use of existing technical infrastructure applies to the “plan and select” phase, where it influences the choice of organisational model. In addition, OI Rec 3 has knock-on effects in the later phases, as it will influence the business processes and interfaces selected and how they are maintained. Both the final recommendations, OI Rec 4 and OI Rec 5 apply to the “provide framework” and “monitor and maintain” sections as they pertain to how business process standards are selected, the criteria (user-centricity) according to which they are selected, and the resources allocated to maintain them.

Figure 7 below illustrates how the different recommendations on **organisational interoperability** and **integrated public service governance** fit onto the roadmap for integrated public services.

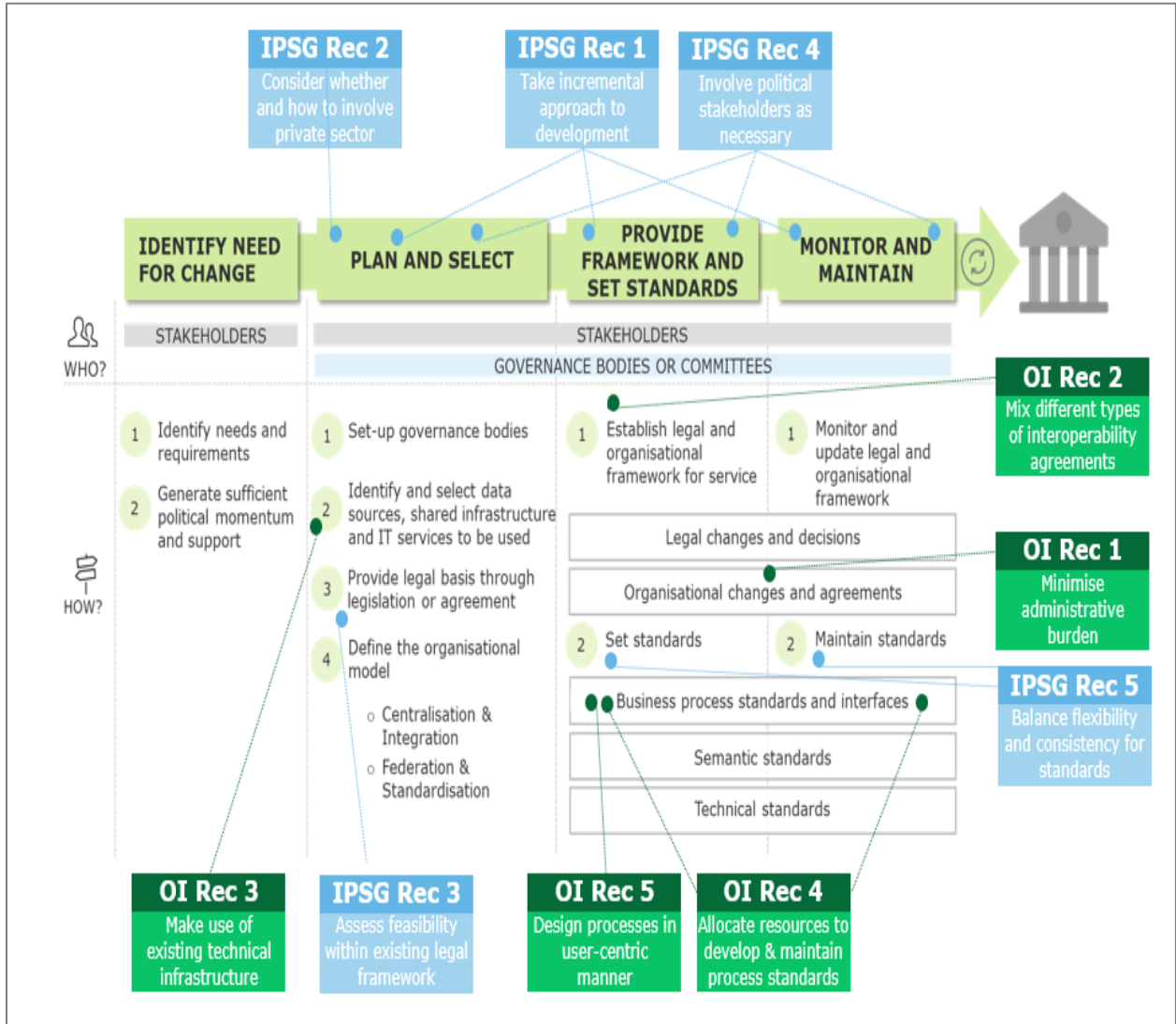


Figure 7: Recommendations mapped against the roadmap for integrated public services

7. CONCLUSIONS AND NEXT STEPS

Through five case studies, this study has provided **concrete examples of how different public organisations have approached the development and delivery of new integrated public services**. In particular, the case studies have provided insight into how these organisations have approached issues related to **integrated public service governance** and **organisational interoperability**.

For each of the case studies, individual lessons have been drawn out on the practical implementation of these concepts. By comparing the experiences across these case studies, common themes were identified and finally **recommendations were developed on integrated public service governance and organisational interoperability**. These recommendations target public organisations considering collaborating with other entities to provide a new integrated public service and can be used as a checklist of points that they should address when tackling challenges related to the organisation and governance of the new service.

A full summary of these recommendations can be found in Section 6.4, above. In brief, the **recommendations on integrated public service governance** encourage a gradual approach to service development, with an early assessment of whether the service can be delivered within the existing legal framework. They advocate close cooperation with the private sector where necessary, and a limited, facilitating role for political stakeholders. Finally, they call for a balanced approach when selecting and maintaining standards, weighing the need for consistency and flexibility.

The **recommendations on organisational interoperability** in part focus on the organisational agreements through which the necessary organisational relationships for an integrated service are formalised. On the one hand, they advocate the minimisation of the administrative burden when creating these agreements, for example through the use of template agreements. In addition, they advise assessing and combining the different types of organisational agreements (multilateral, bilateral) and legal instruments that can be used to formalise these relationships and roles. Other recommendations focus on the development of business processes, encouraging a user-centric approach in this development, together with the allocation of the resources necessary to develop and maintain standards on the process level. Finally, the re-use of existing technical infrastructure is encouraged where possible, as it can help facilitate trust between the organisations involved and speed up the development of the integrated service.

Taken together, these recommendations can help public entities overcome governance and organisational challenges in order to combine data and resources held by multiple organisations. This contributes to efforts to provide better and more user-friendly digital public services.

The study was informed throughout by the theoretical framework provided by the European Interoperability Framework, which introduces and defines these concepts. As formulated, the recommendations provided in this study provide an expansion on the existing recommendations on **integrated public service governance** and **organisational interoperability** in this framework.

Future revisions of the European Interoperability Framework could explicitly incorporate the aspects and recommendations highlighted in this study.

Efforts were made throughout the study (for example via the study workshops) to relate the concepts examined to the needs of public entities when trying to set up new integrated public services. However, in future work, additional focus could be placed on this angle, **defining in more detail the precise organisational and governance challenges faced by public organisations when they are setting up and delivering digital services**, and using this information to identify and define targeted solutions or approaches to these challenges. Additional research could also be done to draw the links between **organisational interoperability** and **integrated public service governance** and digital transformation in general in the public sector. This could include a focus on particular types of data that are likely to be shared across multiple organisations.

The study focused at the level of individual services when developing its analysis of **integrated public service governance** and **organisational interoperability**. In some case studies, this has also allowed analysis of government-wide policies on integrated public services, for example where data exchange infrastructures are provided at the national level. However, this was analysed on an ad hoc basis where it was relevant to the service described. The provision of such infrastructures at a central level and other policies to support the delivery of integrated public services were not systematically assessed. **Future work could address this gap, identifying administration-wide policies and good practices for the development, organisation and governance of integrated public services**. This could include, for example, assessing efforts across different countries to promote the re-use of digital building blocks or enforce particular models for service delivery. This could be complemented also by further analysis on the concept of interoperability governance, which refers to the measures taken to ensure a consistent understanding of interoperability is followed. Previous research indicated that national administrations have adopted different models for the adoption of interoperability governance, and that no single model is dominant (European Commission, 2018, p. 120).

Organisation and governance are areas which provide some of the greatest challenges for public entities attempting to develop and deliver new integrated public services. The recommendations proposed in this study can provide a checklist to help them respond to some of these challenges. Future work could further elaborate on these challenges and develop targeted solutions at both the level of central government and individual public service providers.

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10. ANNEX I: GLOSSARY, ABBREVIATIONS, LONGLIST SERVICES & LITERATURE REVIEW

10.1. Glossary

Table 7: Glossary

Term	Definition	Source of the definition
Administrative simplification	Administrative simplifications means, where possible, to streamline and simplify administrative processes by improving them or eliminating anything that does not provide public value. Administrative simplification can help businesses and citizens to reduce the administrative burden of complying with EU legislation or national obligations. Digitisation can play a role in this, through the application of the digital-by-default and digital-first principles.	(European Commission, 2017 (3), p. 16)
Application service provider	An enterprise that delivers application functionality and associated services across a network to multiple customers using a rental or usage-based transaction-pricing model	Gartner Glossary, 2019 (link)
Base registry	A base registry is a trusted and authoritative source of information, which can and should be digitally reused by others, where one organisation is responsible and accountable for the collection, use, updating and preservation of information. Base registries are reliable sources of basic information on data items such as people, companies, vehicles, licences, buildings, locations and roads.	(European Commission, 2017 (3), p. 31)
Back-office integration	Integration of the systems and processes supporting services and programmes	(National Audit Office, 2013, p. 10)
Building blocks	A self-contained, interoperable and replaceable unit encapsulating an internal structure.	(European Commission, 2017 (3), p. 22)
Business process	An event-driven, end-to-end processing path that starts with a customer request and ends with a result for the customer	Gartner Glossary, 2019 (link)

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Business register	An organisation whose core service is to register, examine and store company information, such as information on a company's legal form, its seat, capital and legal representatives, and to make this information available to the public	European Commission eJustice webpage (link)
Business Report	The document used for the “public reporting of operating and financial data by a business enterprise”.	(Lymer, Debreceeny, Gray, & Rahman, 1999, p. 2)
Catalogue	Catalogues help administrations find reusable resources (e.g. services, data, software, data models). Various types of catalogues exist, e.g. directories of services, libraries of software components, open data portals, registries of base registries, metadata catalogues, catalogues of standards, specifications and guidelines. Commonly agreed descriptions of the services, data, registries and interoperable solutions published in catalogues are needed to enable interoperability between catalogues.	(European Commission, 2017 (3), p. 34)
eGovernment	The use of ICTs to more effectively and efficiently deliver government services to citizens and businesses.	United Nations eGovernment Knowledgebase (link)
European Interoperability Framework	The new European Interoperability Framework (EIF) is part of the Communication (COM(2017)134) from the European Commission adopted on 23 March 2017. The framework gives specific guidance on how to set up interoperable digital public services. It offers public administrations 47 concrete recommendations on how to improve the governance of their interoperability activities, establish cross-organisational relationships, streamline processes supporting end-to-end digital services, and ensure that both existing and new legislation do not compromise interoperability efforts.	European Commission “The New European Interoperability Framework” webpage (link)
European Interoperability Framework Conceptual Model	The EIF conceptual model for public services covers the design, planning, development, operation and maintenance of integrated public services at all governmental levels from local to EU level	(European Economic and Social Committee, 2018)
External information sources and services	Public administrations need to exploit external information sources to deliver their services effectively, such data may include	(European Commission, 2017 (3), p. 35)

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	open data and data from international organisations, chambers of commerce, etc. Moreover, useful external information and data can be collected through the Internet of Things (e.g. sensors) and social web applications.	
Governance	Provides the framework for decision rights and accountability. Among other things it defines principles, roles, and responsibilities.	(Pardo, Burke, & Nam, 2011, p. 12)
Horizontal integration	Linking of service with other services addressing similar users and/or using the same data	(Kubicek, Cimander, & Scholl, 2011)
Integrated public service	The results of bringing together – and fitting together – government services so that citizens can access them in a single seamless experience based on their wants and needs	(Kernaghan, 2012, p. 1)
Integrated public service governance	Providing the framework for decision-making on the provision of an integrated public service	Contractor proposed definition
Interface	A connection between two pieces of electronic equipment, or between a person and a computer	Cambridge English Dictionary (link)
Interoperability	Interoperability is a key factor in making a digital transformation possible. It allows administrative entities to electronically exchange meaningful information in ways that are understood by all parties. It addresses all layers that impact the delivery of digital public services in the EU, including: legal, organisational, semantic and technical aspects.	(European Commission, 2017 (2), p. 2)
Interoperability agreement	“Formal arrangements for cooperation” that can be reached at each interoperability layer	(European Commission, 2017 (3), p. 23)
Interoperability governance	Interoperability governance refers to decisions on interoperability frameworks, institutional arrangements, organisational structures, roles and responsibilities, policies, agreements and other aspects of ensuring and monitoring interoperability at national and EU levels.	(European Commission, 2017 (3), p. 19)
Interoperability layers	The “different interoperability aspects to be addressed when designing European public services”: legal, organisational, semantic and technical	(European Commission, 2017 (3), p. 7)

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Internal information sources and services	Public administrations produce and make available a large number of services, while they maintain and manage a variety of information sources. These include internal information sources that are often unknown outside the boundaries of a particular administration (and sometimes even inside those boundaries). The result is often a duplication of effort and under-exploitation of available resources and solutions.	(European Commission, 2017 (3), p. 30)
Legal interoperability	About ensuring that organisations operating under different legal frameworks, policies and strategies are able to work together	(European Commission, 2017 (3), p. 23)
Once Only Principle	The principle entailing that “citizens and businesses provide diverse data only once in contact with public administrations, while public administration bodies take actions to internally share and reuse these data”	European Commission once-only principle webpage (link)
Organisational interoperability	Integrating or aligning cross-organisational business processes, formalising relationships, and selecting the organisational model to deliver an integrated service	Contractor proposed definition
Pilot	Initial small-scale implementation that is used to prove the viability of a project idea	Association for project management (link)
Semantic interoperability	Ensures that the precise format and meaning of exchanged data and information is preserved and understood throughout exchanges between parties	(European Commission, 2017 (3), p. 25)
Service orientated architecture	“A Service-oriented architecture (SOA) is essentially a collection of services. These services communicate with each other. The communication can involve either simple data passing or it could involve two or more services coordinating some activity	Service Architecture webpage (link)
Shared services	“refer to a dedicated unit (including people, processes and technologies) that is structured as a centralized point of service and is focused on defined business functions. These functions are supported by information technology (IT) and IT services for multiple business units within the enterprise”	(CGI, 2015, p. 1)

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Technical interoperability	Covers the applications and infrastructures linking systems and services	(European Commission, 2017 (3), p. 27)
Vertical integration	Linking services for which there is an obligatory order of the stages involved	(Kubicek, Cimander, & Scholl, 2011)

10.2. List of Abbreviations

Table 8: List of abbreviations

Abbreviation	Meaning
AC	Administrative courts
ASET	Automated Social Energy Tariff (<i>case study</i>)
ASP	Application Service Provider
BPMO	Business Process Management Office
BR	Business register
CBSS	Crossroads Bank for Social Security
CNUE	Council of Notaries
DIGISOS	Digital application for social security (<i>project case study</i>)
DGEG	Directorate General for Energy and Geology
DT4EU	Deloitte and Trasys for Europe
ECMSCS	Electronic Case Management and Secure Communication System
ECRIS	European Criminal Records Information System
EESSI	Electronic Exchange of Social Security Information
EIF	European Interoperability Framework
EIRA	European Interoperability Reference Architecture
ELGA	Austrian electronic health records
ENRWA	European Network of the Registers of Wills Association
EPC	Event-Driven Process Chains
EU	European Union
IACCMSG	Integrated Administrative Court Case Management System
IAP	Interoperability Action Plan
iAP	Interoperability platform
IPSG	Integrated public service governance
ISA ²	Interoperability Solutions and common frameworks for Public Administrations, Businesses and Citizens
IT	Information Technology
KS	Association of Local and Regional Authorities

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NAV	Directorate of Labour and Welfare
NGO	Non-Government organization
Municipality ASP	Municipality Application Service Provider (<i>case study</i>)
OECD	Organisation for Economic Co-operation and Development
OI	Organisational interoperability
OOP	Once-Only Principle
SaaS	Software as a Service
SBR	Standard Business Reporting (<i>case study</i>)
SOAP	Simple Object Access Protocol
SSB	Statistics Norway
UNDP	United Nations Development Programme
XBRL	eXtensible Business Reporting Language
XML	eXtensible Mark-up Language
X-Road BR	Exchange of information between Estonian and Finnish Business registers (<i>case study</i>)

10.3. Longlist of digital public services

Table 9: Longlist of digital public services

NR	Integrated Public Service / Good practice	Country	Sector / Area	Description	Link
Good practices for integrated public service governance (from survey)					
1	X-Road	Estonia	Horizontal	Originally developed in Estonia, X-Road is a distributed information exchange platform that makes it possible for different systems across the public sector to communicate; for example, the police can access data from the health system, tax board or business registry and vice versa. It is an open source solution which has now been adopted in Finland as well, allowing federation between the two country's data exchange systems.	Link
2	Central municipality ASP	Hungary	Local government	The Hungarian central municipality ASP is a centrally provided, modern, integrated shared service provided in SaaS model for specific domains of local administrative management, ensuring standardised internal operation and a common platform for e-government service provision that integrates all necessary building blocks.	Link
3	Digisos	Norway	Social security	Digisos makes the application for financial social assistance available digitally to users. It involves a collaboration between state and municipal governments, however, these different levels are not visible to the user. The state and municipal authorities have come together to build a completely new digital infrastructure which ensures that users will not have to enter information several times.	Link
4	Digihealth	Norway	Health	Digihealth is a digital solution enabling users of home-based health services to communicate with their health providers. These users are able to: send and receive messages from the health and care services in the municipality; see home visits and cancelled visits; get notified about home visits on text message or email This service involves a collaboration between municipal and national level. It was piloted with Bergen municipality, the municipality of Oslo, and the municipal cooperation at Øvre Romerike, KS. The other organisations involved are the Directorate for eHealth and the three suppliers of electronic patient record systems.	Link

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5	RUIAN	Czechia	Geospatial data	The Base Registry of Territorial Identification, Addresses and Real Estates (RUIAN) provides up-to-date information on location data. The registry was developed between 2009 and 2012, integrating data which had initially been uploaded in a variety of forms and by a number of different organisations into one format in one centralised location. Thousands of local authorised editors now provide updates.	Link
6	Digital service teams	Multi-national	Horizontal	A number of digital service teams have been introduced in governments around the world (e.g. Government Digital Service (UK), US Digital Service and 18F (USA), Canadian Digital Service, D9 (Finland), Team Digitale (IT)). These teams aim to introduce organisational change through new skills/capabilities and capacities to transform the way that public administrations are introducing technology innovations and citizen-centric approaches.	
7	ePayBL.de	Germany	Electronic payment	A community of different German administrations developed a service that allows the direct payment of fees etc. to the public sector in Germany. The project solved multiple, legal, organizational and technical challenges through integrating common payment services (giropay, credit card, PayPal, advance payment and invoice, SEPA-debit with fiscal backend services) to introduce a service common in the private sector but not previously possible in the public sector.	Link
8	INSPIRE knowledge base	Europe	Geospatial data	The INSPIRE knowledge base provides a coherent, open and collaborative view of efforts to implement the INSPIRE Directive, alongside other reference materials developed and evolved by INSPIRE stakeholders. One component includes the INSPIRE in Practice platform, which shares generic recipes for implementing the Directive, specific real-world practice joined to them and details of the underlying software solutions used.	Link
9	National Portal for the Codification and Reform of Greek Legislation	Greece	Legal	A central portal will be created for all codifications (consolidations) of Greek legislation developed by Public Authorities. An ontology has been created for the classification of regulations and the standardisation of the codified regulations, and APIs and services will be provided. The portal will connect the Greek Parliament, Ministries, the General Secretariat of the Government, the National Printing House.	Link
10	Issue of driving licence	Greece	Transport	A number of different organisations have to be interconnected in order to issue a driving licence (Ministry of Infrastructure and Transport Directorate D of Road Traffic & Safety; Computer & Electronic Systems Support Service; Transportation and Communications Services throughout the country; Ministry of the Interior Directorate D of Passports; European Network – RESPER; Driving Schools) In order to design the renewed integrated public service to issue a driving license, a working group was established. The members of the working group represented all relevant Departments and discussed issues relevant to IT specifications, legislation, administrative roles and processes, and ensuring strong commitment. External stakeholders also participated.	Link

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11	Integration Platform – “Energy Social Fare” Service	Portugal	Social security	<p>Portugal created an “Energy Social Fare” to lighten the burden for low income families in relation to energy. Since 2016, the responsibility for the fare application has resided with the State (Direção Geral de Energia e Geologia / Directorate General for Energy and Geology – DGEG), rather than the energy companies.</p> <p>In order to deal with the roughly 4 million records involved, an information system was developed by DGEG to communicate with energy companies, the tax system and social security system. This information system uses the Integration Platform developed by the Administrative Modernization Agency and made available to all public administrations in Portugal.</p> <p>The Integration Platform acts as a central Interoperability node with a catalogue of web services, provided by authentic sources of information than can be used and re-used by the different entities. With a single connection, one information system can potentially exchange cross sector data with all other cross sector public information systems, already in use by public entities in Portugal.</p>	Link
12	Integrated Administrative Court Case Management System	Greece	Legal	<p>The aim of the system is the coordination, through digitisation, of workflows of all administrative courts (henceforth AC). Before the adoption of the system, the computerisation of administrative courts was fragmented. The new system integrated the existing court databases and provided for a uniform workflow of court processes (integration of organisational process through standardisation). The Central Organisational Committee for the IACCMSG, which was established by the General Commission of Administrative Courts (an institution of AC responsible to monitor their operation, it consists of judges), together with CS coordinate the operating procedures of the new IS system. The IACCMSG facilitated the communication of the members of the judiciary and the courts.</p> <p>The new system integrated the existing court databases and provided for a uniform workflow of court processes (integration of organisational process through standardisation). The Central Organisational Committee for the IACCMSG, which was established by the General Commission of Administrative Courts (an institution of AC responsible to monitor their operation, it consists of judges), together with CS coordinate the operating procedures of the new IS system. The IACCMSG facilitated the communication of the members of the judiciary and the courts.</p> <p>The system is also interoperable with several external systems, including the lawyers portal for the electronic registration of claims and with the portal of counsellors of the state for the notification of court decisions (institutional agreements reached on the interoperability of these systems depend on the needs of authorities that collaborate for the exchange of information)</p>	Link
13	Catalogue of services	Estonia	Horizontal	<p>All transactional services currently described in a central Catalogue of Services using a machine-readable description language based on the CPSV-AP. It provides a holistic overview of public sector services and makes these services comparable to one another. All other services (indirect services and support services) are also currently being added to</p>	Link
14	Toolbox for plan- and building case	Norway	Construction	<p>Provides a series of tools to assist in digitising the handling of plan and building case work for municipalities particularly for local conversion projects. This includes the Geo-Integration solution, which provides a set of standards for electronic interaction between systems that form part of geographically related case management</p>	Link

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Good practices for organisational interoperability (from survey)					
15	Cooperative networks	Estonia	Horizontal	<p>In the area of public services development and management, Estonia has put into place several networks that gather specialists from all the ministries responsible for public services. These networks include: The Council of Public Services; The Council of IT-architecture; The Council of Data Protection; and The Network of IT-managers.</p> <p>These councils can create best practices and adopt rules of conduct in their domain. They help to build trust and cooperation between organisations and ensure that organisations adopt rules in the same manner.</p>	
16	A-melding	Norway	Business reporting	<p>Through this a-melding form, information is provided on employees' income, employment circumstances and payroll withholding tax, in addition to employer's National Insurance contributions. This is sent to the Norwegian Labour and Welfare Administration (NAV), Statistics Norway (SSB) and the Norwegian Tax Administration. If the employer or accountant has a system that is fully integrated the a-melding is submitted directly from the payroll system.</p>	Link
17	Management service – tax requests	Greece	Taxation	<p>Provides an Integrated Information System for multi-channel information, service and support of the tax administrations. Applications supported include managing requests, issue of certificates, and providing a guide to administrative procedures. It provides a common and unified service regardless of communication channel.</p>	Link
18	Unemployment card	Greece	Social security	<p>A revised procedure was developed to register in the unemployment register and for the provision of an unemployment card. Certain items of the form are pre-filled. The card provides a common protocol for the exchange of information with connected systems.</p>	Link
19	Procedure for digital transformation and alignment of business processes	Greece	Public works	<p>Under this initiative, a working group with representation of all departments involved in public works was established in order to work out where digitalisation was possible. The duties of this group were: 1. Mapping of existing processes; 2. Definition of interrelationships between internal and external stakeholders; 3. Reorganisation of business processes with the aid of a modelling technique to achieve alignment.</p>	
Additional good practices (identified via desk research)					

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20	Aurora	Finland	Horizontal	<p>The Aurora project aims to develop a digital platform (AI assistant) that will offer a personalized selection of services to each user, filtering them according to his or her individual needs at particular moments in life. The software will identify the combinations of services — from both public and private providers — that prove most popular with particular user groups over time.</p> <p>A trial period began in September 2018. It focussed on:</p> <ul style="list-style-type: none"> - moving to a new place of study, - taking courses to improve employment opportunities, and - supporting children and parents in changing family relationships 	Link
21	Digitalisation mediator	Belgium (Flanders)	Horizontal	The Flemish government has introduced the role of digitalisation mediator to help facilitate discussions between interested parties and different levels of government. This is currently an informal role, but they are looking at formalising it.	Link
22	PROMETA	Luxembourg	Horizontal	The BPMO accompanies administrations and public bodies in their business process management and optimisation of their organisation. Its role is to provide support, training and coaching, and also to deliver and support IT projects to public administrations with a business process management deployment approach	Article
23	Suomi.fi	Finland	Horizontal	Provides a range of shared services – eAuthorisations, Web service, service catalogue, data exchange layer, eID, messages.	Link
24	Interoperable building blocks for electronic data gathering, implementation for eSocial Security	Slovenia	Social security	The project enabled efficient interoperable electronic data collecting from 50+ data sources within the public sector and wider (from banks as well) – initially for the purposes of e-Social Security. The data is used to support decisions on social support and other social benefits. The system has now been in operation since 2012 and the solutions developed have been used as building blocks for other services.	OECD case study
25	Electronic Exchange of Social Security Information (EESSI)	European	Social security	The EESSI system will provide the means for national social security institutions to exchange information. By July 2019 all Member States have to “finalise their national implementation of EESSI and to connect their social security institutions to the cross-border electronic exchanges”	Link

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26	ECRIS	European	Law enforcement	Tool to search for criminal records of suspects, of European citizens of another EU country. The tool is developed by DG JUST, this one tool is spread over the countries, but some countries use their own tool, to connect to the ECRIS platform.	Link
27	e-APP	European	Legal	e-APP aims to develop an electronic system for the issuance and verification of Apostilles issued under the Hague Convention. The e-Register component of the e-APP enables the electronic verification of an Apostille in the register of the Competent Authority from which it emanates.	Link
28	i-Support	European	Legal	i-Support aims to develop an electronic case management and secure communication system for the cross-border recovery of maintenance obligations (e.g. alimony and child maintenance) The i-Support Electronic Case Management and Secure Communication System (ECMSCS) provides an efficient solution to support the public administrations to deliver the best services in an efficient and effective way. It is implemented in 13 countries worldwide. (AT, BE, EE, FI, FR, DE, IT, NL, NO, PT, CH, and Brazil, USA)	Link
29	ARERT / ENRWA	European	Legal	European Network of the Registers of Wills Association (ENRWA) or ARERT, is a private organisation, in cooperation with the Council of Notaries (CNUE), currently creating an interconnection of registers of wills at the EU level. It is implemented in different MS, and there is a study to create XML schemas for an electronic European certificate of succession.	Link
30	Standard Business Reporting (SBR)	Netherlands	Business reporting	Standardised solution that enables automated business reporting – adopted by a number of government agencies already in the Netherlands: Tax and Customs Administration; Central Statistics Office, Chamber of Commerce	Link
31	Universal social card (TSU) in Spain	Spain	Social security	Provides a single IT system to manage all public benefits managed by different administrations (general state administration, autonomous communities, local entities, other entities).	TSU website
32	Digital Justice	Spain	Legal	Technological solution for management of legal cases submitted to the Courts. The system enables Spanish judicial bodies to electronically manage data and judicial documents.	EPSA case study
33	Justice 3.0	Austria	Legal	Project addressing how IT workplaces of the Austrian justice system should be designed to ensure that staff can provide up to data and efficient services for citizens and businesses.	EPSA case study
34	Company Dossier	The Netherlands	Business reporting	Provides a central electronic record on which a business can place certain information about its operations just once and have this information re-used to fulfill reporting requirements to different government bodies. The company itself rules on which authorities can access the information in its Company Dossier.	Article

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35	Austrian electronic health records (ELGA)	Austria	Health	ELGA is an information system that simplifies the process of accessing health records for both patients and doctors, as well as other healthcare professionals at hospitals, care facilities and pharmacies. Health data such as a patient's test results are generated by a variety of health institutions. ELGA connects all of them and makes the relevant health data available digitally by means of a link.	OOP best practices report
36	German Refugee Digitisation System	Germany	Migration	An IT system was developed to address issues with refugees being registered multiple times due to misunderstandings or deliberate disguise. The asylum procedures were digitised, with the data exchange of the system building on the established data standard, XAusländer. All relevant authorities have access to a single core data system.	OOP best practices report
37	Tell us Once	United Kingdom	Horizontal	Tell Us Once is a cross-government service that ensures people need to inform government of a birth or death only once. It has been implemented by 44 local authorities for 24 services such as the Council Housing service or the Passport service. The Department of Work and Pensions developed and now administers the IT infrastructure on which all the information is centralised. The relevant information is distributed to all concerned services in other departments.	OOP best practices report
38	Greek enterprise service bus	Greece	National	This service enables a one to one connection between the national ministries so that they can exchange data. Instead of ministries sharing data directly between each other, they share it with the enterprise service bus which then is responsible for sharing this information with the other targeted ministry. The enterprise service bus has been operational since 2016.	Link

10.4. Literature review on integrated public service governance

10.4.1. Introductory note to this section

This section presents the literature review on **integrated public service governance**, coming from the report “Integrated Public Service Governance” (D03.01) delivered in the context of this Specific Contract for ISA2 Action 2016.33: European Interoperability Framework (EIF) Implementation and governance models under Framework contract DI/07624 - ABC IV Lot 3.

This section looks at a number of issues related to **integrated public service governance** in order to provide a solid basis for a future exploration of this concept. This starts with a review of what integrated public services are, and their barriers and enablers, before reviewing different concepts of governance and the types of decisions and issues that are dealt with under **integrated public service governance**.

10.4.2. The provision of integrated public services

There has been a growing trend by public administration to provide or move towards integrated public services. This approach is based on the view that such integration offers “the potential for major value-for-money benefits, in the form of increased efficiency, cost savings and improved services for citizens” (National Audit Office, 2013, p. 12).

The integration of public services refers to “joining up services for the benefit of service users or providers” (Alhusban, 2015, p. 95). A successful integration of services will mean that “citizens can access them in a single seamless experience based on their wants and needs” (Kernaghan, 2012, p. 1). An illustration of the end goal of service integration can be provided by considering the example of an individual setting up a new Tourism Agency (Alhusban, 2015). In order to do this, he will have to provide documents covering aspects including “Criminal Records, Vocational License, Social Security Debts” (Alhusban, 2015, p. 94) and others. All this information is already held by various government organisations. The aim of an integrated public service project in this case would be to ensure that this information is accessed automatically, meaning that “individual government departments share information and avoid the need for the client to provide information” (Alhusban, 2015, p. 94).

In EU policies, this aspiration is known as the once-only principle – according to which public organisations share data between themselves to “ensure that citizens and businesses supply the same information only once to a public administration so that no additional burden falls on citizens and businesses” (European Commission, 2016). For the first time, this aspiration has been made a principle in law at EU level with the Regulation on the Single Digital Gateway establishing that users are able to request direct exchange of data between authorities where one public administration already holds the necessary information for a range of cross-border procedures (European Parliament and Council, 2018).

The need for integration projects is bound up with a history of public administration in which governments are organised in vertical separate structures each responsible for their individual services such as health or education. These types of siloed administrations feature “IT systems that do not communicate or exchange data with each other” (OECD, 2018, p. 107). However, this siloed approach from government has been criticised as ill-equipped to deal with citizens’ needs today, hindering the emergence of a “user-driven administration” (OECD, 2019, p. 3), and preventing a

holistic view of individuals' situations. It is thus commonly believed that there is "great potential to further improve public services through end-to-end integration" (European Commission, 2017 (2), p. 2).

The concept of integrated public services has evolved out of similar concepts such as one-stop shops (OSS) – whereby a single centre provides "consolidated access to multiple public and/or private sector services" (World Bank Group, 2017, p. 7). Such one-stop shops can be physical centres, however public administrations are increasingly focussed on digital OSS with the aim of improving access (World Bank Group, 2017). In general, eGovernment initiatives are seen as "a major opportunity to deliver faster, more readily accessible services" (OECD, 2008), and efforts to integrate public services are often bound up with efforts to digitalise them. The development and delivery of integrated services has even been described as "the logical objective of e-government" (Halligan & Moore, 2004, p. 2).

10.4.3. Integration – approaches and barriers

Integrated public service projects can involve a number of different types of integration (National Audit Office, 2013, p. 10):

- "horizontal integration" – between organisations involved or interested in a service, or with a common interest in a particular group of clients (i.e. citizens)
- "vertical integration" – across the delivery chain for a service
- "back-office integration" – of the systems and processes supporting services and programmes

The set-up and implementation of an integrated service can also take different organisational forms. For example, governments can "create a new agency, design a multi-agency program, or merge existing agencies" (Flumian, 2018). All of these approaches have challenges associated with them – a new agency could result in the loss of important institutional knowledge even if it avoids the risk of a battle between existing organisations over control, and the challenges of alignment that come with a multi-agency approach. Meanwhile, merger projects may face strong resistance from the heads of the involved organisations (Flumian, 2018).

Whatever the choice over organisational structure, integration involves a complex project necessitating "a coherent set of methods and models on the funding, administrative, organisational, service delivery levels designed to create connectivity" (Lipsky, 2010). The challenges associated with setting up and delivering an integrated public service extend beyond the technical to the organisational and cultural, and the political and legal (Halligan & Moore, 2004). These organisational issues can include the question of who is accountable for different steps of the service, how are each of the stakeholders represented, and how they will contribute resources (Halligan & Moore, 2004). Political and legal considerations, meanwhile come into play when legislative change is needed to grant organisations the powers required to deliver the public service, for example the right to share a particular kind of data with the other involved organisations (Halligan & Moore, 2004).

Despite the siloed approach described previously at central government level – where one department is individually responsible for one particular service – it is not necessarily easy to follow which organisations are involved for the delivery of a particular *end-to-end* service. This is because even while at the level of central government there are vertical silos, in addition there are many different layers of government – regional bodies, local bodies, and micro-level agencies – which can

be involved in the delivery chain of different services. For example, there exist “40 different and substantively important ways of organising the inter-relations across tiers of government in most areas in the UK” (Dunleavy, 2010).

The extent to which such regional and local structures play a substantive role, differs from county to country depending on their political and institutional set-up. However, an OECD report (Charbit, 2011) has shown that they can play a substantial role even in unitary countries such as Denmark and Sweden, when assessed according to the budget they are responsible for. The report found that these countries “reach comparable level of spending ratio (rate of sub national spending on total public spending) and of revenue ratio (rate of sub national revenues on total public revenues)” (Charbit, 2011, p. 6) as federal countries.

10.4.4. Success factors for integrated public services

There are a variety of different factors and drivers that enable the success of an integrated public service initiative. In many cases, the need for “**shared vision and objectives**” (National Audit Office, 2013, p. 32) is emphasised. Having a common vision and sense that they are working towards the same thing enables organisations to trust each other, cooperate, and work together productively. In the absence of such a shared vision, the involved bodies may simply reject the integration solution and “fail to incorporate it into their working operations” (National Audit Office, 2013, p. 7).

Such a common vision can also be facilitated by a common focus on the citizen or user, which can “serve as a point of authority to secure proper alignments between jurisdictions and with partner organizations” (Flumian, 2018, p. 3). It has been suggested that without such a common focus on the citizen integrated services cannot be formalised as “there is nothing to align to, no services to be designed, no desired government or citizen outcome in mind” (Flumian, 2018, p. 11). This focus is also established as an underlying principle of European public services within the European Interoperability Framework – labelled as “user-centricity” (European Commission, 2017 (3), p. 13).

Other factors associated with successful integration include the presence of the **political will**, from the top down, to drive an integration project through. The EU’s commitment to providing interoperable public services was confirmed in the 2017 Tallinn Declaration (EU Ministers for eGovernment, 2017), in which the ministers of European Member States reaffirmed their intentions to provide public services that are among other things “interoperable by default” and user-centric. The inclusion of political will or intent as a success factor does not deny public services can be integrated and redesigned in response to bottom-up pressure and user needs. However, it does point out that gaining political support can be an important marker of the likelihood of success of such projects.

Financial incentives (in the form of potential cost savings) that would reward the successful implementation of the project, can also be an important driver of a project. Another driver is the need to **match user expectations** that “services will be conveniently accessible and that response times to requests will decrease” (Halligan & Moore, 2004, p. 6). Such expectations are potentially raised by service levels in the private sector. Another aspect is **leadership**, which is necessary to drive the changes through the different organisations, overcoming cultural, structural and other barriers. This is provided not just at the political level, but at executive level, where sponsorship and buy-in by from the heads of the relevant bureaucracies is needed both to translate a political vision into reality and to motivate and direct the cross-organisational teams involved.

10.4.5. Governance of integrated public services

Another factor that is commonly linked to the success of an integrated public service initiative is the governance of that initiative. There is consensus that good governance is needed in order to ensure the integration of public services and their successful functioning (National Audit Office, 2013) (Flumian, 2018) and that more connected governance structures can “foster a more digitally inclusive society” (United Nations, 2013, p. 5). One study, found that such governance issues are the most crucial barrier for “current low availability services, which cannot be implemented without strong eGovernment and/or sector specific coordination” (Capgemini, tech4i², time.lex, Universiteit Antwerpen, 2011, p. 102). The study recommended that governance mechanisms should be “tailored to the specific needs of each service” and found that the decisions they cover should include to “set relevant standards, protocols and policies, and (if necessary) to enforce these” (Capgemini, tech4i², time.lex, Universiteit Antwerpen, 2011, p. 99), and deal with issues including “data protection, security, semantic alignment, availability and reliability assurances, liability” and more.

Elsewhere, Szeremeta and Kerby (2007) emphasise the need for coordination when setting up an eGovernment service, noting that “needed “backroom” coordination and effort – within and between government agencies – must be ironed out before any eGovernment application goes on line to avoid duplication, assure interoperability, and meet the expectations of users” (Szeremeta & Kerby, 2007, p. 167).

10.4.5.1. Definitions of Governance

Different organisations and authors have different visions of what governance entails. One general definition is that governance is “the way in which an organization is managed at the highest level, and the systems for doing this” (Cambridge University Press, 2011).

At country-level, the United Nations Development Programme defines governance as “the exercise of political, economic, and administrative authority to manage a nation’s affairs” (United Nations Development Programme, 1997, p. ix). The World Bank has also formulated a widely used definition of governance as “the traditions and institutions by which authority in a country is exercised” (Quality of Government Institute, 2010, p. 9). This includes the processes by which governments are selected and their capacities to implement policies. Governance has also been described as about “rules, enforcement mechanisms, and organizations” (Kaufmann, Kraay, & Mastruzzi, 2010, p. 2).

Such definitions of country-level governance might need to be adjusted slightly to describe accurately the processes necessary to govern integrated public services. For example, in the integrated public service context, it might be said that governance is firstly about the processes by which the new service is set up and which organisations have decision-making power and accountability for it. It could also be said to be about the processes by which the integrated public service is developed and delivered, and the rules and enforcement mechanisms that are put in place to do this.

In other domains, definitions of governance differ somewhat, but there are also significant commonalities. For example, corporate governance has been defined as “the set of processes, customs, policies, laws and institutions affecting the way a corporation is directed, administered or controlled” (Kooper, Maes, & Lindgreen, 2011). This can be understood to include as well the relationships with other stakeholders. Meanwhile, IT governance has been seen as particularly relevant in the context of digitalisation and has been defined as “what decisions must be made to ensure effective management and use of IT and who makes the decisions” (Weill & Ross, 2004).

In the area of eGovernment and of integrated public services more specifically, there are also a number of working definitions, often centred on decisions and decision-making. For example, one definition posits that “governance represents the framework for decision rights and accountability to encourage desirable behaviour in the use of resources” (Pardo, Nam, & Burke, 2011). Meanwhile for Flumian (2018) governance is about the process leading up to the decisions, providing the “accountability processes required to review and make investment decisions based on business cases, implementation plans, and outcome evaluations” (Flumian, 2018, p. 7). The work of **integrated public service governance** is in “spelling out the arrangements in detail” (Flumian, 2018). Yet another definition asserts that “governance is about decision-making and ensuring that stakeholders are involved and take on their different roles” (DIGST and ICTU, 2014).

The OECD elaborates further on the relationship between integrated public services and governance by defining a number of key principles to ensure good governance of service delivery. These principles are:

1. Policy for citizen-oriented state administration is in place and applied
2. Good administration is a key policy objective underpinning the delivery of public service, enacted in legislation and applied consistently in practice.
3. Mechanisms for ensuring the quality of public service are in place
4. The accessibility of public services is ensured

(OECD, 2017, p. 64)

In general, although there are differences in the precise definitions, we can say that governance is about providing a framework in which decisions can be made and roles and responsibilities are defined. For the specific example of **integrated public service governance**, such roles, responsibilities and decisions will refer to aspects including choices over standards and how these develop over time, the choice of organisational model, and a broad range of issues including data protection, security, defining the overall vision for the service, and funding.

In the context of **integrated public service governance**, the focus on stakeholders mentioned in one of the definitions above is also crucial. Integrated public services by their nature involve multiple organisations and bodies, and a crucial aspect of governance will entail how the different positions and desires of these organisations are resolved.

10.4.5.2. Integrated public service governance and standards

Elsewhere, Kubicek, Cimander and Scholl (2011) identify a number of different phases that the governance of standards for integrated public services must pass through. They find that there are three phases through which standards for a particular integrated public service must pass:

- “A planning phase of defining or selecting appropriate standards
- An authorization phase of standards, and
- An operation and maintenance phase”

(Kubicek, Cimander, & Scholl, 2011, p. 111)

For each of these phases, the authors find that there are “various institutional configurations and also different degrees of participation or representation of stakeholders” (Kubicek, Cimander, & Scholl, Organizational Interoperability in E-Government - Lessons from 77 European Good-Practice

Cases, 2011, p. 112). In addition, they claim that the different types of interoperability standards – which for them are technical, syntactic, semantic, and business process – “neither have and nor need a common governance structure” (Kubicek, Cimander, & Scholl, *Organizational Interoperability in E-Government - Lessons from 77 European Good-Practice Cases*, 2011, p. 109). Instead, they find that technical and syntactic standards are developed and issued in “international standardization committees or Internet working groups” (Kubicek, Cimander, & Scholl, *Organizational Interoperability in E-Government - Lessons from 77 European Good-Practice Cases*, 2011, p. 109). When planning for an integrated public service, the choice is made to use an existing standard already developed by one of these groups. Meanwhile, for semantic and business process standards, they tend to be “designed to meet the needs of the specific service under consideration” (Kubicek, Cimander, & Scholl, *Organizational Interoperability in E-Government - Lessons from 77 European Good-Practice Cases*, 2011, p. 109) by intergovernmental bodies. For example, the Crossroads Bank for Social Security (CBSS) in Belgium – which is responsible for egovernment strategy in the Belgian social sector developed an information model that ensures that the different organisations involved in social service delivery in Belgium interpret items of information in the same way (Kubicek & Cimander, 2005).

The study also found that the planning phase for business process and semantic standards could be carried out in either existing or newly created bodies (working groups, ad hoc committee, etc.) and that these bodies could be temporary or permanent. The study drew on 77 good practice examples of interoperability in eGovernment services. 31 of these cases involved the delivery of specific services which required collaboration between several organisations (Kubicek, Cimander, & Scholl, 2011, p. 68). In the majority (23 out of 31) of these cases involving specific services, permanent existing institutions were used to develop the business process and semantic standards (Kubicek, Cimander, & Scholl, *Organizational Interoperability in E-Government - Lessons from 77 European Good-Practice Cases*, 2011, p. 112).

Regarding the authorisation of standards phase, separate bodies can be involved to adopt or recommend their use by law, or the partners and stakeholders involved can recommend or mandate their use by agreement or contract. The study found that the use of law or ordinance was more likely at the national level, with contracts or agreements more likely at the regional level (Kubicek, Cimander, & Scholl, *Organizational Interoperability in E-Government - Lessons from 77 European Good-Practice Cases*, 2011, p. 122).

In the operation and maintenance phase of the standards, the study found that the maintenance of interoperability standards – which involves the “design and documentation of updates” (Kubicek, Cimander, & Scholl, *Organizational Interoperability in E-Government - Lessons from 77 European Good-Practice Cases*, 2011, p. 123) was “in most cases kept within the public sector” (Kubicek, Cimander, & Scholl, *Organizational Interoperability in E-Government - Lessons from 77 European Good-Practice Cases*, 2011, p. 124). This contrasts however with tasks required for the operation of standards, such as the provision of clearing and conversion services, which are quite commonly performed by private sector providers or Public Private Partnerships (Kubicek, Cimander, & Scholl, *Organizational Interoperability in E-Government - Lessons from 77 European Good-Practice Cases*, 2011, p. 124). In the same study, the authors emphasise that apart from this process of developing, selecting and operating standards, there is another strategy for providing a digital public service. This strategy is to integrate the necessary processes and databases and centralise them in a new service. Taking this approach will mean that just a single system must be governed, instead of the standardisation process described above. Such an integration and centralisation strategy is often not possible for political or legal reasons, however the authors stress that “the centralization option

should always be checked” (Kubicek, Cimander, & Scholl, Organizational Interoperability in E-Government - Lessons from 77 European Good-Practice Cases, 2011) (Kubicek, Cimander, & Scholl, Organizational Interoperability in E-Government - Lessons from 77 European Good-Practice Cases, 2011, p. 130). There can be advantages and disadvantages of both approaches, as listed in other parts of the literature. Miller (2002) notes that a decentralised approach can be “an effective means of curbing excessive concentration of power at the centre” (Miller, 2002, p. 7). However, he also notes that “central delivery of most services is usually more efficient” (Miller, 2002, p. 12).

10.4.5.3. Modes of governance

There are commonly held to be three main modes of governance: “the market mode, the hierarchical mode, and the network mode” (Estermann, Riedl, & Neuroni, 2009). We can consider how these different modes relate to the governance of integrated public services. Under the market mode, governance is organised through contractual relationships and services are distributed according to the price mechanism. For integrated public services, such a mode of governance is relatively rare, due to the public sector context. However, the market mechanism plays a role in the selection of standards, as specifications often become *de facto* standards due to widespread adoption by private enterprises. Meanwhile, under the hierarchical mode of governance, there is a formal structure characterised by employment relationships and top-down commands. This is a common model for intra-organisational²⁹ IT governance – where there is a clear hierarchy of command. However, in inter-organisational³⁰ eGovernment contexts such a hierarchy is often absent across the different layers of government that are involved. Therefore, this mode of governance is also less common for integrated public services. Finally, under the network mode, cooperation is organised according to “informal relationships, based on interdependencies and complementary interests” (Estermann, Riedl, & Neuroni, 2009). This mode of governance is particularly relevant for inter-organisational eGovernment projects and the provision of integrated public services because as explained, there is often no clear hierarchy between the involved organisations and the market mechanism is not applicable.

10.5. Literature review on organisational interoperability

10.5.1. Introductory note to this section

This section presents the literature review on **organisational interoperability**, coming from the report “Organisational Interoperability” (D04.01) delivered in the context of this Specific Contract for ISA2 Action 2016.33: European Interoperability Framework (EIF) Implementation and governance models under Framework contract DI/07624 - ABC IV Lot 3.

The following section reviews other studies and work on **organisational interoperability** and related issues in order to explore other potential approaches towards the exploration and development of guidelines on this concept.

10.5.2. Introduction to organisational interoperability

Organisational interoperability is seen as a crucial aspect of interoperability by practitioners and academics, necessary to enable “the collaboration of administrations that wish to exchange

²⁹ i.e. IT governance within one single organisation.

³⁰ i.e. when several different organisations are involved and governance issues must be resolved between them

information and may have different internal structures and processes” (UNDP, 2008, p. 7). Organisational issues are a crucial component of successful digital service projects generally, as “moving services online involves redesigning organizational structures and processes according to the citizens’ and businesses’ needs” (United Nations, 2013, p. iii) and “integrating services across different governmental agencies” (United Nations, 2013, p. iii). The attainment of **organisational interoperability**, however, remains an enduring challenge and especially as the scale and ambition of eGovernment projects become larger, “organisational issues and challenges begin to outweigh the technical ones in terms of complexity (Pardo, Burke, & Nam, 2011, p. 10)”. Even apparently simple processes can require a “complex workflow behind the scenes requiring authorisations and payment at several levels of government” (Capgemini, tech4i², time.lex, Universiteit Antwerpen, 2011, p. 91).

In recent years, one focus of EU efforts to support and develop European digital public services has been the once-only principle³¹. The application of this principle has been mandated in law at European level for the first time, with the Regulation on the Single Digital Gateway establishing that users are able to request direct exchange of data between authorities for a number of procedures if one administration already holds the necessary data (European Parliament and Council, 2018). **Organisational interoperability** issues have been emphasised as a major challenge for the application of the once-only principle. Kalvet, Toots and Krimmer, in their review of drivers and barriers for the once-only principle, note that organisational differences create difficulties for public sector bodies attempting to “consolidate their processes and act in a joined-up manner” (Kalvet, Toots, & Krimmer, 2017, p. 38). Building on this in a later paper, the same authors list organisational silos and “the complexity of change in organizational structures, working practices and cultures” among the key organisational barriers to the once-only principle (Kalvet, Fleur van Veenstra, Toots, & Krimmer, 2018).

Despite the recognised importance of this concept, and the challenges that are associated with it, the state of knowledge on **organisational interoperability** has been described as suffering from a “lack of conceptual clarity” with “vague concepts with large scope of interpretation” (Kubicek, Cimander, & Scholl, Organizational Interoperability in E-Government - Lessons from 77 European Good-Practice Cases, 2011, p. 56). The European Interoperability Framework provides one definition of **organisational interoperability** as “the way in which public administrations align their business processes, responsibilities and expectations to achieve commonly agreed and mutually beneficial goals” (European Commission, 2017 (3), p. 24). However, beyond suggesting the documentation of business processes in commonly accepted modelling techniques, it does not elaborate on how this can be done. It suggests that “instruments to formalise mutual assistance” (European Commission, 2017 (3), p. 25) need to be found, but does not elaborate on what should be included in these instruments and what aspects they should cover.

Reflecting the lack of a widely accepted common definition of **organisational interoperability**, different authors and framework include a large range of different issues within this concept. These include business process alignment, the formalisation of agreements between different organisations to collaborate, agreement over interfaces to use, organisational structures, governance structures and linguistic issues.

³¹ The once-only principle means that citizens and businesses should only have to provide data one time when in contact with public administrations. Following this, public administration bodies should share and re-use this data internally, while respecting data protection regulation.

10.5.3. Business Process Interoperability

One aspect frequently included in definitions of **organisational interoperability** is the alignment and management of business processes (UNDP, 2008, p. 7). A business process is “a set of related activities or operations which, together, create value and assist organisations to achieve their strategic objectives” (Department of Finance and Administration, 2007, p. 6).

In the private sector, business process management and the related concept of business process re-engineering is used for “analyzing, improving and controlling processes” (Gabryelczyk & Jurczuk, 2016, p. 788). The aim of these approaches is to create a “process-centric, customer-focussed organisation” (Gabryelczyk & Jurczuk, 2016, p. 790) that “uses information technology, and aligns with the needs and requirements of customers” and “achieves business goals” (Gabryelczyk & Jurczuk, 2016, p. 790). The use of business process management in the public sector is less advanced than in the private sector, however it has nonetheless been applied by administrations wanting to increase efficiency through the application of private sector techniques and “deliver cost effective and efficient services to the public” (Gabryelczyk & Jurczuk, 2016, p. 795). In particular its value is recognised in enabling the “modernisation of old public processes integrating information technologies into their management” (Papadopoulos, Kechagias, Legga, & Tatsiopoulos, 2018, p. 409). The end goal of process re-engineering should be to “[tailor] the ‘back-office’ processes to make service delivery as user-friendly as possible” (European Commission, 2015 (2), p. 81).

When working across organisations, the alignment, integration and interoperability of business processes “enables collaborating agencies to share processes for the achievement of a common goal or for delivering similar services” (Department of Finance and Administration, 2007, p. 21). Business process alignment and integration allows different organisations to work together effectively in order to deliver a common goal (e.g. a European Public Service). Process integration involves “interrelating steps and stages of process performance across technical and organisational borders in order to enable new services based on an overarching monitoring and control of process flow” (Klischewski, 2004, p. 58).

When developing these new, integrated processes public administrations also can and should “streamline and simplify processes” (European Commission, 2015 (2), p. 80) in order to achieve administrative burden reduction. The United Nations Department of Economic and Social Affairs found from an analysis of 145 successful innovations in public governance across 50 countries that innovations in “processes and working methods of an organisation” including through the “simplification of procedures” can “have immediate and long term positive effects on... increasing the efficiency of operations and performance” (United Nations, 2014).

The European Institute for Public Administration provides a Common Assessment Framework (European Institute of Public Administration, 2013) to help public organisations assess how they can improve their operational performance and the quality of their public services. The Common Assessment Framework includes process improvement as one of its main criteria and defines a number of elements that organisations should consider in order to “[coordinate] processes across the organisation and with other organisations” (European Institute of Public Administration, 2013, p. 38). These elements are:

- “1. Define the service delivery chain to which the organisation belongs and its partners.
2. Coordinating and linking processes to key partners in the private, NGO and public sector.

Recommendations for organising and governing integrated public services

3. Develop a common system with partners in the service delivery chain to facilitate data exchange.
4. Undertake citizen/customer journeys across different organisations to learn about better coordination of processes and overcome organisational boundaries.
5. Creating task forces across organisations/ service providers to tackle problems
6. Build in incentives (and conditions) for management and employees to create cross organisational processes (e.g. shared services and common process development between different units).
7. Create a culture for working across borders in the process management, getting out of the silos thinking, coordinating processes across the organisation or developing cross organisational processes (e.g. undertake self-assessment for the whole organisation rather than different units)."

(European Institute of Public Administration, 2013, p. 38)

10.5.4. Organisational Relationships and Models

A first step towards achieving the alignment of business processes is the identification of those processes that have to be aligned in order to achieve common goals and interoperability requirements. These requirements can be assessed according to different types of interdependence and different organisational models. Public administrations differ widely in these organisational models and in their organisation and management across a range of aspects, including their approach to "centralisation vs. decentralisation, flattening of hierarchies, shared services, agencies/agency control, mergers, corporatisation, privatisation, changes to size and scope of government, and redistribution of responsibilities between different government levels" (European Commission, 2017 (4), p. 49).

In some cases, these processes required to deliver a new digital public service already exist in some form or another. In other cases it is necessary to "define and establish new [business processes]" (European Commission, 2017 (3), p. 25). Often additional value is achieved when existing processes are re-engineered. If processes under the authority of different public or private sector organisations are to be linked it becomes a complex governance challenge to negotiate a common organisational model of the processes that have to be integrated.

A study of 77 European cases (Kubicek, Cimander, & Scholl, Organizational Interoperability in E-Government - Lessons from 77 European Good-Practice Cases, 2011) of **organisational interoperability** identified four different kinds of relations between organisations, based on the concepts of services, stages, areas and files. Issues of interoperability arise when a certain service is to be linked with other services addressing similar users and/or using the same data. For example, for typical life situations such as changing address and updating the address data used for citizen registration as well as for many other services (car registration, electricity utilities, post and telecoms etc.). If this data has to be entered only once this is called horizontal integration or multi-service-exchange. Such horizontal integration thus enables the once-only principle, a key EU target for eGovernment, as stressed by Ministers of the EU Member States in the Tallinn Declaration on eGovernment (Council of the EU, 2017). An example of horizontal integration is provided by the Luxembourgish myGuichet project (Vallner & Reinsalu, 2017). Using the myGuichet platform, citizens are able to upload and store personal details and documentation. This data can then be used for a variety of different administrative procedures from applying for financial support for higher education to settling taxes (Centre des technologies de l'information de l'Etat, 2018).

The integration can be said to be vertical or a multi-stage-exchange, in contrast, where there is an obligatory order of the stages involved. An example is the registration for child benefits in Ireland (Cimander & Kubicek, eGovernment interoperability at local and regional level - good practice case: e-Enabled Child Benefit Service in Ireland, 2005). The process starts with the notification of the birth of a child at the registrar, followed by registration in the citizens register, generating a personal ID. If the parents wish to, they can apply for child benefit and the child's data will be sent automatically to the revenue agency.

The figure below provides a visual representation of horizontal and vertical integration and how each type of integration relates to different services and stages.

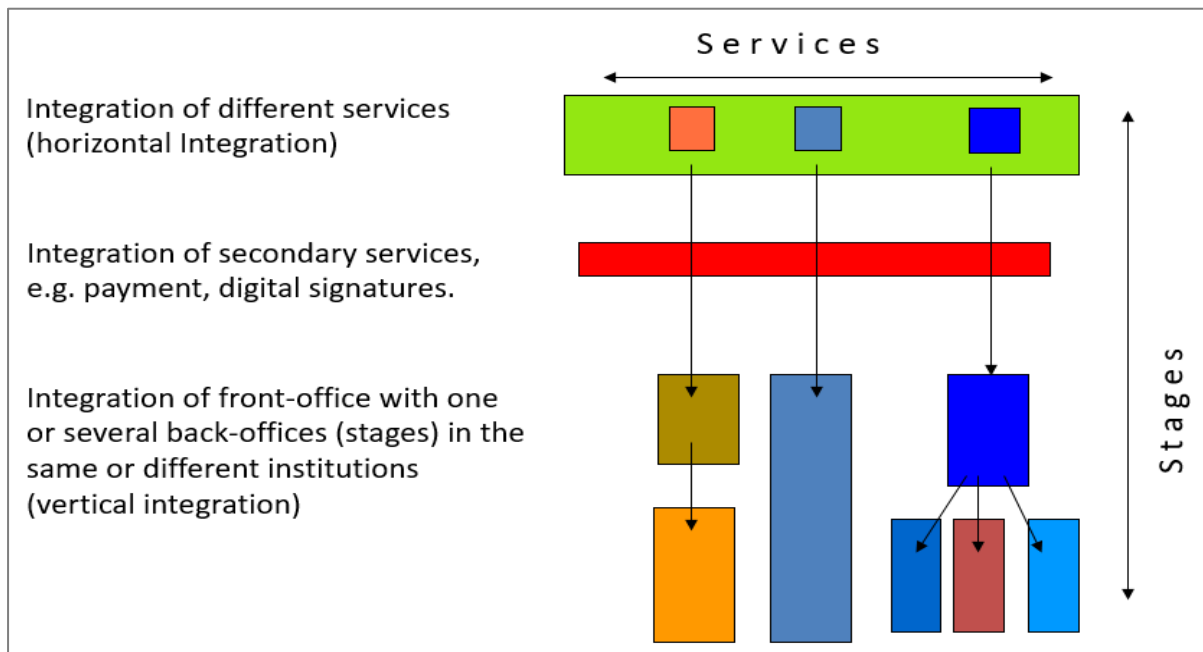


Figure 8: Horizontal and vertical integration

Source: (Kubicek, Cimander, & Scholl, Organizational Interoperability in E-Government - Lessons from 77 European Good-Practice Cases, 2011, p. 72)

A third type of alignment is involved in multi-area-integration, where organisations that provide the same service in different geographical areas (different regions, or even different Member States) need to exchange data. An example of this could be regional citizens' registers, which need to exchange data when a citizen moves from one region to another in order to maintain up to date records. Quite different organisational models are feasible for this type of integration as can be seen by comparing the examples provided by the creation of nation-wide citizens' registers in both Austria (Cimander & Kubicek, 2005) and Germany (Cimander & Kubicek, 2005).

While the Austrian Federal Government after consultation with the federal states by law decided to establish a central register in which each local registration office changes the address of incoming citizens, in Germany the federal states were not willing to give up their own state registers. In order to enable use-cases such as the police being able to access registration data of citizens from other federal states, the sixteen state registers were required by law to install a common interface to operate the common data exchange standard X-Meld, based on OSCI-Transport, a standard acknowledged by the national IT-board.

A final type of interoperability case involves multi-file-exchange. For this type of interoperability case a shared service is developed (e.g. a search functionality or a payment service) which can be used in support of a number of different types of service.

10.5.5. Common Modelling Languages

Once the desired configuration and process relationships have been agreed on in principle, the details of the process and interfaces have to be defined precisely between usually heterogeneous components. For this purpose, a common modelling language should be chosen in order to ensure that different organisations can understand each other's processes. There are a wide range of modelling languages that can be used for this purpose. These include Event-Driven Process Chains (EPC), Integrated Enterprise Modelling (IEM) method, SAP Business Scenario Maps, Business Process Definition Metamodel, Unified Modelling Language, ebXML, RosettaNet, Business Process Modelling Language, XML Process Definition Language, and Web Services Business Process Execution Language / Web Services Choreography Definition Language (ATHENA, 2008).

Another useful enabler can be a reference model. The US Federal Government, for example, makes use of a business reference model to provide a "classification taxonomy... to describe the type of business functions and services that are performed in the Federal Government" (Office of Management and Budget, The White House, 2013, p. 30).

Similarly to the EIF, other interoperability frameworks, such as the Australian Business Process Interoperability framework, don't endorse the use of any particular language. They instead just insist that "a common set of standards, methodologies and frameworks" (Department of Finance and Administration, 2007, p. 37) must be agreed upon by the agencies trying to achieve business process interoperability. Despite this, the Australian framework does note that "Business Process Execution Language (BPEL), Unified Modelling Language (UML) and Business Process Modelling Notation (BPMN)" are "emerging standards used to model business processes" (Department of Finance and Administration, 2007, p. 37).

There may be varying preferences for one or another modelling language. With regard to **organisational interoperability** it is essential that, whatever language is chosen, the borders between the authorities involved are shown because this is where cooperation and interfaces are required. The previously mentioned case studies in Austria (Cimander & Kubicek, 2005) and Germany (Cimander & Kubicek, 2005) used the following method for the description of the cases:

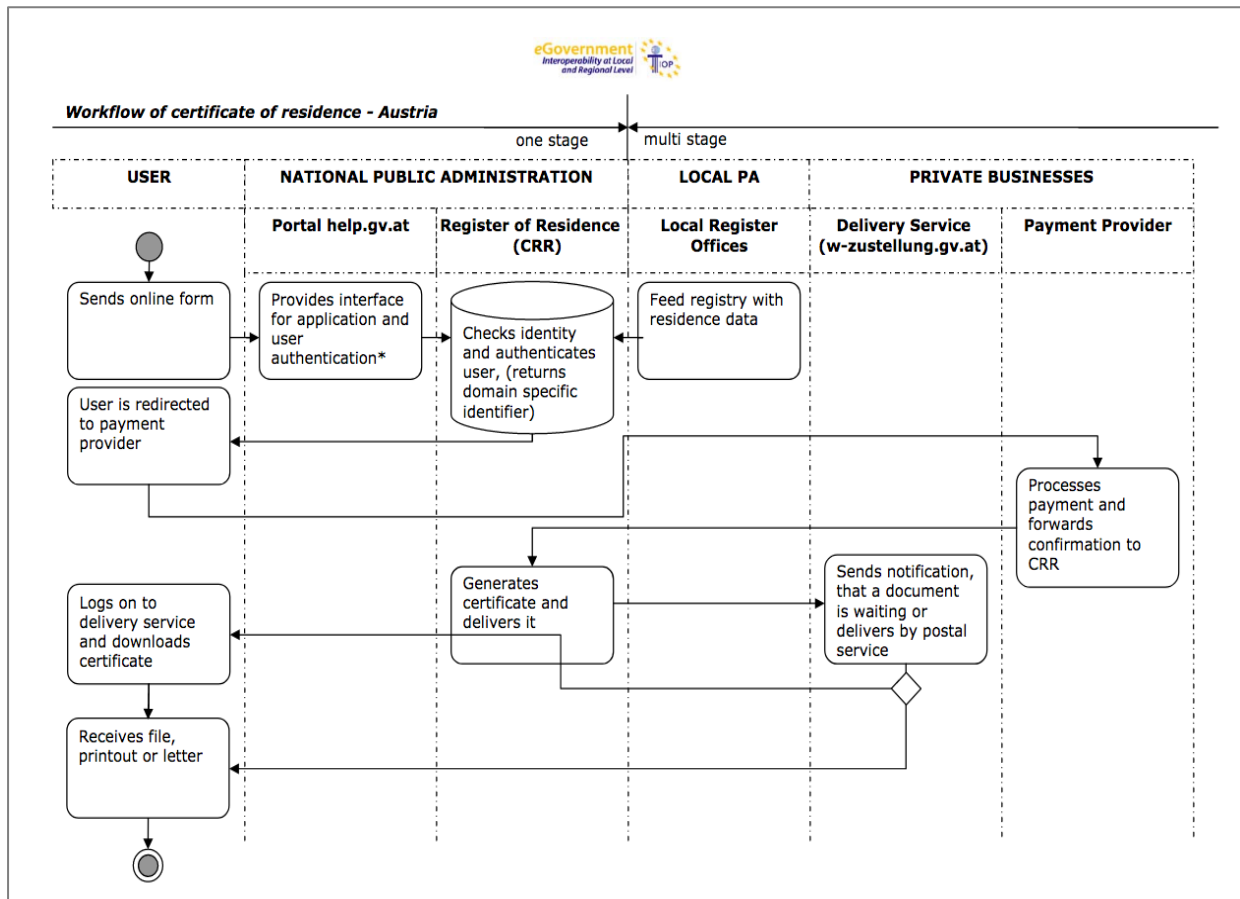


Figure 9: Example of business process model

Source: (Cimander & Kubicek, 2005, p. 12)

10.5.6. Enabling business process interoperability

One way of achieving business process interoperability is through the use of service oriented architecture (SOA), as this “allows for the common description of inter-organisational processes, when business process definition languages are standardized” (Kubicek, Cimander, & Scholl, Organizational Interoperability in E-Government - Lessons from 77 European Good-Practice Cases, 2011, p. 62). Even with the help of such a service orientated architecture the process of reaching business process interoperability will be “application or service-specific” (Kubicek, Cimander, & Scholl, Organizational Interoperability in E-Government - Lessons from 77 European Good-Practice Cases, 2011, p. 94), require “cooperation among the agencies involved in the particular service” (Kubicek, Cimander, & Scholl, Organizational Interoperability in E-Government - Lessons from 77 European Good-Practice Cases, 2011, p. 94) and be faced with challenges in terms of governance.

An important observation on the abovementioned study of **organisational interoperability**³² is that in many cases the ideal model of direct and synchronised data exchange between all organisations involved could not be achieved. Rather additional processes and resource needed to be created and provided in order to guarantee full interoperation. At least three supporting processes are of general relevance.

³² Kubicek, Cimander and Scholl (2011), Organizational Interoperability in E-Government: Lessons from 77 European Good-Practice Cases

- **Common directories** – A type of register which stores details such as addresses to which messages should be routed, authentication details and certificates, or core data key codes (Kubicek, Cimander, & Scholl, Organizational Interoperability in E-Government - Lessons from 77 European Good-Practice Cases, 2011, p. 103). A directory holds information on the core elements of eGovernment such as citizens, companies and public services³³.
- **Buffering functions** – in case a system is not able to operate incoming data immediately or in case an operation requires two different datasets and they arrive at different points in time³⁴.
- **Exchange of different data formats**, when not all participating agencies agree to a common standard but insist on keeping their previous one, an automatic translation process is required.

These kinds of supporting services can be provided centrally via intermediaries known as clearing centres, or in connection with cloud services. An example of a clearing centre is the Crossroads Bank for Social Security (CBSS) in Belgium, which was established to process social contributions from employers to health insurance institutions. The CBSS maintains directories on the type and format of data that agencies need and for whom and for which purpose data can be accessed.

10.5.7. Governance of Organisational Interoperability

While the issues mentioned so far focus on *what* has to be aligned and made interoperable, in practice a necessary precondition is to get all the owners of the desired processes on board, willing to cooperate and accept a common coordination regime. The issue of *who* has to perform the necessary tasks and *how* will also fall under the concepts of Interoperability Governance and **Integrated Public Service Governance**, which deal with the decisions necessary to achieve interoperability on all four interoperability layers defined in the EIF: technical, semantic, organisational and legal. Based on the comparison of 77 European cases, Kubicek, Cimander and Scholl (Kubicek, Cimander, & Scholl, Organizational Interoperability in E-Government - Lessons from 77 European Good-Practice Cases, 2011, p. 63) conclude that there are different actors taking the decisions regarding each of the four layers. We will come back to this issue in more detail in the accompanying report on **Integrated Public Service Governance** in this contract, which deals with the coordination of decisions on all four layers.

With regard to **organisational interoperability** and its governance, Kubicek, Cimander and Scholl found that governance structures shifted across the different phases of the standards life cycle – planning, authorisation and operation and maintenance. In the planning phase tasks “were assigned to either existing or new permanent or temporary institutions”. Meanwhile, in most cases a separate authorising body had to approve the proposed standards – the use of these standards could be mandated by the authorising body or be kept voluntary. Finally, certain organisations and units are assigned to maintain the standards (i.e. design and documentation of updates. The IT departments and user departments involved generally have different views and opinions on this issue. When

³³ An example of an address directory provided by Kubicek, Cimander & Scholl (2011, p. 104) is the “reference directory” provided by the Crossroads Bank for Social Security in Belgium, which is used to route and send messages between 2000 offices using the system.

³⁴ An example of when a buffering function would be needed could be if you apply for a certificate, but your application is not processed until you pay a fee and this payment is processed by the responsible organisation. The first data set therefore has to be temporarily stored (as is done via a buffering function) until the other data (on your payment) is processed.

several organisations are involved this means that several IT departments have to agree on technical aspects of standards and several user departments on functional requirements. Service level agreements have proven to be an appropriate instrument to document what user departments can expect from IT departments in this regard.

10.5.8. Formalising organisational relationships

The EIF specifies that an aspect of **organisational interoperability** involves “finding instruments to formalise mutual assistance, joint action and interconnected business processes as part of service provision” (European Commission, 2017 (3), p. 25). The instruments to formalise these organisational relationships can include different types of interoperability agreements. A number of national interoperability frameworks, as well as the European Interoperability Reference Architecture specify details on what should be included in an interoperability agreement. The EIRA defines an interoperability agreement as “the means through which organisations (public administrations, or businesses) formalise the cooperation with one another” (European Commission, 2018) – they should include “purposes and goals, terms and conditions, governance, and the description of the channel(s)”.


Some national interoperability frameworks also provide further details on their understanding of and requirements for interoperability agreements. The Maltese interoperability framework, for example, compares bilateral interoperability agreements with multi-lateral agreements, claiming that bilateral agreements result in “reduced efficiency and higher costs” (Maltese Information Technology Agency). Meanwhile, outside of Europe, the New Zealand Government specifies that interoperability agreements should define “the operational requirements, budget, roles and responsibilities of all agencies participating” (The New Zealand Government State Services Commission, 2002). The role of such agreements is also emphasised for ratifying “visions, objectives and priorities” (The New Zealand Government State Services Commission, 2002, p. 236), however it is warned that achieving a common vision cannot be achieved simply by signing such an agreement and furthermore that it is unlikely that doing so will be sufficient “to maintain interoperability over time in a complex and changing environment” (The New Zealand Government State Services Commission, 2002, p. 236).

11. ANNEX II: CASE STUDIES ON ORGANISING AND GOVERNING INTEGRATED PUBLIC SERVICES

11.1. Case Study 1: X-Road – Exchange of information between Estonian and Finnish Business registers (X-Road BR)

11.1.1. Case study summary


Case study summary


 **Abstract:** The following case study illustrates how the Estonian and Finnish national business registers have made use of the X-Road data exchange infrastructure in order to enable automated bilateral exchange of business register data. The case study focuses on how these two organisations dealt with issues relating to **integrated public service governance** and **organisational interoperability** in setting up this service.

Both the approach to **integrated public service governance** and **organisational interoperability** were greatly influenced by the presence of an existing technical infrastructure for data exchange (X-Road) that the business registers could use. This existing infrastructure meant that a relatively informal and simple governance structure could be relied upon in developing the new service, involving just small project teams from each business register. A separate governance structure previously established for the X-Road infrastructure retains responsibility for the maintenance and update of the technical standards by which data is exchanged.

The nature of the X-Road infrastructure shaped the project's organisational model – which is decentralised, with organisations maintaining ownership of their own data. In addition, standardised X-Road business processes were used for the exchange of data, so the business registers did not have to organise any further alignment of business processes.

Key findings from the case study are that building on existing technical infrastructure can simplify governance issues and help organisations cooperate in developing a service. Starting with a relatively simple use-case is also to be encouraged, with more ambitious aspects (e.g. extending the data exchange to additional stakeholders) added only at a later stage.

 **Service description:** The national business registers of Estonia and Finland have an agreement on automatic transfer of each other's business register data via the X-Road infrastructure – a public data exchange layer used in both countries. The national X-Road infrastructures are federated, allowing X-Road members to exchange data cross-border. The data exchanged is used only in carrying out the business registers' statutory duties. It cannot be shared with other organisations. The two business registers have agreed to exchange their data free of charge.

 **Integrated public service governance features:** In order to set up the new service, a relatively simple and informal governance structure was implemented. Small project teams (+/- 6 people) from each business register negotiated the conditions of the bilateral data exchange. As both organisations own their data, they did not have to involve other organisations particularly closely (e.g. ministries). There was just a straightforward approval process. The negotiating teams included a range of profiles

(technical, legal) allowing them to address interoperability issues in different domains (legal, organisational, business process, semantic, technical).

The X-Road infrastructure has its own governance structure responsible for the maintenance of the technical infrastructure and standards for data exchange. However, the stakeholders who are part of this X-Road governance structure were not directly involved in the negotiations that led to the development of the new service.



Organisational interoperability features: The organisational model for the business register project was determined by the nature of the X-Road infrastructure. This infrastructure assumes a decentralised model under which organisations maintain ownership and continue to host their own data. The business processes and interfaces used for the data exchange project were also determined by the use of X-Road, which provides standardised processes for the exchange of data between X-Road members, and the standards according to which any interfaces are developed.

The main interoperability agreement formalising the conditions of the data transfer is the bilateral “Agreement on the Exchange of Register Information” between the two business registers. However, there are also important contracts and service level agreements in the background (between the business registers and the national X-Road operators). These formalise the level of service that each register can expect from the X-Road infrastructure. In addition, a “trust federation agreement” between the Estonian and Finnish X-Road ecosystems formalises the framework for the cross-border exchange of data between organisations belonging to each national X-Road system.



Key lessons:

Integrated public service governance:

- Reduce the need for new formal governance structures when setting up services on top of existing by building on existing technical infrastructure with established governance structures. This allows relatively light and informal approaches to service development to be pursued.
- Start with relatively simple use cases before moving on to more ambitious aspects.
- Political stakeholders should play an enabling role in setting up the necessary infrastructure for these projects, but should avoid involvement in technical implementation of new services except where there are roadblocks caused by disagreements between the involved organisations.

Organisational interoperability

- Formal interoperability contracts are crucial even for relatively simple use cases.
- The presence of an established infrastructure and standardised data exchange processes can greatly facilitate exchanges between organisations. They can mean it is not necessary to “align business processes” between organisations for simple use cases.

Case study details



Lead organisation/s: Centre of Registers and Information Systems, Estonia; Finnish Patent and Registration Office; X-Road operators (Information System Authority, Estonia; Population Register Centre, Finland).



Location Estonia/Finland



Level of government: National



Level of data exchange: Cross-border



Project dates: June 2018-present



Maturity: Fully developed; not yet operational



Domain: Business registry



Use case: Cross-border access to base registry data



Contact email:

Centre of Registers and Information Systems;
Tambet.Artma@rik.ee



Website: <https://x-road.global/case-study-the-business-registers-of-estonia-and-finland>

11.1.2. Case study details and background

The **Estonian Centre of Registers and Information System and the Finnish Patent and Registration Office** are both responsible for the maintenance of the business register in their respective countries. They have come to an agreement whereby **each organisation can directly access and download business register data from the other two organisations.**

As the responsible bodies for these national business registers, both organisations are responsible for registering basic details of the companies operating with their national borders. This can include identification and demographic characteristics of companies as well as details of their economic activity and ownership and control relations. The access to the other business register's data will **allow each organisation to directly check the status and details of companies in the other country.** This will be used, for example, when a company established in one country attempts to set up a new sub-unit within the other country.

Under the agreement reached, the data will only be accessible to employees of each business register. **Other stakeholders, such as other government agencies or private companies will not be able to access the data via this channel,** and the business register does not have the right to share the data with these stakeholders. At a later stage the project may be extended to allow these other organisations to access this data. However, the initial project focussed only on data exchange between the two business registries, in order to avoid complexity and establish a first successful use-case.

11.1.2.1. The key enabling infrastructure: X-Road data exchange layer

The following section **introduces the X-Road data exchange infrastructure**, which is the key technical infrastructure **used by the Finnish and Estonian business registers to exchange data.** X-Road infrastructure has existed in both Estonia and Finland for several years preceding the business register data exchange project. It has been established in Estonia since 2001, and was launched in Finland in 2015.

X-Road is a data exchange infrastructure that provides the technical conditions for secure data exchange between participating organisations. It is an open-source solution developed by the Estonian government to enable data exchange between public organisations within its national borders. Each organisation belonging to the X-Road ecosystem must install a security server through which queries and data are exchanged with other X-Road organisations. The data exchange occurs between these security servers over the open internet.

The Estonian Government published the specifications for X-Road, encouraging other national administrations to make use of it. Finland took advantage of this offer, basing its own data exchange layer on these standards. The two national data exchange layers based on these standards are:

- x-tee (Estonia);
- Suomi.fi data exchange layer (Finland)

In both countries, an X-Road operator is responsible for the maintenance and update of X-Road infrastructure within the state borders. This role is filled by the Information Systems Authority in Estonia, and the Population Register Centre in Finland.

As they are based on the same standards, it was possible to **federate the two national data exchange layers** (X-Road ecosystems). This means that organisations which belong to the national X-Road ecosystems in Finland and Estonia can also **use X-Road for the direct cross-border exchange of data with Finnish or Estonian organisations**. In order to achieve this, it was necessary to **configure the central servers for the x-tee and Suomi.fi national X-Road systems**. This was accomplished in **February 2018**. The system enabling the cross-border exchange of data between Finnish and Estonian organisations is illustrated in Figure 10: Federation of X-Road ecosystems below.

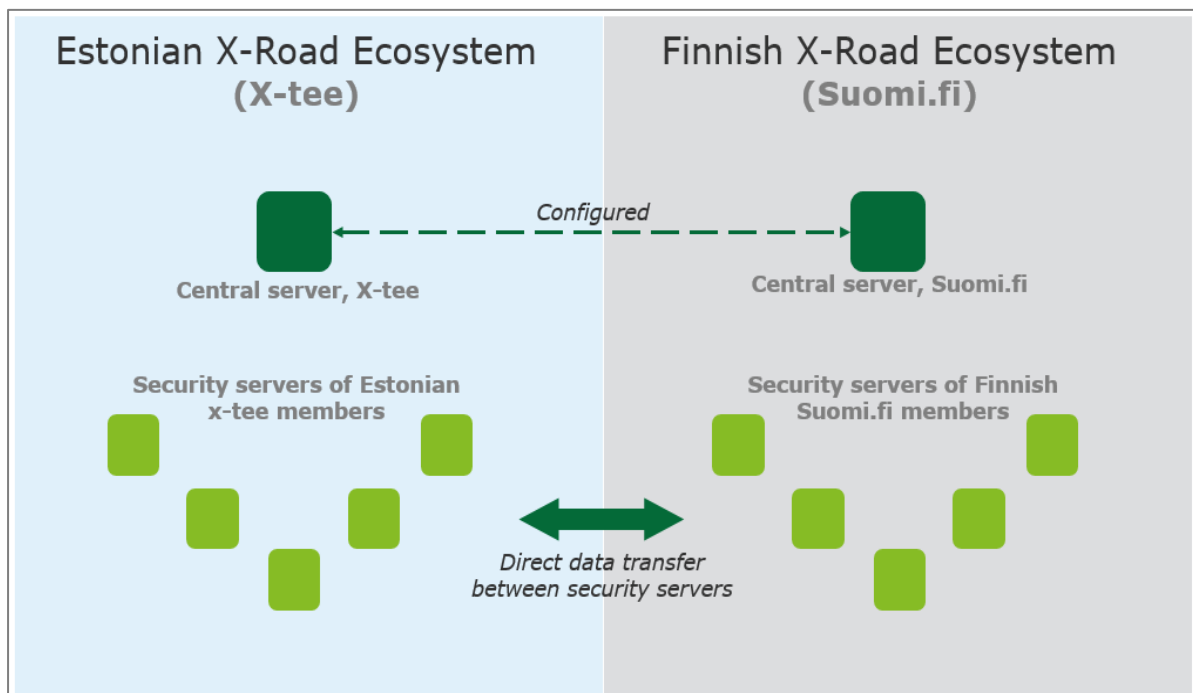


Figure 10: Federation of X-Road ecosystems

Source: Adapted from NIIS (2019)³⁵

11.1.2.2. The X-Road Architecture

The main structural features and entities involved in a data transfer over X-Road are shown in Figure 11 and described below:

- **Security servers** - Each member of the X-road ecosystem must install and maintain an X-road security server. Data is exchanged directly between the security server of the consumer (i.e. the X-road member requesting the data) and the security server of the provider (i.e. the X-road member providing the data).

³⁵ Nordic Institute for Interoperability Studies (2019), APIs and Cross-Border Data Exchange in E-Government Context

Recommendations for organising and governing integrated public services

- **Certification Authority (CA)** – Issues authentication certificates to security servers
- **Time Stamp Authority (TSA)** – Issues time stamps that certify that certain items of data existed at a given point in time;
- **Online Certificate Status Protocol (OCSP)** – Validates the information about the signing and authentication certificates
- **Central server** – Maintains the database of X-Road members and security servers. Provides a list of trusted certification authorities and time-stamping authorities.
- **Configuration proxy** – used to increase system availability and enable configuration with other federated X-Road ecosystems (more details on the agreements required to federate X-Road ecosystems are provided in Section 11.1.3.4).

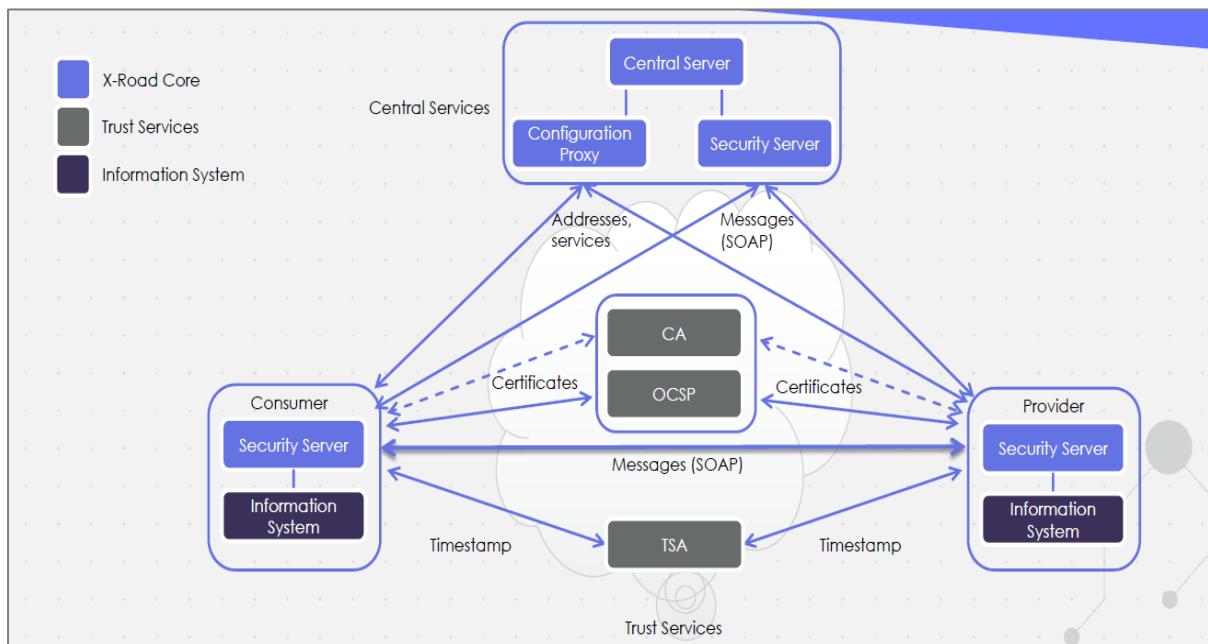


Figure 11: X-road Architecture

Source: NIIS (2019)³⁶

11.1.2.3. Status of the business register data exchange project

As of February 2019, **all of the necessary agreements** – whether technical, operational, or legal – to **enable the transfer of data between the two business registers over X-Road have been reached**. However, **no data has yet been transferred** between the two organisations, except in order to test that the connection works.

Under the agreement reached between the two business registers, the data exchange between the two business registers **should be fully operational and in use no later than February 2020**. Before this is done, the remaining intermediate steps are:

- **Final technical checks:** by each organisation to confirm that the data transfer operates as planned
- **Design of employee interface** (if desired): Each organisation can choose to further customise how their employees are able to access the other business register's data. X-Road provides "out-of-the-box" interfaces by which this data can be accessed. However the

³⁶ Nordic Institute for Interoperability Studies (2019), APIs and Cross-Border Data Exchange in E-Government Context

individual business registers can further customise these. No further concessions or agreements are required from the other organisation in order to perform this customisation.

11.1.3. Organisational Interoperability

The following section will **present the organisational model and relationships** that facilitate the data exchange between the business registers. It will **present also the business processes and interfaces by which this transfer is done and explain why these were selected**. Finally, it will present the **organisational agreements and contracts that formalise the organisational relationships** and enable the data transfer.

11.1.3.1. Organisational model and relationships

There is a **bilateral relationship between the two business registers**, which have agreed to exchange data. However, this bilateral relationship was facilitated and made possible by the **multilateral organisational environment provided by the X-Road ecosystem**.

11.1.3.2. The bilateral relationship between the business registers

A key element that was agreed as a principle of the relationship between the two business registers was that the **exchange of data between them would be free of charge**. Both registers agreed to waive the fees that they would normally charge for access to their data to organisations outside of the national borders. Both business registers normally provide access to the data for free to public organisations within their national borders, but charge for access to other organisations. For this project, they agreed to extend the principle of free access to public organisations to the other organisation, even though they were in a cross-border context. This was done mutually, with both organisations seeing it as in their own self-interest as it would ensure easy and free access to cross-border data.

11.1.3.2.1. The multilateral organisational environment provided by X-Road

The bilateral relationship between the two business registers is facilitated and only possible due to the X-Road ecosystem. Under the X-Road model, **members maintain ownership of their own data**, but can provide access to members through direct bilateral agreements. **Members are able to view what type of data is held by different X-Road members** and approach them to understand under what conditions they could have access to it.

Data exchanges between X-Road members are implemented using the X-Road infrastructure over the open internet. **X-Road provides centralised services, notably including organisation level authentication**, enabling the X-Road member to identify the correct organisation and database, and thereby access the relevant data.

As shown earlier in Figure 11: X-road Architecture, **third parties provide services over X-Road**, ensuring that there is a higher level of security for the data exchange. Third party trust service providers³⁷ such as the Estonian certification authority (SK) and other private sector providers deliver certification and time-stamps. These services provide assurances that a given piece of data was transferred from organisation to the other at a particular time.

³⁷ For example SK (the certification authority of Estonia) as well as private-sector providers

11.1.3.3. Business processes standards and interfaces

Out-of-the-box user interfaces are provided by X-Road for data exchange between its members. The business registers may choose to **design and customise the user interfaces by which their employees access the other register’s data**. They are able to do this individually and do not need to align with one another on how to do this. The business registers have not as yet begun this procedure.

X-Road also provides a standard business process by which data is securely transferred between the two business registers. As depicted in Figure 12 below, this process includes the following steps:

- a request for data is sent from the consumer’s (the business register) information system to its X-Road security server;
- the user’s security server signs the request (to provide evidence of which organisation is requesting the data) and sends it to the provider’s (the other business register) X-road security server;
- The provider’s security server logs the request, checks the signature, and sends it to the provider’s information system;
- The provider’s information system sends the requested data to the provider’s security server;
- The provider’s security server signs the message (to provide evidence of which organisation is providing the data) and sends it to the consumer’s security server;
- The consumer’s security server logs the message, checks the signature and sends it to the consumer’s information system.

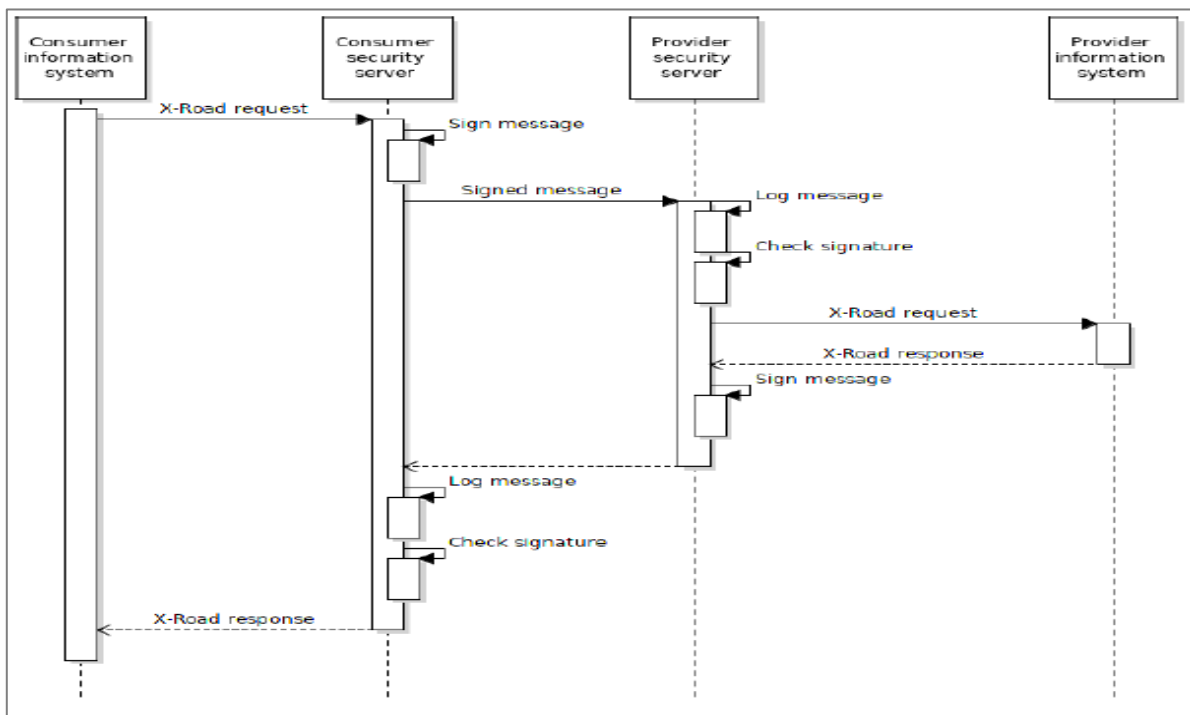


Figure 12: data exchange over X-road

In this case, this single process is sufficient to provide the service (exchange of data) agreed by the two business registers. **No further alignment of business processes was necessary.** This is for two reasons:

1. **The use-case itself – access to base registry data – is simple.** The organisations involved do not rely on each other to make any changes or additions to the data, and there is no further party to which services or data must be provided. There is therefore a limit to the extent to which the two business registers need to align.
2. The **main business process** that needs to be agreed upon by the two business registers – the data transfer – **is already standardised under the X-Road system.**

11.1.3.4. Organisational agreements

A number of organisational agreements are in place which serve to formalise the arrangements between the different stakeholders involved in the business register data exchange project, and explicitly state the responsibilities of each organisation.

The **key agreement** laying down the conditions for the data transfer is the **contract between the Estonian Centre of Registers and Information System and the Finnish Patent and Registration Office**. However, in the background there are a **number of other contracts with other stakeholders which also enable this data exchange** – as illustrated in Figure 13. In general, these other agreements were already in place before the two business registers began negotiating their data exchange project. They enabled the two business registers to proceed with their negotiations to set up the data exchange on a solid footing.

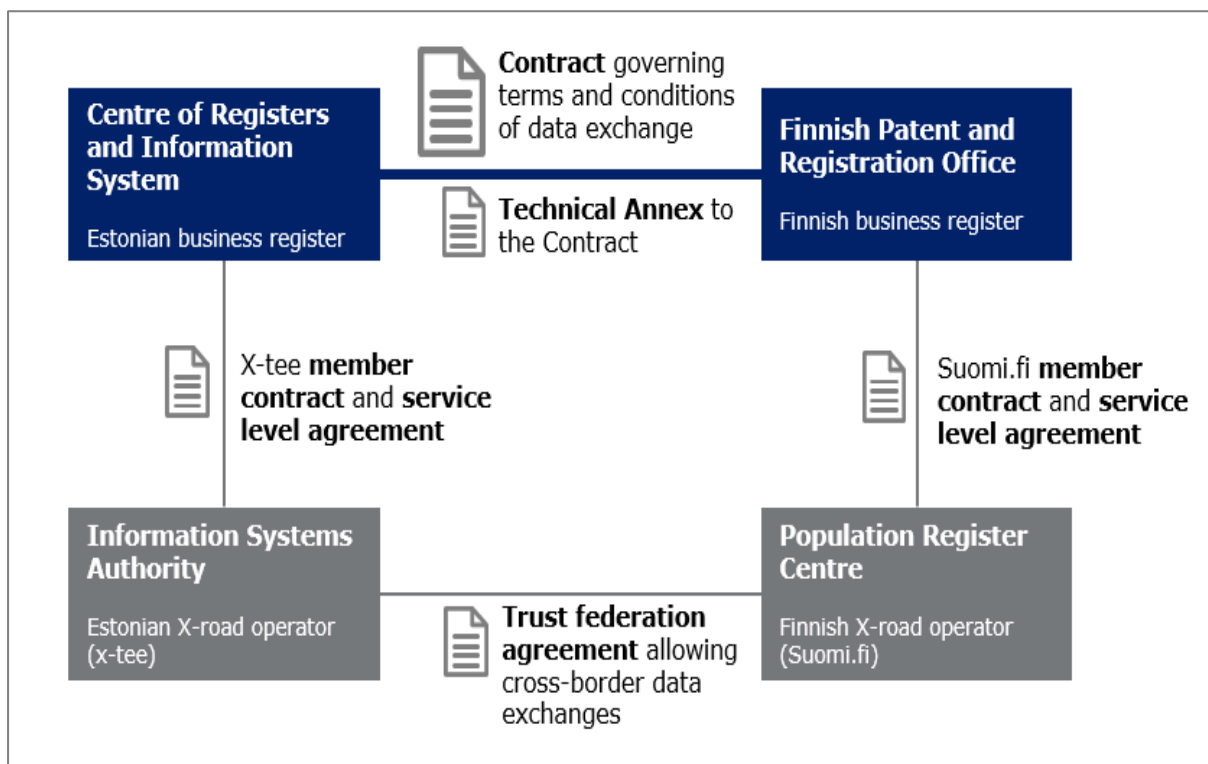


Figure 13: Interoperability agreements and contracts formalising the business register data exchange

The main interoperability agreement enabling the data transfer is the **Contract between the Estonian Centre of Registers and Information Systems, and the Finnish Patent and Registration Office**. This contract provides the terms and conditions under which data can be exchanged between the two organisations. It includes:

- the type of information that can be exchanged (and specifies that certain ID data will not be exchanged unless separately agreed upon);
- the purpose for which the data can be used;
- requirements for data processing security;
- an agreement that the data exchange between the two organisations will be free of charge;
- rules on further disclosure of data, and rules for amending, settling disagreements, terminating and enforcing the agreement.

This contract is supplemented by a Technical Annex which provides additional details on the methods and technical solutions of the information search process by which each organisation can access the other's data. It provides a description of the interface by which each organisation's data is connected to the xRoad service bus. In addition it provides an overview of the data held by the business registers, the data terms used to describe the data, and what these data terms refer to.

11.1.3.4.1. Background contracts and agreements enabling the data exchange between business registers

The main other organisations with which there are relevant interoperability agreements are the X-Road operators in Estonia (Information Systems Authority) and Finland (Population Register Centre). Both of the business registers have a contract with their respective national X-Road operators. These contracts lay out the terms under which the X-Road members are able to use the X-Road infrastructure. This X-Road membership contract is also supplemented by a service level agreement. This describes the conditions under which the member will provide its services to other X-Road users in terms of availability of the service, scheduled and unplanned interruptions, response times, etc.

In addition, the **federation of the Finnish and Estonian X-Road ecosystems is formalised in a trust federation agreement between the X-Road Operators** in each country. In this document, the parties agree on the responsibilities and liabilities of each, commit to cooperation in implementing the technical federation required, and agree on matters including technical features, data security and data protection obligations. It is this trust federation agreement that enables members of each national ecosystem to exchange data with members of the other, and without it the data exchange project between the two national business registers would not have been possible.

11.1.4. Integrated Public Service Governance

This section will look at the governance structure that is responsible for shaping and making decisions over the data transfer project. In order to do this it will present and discuss the governance structure present at each stage of the roadmap for integrated public services: plan and select; provide framework and set standards; and monitor and maintain. It will consider *who* made the key decisions at each of these stages and *how* the decisions were made.

11.1.4.1. Plan and Select – Approach to governance

The establishment of the new data exchange service between the two data business registers proceeded in a relatively informal manner. In terms of governance, the two key players were the owners of the Estonian and Finnish national business registers – the Estonian Centre of Registers and Information System and the Finnish Patent and Registration office. Negotiations and discussions to set up the integrated service took place bilaterally, and there was no need to create any additional formal governance bodies in order to set up the service.

This bilateral and informal approach between the two business registers was possible due to a number of simplifying features of the project:

- **existing technical infrastructure** for the data exchange (i.e. X-Road).
- **established relationship** between the two principal organisations (the business registers)
- **straight-forward use-case** involving access and use of a certain subset of their data.

Of these three points, the presence of the existing technical infrastructure for the data exchange was probably the most crucial. The Finnish and Estonian national governments had **previously come to the necessary agreements to enable organisations in both countries to make use of X-Road infrastructure** to support cross-border data exchanges between the two countries (described further in Section 11.1.4.2.1 below. In addition, a **separate governance structure had already been set up** to maintain the X-Road infrastructure and the technical standards that support it (described further in Section 11.1.4.2.2.1).

The discussions between the two business registers regarding the exchange of data between took as a starting point the assumption that they **would draw on X-Road, and the shared infrastructure and services that it provided as the foundation for the new service**. X-Road provides the standards for secure data exchange, together with shared IT services including authentication services, address management and routing).

In terms of organisational model, the use of the X-Road infrastructure also meant that a decentralised approach to the service would be followed. X-Road operates according to a model whereby participating organisations maintain ownership and control of their own data. They can provide access to this data to other organisations using X-Road according to conditions that they agree bilaterally. No additional legislation was required to provide a legal basis for the business registers to make use of the established X-Road system. The necessary underlying legislation was already provided by the trust federation agreement established between the X-Road operators enabling data exchange over the X-Road infrastructure between Estonia and Finland

11.1.4.2. Provide framework and set standards – Approach to governance

11.1.4.2.1. Establish legal and organisational framework for service

The negotiations between the two business registers proceeded on an informal basis – avoiding the need for extensive project documentation or lengthy approval processes from the Ministries to which each organisation report. Only a small number of aspects required approval at the Ministry level – notably including the decision by both registers to provide access to their data to the other organisation free of charge. The results of the negotiations were eventually formalised, providing a legal framework for the service, in the **contract between the Estonian Centre of Registers and Information Systems and the Finnish Ministry of Finance**, already described in Section 11.1.3.4.

The two sides first discussed the possible development of the data exchange at the European Commerce Registers Forum in Summer 2018. Having agreed that they should pursue this project, the project teams on both sides met again in Estonia in 2018. Following this, negotiations continued via calls and emails on a regular basis until an agreement was reached in February 2019.

The **project teams involved in the discussions on both side were small** (5 or 6 people), incorporating a project manager, lawyers, and technical specialists. **These teams were empowered**

to make the necessary decisions to set up the data exchange, and did not need any regular exchanges or approval from the Ministries to which they ultimately report. Only on a few of the most contentious issues such as the decision to provide the registry data free of charge, was a decision required from the responsible Ministries to enable this. This was again **possible due to the simplifying features of the project** listed previously (established relationship between the organisations, existing technical infrastructure, straight-forward use-case).

The project also **drew on the existing legal and organisational framework provided by the cross-border agreements to cooperate reached by the Estonian and Finnish Government**. Political agreements were previously reached at the high level between the two national governments, which created the conditions under which the business register project was possible and took place.

Key stakeholders in this earlier process, were the offices of the Prime Ministers of both countries. These offices provided the high-level political support that led to the federation of the Estonian and Finnish data exchange layers under the X-Road system. Between them, they arrived at a political agreement which was formalised and made explicit in two documents – a Memorandum of Understanding and a Joint Declaration³⁸.

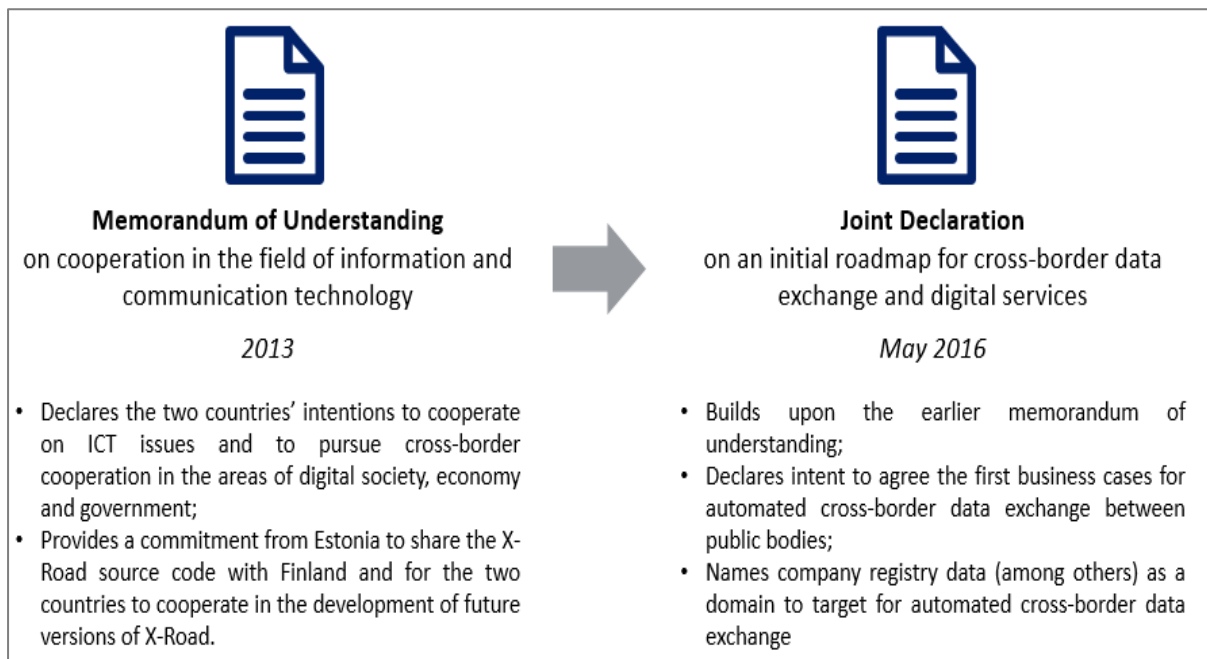


Figure 14: Political agreements on ICT cooperation and data exchange between Estonia and Finland

Having laid this foundation, **these political bodies were not involved in the technical implementation or in negotiations regarding the specific uses of the X-Road infrastructure**, of which the business register data exchange is one example.

³⁸ A full version of the Memorandum of Understanding is available at https://www.valitsus.ee/sites/default/files/news-related-files/ict_mou_fi-ee_10dec2013.pdf. A full version of the Joint Declaration can be found at https://www.valitsus.ee/sites/default/files/file_attach/ee-fi_pm_digital_roadmap_declaration_10may2016.pdf

11.1.4.2.2. Set standards

In order to set up the data exchange between the business registers, decisions had to be taken by the two business registers regarding what business processes, interfaces, and semantic and technical standards would be used.

As specified previously, at the technical level the teams operated from the start on the assumption that they would make use of the X-Road standards. X-Road also provides a standardised business process for the data exchange, and out-of-the-box user interfaces, although these can be further tailored to user needs. Decisions related to semantic definitions and interoperability were reached bilaterally by the two business registers.

The sections below provide further detail on how these standards, interfaces and business processes are developed and selected.

11.1.4.2.2.1. Technical standards

At the technical level an established governance structure ensures the operation and maintenance of the xRoad data exchange system, which provides the technical means for the data exchange between the Estonian and Finnish business registers. The stakeholders within this governance structure were not directly involved in the negotiations and discussions to set up the business register data exchange. However, they provide and maintain the standards used to enable this data exchange.

The X-Road governance structure is shown in Figure 15 below. The **main stakeholders** within this structure are:

- **the X-road operators** in Finland (the Population Register Centre) and Estonia (the Information Systems Authority). These organisations are responsible for operating and maintaining the X-Road infrastructure in their country, and determining which organisations are able to use it.
- **the Nordic Institute for Interoperability Studies (NIIS)** – responsible for system updates to the X-Road software and for development and strategic management of the X-road infrastructure.

NIIS is an association jointly founded by the Estonian and Finnish Governments, whose members are the Estonian Ministry of Economic Affairs and Communications and the Finnish Ministry of Finance. The X-Road operators in Estonia and Finland are also represented within the association's decision-making structures, which are set up as follows:

- **General meeting** – *strategic level decisions* – attended by NIIS members
- **Advisory group** – *tactical level advice* – attended by NIIS members and X-Road operators
- **Working groups & development team** – *operational decisions* – attended by X-Road operators

Recommendations for organising and governing integrated public services

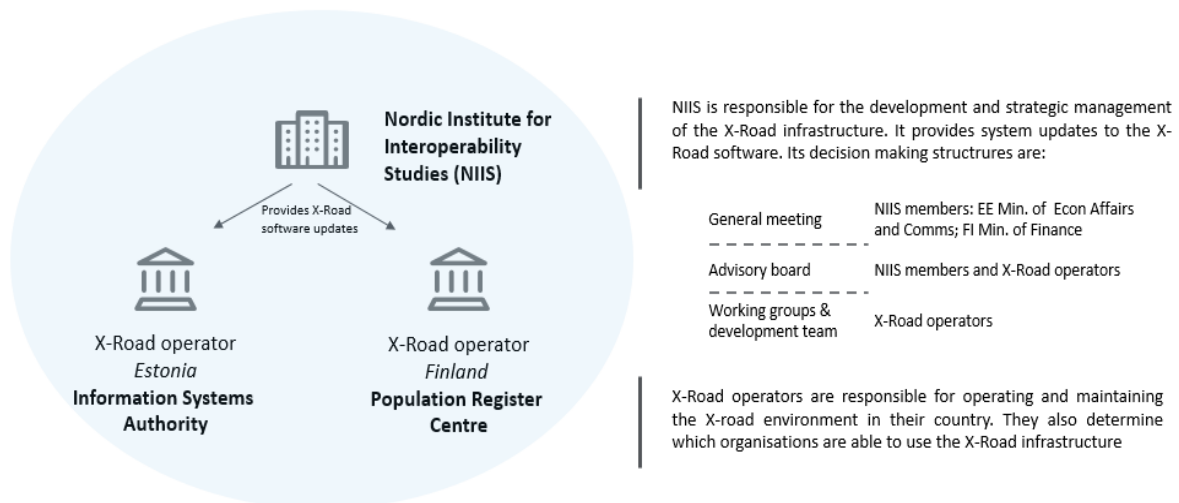


Figure 15: X-Road Governance structure

When the Estonian and Finnish ecosystems were first federated, tests were run to ensure data connections between the two systems were secure. Going forward, each individual organisation using X-Road is responsible for ensuring that their connection is secure. This is achieved through the use of an X-Road security server used in compliance with the security guidelines provided by X-Road.

As it currently stands, the only countries which have federated their X-Road ecosystems are Estonia and Finland. These countries therefore lead the development of the X-Road standards through NIIS. If more countries federated their X-Road ecosystems³⁹, they would also be represented in the further development of the X-Road standards.

11.1.4.2.2.2. Semantic standards

Issues of semantics were dealt with bilaterally by the two business registers. No additional agreement on semantic standards was necessary, and no effort was made to reach harmonised definitions during the negotiations for the data transfer. Instead, each organisation simply provides the other with the full definitions of each data term – enabling the other to understand the data. Although the data definitions used by each organisation are not fully harmonised, they are fairly similar as they both draw on EU company law, which itself is quite harmonised across the Member States.

11.1.4.2.2.3. Business process standards and interfaces

As discussed in the earlier Section 11.1.3.3, there was also **no need for any alignment of business processes** between the two organisations. Instead the two organisations simply agreed to make some of their data available to the other over X-Road using the standardised X-Road business process for this data exchange.

In terms of the user interface enabling the employees of one business register to request data from the other business register, each organisation is able to design this separately based on the X-Road standards. X-road provides “out-of-the-box” templates for such interfaces, however these can be

³⁹ It could be possible for a country to federate their national data exchange system with X-Road even if they do not use the underlying X-Road standards for their national system. However, this would require significantly more effort to achieve.

changed and tailored by the organisations using them. A business analysis will be conducted by the Estonian business register in order to design their interface.

11.1.4.3. Monitor and maintain – Approach to governance

As the business register data exchange is not yet fully operational, the “monitor and maintain” phase has not yet been reached. However, based on the existing governance structures and the agreements that have been reached, some points can already be made about the arrangements that will be in place. Overall, the two business registers maintain responsibility for providing access to the data agreed to, maintaining a secure connection by which this data can be securely transferred (using an X-Road security server), and generally ensuring they comply with the conditions detailed in the contract between the two organisations.

In terms of the maintenance of the technical standards and business processes by which the data exchange will occur, as explained in Section_11.1.4.2.2.1, the X-Road governance structure (NIIS and X-Road operators) is responsible for this. NIIS is responsible for updating the standards, while the X-Road operators are responsible for implementing them.

In relation to oversight and maintenance of data definitions and semantic interoperability, this is also managed bilaterally by the two business registers. The risks associated with unilateral changes to data definitions are seen as fairly limited as both registers are also member of other groups and projects such as the European Business Register Association (EBRA) and the European Business Register Interconnection System (EBRIS). If either changed any definitions, they would likely notify these groups well ahead of doing so and discuss the implications of any changes using these fora.

If the exchange of business register data over X-Road became a multilateral project involving other business registers, different and more formalised procedures may need to be developed in order to govern and maintain the semantic definitions used. However, at this stage of the service development, the existing bilateral agreement between the two business registers is sufficient.

11.1.5. Lessons learnt

A number of lessons can be taken from this case regarding both **integrated public service governance** and **organisational interoperability**.

11.1.5.1. Lessons for organisational interoperability

Lesson 1: Formal interoperability agreements are necessary even for simple use-cases

The exchange of business register data project is relatively straight-forward. However, even for this type of straight-forward case it is necessary to formalise the arrangements agreed to in a contract or other binding document. The contents of such formal agreements should include:

- The specification for technical access to the data;
- The purpose for which the data can be used;
- Security requirements;
- Costs;
- Rules on further disclosure of data;
- Rules for amending, settling disagreements, terminating and enforcing the agreement.

Lesson 2: Alignment of business processes

The European Interoperability Framework refers to “aligning business processes”⁴⁰ as a crucial aspect of **organisational interoperability** (European Commission, 2017 (2), p. 25). For the business register data exchange project focussed on in this case study, rather than “aligning” any existing business processes, the X-Road business registers just had to agree to make use of the standard X-Road process for secure data exchange. There was no need for further alignment of business processes. This may also be the case for other simple use-cases. Future versions of the EIF could clarify in what situations alignment of business processes between organisations is necessary.

11.1.5.2. Lessons for integrated public service governance

Lesson 1: Build on existing technical infrastructure

The use of existing technical infrastructure – X-Road – in this case reduced the range and scope of decisions that had to be taken and negotiated between the two business registers. It **enabled the project to proceed with a relatively simple governance structure** consisting of small project teams from each business register. No extended approval process or oversight was necessary from the national ministries to whom the business registers ultimately report. Instead, the existence of an established infrastructure, with its own governance structure, enabling secure exchange of data meant that a relatively informal approach could be pursued for the negotiations and efforts to set up the new integrated service.

Lesson 2: Start with small feasible projects with clear added value

For this project, the two business registers chose to begin with a relatively straightforward use-case – agreeing to exchange data bilaterally with each other so that each organisation could use this data in connection to their statutory duties. They chose not to involve other organisations – whether business registers in other countries, or other public organisations in Estonia and Finland interested in cross-border access to business register data. In this way, they kept the project simple, first testing out the concept and implementation within a bilateral context before moving on to any more complex multilateral use-cases. This **principle of “starting small” is a general rule that other organisations would be advised to follow when implementing their own digital projects.**

Lesson 3: Political stakeholders should facilitate projects but avoid involvement in technical implementation


Political stakeholders played an enabling role in this project by initially providing the drive to federate the Estonian and Finnish national X-Road data exchange systems. This federation was a large-scale political achievement – with involvement all the way up to Prime Ministerial level – that provided the foundation for the exchange of business register data project discussed in this case study. However, once this X-Road federation was achieved, these political stakeholders played no direct role in the smaller scale project of the business register data exchange. Instead, they stood back and allowed the organisations directly involved and affected by the project to take the lead. In general, this is a principle that can be established for the involvement of stakeholders in these integrated public service projects – they should play an enabling role in setting up and supporting large-scale infrastructure projects. However, they should be prepared to step back for smaller-scale projects setting up particular services. Input from political stakeholders is only required for these types of projects if there is some sort of block or disagreement preventing progress.


⁴⁰ European Commission (2017), Annex to the European Interoperability Framework - Implementation Strategy, https://eur-lex.europa.eu/resource.html?uri=cellar:2c2f2554-0faf-11e7-8a35-01aa75ed71a1.0017.02/DOC_3&format=PDF

11.2. Case Study 2: Standard Business Reporting (SBR)


11.2.1. Case summary

Case study summary

 **Abstract:** This case study presents how the Standard Business Reporting (SBR) solution in the Netherlands is used to enable system-to-system submission of business reports to both public and private organisations. The case study focuses on how **integrated public service governance** and **organisational interoperability** were dealt with in setting up this solution and the SBR Programme that maintains it. In terms of **integrated public service governance**, the notable feature is the public-private structure through which decisions on the development and direction of the SBR Programme are made. This ensures expertise and input are gathered from the private sector to shape the solution going forward. Public-sector only fora are also provided to ensure public sector organisations are able to coordinate their positions on the SBR standards. In terms of **organisational interoperability**, the organisational relationships are formalised through a mix of agreements that are multilateral (SBR Framework of Agreements) and bilateral (e.g. SLAs). The Framework of Agreements includes standardised business processes for the submission of SBR reports, which greatly facilitates the take-up and use of the SBR solution.

 **Service description:** SBR (Standard Business Reporting) is a nationwide solution for system-to-system submission of business reports in the Netherlands. It is used across a range of sectors and domains (tax, business registers, education). It has also been adopted by the private sector (banks). It enables a company to submit a report (e.g. its corporate tax return) directly from its (SBR-compatible) tax software. Reports submitted to public organisations are sent via a single gateway – *Digipoort* – maintained by Logius, the national government’s IT department. To enable this, the SBR programme maintains and updates a set of technical, semantic and process standards. These are published in the Netherlands Taxonomy Architecture and the Netherlands Process Architecture.

 **Integrated public service governance features:** The SBR Programme has a public-private governance structure to take decisions on the future of the solution and the update of standards at the technical, semantic and business process level. There are different bodies at the strategic (SBR Council), tactical (SBR Platform), and technical (expert group) level that provide input to and make these decisions. In addition, public sector organisations discuss issues related to SBR in a number of public-sector only bodies so as to present a coordinated position in the public-private governance bodies. Recipient organisations (of SBR reports) retain a large degree of independence for the implementation of the SBR solution and standards, and are able to determine the data terms and content of their reports (in compliance with the Netherlands Taxonomy Architecture).

 **Organisational interoperability features:** A limited number of organisations are directly involved in any single SBR business reporting chain. These organisations are linked by their common adherence to the SBR “framework of agreements” – which defines the standards according to which SBR is implemented. This multilateral framework is complemented by bilateral agreements which enable the implementation of a specific reporting chain.

Crucially, the SBR “framework of agreements” includes standardised business processes for the submission of business reports. This is a key factor for the replication of the solution across a number of different reporting chains and organisations.



Key lessons:

Integrated public service governance:

- Involve the private sector in governance to motivate them while maintaining fora or bodies for public-only discussions.
- Balance rigidity and flexibility in the development of standards.

Organisational interoperability:

- Pursue standardisation at the process level and also dedicate the necessary resources to maintain these process standards.
- Design and share standardised processes across organisations to reduce costs.
- Consider providing standard, unilateral SLAs to reduce the administrative burden.
- Assess how bilateral and multilateral agreements can be combined to formalise organisational relationships.

Case study details



Lead organisation/s: Ministry of Interior, Logius, Tax and Customs Administration, Business Register



Location: Netherlands



Level of government: National



Level of data exchange: National



Project dates: 2009-present



Maturity: Operational



Domain: Business reporting⁴¹



Use case: standardised system-to-system business reporting



Contact: <https://www.sbr-nl.nl/contact/contactformulier-en-adres>



Website: <https://www.sbr-nl.nl/sbr-international>

11.2.2. Case study details and background

Standard Business Reporting (SBR) is a **standardised digital solution used in the Netherlands for the submission and processing of business reports**. It is deployed across multiple sectors and domains, and used by both public and private organisations for a range of different reports.

In the public sector, those organisations which use SBR as a solution by which businesses can submit reports to them include:

- **Tax and Customs Administration (TCA)** – Uses SBR for the submission of a wide variety of different reports. These include income tax forms, corporate tax forms, VAT forms, gift tax forms, country-by-country reports, dividend tax, wages tax, and allowances.
- **Business Register** – For the submission of annual accounts

⁴¹ Business reporting refers to the reporting of operational and financial data by a company (e.g. to a tax administration or a regulator)

Recommendations for organising and governing integrated public services

- **Central bureau of statistics** – For the submission of statistical declarations
- **Education executive agency** – For the submission of annual accounts
- **Authority for public housing** – For the submission of annual accounts and prognosis information

In addition **in the private sector**, banks make use of the SBR solution to enable organisations to submit reports to them including credit applications and revisions reports, and standard banking statements. The different organisations making use of SBR are summarised below in Figure 16.

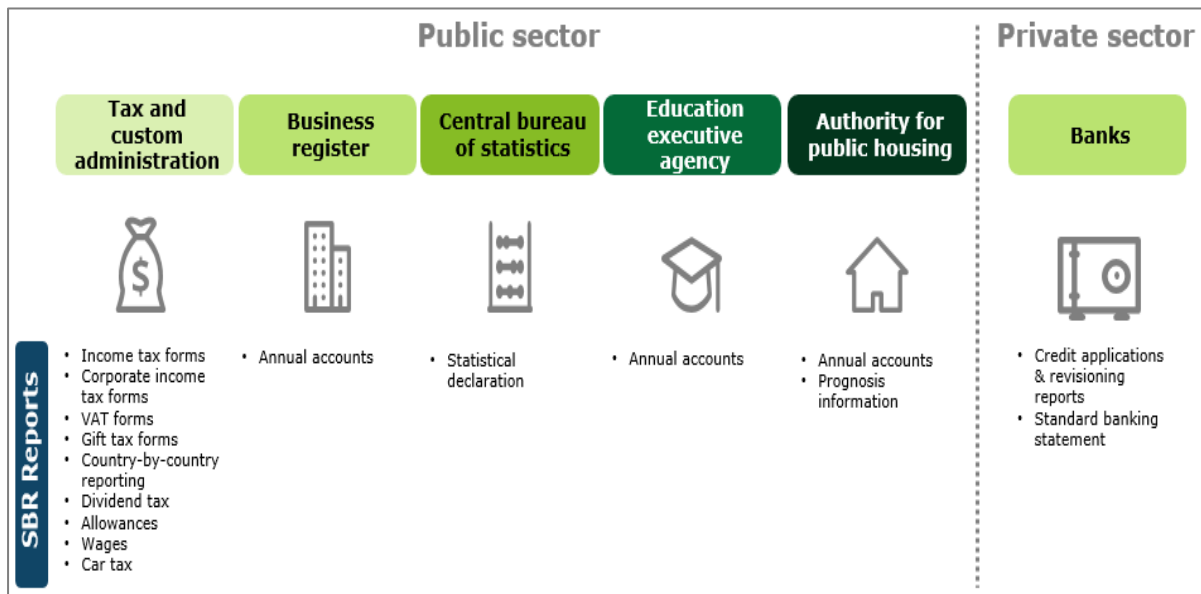


Figure 16: Organisations using SBR for their reporting chains

The aim of the SBR Programme is to make the submission of business reports as easy as possible for those organisations submitting them. It does this by **standardising technical, semantic and process** features common to all of these reporting chains. The governance structures used to select and update these standards are presented in Section 11.2.4.2.2. The standards which form the basis of the SBR solution are described in Figure 17.

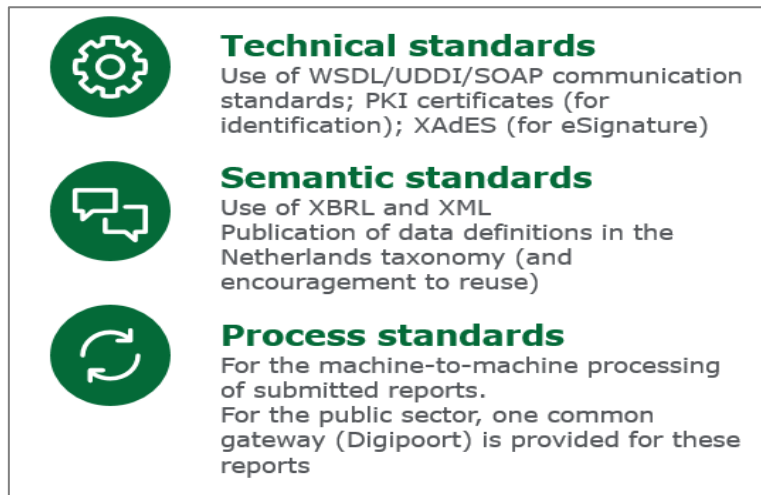


Figure 17: SBR Standards

The content in the reports required by different organisations across different domains differs and the exact definitions used for different data terms in the reports also differs according to the legislation in the relevant sector. For these reasons, it remains necessary to submit separate reports to the different organisations under the SBR solution. **SBR is not a once-only reporting solution**, although it does enable once-only registration by a company. Instead the focus of SBR is on making it as easy as possible for an organisation to submit an individual report.

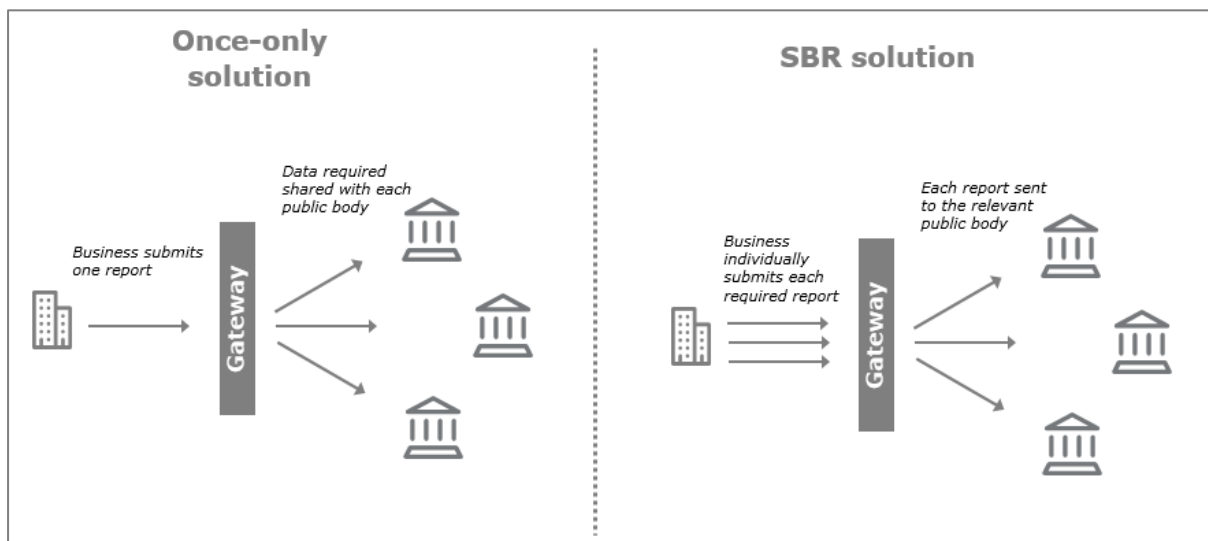


Figure 18: Difference between SBR and once-only solution

Although it is not a once-only solution, SBR has other advantages. It provides standards for the data formats for business reports as well as for their submission (technical and semantic standards). One of the principal advantages of SBR is that it **enables direct system-to-system submission of business reports**. This means that a firm (or tax/accountancy/other consultancy working for the firm) can directly submit the report using its tax/accountancy/other software. An SBR type solution is therefore best suited to situations in which frequent and repetitive reports are required from an organisation and when there is an overlap in the data that is required by different government institutions.

The direct system-to-system submission of reports is possible because the **SBR programme works with the providers of these types of software to ensure that they can directly interface**

with SBR Gateways. For **public organisations using SBR, the submission of these reports all go through the same gateway: Digipoort** – run by the national Government’s IT department, Logius. Private companies who want to make use of SBR to allow other organisations submit reports to them (e.g. banks who want to allow organisations to submit credit applications to them using SBR) are not able to use Digipoort for this. This is because Digipoort is publicly funded and therefore reserved for public organisations. The private organisations such as banks using SBR must instead provide their own gateway based on the SBR architecture. The banks have grouped together to create a single gateway, SBR Banken, which mirrors the Digipoort solution, through which all SBR reports to them are submitted.

11.2.2.1. A brief history of the SBR Programme

The SBR Programme has been in operation since 2009, taking over from other precursor projects (the Netherlands Taxonomy Programme). **Since its inception the Tax and Customs administration has been a leading stakeholder driving the project forward.** It was the first organisation to make use of the solution, and went on to make it the mandatory pathway for system-to-system submission of a number of its reports (corporate income tax and income tax declarations in 2013, and VAT declarations in 2014). A number of other public and private organisations now also use the SBR reporting solution, and through the programme’s public-private governance structure have a say in how SBR is developed and implemented.

11.2.3. Organisational Interoperability

In the following section, the organisational relationships and model in place for a particular implementation of SBR reporting – that by the Tax and Customs Administration – will be presented. Using this example, the main agreements formalising these relationships will be analysed, and the reasons that particular business processes and interfaces between the organisations were developed will be explained.

11.2.3.1. Organisational model and relationships

For any single SBR business reporting chain, the organisational model involved in processing the report is very simple. The key organisations involved in the submission of an SBR Report to the Tax and Customs Administration are the following:

- **The submitting business** (or tax consultant representing it) – which submits the report;
- **The tax software vendor** – which provides the SBR compatible software by which the report is submitted;
- **Logius** – which maintains **Digipoort**, the gateway by which the report is submitted and then sent on to the relevant public organisation;
- **Tax and Customs Administration** – which processes the report.

Above these four types of organisations there is also the SBR Programme. This is a public private governance body which has been set up to develop and maintain the standards used for SBR, and promote the solution. All public and private users of SBR are represented within this body. *(Further details will be presented on the SBR Programme and its governance structure in Section 11.2.4 Integrated Public Service Governance).*

Figure 19 below presents the different involved stakeholders and the roles they play in the submission of an SBR Report to the Tax and Customs Administration⁴².

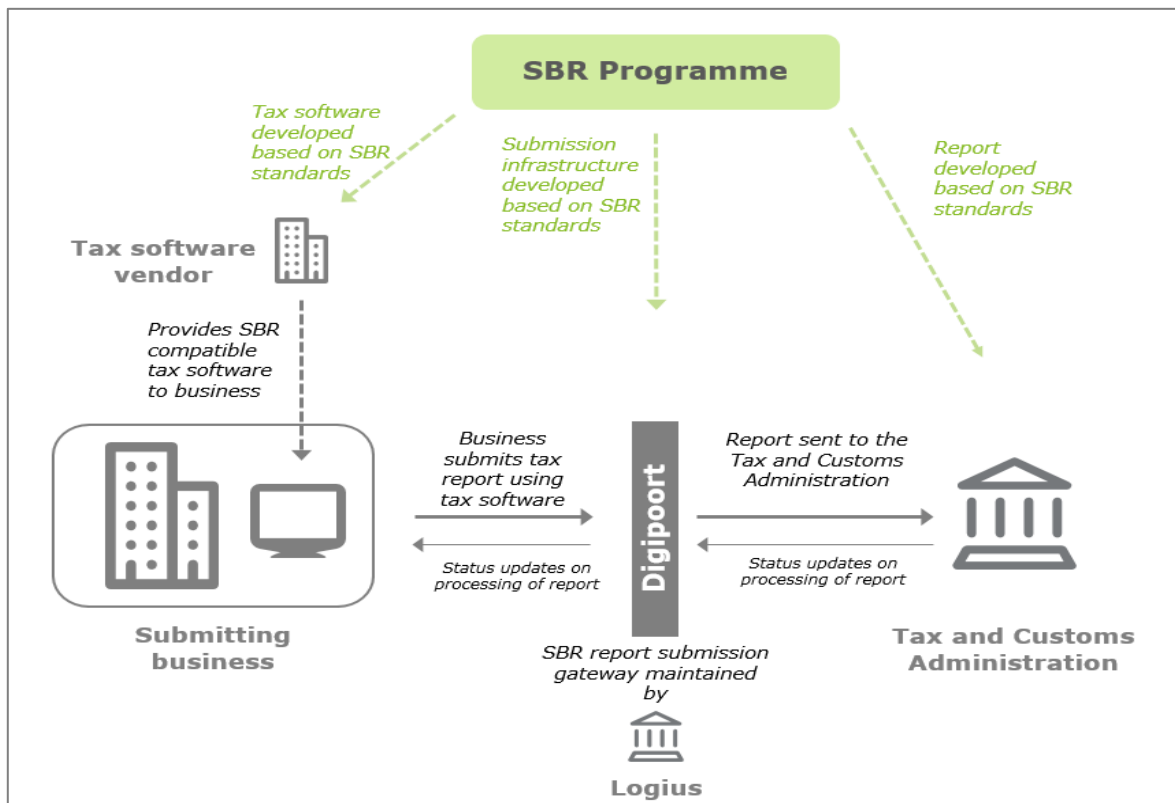


Figure 19: Submission of an SBR tax report to the Tax and Customs Administration

In terms of the **relationships that exist between these different organisations**, there is a direct bilateral relationship between the submitting business and the tax software provider - who have a commercial agreement for the provision of the software. There is also a direct relationship between the Tax and Customs Administration and Logius, as Logius has agreed to provide the gateway (*Digipoort*) for the submission of the report and sending on the report to the organisation. Although the submitting business does submit its tax report to Logius, there is no direct relationship between these two organisations (in the sense of there being any formal agreement or contract between them). **Logius, the Tax and Customs Administration and the tax software vendor are all part of the SBR Programme, which maintains the standards which the organisations using SBR have agreed to use**, and therefore allows them to work together for the submission of the SBR tax reports.

The organisational model according to which the SBR Programme is run can overall be described as decentralised. Each individual SBR reporting chain is developed using the standards developed through the SBR Programme. However, the organisation that sets up this reporting chain retains a large amount of freedom in implementing these standards.

11.2.3.2. Business process standards and interfaces

The interfaces to be used and the business processes to be followed for the submission of SBR business reports are defined in specifications which are built according to the SBR

⁴² The Tax and Customs Administration is used as an illustrative example. The process would be very similar for any other public organisation to which SBR reports are submitted.

framework of agreements. The interfaces used operate according to the Simple Object Access Protocol. This interface is integrated directly into the tax software of the submitting organisation (or other relevant software). Although system-to-system submission using the SBR standards is the preferred option, the Tax and Customs Administration also maintains a web portal not based on SBR standards, which allows businesses without compatible software⁴³ to submit their report online.

The **business processes followed in order to submit the report are presented in more detail in Figure 20 below**, which shows how an SBR tax report is submitted by the tax payer and processed, first by Logius, then by the Tax and Customs Administration. These organisations check and validate the different technical and identification aspects of the submission (SOAP format, XBRL, tax-payer ID). Only the final stage of this process (the legal validation) involves the assessment of the actual content of the report (e.g. calculating what the tax payer has to pay on the basis of the report. The results of the final legal validation step (e.g. Tax Demand Form) are not communicated to the tax payer via their tax software, but are instead sent separately via post or portal solutions. When mandated by the tax payer, the tax consultant can receive a digital copy in XBRL of the Tax Demand Form through Digipoort.

At each step of this process, updates are sent by the processing organisation, enabling the tax payer to stay up to date on the status of the submitted report. These updates are sent via the status information service also integrated in Digipoort, which connects to the tax software.

The different stages of the processing of the report are conducted by Logius and the Tax and Customs Administration across two SOAP sessions. At one stage, the organisations intended to have all the stages concluded within one SOAP-session. This approach was eventually rejected because it risked the submission of the report failing if, for example, the administration's firewall failed during the validation steps. If this happened, the SOAP-session would be ended and the taxpayer would need to resubmit the report. To avoid this risk, it was decided to split the interaction with the tax payer into two sessions. The first session is used to send the report to Digipoort. This session ends with the message that Digipoort has successfully received the report. The second session is used to receive status updates such as rejections by Logius, rejections by Tax Administration or with the status that the report is technically accepted by the Tax Administration.

⁴³ for instance because the software provider has not made the necessary updates to enable system-to-system submission

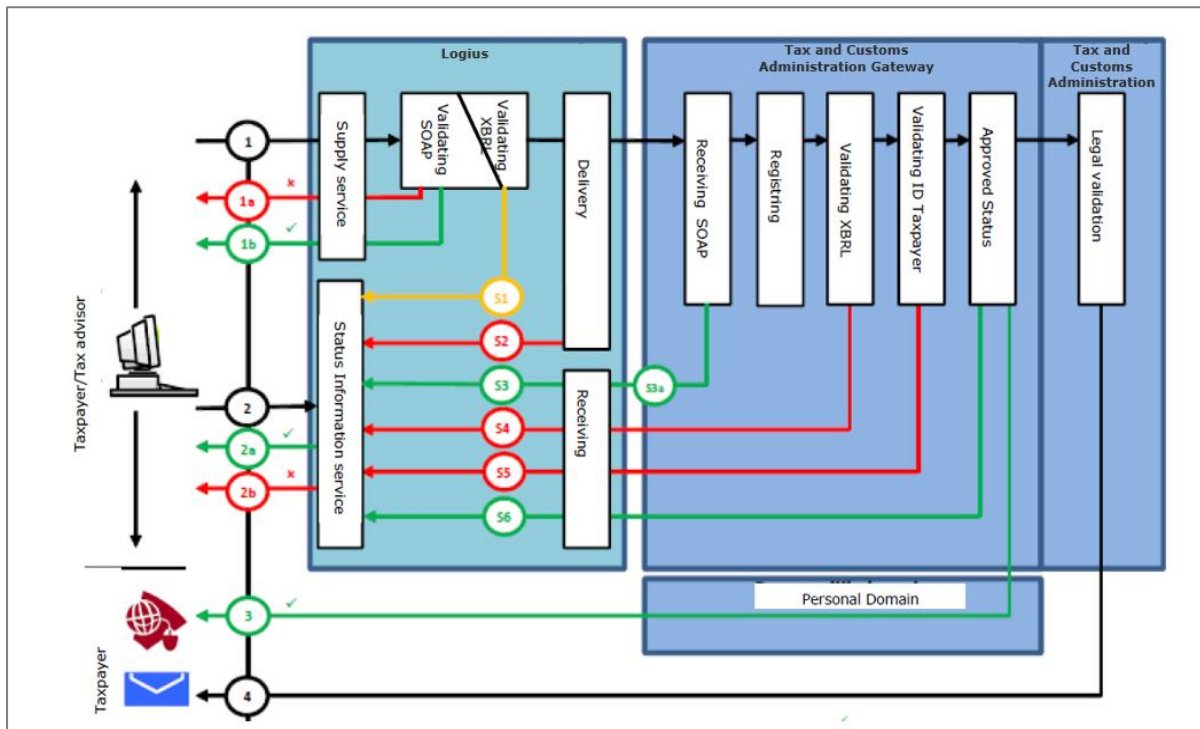


Figure 20: Business process for tax reporting chain

11.2.3.3. Organisational agreements

A number of different instruments are used to formalise the agreements and arrangements between the organisations involved in the submission of SBR tax reports to the Tax and Customs Administration:

- The **bilateral relationship between the tax software vendor and the submitting business** is a commercial relationship and is *formalised through a commercial contract* which stipulates the terms and conditions under which the tax software vendor makes available its software to the submitting business.
- The **bilateral relationship between the Tax and Customs Administration and Logius** is *formalised in several documents*:
 - o *Service level agreement (SLA)* – This is issued by Logius unilaterally according to the requirements of the service requested by the Tax and Customs Administration. Logius have a standard level of service that they guarantee to all their users. In special circumstances, if the service requires it, they can offer a higher level of service in the SLA. The agreement is not signed by the Tax and Customs Administration. It includes clauses specifying the levels to which it will provide its services in terms of timeliness, performance, continuity and information security.
 - o *An engagement letter* - describing the services that will be provided and at what costs
 - o *An agreements and procedures file* - including operational agreements and escalations
 - o *A solution description* – describing the service provided, the public context and the long and short-term developments
 - o *A service description* - describing the service, the underlying functions and the service platform

- **Agreement by the tax software vendor, Logius, and the Tax and Customs Administration to abide by the SBR standards** – *This is formalised in the SBR “framework of agreements”* that each of the organisations has agreed to. This framework covers the technical, semantic and process standards previously discussed. It consists of the Netherlands Taxonomy Architecture, the Netherlands Process Architecture and Governance agreements.
 - The **Netherlands Taxonomy Architecture** has to be followed when developing data specifications for a report (based on xml or xbrl). It provides syntax rules, naming conventions, design and modelling templates, and technical references. Organisations have the freedom to define the data definitions that they will use (although they are encouraged to reuse existing definitions). However once decided upon, the definitions are published in the Netherlands Taxonomy, providing transparency towards businesses and other organisations.
 - The **Netherlands Process Architecture** provides the basis for information process specifications for the standardised system-to-system submission of an SBR report. In addition it provides the basis for the process engine for the actual implementation of this process (i.e. for public organisations, via *Digipoort*), and for the interfaces by which the reports are submitted (i.e. between the submitting businesses software and *Digipoort*).
 - **Governance agreements** cover the process by which the Netherlands Taxonomy Architecture and Netherlands Process Architecture are to be maintained and updated. They also include agreements on how individual reporting chains should be implemented and how new reporting chains can join the SBR system.

The SBR framework of agreements is depicted in **Figure 21** below.

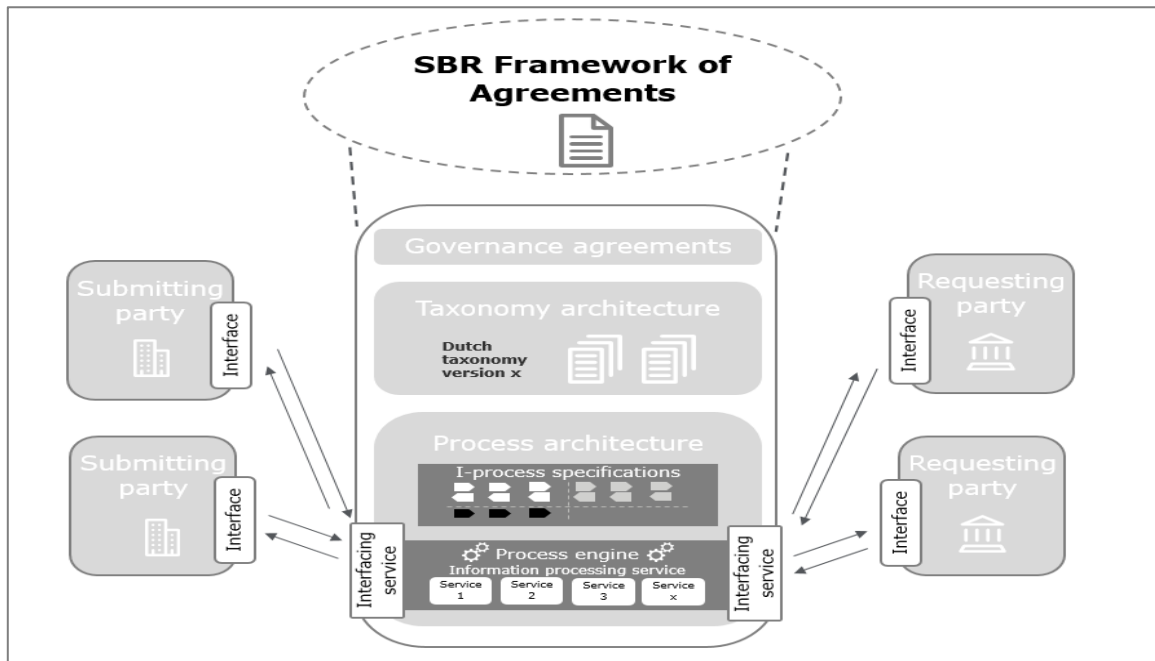


Figure 21: SBR Framework of Agreements

The network of different agreements which serve to formalise the relationships between the organisations involved in a SBR reporting chain operated by the Tax and Customs Administration⁴⁴ is shown in Figure 22 below.

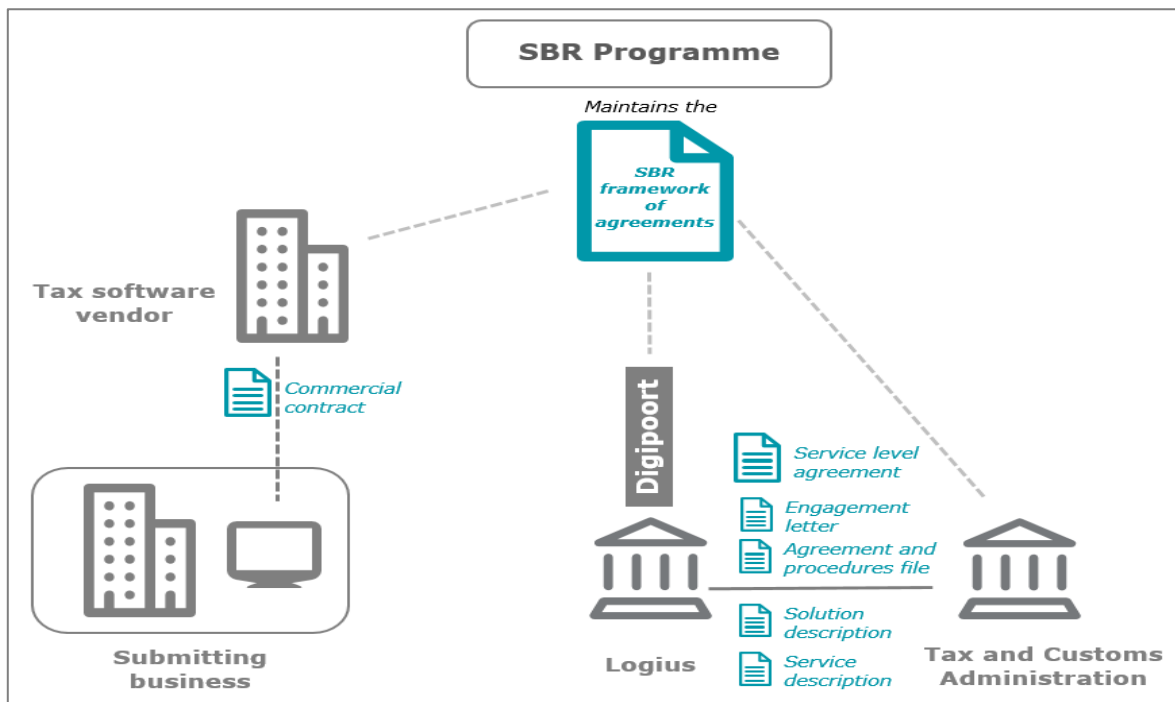


Figure 22: Agreements between organisations in the SBR reporting chain

11.2.4. Integrated Public Service Governance

The following section presents and assesses the governance structures that provide oversight over the development and implementation of the SBR solution. It describes the overall governance

⁴⁴ Used as an illustrative example

structure that has been set up to oversee the SPR Programme, before showing how it is applied to the decisions required at each stage of the roadmap for integrated public services: plan and select; provide framework and set standards; and monitor and maintain. In addition, the section presents the governance for the implementation of the solution for a particular business reporting chain. In order to do this, it uses the Tax and Customs Administration's SBR reporting chains as an illustrative example.

11.2.4.1. Plan and Select – Approach to governance

This section presents the governance bodies that were set up in order to oversee the SBR Programme. It will describe how the decisions taken within these governance bodies determined the shared infrastructure used to deliver SBR reports, the organisational model by which the SBR Programme is implemented, and the legal basis required to establish the SBR Programme and associated governance bodies.

The **SBR Public Private Partnership (SBR PPP) is the governance body responsible for strategic decision-making over the direction of the SBR Programme, and for the development and maintenance of the standards for SBR reporting.** It was formally set up in 2009, having evolved out of previous efforts by the Tax and Customs Administration to reduce the level of administrative burden experienced by companies. Previously, in 2006, a number of both public and private stakeholders signed an agreement to work towards this goal. The signatories included the Minister of Economic Affairs, Minister of Justice, Minister of Interior and Kingdom Relations, and private sector software suppliers.

The SBR PPP determines the direction for the SBR Programme, and the decisions taken within this framework **resulted in the development of the shared infrastructure by which SBR reports are submitted to public organisations** – *Digipoort* – which is maintained by Logius, the national Government's IT department.

Decisions taken within the SBR PPP have also resulted in a decentralised organisational model which grants a large amount of independence to the individual organisations that want to make use of the SBR standards it has developed in order to receive different types of business reports from companies. In order to make use of the SBR standards, the requesting organisation must first get the approval of the SBR PPP to set up the new SBR reporting chain. In order to get this it must go through a number of steps during which it presents how it would implement SBR, and the business case for doing so. **However, once approved the receiving organisation retains a large degree of independence for the implementation of the SBR solution and standards.** In some areas this independence is greater than others. For example, in the area of data, the receiving organisation must use and ensure compliance with the principles specified in the Dutch Taxonomy Architecture. However, it is free to implement its own data definitions according to the needs (including legal needs) of the specific reports. These data definitions are then published in the Dutch Taxonomy (see Section 11.2.4.2.2 for further details).

In order to set up the SBR Programme and its governance bodies no legislative changes were required. This is because initially SBR was a voluntary mechanism by which companies could submit their business reports if they chose, that was compliant with the existing law enabling digital reporting.

11.2.4.1.1. The decision-making bodies of the SBR Public Private Partnership

The SBR PPP consists of decision-making bodies at the strategic (SBR Council), tactical (SBR Platform) and technical (Expert Groups) levels. All users of SBR solutions (both public and private) are represented within this governance structure. The main decision-making and discussion groups are as follows:

- **SBR Council** – *Decides on the strategic direction and development of the SBR Programme as a whole.* It meets four times per year and Members of the Council include representatives from the Tax and Customs Administration, Ministry of the Interior and Kingdom Relations, Big 5 accounting organisations, and XBRL Netherlands⁴⁵. In general the private sector is represented by trade associations. The main tasks of the Council include determining of agreements and standards to be used within SBR. It **approves the framework of agreements that is the basis of all SBR solutions – including the Netherlands Process architecture, the Netherlands Taxonomy Architecture, and any updates to governance arrangements.** It is also responsible for admitting new entrants into the SBR Programme, and provides charters for the SBR Platform and expert groups, determining the issues that they will focus on. Decisions taken by the Council must be unanimous for them to be binding. The Council is chaired by a National Director, and the secretariat is provided by the Tax and Customs Administration and supported by Logius.
- **SBR Platform** – *Coordinates the activities of the programme.* It assigns topics for investigation to expert groups and submits strategic decisions to the Council to be ruled upon there. Logius provides the secretariat for the platform. The main tasks of the platform include monitoring the progress of work by the expert groups, exploring future opportunities for SBR, and investigating incidents disrupting SBR services. The Platform is chaired by the Ministry of Interior, and the secretariat is provided by Logius.
- **Expert Groups** – *These groups provide advice and make proposals on the design, management and maintenance of the different components of the SBR system.* The groups are composed of specialists in their respective fields and operate on the basis of an annual agenda. Logius provides the secretariat for the expert groups. The program has permanent expert groups in the following areas:
 - Data – Responsibilities include design, organisation and monitoring of the Netherlands Taxonomy and the **Netherlands Taxonomy Architecture** (NTA) ;
 - Processes and Technology – Responsibilities include design and organisation of the **Netherlands Process Architecture**, description and maintenance of interfaces, description and maintenance of processes by which incoming messages are processed;
 - Marketing, communication and knowledge - Responsibilities include design and organisation of marketing, communication and knowledge;

In addition to the SBR Programme, **the public sector maintains a number of public sector only bodies** which enable the public-sector organisations involved in SBR to come to common positions on the future of the Programme. These groups - SBR steering committee, SBR tactical committee, and working groups - mirror the layers (strategic, tactical, technical) in the SBR Programme and feed directly into the discussion within the layers of the SBR Programme itself. Likewise, the private sector

⁴⁵ XBRL Netherlands is the Dutch branch of the organisation responsible for the update and maintenance of the open data exchange standard, XBRL. This is the data standard that is drawn upon and provides a foundation for SBR.

organisations involved (Big 5⁴⁶ accounting firms, software developers, banks) have similar ways to ensure common positions, meeting within their associations to discuss the development and maintenance of the SBR standards.

Finally, there are **two other offices which play an important role in facilitating the governance of the SBR Programme**. The first of these is the **SBR Coordinator**, who is independent from the public organisations involved in SBR, and is responsible for ensuring the proper governance processes are followed. The SBR coordinator chairs the (public-private) SBR Council as well as the (public-only) SBR steering committee. The other is the **SBR programme office**. This office is provided by Logius and supports both the public and the public-private SBR bodies. It chairs the expert groups and working groups that propose updates to SBR, and also updates the documentation on the Netherlands Taxonomy Architecture and Netherlands Process Architecture according to the decisions taken by the SBR Programme.

Figure 23 below provides an overview of these public-private, public sector, and private sector decision making and discussion bodies.

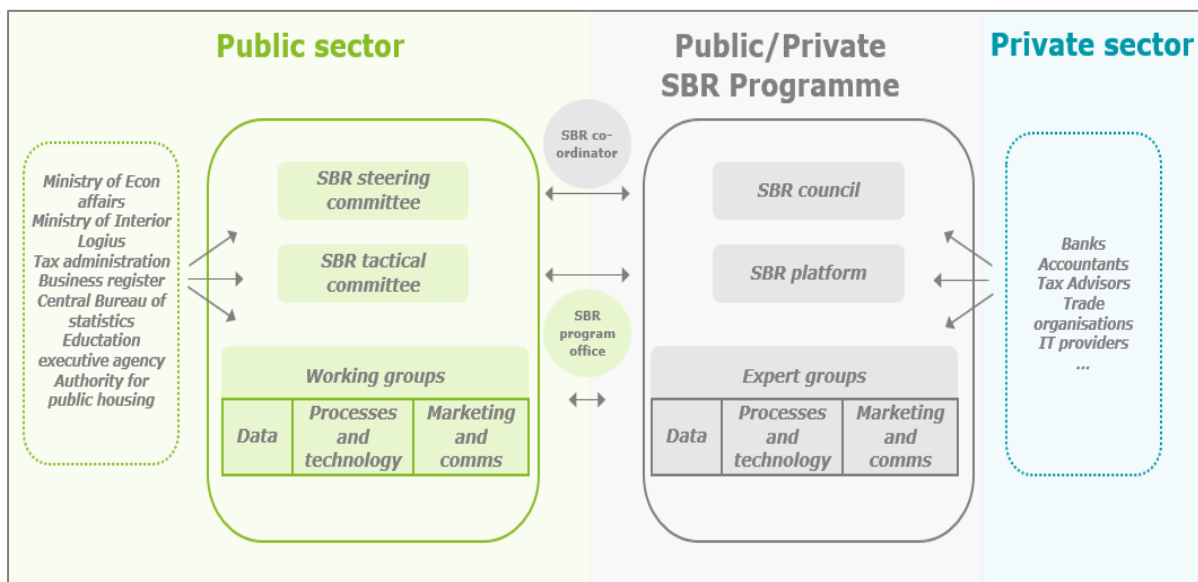


Figure 23: SBR Programme Governance Structure

11.2.4.2. Provide framework and set standards – Approach to governance

This section presents how decisions are made related to the “Provide framework and set standards” phase of the roadmap for integrated public services. In general, these decisions are made through the bodies of the SBR Programme presented in the previous section.

11.2.4.2.1. Establish legal and organisational framework for service

As already mentioned, no new legislation was required to set up the SBR Programme or its decision-making bodies. However, starting in 2011, there was growing pressure from the private members of the SBR Programme to make the solution mandatory for certain reporting chains. In 2012, a regulation was adapted to enable the mandatory use of electronic reporting. At this time, a **temporary SBR task force for legal issues was set up** to ensure that the regulations were compatible with the SBR approach

⁴⁶ Ernst & Young, Deloitte, KPMG, PricewaterhouseCoopers, BDO

Later, in 2013, the Tax and Customs Administration took the unilateral decision to mandate the use of SBR for system-to-system exchanges for both corporate income tax and income tax declaration (some alternative methods, e.g. via the tax portal are maintained). It did the same for VAT declarations in 2014. This did not any further change in the law nor any additional approval by the SBR Programme governance structure.

In terms of the overall organisational framework, this is provided by the “framework of agreements” already presented in Section 11.2.3.3. It consists of the Netherlands Taxonomy Architecture, the Netherlands Process Architecture and Governance agreements and is maintained and updated by the SBR PPP.

11.2.4.2.2. Set standards

11.2.4.2.2.1. Technical standards

Within the SBR PPP, the expert group on processes and technology is responsible for proposals on updates to the technical standards to be used within the SBR solution. Any updates to these standards must be approved by the SBR Platform and SBR Council and are then incorporated within the Netherlands Process Architecture.

For these processes, WSDL/UDDI/SOAP are drawn upon as communication standards, PKI is used for identification, and XAdES is used by some reporting chains⁴⁷ for electronic signatures. The receiving organisation (e.g. the Tax and Customs Administration or Business Register), and Logius (as administrator and maintainer of the *Digipoort* gateway), are responsible for the implementation of these standards.

11.2.4.2.2.2. Semantic standards

The **SBR PPP develops the data architecture for SBR, with a dedicated expert group on this topic**. However, the individual requesting organisation receiving the report retains the autonomy to define the data definitions used in its report.

The **underlying technical standard which has been used since the beginning of the programme is XBRL** – eXtensible Business Reporting Language. This international standard for business reporting is used as a language in which reporting terms can be defined. It is maintained by a non-profit consortium (XBRL International Inc.) which is represented by XBRL-NL within the SBR Programme governance structure – and thus has a say in how the SBR standards are developed.

The **SBR PPP expert group on data is responsible for developing the data architecture for SBR** – it **proposes updates to the Netherlands Taxonomy Architecture** which are reviewed and approved by the SBR Platform and SBR Council. The Netherlands Taxonomy Architecture consists of syntax rules, naming conventions, design and modelling templates, and technical references. All organisations using SBR must abide by the principles laid down in the Netherlands Taxonomy architecture when they are developing their own reports.

⁴⁷ The Tax and Customs Administration does not use electronic signatures for its reporting chains, however the Business Register does use electronic signatures for certain of its reporting chains (submission of annual accounts).

Despite this, these **organisations retain a large degree of flexibility in determining the content of their reports**, including the data terms that are used (which may need to be updated due to legal or other changes). Taking the Tax and Customs Administration as an example, it updates the content of its SBR reports (corporate tax filing, VAT filing etc) according to updates in the law. In addition, it makes updates to them in consultation with the end-users (i.e. private companies, tax consultants, etc) of these reporting chains. The Tax and Customs Administration maintains a bilateral contact with software developers and with trade associations representing tax consultants in order to get their views on any changes.

The Tax and Customs Administration is obliged to **make the data definitions they use transparent**, as are the other public organisations using the SBR reports. **The different definitions are shared with Logius, which is responsible for publishing them in the Netherlands Taxonomy** – where companies are able to access them to ensure they fully understand the meanings of the terms in the report. Another task of the SBR Programme’s expert group on data is to monitor the quality of the Netherlands Taxonomy.

11.2.4.2.2.3. Business processes and interfaces

Within the SBR solution, the **processes for the system to system exchange of reports and the interfaces by which they are submitted are standardised** and based upon the SBR framework of agreements. The SBR PPP is responsible for the maintenance of these process and interface standards. Within the SBR Programme, **the expert group on processes and technology is responsible for developing and maintaining these standards, documenting them in the Netherlands Process Architecture**. The SBR Platform and Council endorse and validate the standard processes developed by this expert group.

For public organisations using *Digipoort* as their reporting gateway, these automatic standardised processes are implemented by Logius.

11.2.4.3. Monitor and maintain

The governance structures and stakeholders already presented in the previous section are responsible for maintaining and updating the standards by which SBR reports are delivered. Any updates to the standards on which SBR solutions are based are first proposed by users and discussed in the relevant expert group (either data or processes and technology). They must then be approved at the higher levels of the SBR Programme hierarchy – by the SBR Platform and SBR Committee. Logius is responsible for the maintenance of the *Digipoort* gateway by which SBR reports are submitted to public organisations.

11.2.5. Lessons learnt

There are a number of lessons that can be drawn from the success of the SBR Programme both in terms of **organisational interoperability** and **integrated public service governance**.

11.2.5.1. Lessons for integrated public service governance

Lesson 1: Involve the private sector in governance to motivate them, but maintain fora or bodies for public-only discussions

A defining feature of the SBR programme is its public-private governance structure. The success of the programme and others like it is dependent upon the close involvement, engagement and expertise

of private sector partners. Their cooperation is voluntary, and requires a “coalition of the willing” and the right representation from people at both strategic and operational levels. Involving the private sector in the governance of the SBR solution helps motivate their involvement and investment in the Programme.

Despite this, it is important to maintain public-bodies for the discussion of how best to develop the SBR solution to benefit the public sector and to coordinate the public-sector position on key issues regarding the future of the solution. Bodies have been set up at the strategic (SBR steering committee), tactical (SBR tactical committee), and technical level (SBR working groups) to ensure that these discussions are held and coordination can be achieved.

Lesson 2: Balance rigidity and flexibility in the development of standards

Another key point that comes out of the SBR experience is the need to find a balance regarding the rigidity of the standards defined. On the one hand, standards need to be consistent enough that organisations can base their solutions on them (and trust that they will not have to update them all the time). However, on the other hand a level of flexibility must be provided to ensure that organisations can adapt the solution to their needs (which may themselves change).

This balancing act is managed for SBR through the provision of consistent and reliable process and taxonomy architectures, which are only updated occasionally, providing the organisations using SBR with certainty. Meanwhile a level of flexibility is maintained by allowing organisations to define the data terms (in accordance with the taxonomy architecture) that they will use in their reports. Flexibility is also provided in the architecture, which can enable the receipt of simple XBRL reports, or XBRL reports with extensions and/or assurance.

11.2.5.2. Lessons for organisational interoperability

Lesson 1: Pursue standardisation on the process level and dedicate the necessary resources to maintain these process standards

The SBR Programme provides and maintains a set of process standards for the system-to-system submission of business reports, and not just communication standards or data standards. This has been a key factor enabling the promotion of the SBR solution across different organisations and for different reports. The lesson for other organisations is to investigate how solutions can be facilitated by standardising processes, but also that appropriate attention and resources must be focussed on maintaining the process standards, and ensuring they are updated as needed.

Lesson 2: Design and share standardised processes across organisations to reduce risk

When developing and dividing the business processes between organisations, practical reasons (such as reducing the probability of the need to resubmit reports) can play as influential a role as more strategic reasons. In the SBR example, the process for submission of business reports was designed to involve two separate SOAP sessions (one for the submission of the report to Logius, and one to receive status updates on the report). Initially, it was planned for this process to be done in just one session. The choice to perform it in two sessions was taken in order to reduce the risk that an organisation would have to resubmit a report because the session was interrupted. When designing standardised processes, public administrations should take these sort of practical reasons into account.

Lesson 3: Consider providing standard, unilateral SLAs to reduce administrative burden

Logius is a key player enabling the submission of SBR reports to public organisations, maintaining the *Digipoort* gateway. It provides IT services to a range of different public organisations. In order to simplify the process by which the level of service that can be expected from it is formalised, it unilaterally issues a service level agreement (SLA) presenting this, according to a standard template. This agreement does not need to be signed by the other organisation (e.g. the Tax and Customs Administration). In special circumstances, the level of service committed to in the SLA can be increased, if the particular service requires it. The provision of a standard, unilateral SLA is one way, however, in which Logius reduces the administrative burden associated with SBR.

Lesson 4: Assess how bilateral and multilateral agreements can be combined to formalise organisational relationships


A combination of both multilateral and bilateral agreements is used to formalise the organisational relationships required to deliver an SBR solution. On the one hand, the main agreement formalising the SBR standards to be used is the SBR framework of agreements. This is a multi-lateral agreement that all the users of SBR sign up to. However, for the implementation of individual reporting chains, bilateral agreements are drawn upon between the receiving organisation and Logius (service level agreement), as well as between the submitting company and the tax software vendor (commercial contract).


This balance of multilateral and bilateral agreements enables both the provision of a consistent set of standards used and agreed to by all, and the possibility of tailoring agreements for the provision of an individual reporting chain.


11.3. Case Study 3: Digital application for social security (Digisos)


11.3.1. Case study summary

Case study summary

 **Abstract:** This case study presents how Norway's Digisos solution was developed, providing a digital channel by which citizens can apply for a municipal-level benefit via a national-level portal. The focus of the case study is on how the project dealt with issues related to **integrated public service governance** and **organisational interoperability** in providing this service. In terms of **integrated public service governance**, the most interesting features are the pilot approach, which enabled feedback to be gathered from a limited set of users (municipalities) as the service was being developed. In terms of **organisational interoperability**, the most interesting feature is the use of template agreements to facilitate the formalisation of organisational relationships between the entities involved in providing the service. The provision of these templates speeds up the process by which the necessary agreements are reached.

 **Service description:** Digisos provides a digital channel via which citizens can apply for a certain type of social security benefit which is provided at the municipal level. Previously citizens had to apply for this benefit in person, over the phone or by post. Digisos provides a single nationwide digital portal via which the application can be made, and through which the applicants' identity is authenticated. The application is enriched with additional national-level data on the applicant, then stored on a digital platform (FIKS platform) before being sent on to the municipality in which the applicant is resident. The application is processed at the municipality level using an internal IT system that was already in use for the storage and processing of applications prior to the development of the Digisos service. This has been updated to interface with the FIKS platform.

 **Integrated public service governance features:** A range of stakeholders at both municipal and national government level as well as in the private sector were involved in developing the Digisos solution. The leading stakeholders were the municipality of Bergen and the Directorate of Labour and Welfare (NAV). These entities retained the ultimate decision-making power for the project. However, the project also relied on contributions from a number of other stakeholders including for the technical development of the solution. These stakeholders, including private sector solution providers, were involved in the project from its inception, and the project team attempted to reach decisions through dialogue in regular meetings rather than through mandating them. The project also implemented a pilot phase, during which the Digisos solution was developed with the cooperation of five pilot municipalities. The inclusion of this pilot phase in the project development allowed the solution to be developed in a way that was more responsive to user needs.

 **Organisational interoperability features:** The Digisos solution requires contributions from a large number of organisations. It is characterised by a decentralised organisational structure in which standardised data is exchanged between the organisations. The role played by each organisation is determined largely by their existing competences and resources. Therefore, for example, NAV provides the portal for citizens to apply for the municipal benefits because it already provided a portal through which citizens applied for national-level benefits. The Association of Local and Regional Authorities (KS) provides the platform on which the application is stored because it already provided digital services of a similar type to the municipalities and they were comfortable with sharing their data with it. The specific business processes and

interfaces used for the service likewise reflect an approach of re-using existing platforms and dividing responsibilities and tasks according to organisational competences.

With such a large number of organisations involved in the project, there was a need to facilitate the formalisation of the organisational relationships between them. This was done through the provision of standard template agreements (developed in cooperation with the pilot municipalities). This meant the necessary agreements could be reached and signed in less time.



Key lessons:

Integrated public service governance:

- Include a pilot phase in the project development in order to develop the service and ensure it meets user needs.
- Assess whether the service can be deployed without additional legislation.
- Identify mutual incentives in order to involve private solution providers in the development of the integrated public service.
- Develop supporting materials to promote solution uptake in a decentralised context.

Organisational interoperability:

- Distribute organisational tasks and roles according to existing competences.
- Develop agreement templates to facilitate the formalisation of organisational agreements that provide clear principles on data ownership, processing and storage.
- Re-use existing systems and standards where possible.

Case study details



Lead organisation/s: Bergen municipality and Directorate of Labour and Welfare (NAV).



Location: Norway



Level of government: National and local



Level of data exchange: National to local



Project dates: 2017-present



Maturity: Operational



Domain: Social security



Use-case: Digital application for social security



Contact email: Digisos@nav.no



Website: <https://tjenester.nav.no/nav-sok/?1&language=no&ord=Digisos> and <https://www.ks.no/fagomrader/digitalisering/felleslosninger/digitale-sosialtjenester-Digisos/>

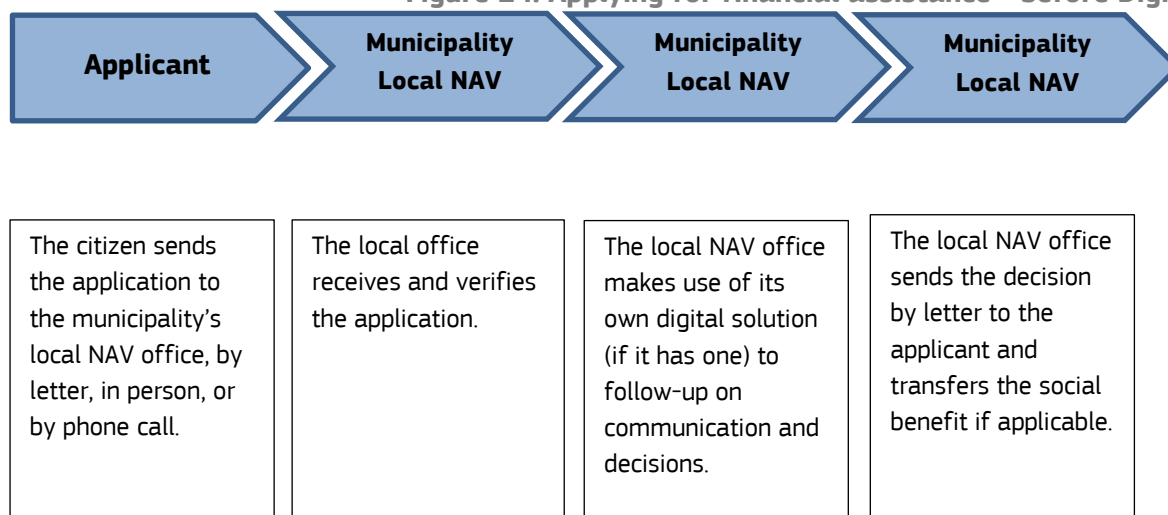
11.3.2. Case study details and background

11.3.2.1. Project background and aims

Digisos provides a digital platform through which citizens can apply for a particular type of social security, including financial and social assistance. This type of social security is provided at the municipality level, and is aimed at citizens experiencing financial difficulties who are not eligible for other forms of benefits. It provides a last resort safety net to the citizen.

Prior to the creation of Digisos, it was necessary to apply either orally in person at the municipality, or on paper. There was no digital platform through which the financial assistance could be applied for. Municipalities did however have an IT system which they used to store, process information and handle the applications. These IT systems are delivered by four competing private solution providers. All processing of the application for financial assistance was done at the municipality level, by the local branch of the Norwegian Labour and Welfare Administration (NAV). Figure 24 below presents the process by which financial assistance was applied for before the creation of Digisos.

Figure 24: Applying for financial assistance - before Digisos



The new Digisos service provides **one national digital portal** (integrated on the nav.no website) through which citizens living in participating municipalities can apply for financial assistance. Additional information is automatically gathered on the applicant, and the enriched application is then sent on to the relevant local NAV office. The processing of the application is then performed, as previously, at **municipal level** in the local NAV office.

11.3.2.2. Stakeholders

The project is a collaboration between public and private stakeholders operating on both the national and municipal level:

The project is financed by the Norwegian Association of Local and Regional Authorities (KS), **as well as through DigiFin**, which is a co-financing scheme run by NAV and the Agency for Public Management and eGovernment (DIFI). Digisos was set up by NAV in collaboration with KS and the municipalities. Other important stakeholders are the four private solution providers who supply the municipalities with the IT systems with which they process the applications for social security.

Each of the involved organisations plays a crucial role in the new service. **NAV** (Norwegian Labour and Welfare Administration) is the responsible directorate for the national Norwegian social security

provisions. It provides a set of services, benefits and pensions⁴⁸ to Norwegian citizens. It takes care of the social welfare of the Norwegian citizens and owns data related to which citizens are eligible for and access different social security benefits. Persons in need can apply NAV for financial help, for example in cases of unemployment, sickness, and pensions. In the Digisos project, the NAV provides the user interface for applications for social security via its existing website: www.nav.no.

KS (The Norwegian Association of Local and Regional Authorities) is a member organisation for all municipalities in Norway. It addresses the needs of the municipal sector for innovation, quality development in services, efficiency improvement, employer development, social development and the development of local democracy. KS provides the FIKS platform as a service for municipalities. The platform is used to run common applications needed by the municipalities and to provide storage area for their data. The FIKS platform is used to support the Digisos service.

The four **digital solution providers** which supply the municipalities with the IT solutions by which they process and store applications for social security and welfare are Visma, Tieto, Dips, and Fasit. Of these 4 providers, Fasit provides the IT system used in Oslo, but is not used by any other municipality. All other municipalities make use of the IT solutions supplied by one of the 3 other providers. These four digital service providers are important stakeholders for Digisos as they had to update their IT systems to make them compatible with the new digital application path provided by Digisos.

Municipalities are key stakeholders for the Digisos project as they continue to process the applications for financial social assistance via their local NAV offices. **Five pilot municipalities** (Bergen, Bærum, Stavanger, Oslo and Trondheim) were initially selected to develop the Digisos solution. Between the five of them they use IT systems provided by each of the four private solution providers. They were selected as pilots for this reason - to ensure that the solution developed was compatible with each of the four different IT providers' systems - and because they are among the largest municipalities.

Other non-pilot municipalities and their local NAV offices are also important stakeholders for the Digisos project. As of October 2019, 112 out of 422 local municipalities in Norway, covering 50 % of the total population, were participants in Digisos, enabling local residents to apply for financial social assistance via this digital route. This number continues to grow by roughly 10 to 20 municipalities per month. With the Digisos solution now developed, there is no difference in practice between the pilot municipalities and the other municipalities. Each local office is responsible for the processing of citizen applications for financial aid, keeping them up to date on the progress of the application and eventual decision, and transferring the financial benefit if the application is accepted.

Other **minor stakeholders** in the Digisos project include other governmental organisations such as Husbanken, which is responsible for information on housing loans, and Skatteetaten which holds data related to taxation. They are consulted for relevant data about citizens applying for financial social assistance.

The main stakeholders involved in the provision of the Digisos service are presented in Figure 25 below.

⁴⁸ Information about NAV's services and benefits, url:

<https://www.nav.no/en/Home/Benefits+and+services/Information+about+NAV+s+services+and+benefits>

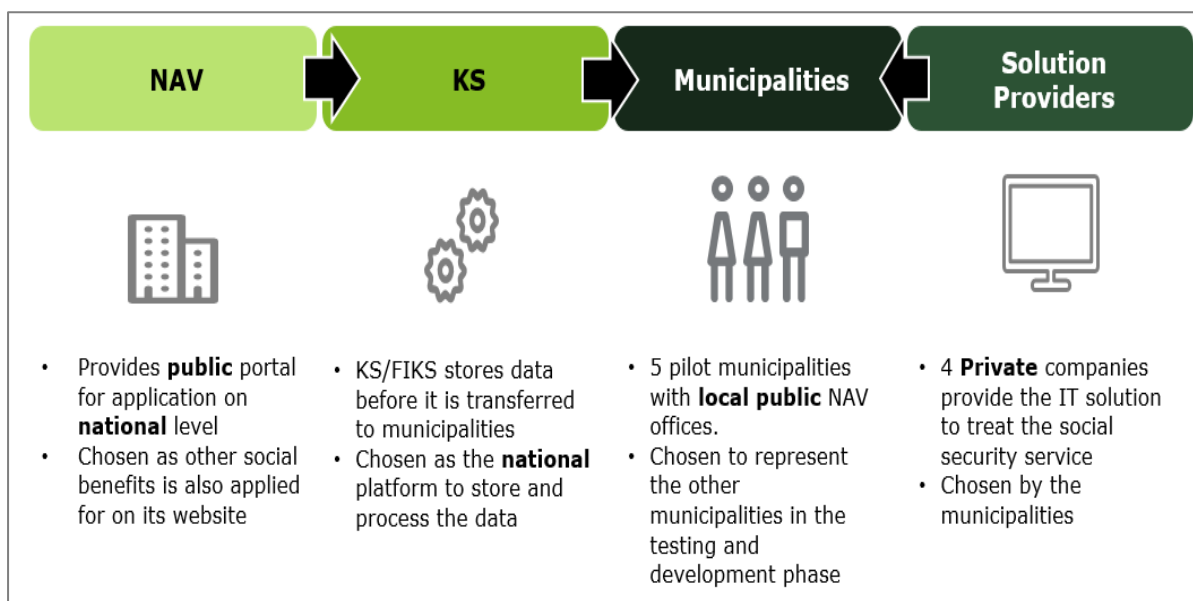


Figure 25: Key stakeholders

11.3.2.3. Presenting the Digisos solution

The **Digisos project was officially initiated in 2017**, following some preliminary planning and studies in 2016. A first testing phase for the digital application with the five pilot municipalities was finalised in 2018, after which it was made available to other municipalities. By July 2019 the solution has been taken up by 112 municipalities.

The Digisos service is provided through the following steps:

- A resident in a participating municipality applies for the financial social assistance via the “nav.no” website. The citizen has to log on to the website in order to make this application using a personal secure digital ID.
- The application is sent through **KS’ FIKS platform** to the local NAV office of the municipality in which the applicant is resident. The application is sent to the IT system (provided by one of the four private solution providers presented previously) used by the municipality to process applications.
- The municipality processes the application and communicates its decision (either digitally or via a letter) to the citizen.

In phase 2 of the Digisos development, which is currently ongoing and will continue until 2020, a service will be developed for the applicant allowing them to track the status of their application and payments via the “nav.no” website. The applicant will also be able to see information on other applications for benefits on the nav.no page “your NAV”. Digisos is also developing links with other governmental departments (Husbanken for housing loans data, and Skatteetaten for tax data) which will allow data on applicants from these departments to be automatically added to the application, proving additional relevant information related to the eligibility of the applicant for the benefit.

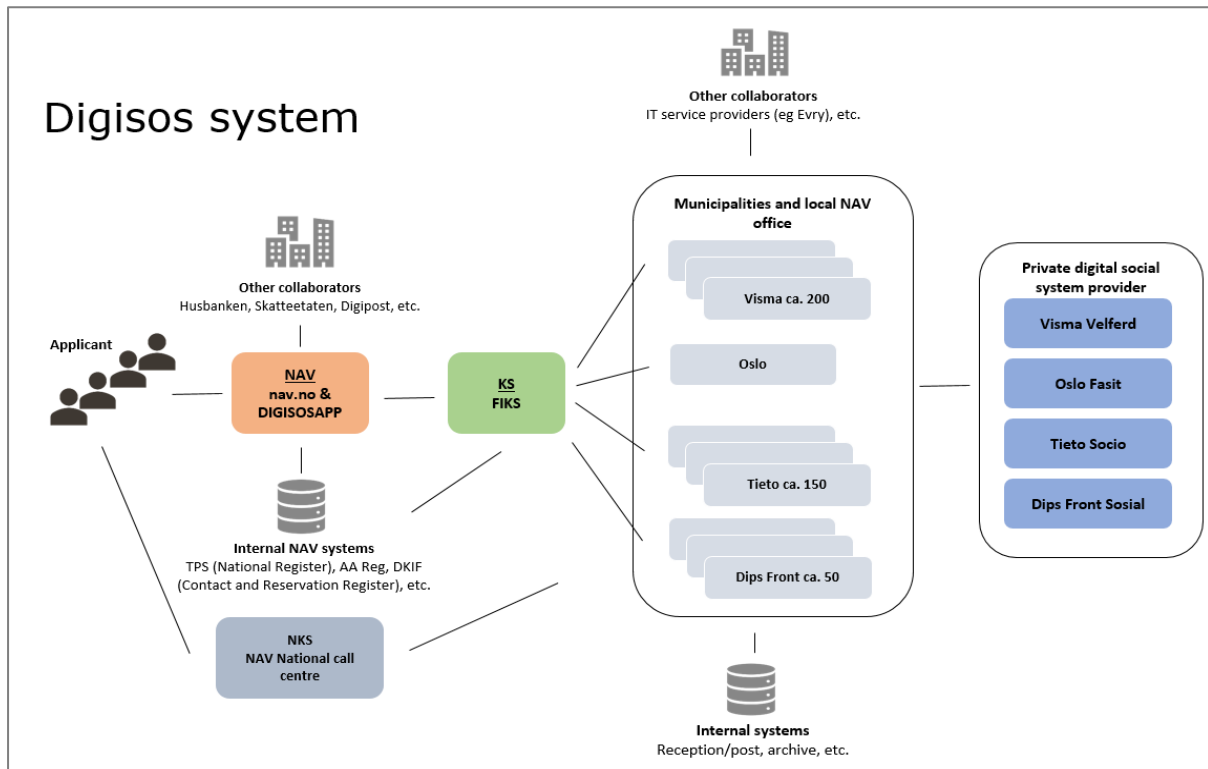


Figure 26: Parties involved in Digisos⁴⁹

11.3.3. Organisational Interoperability

The following section of the case study presents how the Digisos project dealt with **organisational interoperability** issues in setting up the new service. This covers the organisational model and relationships set up to deliver the service, the business processes and interfaces through which the service is provided, and the instruments used to formalise these agreements.

11.3.3.1. Organisational model and relationships

The organisational model for the Digisos solution was determined largely by the roles and positions of the involved organisations prior to the development of the service:

- NAV, provides the **single sign-on** and interface for citizens to submit applications for the financial social assistance. This is done at the nav.no webpage, and applicants use their e-ID for the single sign-on. NAV provides the single point of contact for the citizens making use of the Digisos service. It was selected to play this role because it already provides a digital portal by which citizens can apply for a range of social security benefits at the national level. It therefore provides a familiar platform for citizens.
- The data inserted by the applicant is **enriched with data held on the applicant** by other governmental organisations such as Husbanken and Skatteetaten, as well as internal NAV databases such as the national register.
- **The FIKS platform operated and maintained by KS functions as a bridge** between the point at which the citizen applies for the benefit (nav.no), and the point at which the application is assessed and processed (the local NAV offices in the municipalities). No data related to the application is stored or processed by NAV. Instead the application is immediately sent to the FIKS platform, where it is processed to see which municipality to

⁴⁹ Figure is based on diagram created by NAV, provided by Digisos.

send it on to. This is done because the municipalities own the data submitted in the application, and did not want NAV to processing this data. **As KS is the association representing the municipalities, they preferred to have it process and store this data using the FIKS platform.** The municipalities are already familiar with the FIKS platform and use it for some digital applications.

- The **municipalities remain the key party regarding the processing of the applications for financial social assistance and the provision of the financial benefits.** They process the data received from the national NAV website, via the FIKS Platform and communicate the result back to the applicant. The **municipalities maintain autonomy** regarding whether to use the Digisos platform or not – they are not obliged to provide this digital channel for the application for financial social assistance. If they do choose to make use of the Digisos solution they must buy an updated IT solution for the processing of the citizen's applications which is linked to the FIKS platform. If they already have an IT system from one of the four private solution providers mentioned previously, they will purchase the update from this same provider, if not they can purchase it from any of the four competitors.
- The **four solution providers** already cover the national market for the provision of the IT systems to municipalities for the processing and storing of applications for financial social assistance. Their cooperation in the project was crucial as it was necessary to update the IT systems so that a connection could be made with the FIKS platform and applications could be sent directly to these systems via the new Digisos channel.

The organisational structure and the relationships between organisations required to deliver the Digisos service are presented in Figure 27 below.

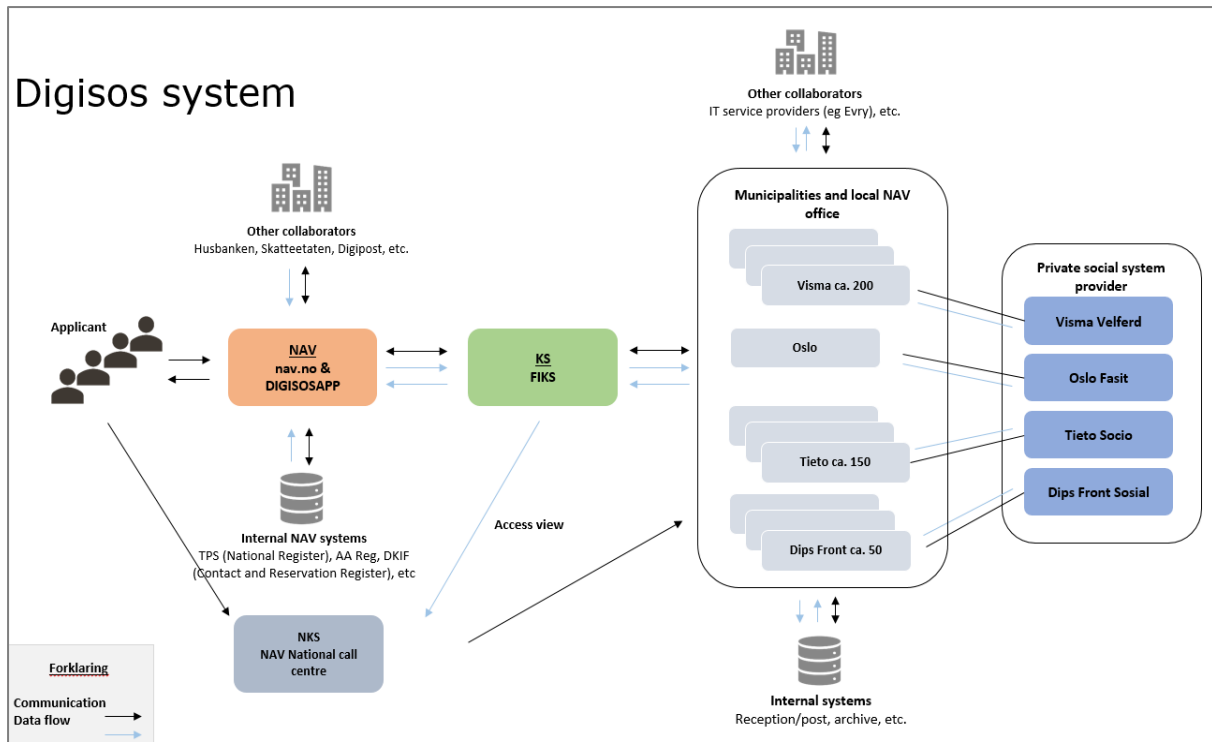


Figure 27: Organisational structure for Digisos⁵⁰

11.3.3.2. Business process standards and interfaces

11.3.3.2.1. Definition of interfaces

The two key interfaces for the provision of the Digisos service are provided by nav.no and the FIKS platform. Nav.no provides the interface by which citizens submit their applications, while the FIKS platform provides the interface by which the application is first shared from nav.no and then sent on to the local municipality offices.

As explained above, the selection of these interfaces was made for the following reasons:

- **nav.no** – Citizens are familiar with this portal as it is already used for applications for social security at the national level;
- **FIKS platform** – Preferred by municipalities as the tool to process and store their data, as it is operated by the association representing them (KS).

The FIKS platform is a common service platform for Norwegian municipalities⁵¹ consisting of three parts:

- A platform for citizens-focused services;
- Services for municipal employees;
- An API layer on which suppliers, municipalities and other public companies can integrate with digital KS FIKS services.

The FIKS Platform in general serves as **a common platform for the municipalities** and stores many other solutions for the municipalities, involving collaborations between municipalities and a

⁵⁰ Figure is based on diagram created by NAV, provided by Digisos.

⁵¹ FIKS-Platform, KS, url: <https://ks-no.github.io/fiks-platform/>

private provider. The FIKS Platform was the only common technical platform available which would suit the interoperability requirements for Digisos as NAV does not have a common platform providing a connection to the municipalities. The FIKS Platform provides a bridge between the public and the private software tools. It transforms the application specifications into the correct standards to be accepted by the private companies' software tools, used by the local NAV offices

11.3.3.2.2. Business processes

The primary business processes⁵² developed in order to provide the Digisos service are as follows:

- A citizen that wants to create an application goes to the nav.no web space, where he/she logs in with an e-ID, and fills in the application on line;
- NAV.no authenticates the applicant via the e-ID provided and collects the application. It then consults the databases of the Housing department (Husbanken: holding data on housing loans held by the applicant) and the Tax department (Skatteetaten: holding data about the financial status of the applicant) for additional information about the applicant. The application is enriched with this information and forwarded to KS' FIKS platform. NAV itself does not store any data related to the application, and it is deleted after forwarding;
- The application is stored on the FIKS platform. The municipality to which the application should be sent is identified, the application is converted to the standard of the digital solution used by that municipality, and the application is sent to the NAV local office in the relevant municipality.
- The local NAV office in the municipality of the applicant receives the application in their IT system, and sends a confirmation to the FIKS Platform;
- The status of the application is updated on the FIKS platform (i.e.; as received by the municipality);
- The local NAV office in the municipality investigates if all necessary criteria are fulfilled to grant the citizen the social security applied for. Once this assessment is complete, they send the decision to the applicant. If documents are missing, they can ask also the applicant to provide them. If the application is approved, they then transfer the financial benefit to the citizen.

Municipalities that have adopted the Digisos solution (112 municipalities currently) still accept the former method of applying via a paper form, phone call or an oral application. The **Digisos solution provides an additional digital channel** by which the citizen can apply, but application via this channel is not mandated. The five pilot municipalities have found that nearly half of applications are submitted by this new digital channel. However there are substantial differences in the proportions of digital applications received by different local NAV offices.

Figure 28 below describes the key **business processes** for the Digisos solution. It presents a business form going from "Start" to "End". The vertical columns represent actors and in these columns the actions undertaken by these actors are positioned. The direction of the flow of business processes is presented by arrows going from action to action, represented by boxes. Some actions can produce

⁵² Different business process can be related to the Digisos system, but the main flow of processes is described here as it represents the essence of the Digisos project, involving the exchange of digital data from one system to another across different organisations. This main flow covers the application of the citizen via nav.no, and the receipt and processing of the application by the local municipalities.

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a message which is sent to the corresponding actor, or can produce a certain document (e.g. an application form).

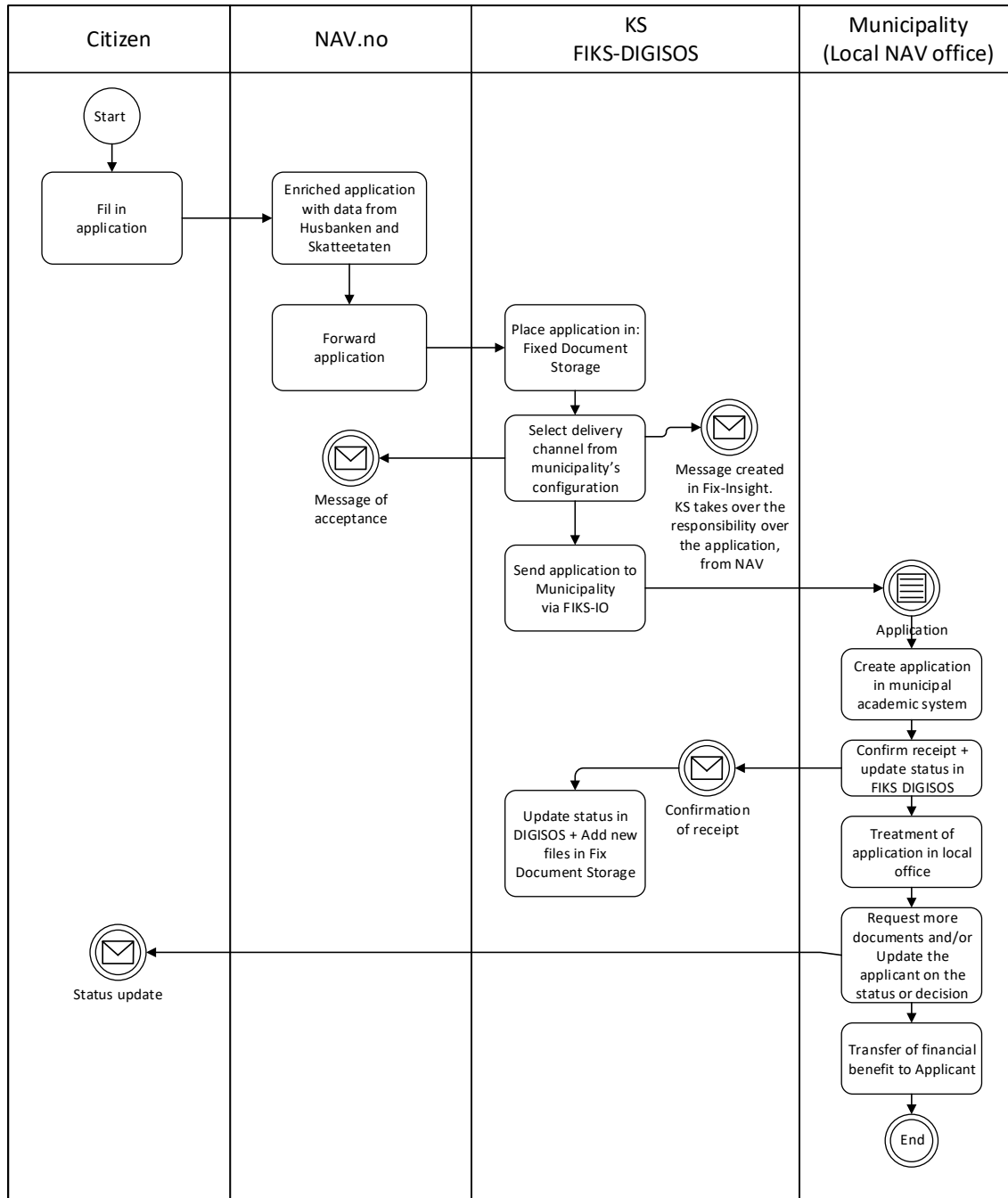


Figure 28: Primary Digisos business processes

11.3.3.3. Organisational agreements

In order to provide this Digisos service, the multiple organisations involved have reached a number of agreements which formalise their relationships and the tasks they are responsible for, and provide a solid legal foundation for the service. These agreements are reached on a bilateral basis.

The majority of these agreements involve the municipalities which have decided to use the service. Each municipality must reach bilateral agreements with KS and NAV agreeing to the necessary collaboration in order to deliver the service and the processing of their data. In addition, they must reach a commercial agreement with the IT solution provider to upgrade (or purchase for the first

time) the system for the processing of applications which is linked to and compatible with the Digisos solution.

There are also bilateral agreements between the national level organisations involved to formalise their cooperation and responsibilities (e.g. between KS and NAV).

11.3.3.3.1. Municipality agreements.

As mentioned, each municipality which wants to use Digisos must agree a number of different bilateral agreements with other organisations involved in the service provision (NAV, KS, private service providers) in order to do so.

Because both KS and NAV must reach these bilateral agreements with a large number of municipalities, **both organisations provide templates for the most significant agreements:**

- **Data processing agreement** – defines the data that can be processed and used by the national organisations, providing protection for the municipality data.
- **Collaboration agreement** - elaborates on how the collaboration between the organisations should be executed.

These templates agreements are based on the initial agreements developed with the pilot municipalities. If new functionalities or data is added to the solution then additional attachments can be added to the agreements. The involved organisations are able to use digital signatures in order to sign the agreements

The **two organisations – NAV and KS – differ regarding whether they allow municipalities to customise the templates to their needs.** NAV is open to some level of customisation, negotiated with them, as they recognise that some municipalities may have existing systems or requirements which require tailored agreements. A customised agreement will take a longer period to conclude. Whereas the standard template agreement takes just a couple of days to process and conclude, a customised agreement is likely to take several weeks. This is because the customisation requires extra work and approval by legal specialists. This is costly and also depends upon their availability. Because of this, the possibility of reaching a customised agreement is not advertised to the municipalities, but only done if the municipality insists on it. Currently, NAV has only reached one fully customised agreement, with two others with small changes, out of the 120 signed agreements. On the other hand, KS allows no customisation of the template agreements they provide. Municipalities can either accept the standard clauses or they are unable to use the Digisos service.

The municipalities also reach individual bilateral agreements with the private solution providers in order to have the necessary systems in their local office to receive and process the applications. In order to do this they agree a “buy contract” with the solution provider, laying out the commercial conditions under which they have access to the necessary software. On top of this, a data processing agreement is agreed between the two parties.

The solution providers also reached tailored “pilot agreements” with the five pilot municipalities. These agreements include additional clauses enabling the solution provider to test the software being developed for the Digisos solution. It may also include price reductions for the pilot municipality for the software as an incentive for it to participate as a pilot organisation.






11.3.3.3.2. Other Agreements.

KS and NAV have cooperation and data processing agreements with each other as well, laying out their responsibilities and how they can process the data provided. In addition, NAV has agreements with other national level organisations from which it wants to access data to enrich the citizen applications. It has a development agreement with Husbanken, with which it is developing the interface to access its data on housing loans, and is developing a Data Processing Agreement with Skatteetaten to access its tax data.

11.3.3.3. Overview of Digisos agreements

Table 10 and **Figure 29** below provide an overview of the different types of agreement between the different actors involved in providing the Digisos solution.

Table 10: Types of agreements formalising the Digisos service

Pictogram	Agreement	Occurrence
	Cooperation Agreement	3 positions in the figure below (location: 1, 4, 6)
	Data Processing Agreement	4 positions in the figure below (location: 3, 5, 7, 11)
	Buy Contract;	2 positions in the figure below (location: 8, 12)
	Management Agreement; (development and operation)	2 positions in the figure below (location: 2, 10)
	Pilot Agreement	1 positions in the figure below (location: 9)

Recommendations for organising and governing integrated public services

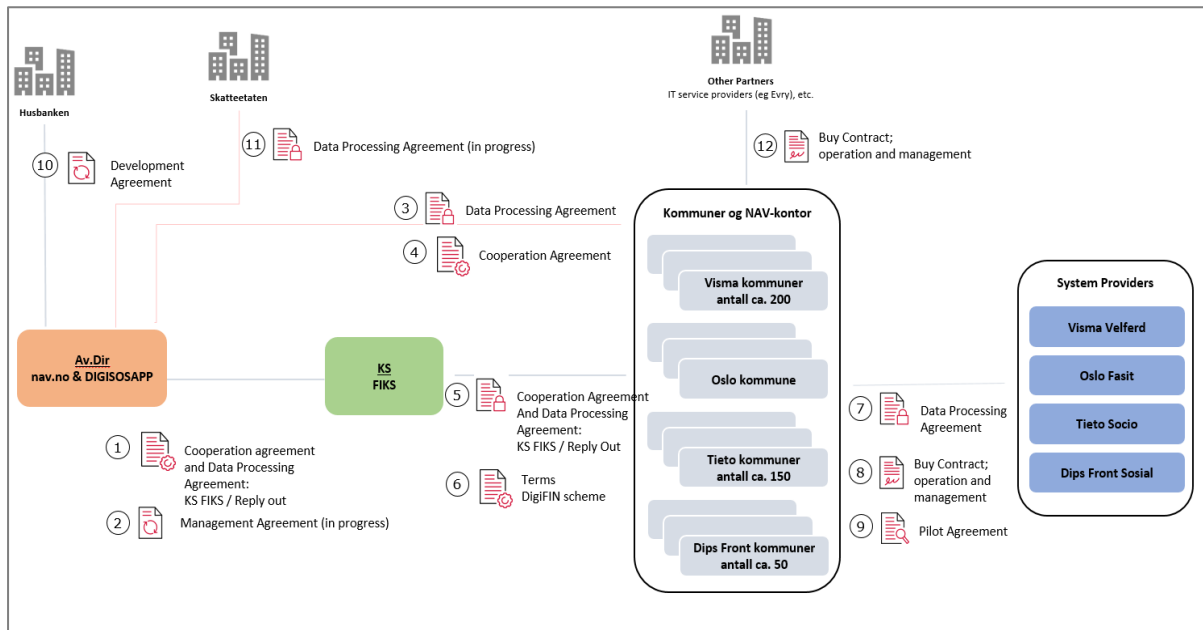


Figure 29: Overview of Digisos agreements⁵³

11.3.4. Integrated Public Service Governance

The following section presents how issues related to **integrated public service governance** were addressed in setting up the Digisos service. This covers who made the decisions required to develop and deliver the service, and how these decisions were made. This is done for each of the phases defined in the roadmap for **integrated public service governance**: plan and select; provide framework and set standards; monitor and maintain.

11.3.4.1. Plan and select – approach to governance

The **leading stakeholders for the Digisos project are the Bergen municipality and NAV**. These two organisations took charge of developing the main process by which the Digisos service is provided. Bergen municipality's role as a leading stakeholder is due to the fact that it initiated contact with NAV regarding the development of a potential digital channel for applications for financial social security.

These two leading stakeholders were responsible for the set-up of the project team and governance structure by which the Digisos service has been developed and delivered. In order to ensure the necessary resources, infrastructure and services were drawn upon and developed in order to provide the Digisos service, they involved a number of other key stakeholders from an early stage.

A key early decision was to develop the integrated service following a pilot approach. This entailed closely involving a limited number (five) municipalities in the development of Digisos. These pilot municipalities served as a testing ground and provided user feedback during the development of the new integrated service. The other stakeholders involved during this early phase included KS, and the four private solution providers supplying the municipalities with IT systems for social security.

⁵³ The greater Digisos system: Agreements Summary (As Is). Figure is based on diagram created by NAV, provided by Digisos.

The **Digisos project team set up reports to Bergen municipality and NAV and consists of a group of 22 employees** which are responsible and work on different “arenas” (working groups) for the project. Apart from the Digisos project team, other participants in these working groups include representatives from:

- **The five pilot municipalities** – for meetings concerning project planning and decisions to be made in collaboration with them, and concerning social issues and experiences;
- **KS** – for meetings concerning technical development
- **The four private solution providers** – for meetings concerning technical development
- **Citizens** – on rare occasions, where user feedback is desired.

Regular meetings (weekly or bi-weekly) were held involving these stakeholders from the start of the project, to ensure that all parties were up to date on development and provided their input to any decision. Decisions were arrived at through dialogue and if no immediate consensus could be found, a vote was conducted. However, the national Digisos project team retained the power to make the final decision, if necessary.

As presented in Section 11.3.3, the organisational model and roles decided upon for the service were based strongly on the existing roles and positions of the involved organisations prior to the development of the service. For example, NAV provided the single sign-on and user interface for Digisos because it already played this role for applications for other national level social security benefits.

No real negotiations were held in order to divide the responsibilities for the different components and their development between the different stakeholders. Instead, **it was clear from the beginning what the respective responsibilities would be based on the stakeholders’ existing roles**. Each had to develop the software related to its own business.

During this phase, **political-level stakeholders were involved but only from a distance**. They played a facilitating role in supporting the state/municipality mutual investment in developing common digital solutions, and Digisos receives three mentions in the Government’s “Digital strategy for the public sector”⁵⁴.

No additional legal act was required to provide a basis for the Digisos solution. Instead, the project was developed within the boundaries of existing laws and acts, drawing on the contracts and agreements previously described to provide a firm legal basis.

11.3.4.2. Provide framework and standards – Approach to governance

11.3.4.2.1. Establish legal and organisational framework for service

As mentioned above, no legislative changes were required in order to develop and provide the Digisos service. However, **as presented in Section 11.3.3.3, a number of different contracts between the organisations involved in delivering the service provide a solid legal foundation for the service** and formalise the organisational relationships required. These contracts are for the most

⁵⁴ Digital strategy for the public sector (Digitaliseringsstrategi for offentlig sektori) URL:

<https://www.regjeringen.no/no/tema/statlig-forvaltning/ikt-politikk/digitaliseringsstrategi-for-offentlig-sektor/id2612415/>

part bilateral agreements between the municipalities signing up to use Digisos and the other organisations supporting service delivery (i.e. NAV, KS). As explained previously, template contracts are provided to the municipalities to facilitate the process of them reaching the necessary agreements. These templates were developed during the pilot phase of the project in collaboration with the five pilot municipalities.

Each local administration retains the independence to choose whether or not to use the Digisos solution. They are not obliged to make use of Digisos or to follow any of the particular business processes that have been developed. The Digisos project team provides good practices and recommendations for municipalities, but these remain optional.

11.3.4.2.2. Set standards

Overall, the **technical, semantic, and business process standards to be used for the Digisos solution were selected by the Digisos project team**. As described in the sections below, the project team also drew on external expertise in order to select these standards.

11.3.4.2.2.1. Technical standards

The different IT systems provided by the four solutions providers made use of different standards. With the start of the Digisos project, it was decided by the project team that the KS standard used for the FIKS Platform would be used as a national technical standard for Digisos. It provides a standard on how to store data on behalf of the municipalities.

11.3.4.2.2.2. Semantic standards

To ensure semantic interoperability it is necessary to ensure that different data fields - application, income, children, etc - are displayed in the correct way in the municipalities' systems. Four different solution providers supply these systems, with each previously drawing on different terminologies. It was necessary to ensure that the data fields appear correctly in each type of system, requiring an agreement to be reached laying out a common understanding of the terminology to be used.

To come to this common terminology, input was provided by all parties, including the Directorate of Labour and Welfare (NAV) which has responsibility for interpretation of the laws regulating the social services in the municipalities. The meaning of some words were not understood in the same way by all parties, so a common definition was needed.

The four local service providers, five pilot municipalities and NAV all had to agree on mutual practices and developments. To support semantic interoperability and common understanding of data terms, all functional developments in the Digisos project have their own product description and a glossary.

11.3.4.2.2.3. Business processes and interfaces

Decisions on the development of the business processes and interfaces by which the Digisos service is delivered were determined by the project team with the input of the key stakeholders, with the results described in Section [11.3.3](#). During the initial design phase of the meeting, the processes to deliver the service were validated and agreed upon during weekly or bi-weekly meetings. This will continue in order to develop the additional functionality that is being added during phase 2 of the development.

11.3.4.3. *Monitor and maintain – Approach to governance*

The project team reporting to **NAV and Bergen municipality retain overall responsibility for the delivery of the Digisos service** and to ensure that the constituent components and underlying standards are maintained. There are measures in place to establish liability if the service is interrupted or somehow fails to deliver. The formal contracts and agreements (described in Section 11.3.3.3) lay out clear roles and responsibilities and legal liabilities for each organisation. If something goes wrong and a task is not correctly carried out, it is clear who is liable. In the event of errors or mistakes, the log files of the system can be consulted to understand the fault and assign responsibility.

As it currently stands, the **Digisos project team does not see the need for any adjustments to the law to further facilitate the delivery of the service**, however this could be required in the future. There is no separate mechanism in place by which the Digisos project team provides feedback on legal barriers and interoperability issues, however the team includes several legal experts who are in communication with legal experts within the Ministry of Labour and Social Affairs. They will be consulted when revisions to relevant laws are being considered and are able to raise issues if the project is blocked by any existing law. KS is also in direct communication with the Ministry of Labour and Social Affairs, providing their input via a standardised procedure several times a year on legal issues or requirements.

In order to ensure that municipalities face a minimum of issues when making use of the Digisos service, the Digisos project team, supported by NAV and KS and the pilot municipalities have developed a number of materials⁵⁵ to support municipalities as they adopt the Digisos solution. These materials include trainings on using the application, template letters, template agreements, proposed press releases, organisational preparation checklists, decision guidelines, a test environment, and connection and testing plans. The Digisos team have also developed an introduction clarifying the roles and responsibilities of KS, NAV and the private solution providers in the project.

11.3.5. Lessons learnt

11.3.5.1. *Lessons for organisational interoperability*

Lesson 1: Distribute organisational tasks and roles according to existing competences

In general, the Digisos team ensured that the organisations involved were allocated tasks and roles that were in line with existing tasks that they already carried out. This is a general practice that should be followed by other organisations delivering integrated public services. An example from the Digisos project is the use of the NAV portal (nav.no) as an interface by which citizens could apply digitally for the financial social assistance. This interface was selected because nav.no was already familiar to citizens as the portal by which they applied to several other national level social security benefits.

Lesson 2: Develop agreement templates to facilitate the formalisation of organisational agreements that provide clear principles regarding data ownership, processing and storage

The Digisos project developed clear agreements on who own the data (the municipalities) and which make clear where and by who it will be stored. In order to facilitate reaching these agreements with

⁵⁵ Support materials: <https://www.nav.no/no/NAV+og+samfunn/Samarbeid/For+kommunen/Digisos/informasjons-og-st%C3%B8ttmateriell>

the large number of municipalities which want to use the service, template agreements are provided which can be validated and signed within a couple of days. The provision of such template agreements can facilitate the formalisation of organisational relationships between the entities involved in service provision.

Lesson 3: Re-use existing systems and standards where possible

The Digisos project team drew on the FIKS platform and the underlying KS standards in order to develop the Digisos solution and to store data related to the citizen applications for financial social assistance. The use of such an existing platform and standards facilitated the development of the solution and should be investigated where possible when developing a new integrated public service.

11.3.5.2. Lessons for integrated public service governance

Lesson 1: Include a pilot phase in the project development in order to develop the service and ensure it meets user needs

The Digisos project included a pilot phase in which the solution was developed along with five pilot municipalities. Limiting the scope of the solution during this pilot phase to just these five municipalities allowed the project team to remove complexity and focus on ensuring the solution was well adapted to the requirements of these municipalities. Not only the technical solution but organisational solutions (such as the definition of template agreements for other municipalities to use when joining Digisos) were developed during this period. The pilot phase therefore facilitated the later success of the project and ensured that the solution was better adapted to the needs of its users.

Lesson 2: Assess whether the service can be deployed without additional legislation

The Digisos solution was developed and deployed without any legislative change being passed to support it. Although this will not always be possible for a new integrated service, the possibility should be investigated as it can speed up the development of the service.

Lesson 3: Identify mutual incentives in order to involve private solution providers in the development of the integrated public service

For the development of the Digisos solution, the involvement of private solution providers was crucial as they were already involved in supplying municipalities with IT systems which would require updating in order to be compatible with the new service. The Digisos team involved the solution providers from the very start of the project, relying on their shared incentives to create the new service. The provision of the new Digisos solution was in the interest of these private sector companies because municipalities wanting to make use of the Digisos solution would buy the necessary upgraded software for their internal IT systems to process social security applications from them.


Lesson 4: Develop supporting materials to promote solution uptake in a decentralised context

Given the autonomy of municipalities in Norway, a centralised approach in which the use of the new Digisos solution was imposed on them was not possible. The municipalities must choose themselves to adopt the new solution. To promote this adoption, efforts were made to make it straightforward and easy for the municipalities to use the solution. Training and supporting materials including guidelines, templates, checklists and testing plans are provided to the municipalities to help them effectively implement the Digisos solution.

11.4. Case study 4: Municipality Application Service Provider (Municipality ASP)


11.4.1. Case study summary


Case study summary

 **Abstract:** The following case study presents how the Hungarian Government developed a new cloud Application Service Provider, the Municipal ASP Centre (Önkormányzati ASP). This centre provides a digital platform for local administrative management and the provision of local e-Government services for end-users. The case study focusses on how the public organisations involved dealt with issues related to **integrated public service governance** and **organisational interoperability** in setting up and providing this service.

In terms of **governance**, both the stakeholders responsible and the supporting structures have shifted over time, evolving from a development phase in which a large consortium of stakeholders was actively involved, to an operational phase in which a small group of key stakeholders are involved. The project consortium played the key role in developing and deciding upon the infrastructure and standards through which the service would be delivered. This work was supported through a clear definition of roles and responsibilities in legislation⁵⁶.

In terms of **organisational interoperability**, the service exhibits a partially centralised organisational model, with a single centre and infrastructure serving the municipalities. However, it draws on data resources owned by other government ministries, accessing base registry data via existing technical infrastructure – the government service bus. The main responsibilities of the organisations involved in service delivery are defined in legislation. However further details or the relationships between these organisations and the services they provide to one another are defined in service agreements.

 **Service description:** The Hungarian Municipality ASP Centre is a centralised model overseen by the Hungarian State Treasury, providing modern, integrated shared services for local administrative management, ensuring standardised internal operations and a common platform for e-government service provision to end-users at the local government level. Nine sector-specific systems are included in the service portfolio (from the tax management to industrial and commercial management), as well as a framework system, providing functions such as user management, access management (authentication, roles and rights) and operating system services. The different services provided by Municipality ASP are integrated and able to exchange data with each other, but they also draw on data from 27 central base registries through the Government Service Bus (Központi Kormányzati Szolgáltatás Busz – KKSzB). The project has integrated the centrally provided regulated electronic administrative services (e.g. e-identification, e-authentication, e-delivery, intelligent online forms and the electronic payment service) to comply with e-government policy criteria and the relevant legal provisions.

 **Integrated public service and governance features:** A consortium of public stakeholders initially developed the ASP Centre. Following a pilot phase, a consortium was created in 2016 between the Ministry of Interior (project sponsor), the government IT Development Agency (project leader), the Hungarian State Treasury and several state-owned companies. Decisions

⁵⁶ Government Decree No. 257/2016. (VIII. 31.), http://njt.hu/cgi_bin/njt_doc.cgi?docid=197239

were made by the Project Steering Committee, representing each consortium member. Working groups provided input for the Steering Committee to decide upon. The consortium is still active as some aspects of the ASP Centre are being further developed. However, responsibility for the ASP Centre has shifted in its operational phase to a more limited number of public stakeholders (Hungarian State Treasury, Ministry of the Interior and the latter's state-owned company responsible for the IT infrastructure). The Hungarian State Treasury oversees daily operations.



Organisational interoperability features:

The ASP Centre has a partially centralised structure, with one centre providing services to multiple municipalities. However, it also draws on external data from base registries to deliver its services. It draws on pre-existing technical infrastructure in order to do this, accessing the data via the government service bus, KKSZB. The selection of business processes for the ASP Centre was developed within the project consortium's "integration and eGovernment" working group led by the State Treasury. For interconnection with base registry data, the working group worked directly with developers from the government service bus.

The principal responsibilities and tasks of each of the stakeholders involved in the ASP Centre are defined in legislation, while their responsibilities for the development of the service are further elaborated on in a project funding document. The organisational relationships required for the delivery of the service are further defined through a number of contracts. There is a service agreement between each municipality and the State Treasury covering the services that will be provided through the ASP Centre, the obligation of the municipality to connect to the system and how data will be handled. The Municipality ASP Centre has just one single contract on behalf of all connected municipalities with each of the base registries involved. This contract simply describes the data required by the Municipality ASP Centre.



Key lessons:

Integrated public service governance

- Consider combining legal acts and organisational agreements to provide a clear governance structure.
- Plan for evolution of governance structures over the course of the project, ensuring the necessary input from a wide range of stakeholders during the development phases, and narrowing down to core stakeholders during the operational phases.

Organisational interoperability

- Draw on existing technical infrastructure and resources where possible to provide the service and form the necessary connections between organisations.
- Pursue administrative simplification where possible to facilitate the formation and formalisation of organisational relationships. The case study achieved this by empowering the ASP Centre to reach a single interoperability agreement with the base registries from which data is accessed on behalf of all municipalities.

Case study details



Lead organisation/s: Ministry of Interior and Hungarian State Treasury



Location: Hungary



Level of government: National/Local



Level of data exchange:
National/Local

 Project dates: Pilot project ran between 2012 and 2015; project implementation started in 2016	 Maturity: Ongoing and successful, with 99% of municipalities making use of the system as of August 2019 (35 of 3197 municipalities opted out)
 Domain: Local administrative management (industrial, commercial, financial, local tax, property registry, inheritance, business), and related local e-government services for clients	 Use case: Cloud Application Service Provider (ASP) model that provides an integrated back-office software in an SaaS model, has a standardised internal operation, use building blocks (e-identification, e-authentication, e-delivery and intelligent online forms) and a common platform for client-side e-government services accessible through Hungarian eID
 Contact email: Dán Mihály – e-government advisor at Ministry of Interior – mihaly.dan@bm.gov.hu	 Website: Local government e-administration single point of contact portal: https://ohp-20.asp.lgov.hu/nyitolap

11.4.2. Case study details and background

In 2016, the Hungarian government adopted new legislation, the Government Decree 257/2016 on the Municipality ASP Centre⁵⁷, which established a **new cloud Application Service Provider (ASP) model** to be used as the back-office IT system by all Hungarian municipalities. The system also provides a front-office portal by which clients (i.e. local residents and businesses) can access municipality services.

The Municipality ASP centre was previously set up through a pilot project “Establishing a Municipality ASP centre” which ran between 2012 and 2015 supported by EU funds. Following the successful pilot, the Government decided to develop the service and extend it at the national level on a **mandatory basis**. The implementation started in 2016 with the project “Municipality ASP 2.0” financed by EU funds within the framework of the Public Administration and Civil Service Development Operational Programme. Also, the necessary legislation has been adopted to make the use of the services offered by the Municipality ASP mandatory for local governments, **although it is possible to apply for an exemption**. The implementation of the new model has been a success with 99% of municipalities making use of the system as of August 2019, only 35 out of 3197 municipalities opted out.

The Ministry of Interior was the initiator of the project; however the Hungarian State Treasury now has responsibility for the Municipality ASP centre. The Municipality ASP provides a **centralised, integrated and cost-effective IT solution in SaaS model that other governments could imitate**.

⁵⁷ 257/2016. (VIII. 31.) Korm. rendelet az önkormányzati ASP rendszerről, <https://net.jogtar.hu/jogszabaly?docid=A1600257.KOR>

The service portfolio provided under the new ASP model includes the following support systems:

- **Administrative interfaces** that allow users to access different systems with a single sign-on. The framework permits the administration of master data, business logs, users' rights administration and access to e-authorisation.
- **Operational support service** – Provides service management.
- **Industrial and commercial management system** – For the storage, recording and update of records related to industry and commerce (e.g. operating licence records, property register).
- **Financial management system** – Provides financial and accounting functions. System by which the municipality keeps their accounts.
- **Local tax management system** – For the registration, administration and settlement of municipal taxes. The system provides the interface for the administration of tax returns, taxpayer accounts as well as providing connections to other external data sources (NAV, BM and the Hungarian State Treasury).
- **Property cadastre system** – Provides an interface to record of real estate rights, responsibilities and restrictions.
- **Document management system** – Management and maintenance of records for general administrative activities.
- **Inheritance registration system** – Provides records and administrative functions related to inheritance matters, also linked to data in the property cadastre system.
- **Online form management tool** – Provides editable form templates (e.g. for taxation or business records) which municipalities can select and make available to their users. These templates come pre-filled with personal and contact details, data from relevant base registries, tax ID, social security number, etc.
- **Local government e-administration single point of contact portal** – Provides an online portal by which citizens and businesses can access municipal services, and the municipal government can provide information. Users can submit forms and request information from their local government.

The municipalities are able to access the services via a browser. The end-users, the citizen and the businesses, can access the services through a local government **eAdministration portal**. The full functionality of this portal is **only accessible with a Hungarian eID** after the end-user authenticated him/herself via the Central Authentication Agent service of the Municipality ASP. Access will also be possible **via eIDAS Authentication**, which is one of the building blocks connected through the framework system to the Municipality ASP Centre, following the adherence of Hungary to the eIDAS scheme. This helps implement the once-only principle since citizens and companies only have to provide information once.

The different services provided by the Municipality ASP are integrated and able to exchange data with each other, but they can also draw on data from 27 central base registries. The 27 connected base registries include, among others the following data: personal data, address registry, vehicle registry, business registry, private entrepreneur's registry and e-Authorisations registry. Direct access to these registries ensures that the forms provided over the Municipality ASP's Local government e-administration single point of contact portal come pre-filled with critical data, avoiding repeat requests to citizens providing the same data. **The ASP centre accesses the data of the base registries via the central government service bus (KKSZB)**. The service bus provides a universal gateway by which client applications can access the base registry data. When it receives a request

for data, it authenticates the request against a System Authentication register. If this request is validated, the service is made available.

The project has **integrated the centrally provided regulated electronic administrative services** (e.g. e-identification, e-authentication, e-delivery, intelligent online forms, etc., the electronic payment service is planned to be introduced in 2019) **to comply with e-Government policy criteria** and the relevant legal provisions. Additionally, a data warehouse solution, operated by Hungarian State Treasury, is currently being developed to support the local governments' as well as the central government's planning and analysis tasks, providing big data analysis of the anonymised citizen data derived from the systems mentioned above.

Before the introduction of the Municipality ASP local governments used dozens of different types of software for their daily tasks, including outdated solutions (e.g. MS-DOS or Windows 3.1 based legacy systems from the 1990s). In some cases they did not have e-government services at all, or just a webpage for publishing information. This meant that **there was no interoperability at all on the local level**, or between the local and central level.

As of January 2019, over 99% of municipalities are using the new system. The 35 municipalities which are not using the new system are mostly well developed towns and cities with pre-existing integrated IT systems. These municipalities have been required to establish interface connections with their existing systems and the Municipality ASP's data warehouse to provide the data defined in the 257/2016 Government Decree⁵⁸.

As local governments have autonomy, they can establish databases for their own local data. But in this case they have to register these databases at the Electronic Administration Supervisory Inspectorate within the Ministry of Interior, which manages the registry of information sources. Meanwhile, the most important data is stored in national base registries. For data contained in these base registries, the local governments cannot establish local databases or duplicates.

below presents the architecture of the solution provided by the Municipality ASP Centre:

⁵⁸ 257/2016. (VIII. 31.) Korm. rendelet az önkormányzati ASP rendszerről,
<https://net.jogtar.hu/jogszabaly?docid=A1600257.KOR>

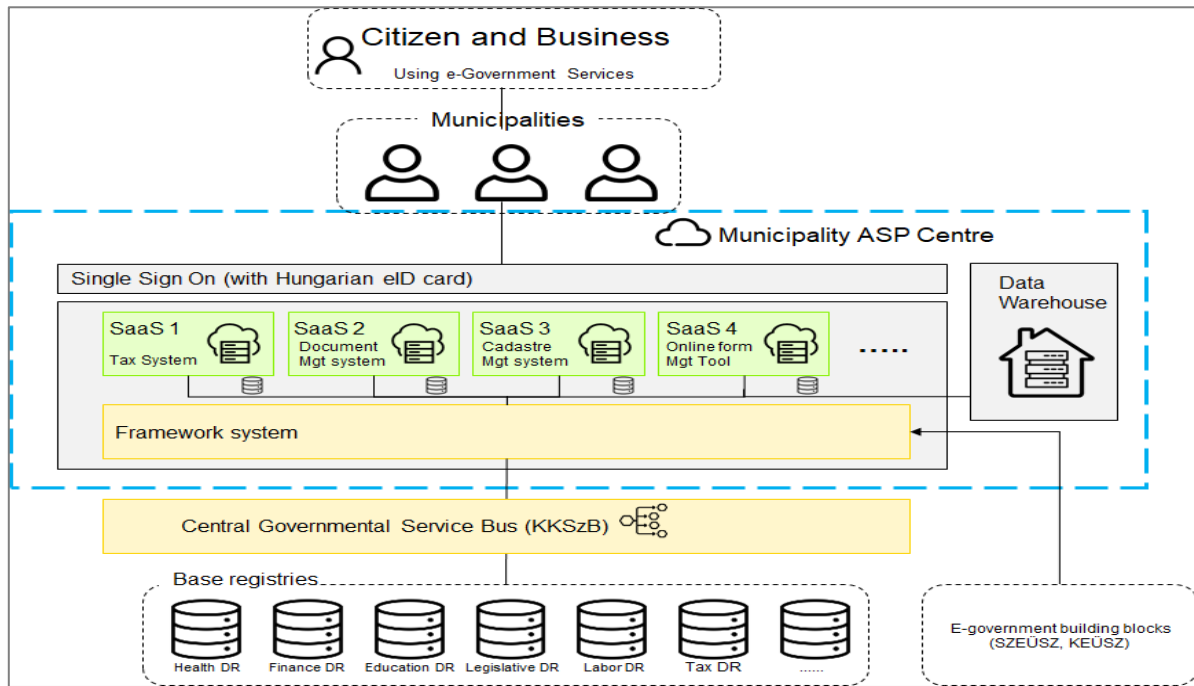


Figure 30: Solution architecture

11.4.3. Organisational Interoperability

This section aims to describe the organisational model and structure used to deliver the Municipality ASP services. It describes the entities involved in the ASP ecosystem, their relationships, the business processes they carry out, and the agreements formalising these arrangements.

11.4.3.1. Organisational model and relationships

The organisational model and tasks related to service delivery, are defined by legislation. The organisational model has been defined in the following two-fold structure:

Supervisory bodies

- Hungarian State Treasury, responsible for the development and budget plan approval;
- Ministry of Interior, responsible for the strategic management and service control.

Operational tier

- Hungarian State Treasury - responsible for customer service, operational management (administration management, project management, training, marketing, business continuity and access and service management) and the second level of application support.
- NISZ - responsible for the maintenance of the IT infrastructure required to deliver the service. In particular, NISZ is responsible for the operations regarding the framework system and portal service.
- IdomSoft - acting as developer and service provider of the government service bus used to exchange data between the ASP centre and the base registries. Due to the large amount of data and their different sources, the Ministries responsible for the different base registries (e.g. of Economics, of Justice, etc.) are called to cooperate in the management of the service bus. IdomSoft is also responsible for the development of the financial management system provided by the Municipality ASP.
- KINCSINFO - a state-owned company governed by the Hungarian State Treasury, responsible for running the day to day IT activities of the Hungarian Municipality ASP Centre and for developing the Local tax management system of the Municipality ASP.

Recommendations for organising and governing integrated public services

- Base Registries - holding personal data, address registry, vehicle registry, business registry, private entrepreneurs registry and e-Authorisations registry owned by the related Ministries.
- Building blocks: including e-identification, e-delivery, e-authentication and e-payment.

Figure 31 below shows the main components provided by these organisations:

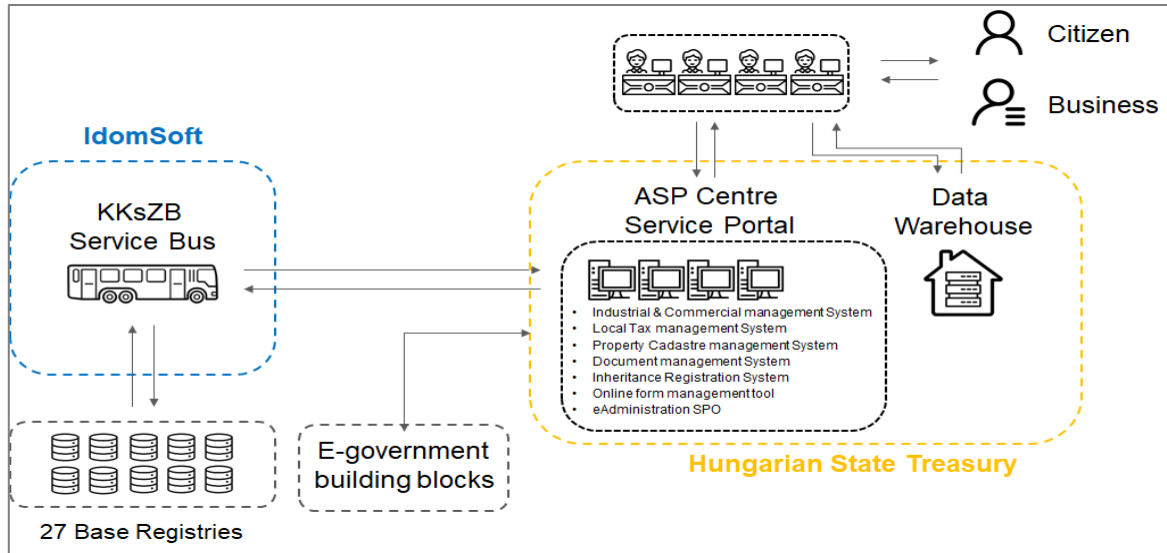


Figure 31: Components of the Municipality ASP solution

11.4.3.2. Business process standards and interfaces

The Municipality ASP Centre provides more than 20 services. Below is described the e-Government service provision process of the Hungarian Municipality ASP Centre.

1. The user (municipality/citizen and business) signs in the ASP's Local Government E-Administration Portal the point of single contact for local government e-administration.
2. Once the user has logged in, the ASP Centre provides a list of forms that the user can either choose or search for a specific one.
3. Once the user selects one of the possible forms, the template is automatically filled by the ASP Centre, which gives the following data: personal data and contact data, as well as tax ID, social security number and contact details (e-mail address, mobile phone number), the pre-filling of company data and vehicle data is under development at the moment and are expected to be launched in the following months.
4. To compile the template the Municipality ASP service requests the data needed to be filled in the form to the KKSZB Government Service Bus;
5. The Government Service Bus accepts the request for data coming from the ASP and submits it to the base registries owners.
6. The base registries owners accept it and send the requested data via the Government Service Bus.
7. Once the government service bus has received the data, it has to check the interface permission of the user.
8. In case of success, the Government Service Bus directs the data to the Municipality ASP service, which then auto-fills the template of the form which will be displayed in the service portal to the user.
9. Once the form is filled with the needed information, the user has to validate the information present in the form before submitting it. If all the information is correct, the form is ready to be submitted to the right institution.

These processes are visualised in **Figure 32** below:

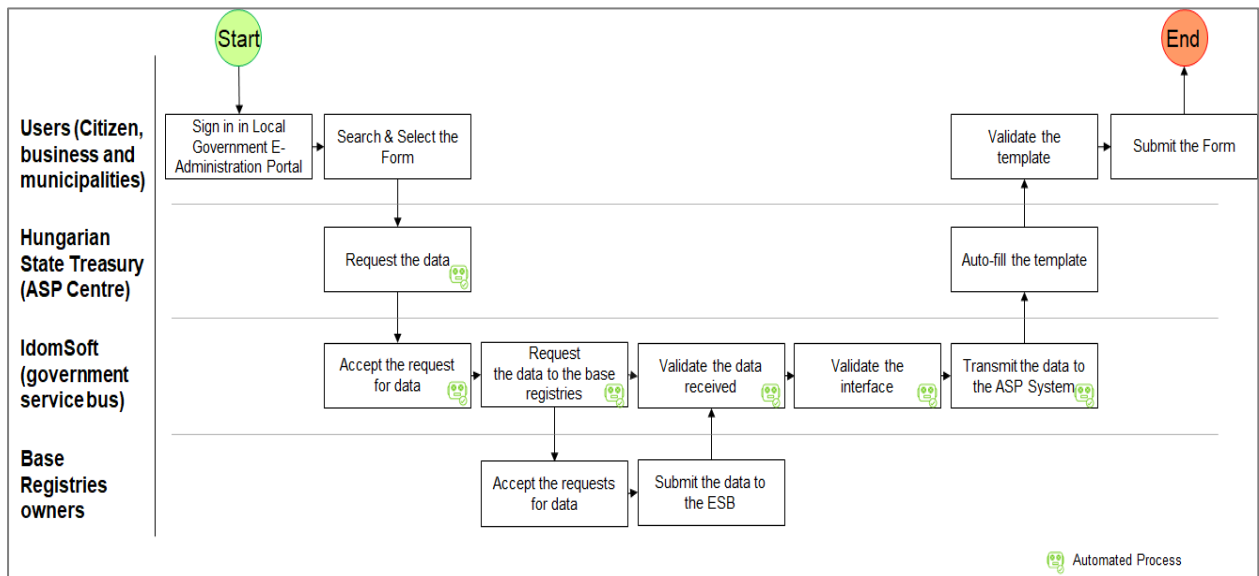


Figure 32: e-Government service provision process of the Hungarian Municipality ASP Centre

The processes and interfaces used were developed with the project consortium’s “integration and eGovernment” working group, led by the State Treasury. For interconnection with base registry data, the working group worked directly with developers from the government service bus.

The processes were developed taking into account the EIF recommendations and they **demonstrate adherence to the following EIF principles:**

- **Administrative simplification:** access to the needed data is guaranteed to citizens or businesses in a modernised and efficient way through the coordination of the system.
- **User centricity:** the eServices are available to citizens and businesses via the platform that can easily access them through the ASP’s Local Government E-Administration Portal that acts as a **point of single contact** for local government e-administration.
- **Once-only principle:** the relevant data are extracted **directly from the national base registries** and the users do not need to provide them several times. Citizens and companies only have to provide the information once.
- **Base registries:** the project starts from the implementation of the base registries, which are the core of the development of several e-services through their communication system. The new Platform publishes and aggregates them according to the new EIF recommendations. They represent, at their appropriate level, the official sources of information consultable by Citizens, business and public administrations.

In the following section, we will describe the agreements between the aforementioned entities which formalise the processes and relationships required to deliver the service.

11.4.3.3. Organisational Agreements

As stated in the legislation providing a basis for the Municipality ASP Centre, each **of the municipalities must enter into a service agreement with the Hungarian State Treasury.**

Recommendations for organising and governing integrated public services

This agreement covers the services that will be provided through the ASP Centre, the obligation of the municipality to connect to the system, how data will be handled – with the municipality acknowledging the service provider as a data processor for the data stored in the ASP Centre. In annex to this agreement, there are further terms and conditions⁵⁹ which lay down the obligations and responsibilities of both the municipality and the service provider (the Hungarian State Treasury). On the side of the municipality, these obligations include the provision of the connection to the Municipality ASP, while on the side of the Hungarian State Treasury, these obligations include taking responsibility for data content and quality. The terms and conditions also include points on ensuring IT security, subcontracting specific tasks, data migration, and communication, as well as providing the service catalogue for each of the professional systems provided under the ASP Centre.

According to the e-Administration Act⁶⁰ passed in 2015 by the Hungarian legislature⁶¹, the 27 central base registries are required to enable automatic data exchange with other government organisations over the government service bus. The Municipality ASP, therefore, **has just one single contract on behalf of all connected municipalities (over 3100 municipalities) with each of these base registries and additionally with the Building Blocks**. This contract describes the data required by the Municipality ASP centre. Further details are not required as the centre’s right to access the data is already laid down in the law as is the method by which it will be provided.

Figure 33 provides a visualisation of the agreements between the organisations described above.

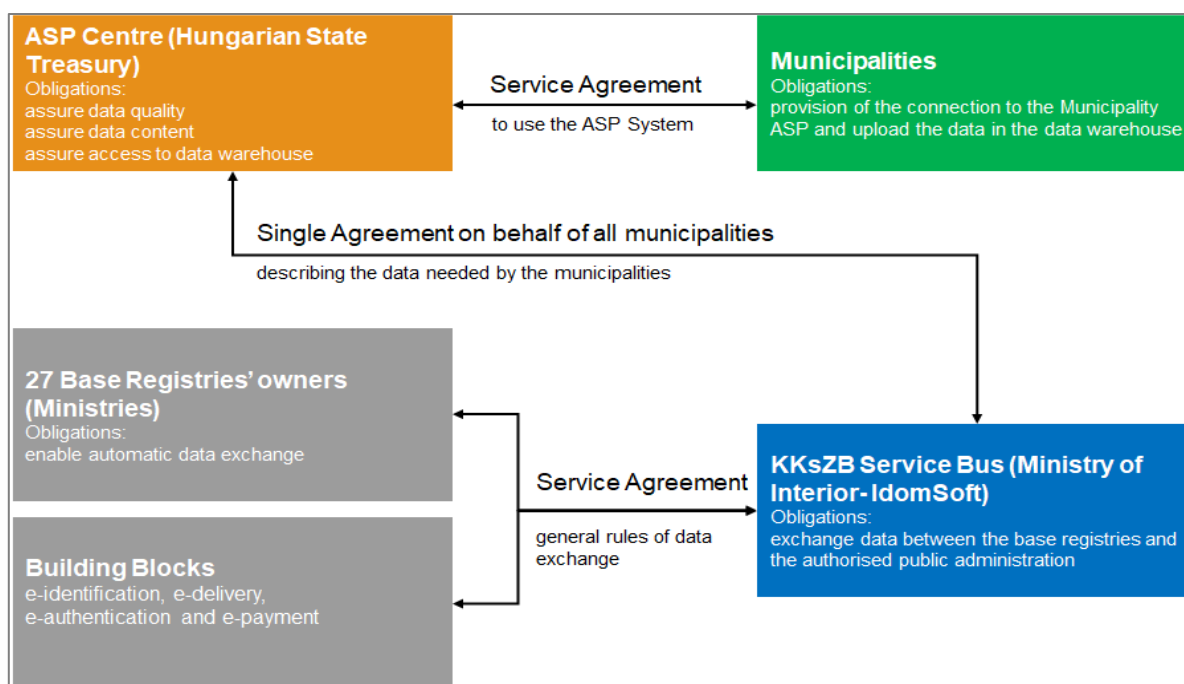


Figure 33: Agreements between entities

⁶⁰ évi CCXXII. törvény az elektronikus ügyintézés és a bizalmi szolgáltatások általános szabályairól (Act CCXXII. of 2015 on eAdministration and trust services), http://njt.hu/cgi_bin/njt_doc.cgi?docid=193173.316582

11.4.4. Integrated Public Service Governance

The following section presents how issues related to **integrated public service governance** were addressed in setting up the Municipality ASP Centre. This covers who made the decisions required to develop and deliver the service, and how these decisions were made. This is done for each of the phases defined in the roadmap for **integrated public service governance**: plan and select; provide framework and set standards; monitor and maintain.

11.4.4.1. Plan and Select – Approach to governance

The main founder of the project is **the Ministry of Interior, which is responsible for e-government policy as well as local government policy within the Government**. An initial pilot project was carried out between 2012 and 2015 together with 55 volunteering municipalities from Central Hungary. Following the success of this pilot, the decision was taken to further develop the functionality of the Municipality ASP Centre and extend it to a country-wide project.

This project was established with the Ministry of Interior as project sponsor, and financing was obtained through EU funds via the Public Administration and Civil Service Development Operational Programme. In order to ensure full involvement and commitment of all necessary stakeholders and access to the required resources, a project consortium was established. The Governmental Information-Technology Development Agency (GITDA) was given the role of project administrator and leader of the project consortium. The other members of the project consortium were:

- Ministry of Interior
- Hungarian State Treasury
- State-owned companies:
 - KINCSINFO – IT company responsible for the Hungarian State Treasury IT infrastructure
 - National Info communication Service Provider (NISZ) – IT agency responsible for the maintenance of the base IT infrastructure
 - Kopint-Datorg – a subsidiary of NISZ, IT agency responsible for the service portal
 - Idomsoft –IdomSoft⁶²– a subsidiary of NISZ, IT agency responsible for the Government Enterprise Service Bus

With the project consortium, the decision-making bodies are as follows:

- **High-Level Support Body**, composed of the representative of the consortium and the State Secretary for Administration. This support body was responsible for providing strategic guidance.
- **Project Sponsor**, represented by the Ministry of Interior – the initiator of the project.
- **Project Steering Committee**, composed of the representatives of the consortium, who were responsible for the monitoring of the project on a weekly base.
- **Project Management Board**, composed of all the project leaders from the entities involved.

⁶² In 2016 with the launch of the country-wide implementation project, IdomSoft became part of the consortium, responsible for developing the financial management system. Within the pilot phase between 2012-2015 an external company from Szeged won the public procurement to supply the financial management system. As well as the license for the use of the software, the source code was also purchased with the rights of further development from this supplier.

Meanwhile, **at the operational layer, a number of different groups are responsible for the development of systems and services, data warehouse and IT infrastructure.** Additionally, 5 sub-projects have been established to assess specific issues regarding the implementation of the Hungarian Municipality ASP Centre. These sub-projects are Network Development, Infrastructure Development, Application & Service Development, Data Warehouse Development and Access Management. Inside this sub-project, different working groups have been established for operational tasks.

Figure 34 below provides a visualisation of the governance structure established for the project consortium.

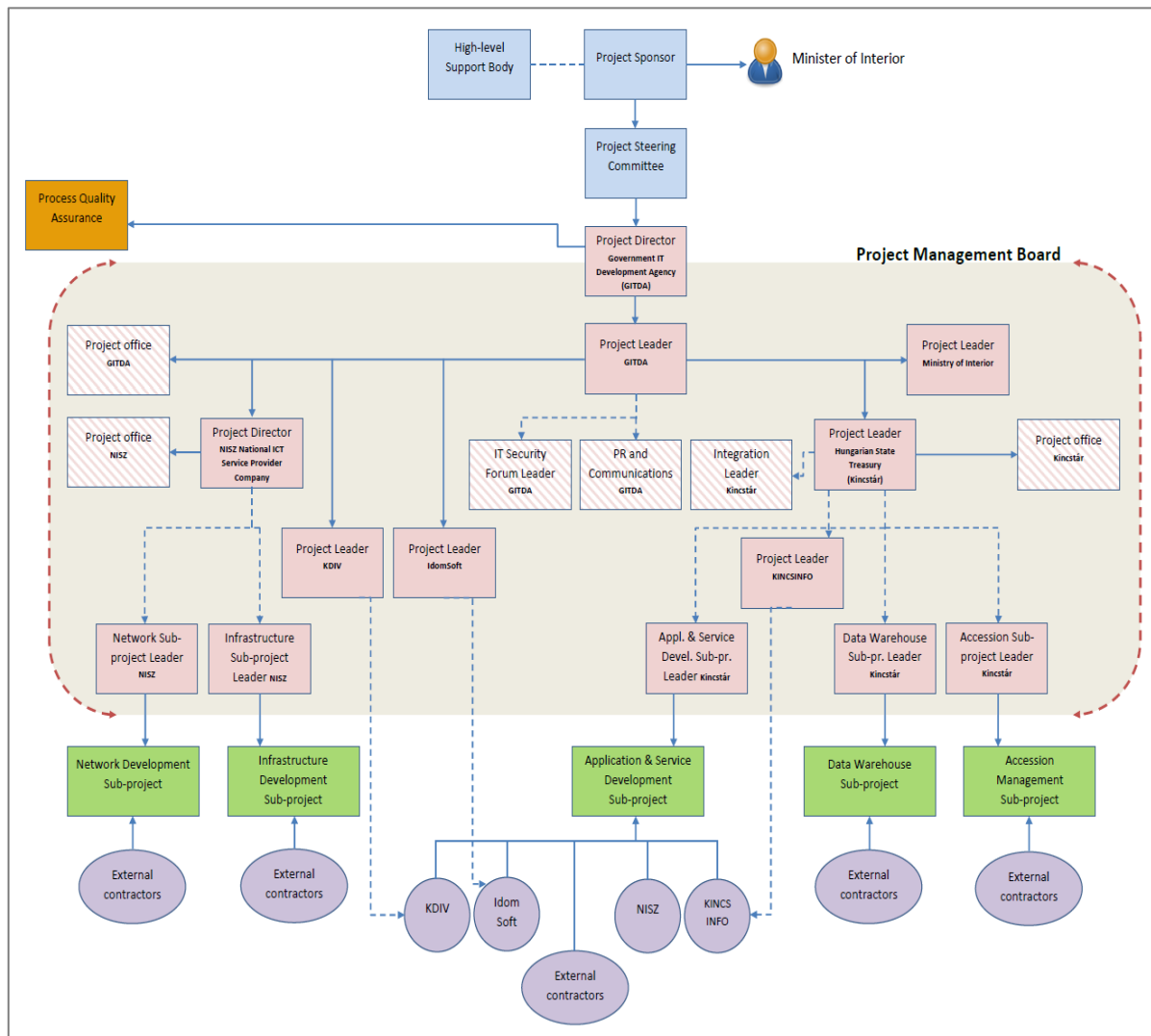


Figure 34: Project Consortium Governance

In order to set up the Municipality ASP Centre, it was necessary to pass a specific piece of legislation, Government Decree No. 257/2016. (VIII. 31.)⁶³, to provide a legal basis for the service. This legislation granted the relevant ministries and government bodies the powers needed to develop, operate and maintain the system. It established the system and defined the

⁶³ 257/2016. (VIII. 31.) Korm. rendelet az önkormányzati ASP rendszerről, <https://net.jogtar.hu/jogszabaly?docid=A1600257.KOR>

responsibilities of the Hungarian State Treasury, the Ministry of Interior and of the two IT agencies - the National Info-communication Service Provider (NISZ) and IdomSoft.

The distribution of responsibilities created by this legislation was determined through political discussions between and within the involved Ministries (Minister of the Interior and Hungarian State Treasury), and between the consortium partners. The lead ministry in developing and driving through the required legislation was the Ministry of Interior given its authority over the national and local administrations, however there was also a joint effort from all the involved public entities (Hungarian State Treasury, the Ministry of Interior and the local municipality administrations).

11.4.4.2. Provide framework and set standards – Approach to governance

This section presents how decisions are made related to the “Provide framework and set standards” phase of the roadmap for integrated public services. In general, these decisions were made through the decision-making bodies of the project consortium presented in the previous section.

11.4.4.2.1. Establish legal and organisational framework for service

As described above, a new legislative act was required in order to provide a legal basis for the Municipality ASP Centre and define the main roles and responsibilities of the organisations involved. Beyond this, additional legislation and legal changes were not required, as **a previous legal act, passed in 2015 and in force as of 2018, already defined the main rules and principles according to which eGovernment services should be provided**. This piece of legislation, the eAdministration Act⁶⁴, covers legal and organisational issues regarding the provision of eAdministration, electronic communication, electronic identification and trust services. This includes a definition of the conditions under which the centrally maintained base registries must share their data with the Municipality ASP centre – via the government service bus operated by IdomSoft. Thanks to this legislation, the different users can access the citizen data stored by the different Public Administrations in the base registries with a simple automated data transfer. The Municipality ASP Centre was designed to be compliant with the eAdministration Act, and no additional legal changes were required.

In order **to provide a clear organisational framework for the work done by the project consortium, a project funding document was also drawn up by the consortium members**. This document elaborated in greater detail on the division of duties for each of the stakeholders involved, thereby preventing conflicts of interest between the involved actors.

11.4.4.2.2. Set standards

11.4.4.2.2.1. Technical standards

The technical interoperability of the data exchange between the base registries and the Municipality ASP Centre is provided by the government service bus (KKSZB) (custom solution). As explained previously in Section 11.4.4.1, the government service bus is managed and maintained by the state-owned company IdomSoft, directly controlled by the Ministry of Interior.

⁶⁴ évi CCXXII. törvény az elektronikus ügyintézés és a bizalmi szolgáltatások általános szabályairól (Act CCXXII. of 2015 on eAdministration and trust services), http://njt.hu/cgi_bin/njt_doc.cgi?docid=193173.316582

The government service bus enables the connection of the different systems in use by the municipalities reducing also the data errors during the data exchange. KKSzB also manages the permission to access the data. Therefore, the development of authentication solutions is not necessary. The government service bus establishes the fundamental base for the implementation of the once-only principle in Hungary.

The application connects to the KKSzB gateway to reach the service as follows:

1. the KKSzB gateway sends a message to the System Authentication Register;
2. the System Authentication Register checks the validity of the message and the interface's permission;
3. the KKSzB provides the data exchange for the client e-service.

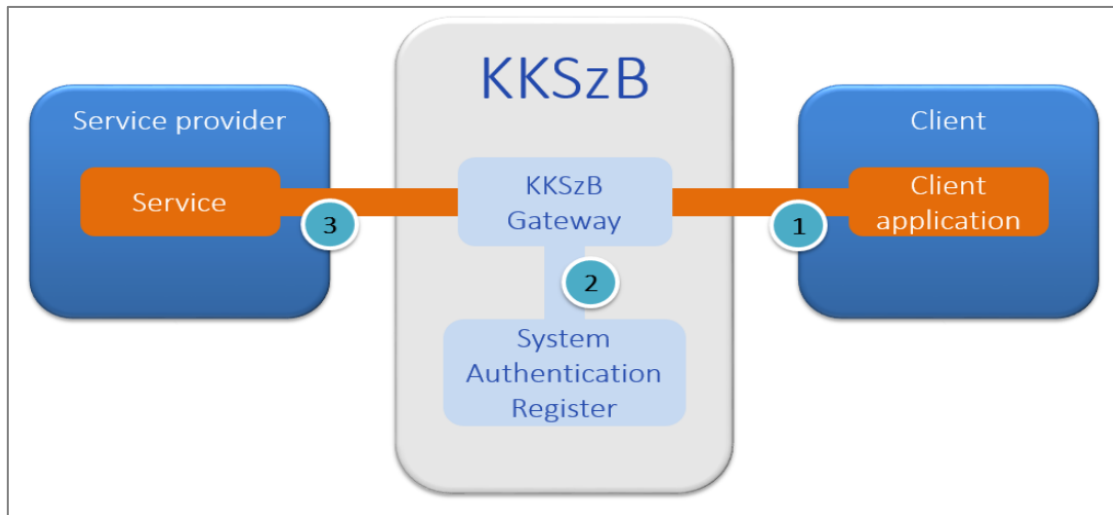


Figure 35: Logical connections between the base registries and the ASP centre via the bus

11.4.4.2.2.2. Semantic standards

There was no need for any change in semantic interoperability since the data definitions used are those pre-defined by the base registries. Therefore, it was merely a case of re-using existing definitions rather than developing and defining new ones. Since the single base registries are managed by the relevant Ministries (e.g. Ministry of Interior, Ministry of Justice etc.), it was their responsibility to provide the semantic standards of the base registries. Thanks to the Government Service Bus and the obligation of each party involved in the project to connect to it, the need to develop additional interfaces was bypassed.

11.4.4.2.2.3. Business process standards and interfaces

The business processes required to deliver the services offered through the Municipality ASP Centre, together with the interfaces by which data is exchange were developed within the project consortium's "integration and eGovernment" working group, led by the State Treasury. Where interconnection with base registry data was required, this working group worked with developers from the government service bus.

11.4.4.3. Monitor and maintain – Approach to governance

This section describes the approach taken in order to oversee the maintenance of the Municipality ASP Centre. The governance structure provided through the project consortium (described in Section 11.4.4.1) will be in operation until the end of the project (2020), after which the consortium will be

dissolved. Following this, the responsibilities for the maintenance and operation are laid down in legislation via Government Decree 257/2016. (VIII. 31.)⁶⁵ This legislation specifies that the Ministry of Interior and the State Treasury will be responsible for high level decision making. The State Treasury will oversee daily operations, with customer support, application and system support provided by the Municipality ASP Centre, within the Hungarian State Treasury.

The **maintenance of the base infrastructure is the task of the NISZ National Info communication Service Provider Ltd.** The maintenance of the service is partly based on a central service contract with the state-owned companies NISZ National Info communication Service Provider Ltd. and IdomSoft Ltd. financed by the Ministry of Interior, and partly included within the Hungarian State Treasury's own institutional budget that is directly financed by the Ministry of Finance. This means that the service is completely financed from the central state budget, and therefore it is free of charge for the users (local governments), meaning that on the local government budget level significant savings have been realised.

A number of steps have also been taken to ensure that users are able to properly use the Municipality ASP and that they are familiar and comfortable with its applications and functionalities. Training is provided for users via three main channels:

- eLearning platform⁶⁶;
- Property Cadastre System, Electronic Administration Portal, Inheritance Inventory System and Document Management System;
- Training courses at county level provided by the Hungarian State Treasury;
- Regular regional information days and consultations with local government associations.

11.4.5. Lessons learnt

The case study can be considered a success story, given the large uptake and use of ASP centre by the municipalities. More than 99% of the 3197 Hungarian local governments use the system as of August 2019. The success can be linked to the cooperation between the public administration systems based on a standardised solution that increased the level of transparency and flexibility.

11.4.5.1. Lessons for organisational interoperability

In relation to **organisational interoperability**, the following points can be taken as good practices for other administrations to consider implementing when developing integrated public services.

Lesson 1: Draw on existing technical infrastructure and resources where possible

Drawing on existing technical infrastructure and resources can simplify the process of setting up a new integrated service and enabling the relevant organisations to work together effectively and efficiently. In this case, re-use of the existing government service bus ensured that it was straightforward for the project to draw on base registry data.

Pursue administrative simplification where possible when formalising organisational relationships

⁶⁵ 257/2016. (VIII. 31.) Korm. rendelet az önkormányzati ASP rendszerről,
<https://net.jogtar.hu/jogszabaly?docid=A1600257.KOR>

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When setting up a new integrated public service, it is necessary to reach a large number of agreements between the organisations involved in order to provide a solid legal basis for the service and ensure that respective responsibilities are well defined and understood. Due to the large number of agreements required this can involve substantial administrative burden, which should be minimised where possible. In the example of the Municipality ASP Centre, this minimisation of administrative burden was achieved by empowering the ASP Centre to reach a single interoperability agreement with the base registries from which data is accessed, on behalf of all municipalities.

11.4.5.2. Lessons for integrated public service governance

In relation to **integrated public service governance** the following points can be taken as good practices for other administrations to implement when developing new integrated public services.

Lesson 1: Consider combining legal acts and organisational agreements to provide a clear governance structure

In order to provide a clear governance structure for the Municipality ASP Centre, both a legal act and organisational agreements were used. The legal act outlined the core responsibilities of each organisation involved, drawing on the experience of the earlier pilot programme, and providing a solid foundation for the service. Meanwhile, a project funding document was used to provide a detailed division of responsibilities across the relevant stakeholders.


Lesson 2: Plan for an evolution of governance structures over the course of the project

An evolution of governance structures over the course of the project, from the development to the operational stages, should be planned for. This can help ensure that the necessary input from a wide range of stakeholders is received during the development phases, as provide for by the project consortium for the Municipality ASP Centre. Meanwhile, a shift in the governance structure to ensure that a smaller group of core stakeholders are responsible during the operational phase should be considered for reasons of efficacy.


11.5. Case Study 5: Automated Social Energy Tariff (ASET)


11.5.1. Case summary


Case study summary

 **Abstract:** This case study presents how the Portuguese Secretaries of State for justice, energy, tax and social security implemented the Automated Social Energy Tariff (ASET) in order to grant a social benefit to low-income families. The case study focusses on how these organisations dealt with issues related to **integrated public service governance** and **organisational interoperability** in setting up this service.

To set up ASET, the Portuguese Interoperability Platform (iAP) was used. The iAP facilitates cross-sectoral collaboration by providing a common platform for the exchange of data between public administrations. This has enabled the creation of an automated process to check the eligibility of citizens for the social benefit, drawing on data held by different parts of the public administration. This re-use of existing infrastructure is a crucial **organisational** feature used in developing the new service: its proactive design means that there is no need for an initial application from the citizen. In terms of **governance**, the key point to take from the integrated service is the shift from a governance structure that incorporates input from a range of stakeholders during the development phase to a light-touch structure in which the organisations involved in service delivery only meet if there is some clearly identified need for improvement.

 **Service description:** in 2016, the secretaries of state for justice, energy, tax, and social security decided to implement a new system – ASET – for granting the social energy tariff. The existing system was seen as inefficient as energy suppliers were not promoting the reduced tariff as much as desired and the administrative burden for citizens was a barrier for many families. The responsibility for the tariff shifted from energy providers to the Directorate-General for Energy and Geology. DGEG developed an information system to process the records from every energy supplier automatically, and drew on the existing interoperability platform (iAP) to enable an exchange of information and data with other public organisations (social security and tax authorities) in order to assess the eligibility of citizens for the reduced tariff. Citizens are able to opt out of the reduced energy tariff if they wish to.

 **Integrated public service governance features:** DGEG is the lead organisation for the Automated Social Energy Tariff, with responsibility for awarding the reduced tariff. During the development of the service, a series of working groups with other public organisations (including the Administrative Modernisation Agency responsible for the iAP) ensured the necessary expertise and input were gathered to ensure a well-designed service. The core responsibilities of each organisation involved in service delivery are defined in regulation. During the operational phase, DGEG has overall responsibility for the service, while other organisations retain responsibility for the smooth operation of the tasks allocated to them. These organisations involved in service delivery only meet in working groups if there is a specific need to do so.

 **Organisational interoperability features:** ASET is designed to be proactive, meaning that the citizen does not need to initiate an application for the reduced tariff, but instead this responsibility is allocated to the State (DGEG). The service draws on the existing interoperability platform (iAP) to ensure that data held by different public organisations

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(social security, tax authorities) can be used to assess whether a citizen is eligible for the tariff. Via the iAP, DGEG sends the social security and tax authorities information on citizens potentially eligible (identified using their tax identification number). These authorities assess whether the citizens are eligible for the tariff using the data they hold on them. They do not share this data with DGEG, but instead just tell it whether the citizen is eligible for the tariff based on the data they hold. In addition, protocols signed by each of the organisations involved define the core roles, the exact data and information to be exchanged, and how the eligibility criteria are to be applied.



Key lessons:

Integrated public service governance:

- Shift governance arrangements between the development and operational phases.
- Define key principles for e-government services in legislation.

Organisational interoperability:

- Consider a proactive service design to reduce burden on citizens.
- Agree protocols in addition to legislation in order to define organisational responsibilities in detail.
- Re-use existing infrastructure where possible to facilitate cross-sectoral collaboration.

Case study details



Lead organisation/s: Directorate-General for Energy and Geology of the ministry of economy and i-Intelligent Energy Europe, Tax Authority, IT Institute for Social Security, Administrative Modernisation Agency



Location: Portugal



Level of government: National



Level of data exchange: National



Project dates: ASET was deployed in May 2016



Maturity: High maturity, around 14% of all Portuguese households benefit from this measure (764,000 households receive the social tariff for electricity and 34,200 receive it for natural gas)



Domain: energy/electricity and natural gas



Use-case: The Automated Social Energy Tariff, (ASET), provides an automated assessment of citizens' eligibility for a reduced energy tariff



Contact email:

DGEG: Marlene Neves,
marlene.neves@dgeg.gov.pt;
AMA: eri@ama.pt



Website:

Social energy tariff website,
<https://www.tarifasocial.dgeg.gov.pt/>

11.5.2. Case study details and background

In the context of the Ordinance no. 178-B/2016⁶⁷ the Automated Social Energy Tariff (ASET) was deployed in 2016 as an innovative way to provide social protection. It can be considered as a tangible example of how technology can aid the government to improve citizens' lives. In 2010, with the Decree-Law no. 138-A/2010⁶⁸, Portugal created the social tariff for energy supply. **To lighten the burden of energy bills for low-income families, the Portuguese Government launched the "Social Energy Tariff", promoting reduced fees for those most in need.** This initiative did not include an automatic digital system and its results were lower than expected, as energy suppliers did not promote this reduced tariff as much as desired (this initiative meant a decrease in the energy supplier's revenues). In addition, the administrative burden put on the citizens acted as a barrier to many families, as a lot of paperwork was required to prove that the income of the family indeed met the criteria for the tariff, with a single file, in general, taking several months to complete. Some families were also not aware of the existence of this reduced tariff.

To counteract this tendency, in 2016, **Secretaries of State (justice, energy, tax, social security) came together and decided to implement a new system to deliver the service** thereby making use of data already held on citizens:

- Tax authority – income data
- Social security – data on benefits
- Energy suppliers – information on contracts

The responsibility for the tariff's application changed from the energy suppliers to the State, namely to DGEG. To introduce the new energy tariff, **DGEG developed an information system** that automatically processes around four million records from every energy supplier. This information system **uses the Integration Platform developed by the Administrative Modernization Agency (AMA)**. The Integration Platform acts as a central Interoperability node with a catalogue of web services, providing access to the base registry data required for ASET held by the Social Security and Tax Authorities. This Integration Platform is part of the Interoperability in Public Administration (iAP) concept, aligned with the European Interoperability Framework (EIF).

DGEG shares information on the tax identification number of citizens, name and address, over the iAP platform to the Social Security and Tax Authorities. The Social Security and Tax Authorities check the eligibility of the citizens by cross-matching the data with their internal database (annual income and tax expenditure). This financial and social information never leaves the Tax Authority and Social Security internal databases ensuring confidentiality and privacy. The Tax Authority and Social Security sends information on whether the citizens are eligible for the reduced tariff according to their data to DGEG.

After cross-checking the data received by the Tax Authority and Social Security, the DGED sends the list of eligible customers to the various energy companies, in a binary reply that merely informs them if the client is entitled to ASET. It obliges them to change the tariff and inform the clients of the modification as described in Ordinance no° 178-B/201667.

The **eligibility criteria are checked every year in September for every contract**, meaning that a household which is entitled to the tariff will maintain that benefit for at least one year even if their status changes (e.g. increase in annual income of the household). Eligibility checks for new contracts

⁶⁷ Order no. 178-B/2016: <https://dre.pt/application/conteudo/74848641>

⁶⁸ Decree-Law no. 138-A/2010: <https://dre.pt/application/file/666979>

and for updated contracts, are run every three months, so as to ensure that families in need are taken into account in a timely manner.

Looking at the performance of the system, the **implementation of the Automated Social Energy Tariff (ASET) resulted in a fare jump from 150,000 to 850,000 eligible customers**. An increase of roughly 400% in the number of households benefiting from the reduced tariff.

The main stakeholders in this project are:

- Directorate-General for Energy and Geology (DGEG) - responsible overall for the application of the reduced tariff;
- Social security (IISS) - responsible for the social security check;
- Tax Authority (TA) - responsible for the income check;
- Administrative Modernisation Agency (AMA) - provides and maintains the national interoperability platform (iAP);
- Energy providers – responsible for informing their customers about the modification of the tariff;
- Logistic Trader Change Operator (OLMC) - responsible for adding the energy consumption data of citizens to the list of possible eligible customers;
- Distribution network operators - responsible for collecting data from energy providers;
- Citizens - the potential beneficiaries of the reduced energy tariff.

All these stakeholders, except for the citizens, are responsible for the implementation and service continuity of this system. Each social tariff is composed as follow:

Social tariff for natural gas: applies to economically vulnerable end-users and is calculated by applying a discount on the access tariff for low-pressure networks. The eligibility criteria coincide with the benefits granted under the social security system, in line with the one established for the electricity sector. The beneficiaries may request the application of the social tariff as one of:

- i. Solidarity supplement for the elderly;
- ii. The social insertion income;
- iii. The unemployment allowance;
- iv. The first step of the family allowance;
- v. The invalidity social pension.

Social tariff for electricity: applies to final energy customers who are in a situation of socioeconomic need, according to eligibility criteria that coincide with the benefits granted by the social security system. The electricity traders must authorise the OLMC⁶⁹ to send to DGEG, by electronic transmission of data, the following information regarding the final customers who meet the conditions set out in article 5 of Decree Law no. 138-A/201068, of December 28th 2010:

- i. Full name;
- ii. Tax Identification Number (NIF);
- iii. Point of Delivery Code (CPE);
- iv. Full CPE.

ASET is today a mature system, operating out of sight of citizens, that works extremely well and which has had such impact that the process is now being applied to other areas such as water supply and wastewater management. It represents the future of digital public services: seamless, effective,

⁶⁹ Low Voltage Distribution Network Operators (ORD) transmit this information to the Electricity Trader Change Process Manager (GPMC-EE).

provided without unnecessary interactions with the Government and making full use of the “once-only⁷⁰” principle, thanks to the interoperability between entities.

11.5.3. Organisational Interoperability

This section aims at describing the organisational model for ASET with a description of all entities involved in the Energy Social Fare ecosystem, their relationships and agreements, and the business processes by which ASET is implemented.

11.5.3.1. Organisational model and relationships

ASET’s organisational model is composed of the following entities:

- **DGEG** is leading the initiative. DGEG is responsible for verifying the compliance with the procedures concerning the application of the social tariff and for the resolution of potential conflicts regarding the application of the tariff. DGEG is also responsible for the data cross-check with the Tax and the Social security databases to verify the citizens’ eligibility to receive a reduced tariff. DGEG receives the list of potentially eligible customers from the **Logistic Trader Change Operator (OLMC)**.
- **Tax Authority** is responsible for cross-checking the data provided by the DGET against income data to analyse whether the customer is eligible. Based on the results of the check it provides feedback on the eligibility of Social Fare benefit in the form of “Yes” and “No” to DGEG.
- **Information Institute of Social security (IISS)** is responsible for cross-checking the data provided by DGEG against social security data to analyse whether the customer is eligible. Based on the results of the check it provides feedback on the eligibility of Social Fare benefit in the form of “Yes” and “No” to DGEG.
- **Energy providers** have a twofold role. First, since the energy providers hold the contracts of the customers, they share this contract data with the Distribution Network Operators so that a list of potentially eligible citizens can be created. Secondly, they are responsible for communicating the results of the assessment of eligibility for the reduced energy tariff to the customers.
- **Logistic Trader Change Operator (OLMC)** is responsible to provide DGEG the list of potentially eligible customers and inform the Distribution Network Operators whether or not to apply the Social Fare benefit to the customers.
- **Distribution Network Operators (DNO)** are responsible to transmit to the OLMC the following data: full name, tax identification number, point of delivery code and full delivery code. The Distribution Network operators are informed by the OLMC whether or not to apply the reduced energy tariff and communicate this information to the Energy providers.
- **Administrative Modernisation Agency (AMA)** is the provider of the national interoperability platform (iAP) and acts as a broker for entities wishing to transmit data.

In short, DGEG receives the information (tax number, address, name) on potentially eligible citizens from OLMC. The service has a pro-active structure, and does not require an application or active involvement from citizens in order to activate the service. DGEG sends the information received to both Social Security and the Tax Authority through the iAP (entities connect to iAP via web services). Social Security and the Tax Authority then check if the criteria are met (the Tax Authority verifies the annual income threshold and Social Security verifies social benefits) and then return a yes/no

⁷⁰ Once-Only principle, url: <https://ec.europa.eu/digital-single-market/en/news/eu-wide-digital-once-only-principle-citizens-and-businesses-policy-options-and-their-impacts>

response to DGEG through iAP as well. DGEG cannot request the necessary data from the Social Security and Tax Authority to make this assessment itself for security and privacy reasons. The results of the eligibility assessment are communicated to the citizen by the energy suppliers, via the OLMC and DNOs. These organisational roles and the exchange of information between the involved entities are described in the figure below.

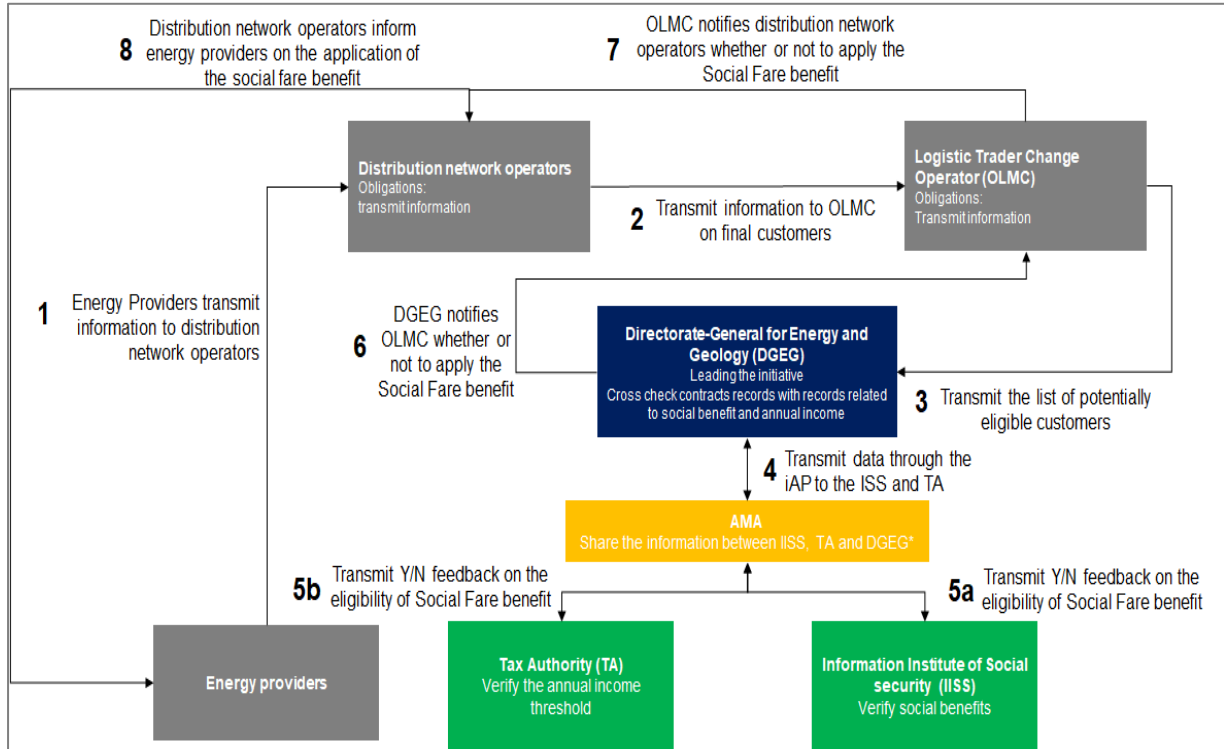


Figure 36: Organisational model and data exchange

11.5.3.2. Business process standards and interfaces

The interfaces for the data exchange are represented by the following elements:

- **DGEG information system:** automatically processes around 4 million records from every energy supplier
- **iAP platform:** acts as a broker entity used to transmit data between DGEG, TA and IISS

The business processes for the activation of the Automated Social Energy Tariff involves all the stakeholders presented in the previous section. The following hierarchical steps are carried out as also described below in Figure 37:

1. The Distribution Network Operator (DNO) collects the data on customers. Precisely, the DNO collects all the personal data including the Tax Identification Number, Energy Delivery Point and Address. It then submits these data to the Logistic Operator of Supplier Change (OLMC);
2. The OLMC collects the data and integrates it with the information on energy and gas consumption;
3. The OLMC transmits to DGEG all contracts that meet general criteria (i.e. annual consumption of electricity for domestic use lower than, or equal to, 6.9 kVA, annual consumption of natural gas for domestic use lower than, or equal to, 500 m³);
4. Directorate-General for Energy and Geology collects and elaborates the data from OLMC and sends through the iAP platform the list of possible eligible customers to the Tax Authority and Informatics Institute of Social Security for the eligibility check;

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5. The TA and ISS collect the data and cross-check it with the eligibility criteria (respectively annual income threshold and social security benefit). After the fulfilment of the eligibility check process, the TA and IISS submit, through the iAP platform, in a binary reply Yes or No on the eligibility of the Social Fare benefit;
6. DGEG assesses the eligibility condition in terms of “permanent housing” in the “Yes” situations from TA and/or IISS. Then it compares the TA address and the IISS address with the delivery point address, by an algorithm. As result of the process, DGEG transmit the information to the OLMC in a binary reply that merely informs them if the client is entitled to ASET and obliges the energy provider to change the tariff and inform the clients of the modification.
7. The OLMC transmits the information received to the Distribution Network Operator;
8. The Distribution Network Operator informs the Energy Suppliers and obliges them to change the tariff;
9. The Energy Suppliers activates the Social Tariff and notifies the modification of the energy tariff to customers through the bills;
10. The customers receive the notification of the activation of the ASET.

This process is carried out once every year for existing contracts that have not changed, to assess whether the citizen has become eligible or is no longer eligible for the reduced tariff. For new contracts, or those that have been updated, the process is carried out every three months.

Citizens also have the possibility of submitting a complaint either to their energy supplier or directly to DGEG. To submit a complaint to the DGEG, the customer can either send it using an online form⁷¹ or by letter. DGEG analyses the complaint and the available information in the information system regarding the various automatic processing. If for some reason, the social tariff has not been automatically applied, DGEG requests the energy sector agents to rectify the social tariff on the customer's invoices in the corresponding period and informs the customer of the resolution of their situation.

The application of the social tariff is communicated together with the next energy bill, where it is also stated that the customer has the right to refuse the social tariff within 30 days. After this time, the reduced tariff is considered accepted. The social tariff is only very occasionally refused.

⁷¹ *Social tariff Information Request / Complaint*; www.tarifasocial.dgeg.gov.pt

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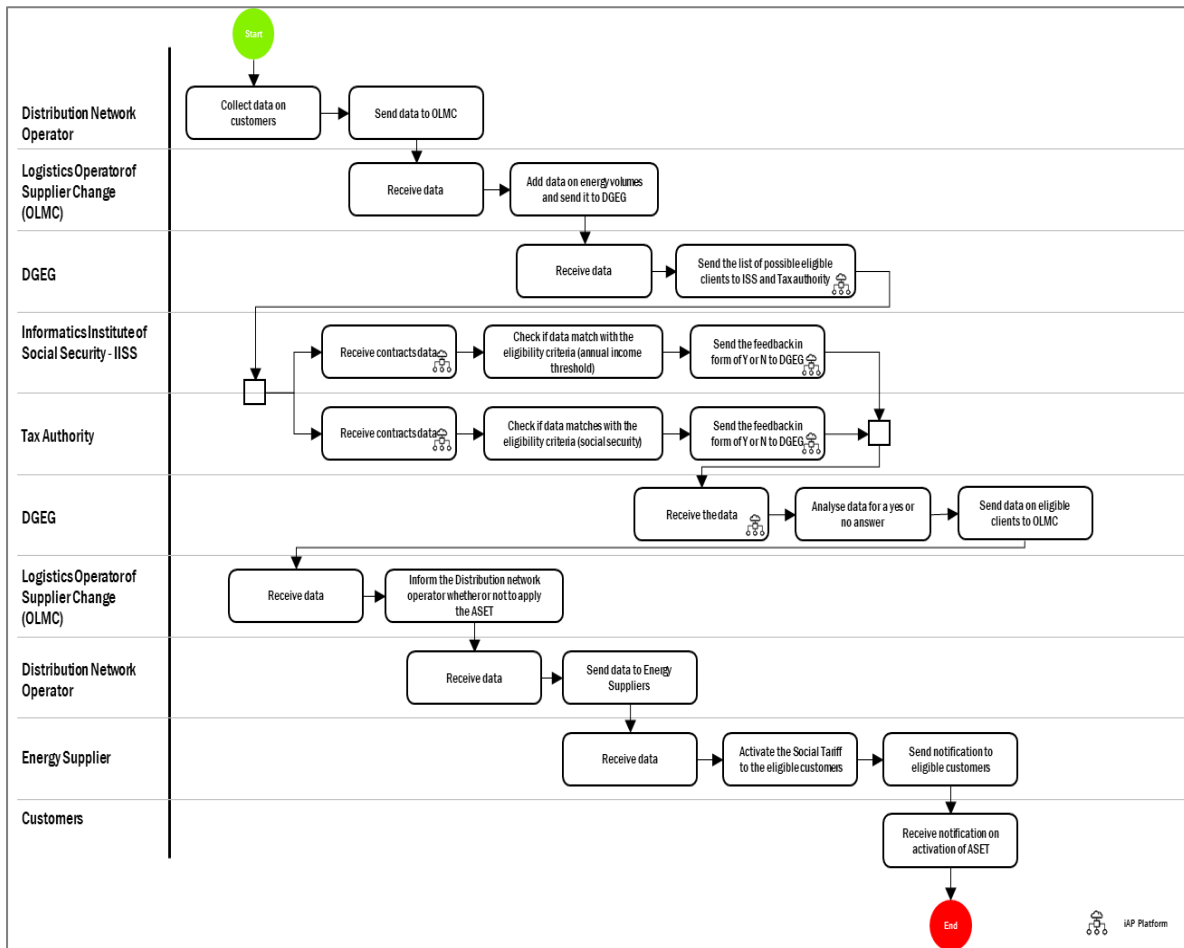


Figure 37: ASET Information Process

11.5.3.3. Organisational Agreements

The access and transmission of the data is subject to the Deliberation of the “Comissão Nacional de Proteção de Dados”⁷² (CNPD) and **regulated by protocols signed between the Tax Authority, Social Security, Institute of Informatics, AMA, General Directorate of Energy and Geology, EDP Distribuição - Energia SA and REN - Gasodutos, SA** which were considered by the National Authority for Personal Data Control as compliant with the principles of personal data protection and applicable law.

The protocols were signed in June 2016, before the first automatic procedure, after the necessary legislation automating the process was enacted. There was a Council of Ministers Resolution ordering the protocols to be approved by the areas of Administrative Modernization, Finance, Social Security and Energy. These **protocols set out the terms and conditions for determining and confirming the situation of economically vulnerable end customers**, as beneficiaries of the reduced energy tariff, as well as the **flow of information between the operators** of the distribution network and the commercial traders to identify individuals who are consumers.

⁷² CNPD: <https://www.cnpd.pt/>

11.5.4. Integrated Public Service Governance

The following section presents and assesses the governance structures that provide oversight over the development and implementation of ASET. It describes how these governance structures make decisions related to each stage of the roadmap for integrated public services: plan and select; provide framework and set standards; and monitor and maintain.

11.5.4.1. Plan and Select – Approach to governance

In the early planning of the project **several working meetings, at political level, took place to develop the integrated public service** and in particular the organisational model, data sources and shared services in scope. In these working meetings the following entities were involved:

- Office of Secretary of State for Energy
- Office of Secretary of State for Finance
- Office of Secretary of State for Social Security
- DGEG
- AMA
- Informatic Institute of Social Security (IISS)
- Tax Authority

The standard operations for the service have been defined in the early planning of the project during these working meetings. **The meetings were conducted under the leadership of DGEG, but with the collaboration and input of each of the entities involved**, which provided input in their areas of expertise. AMA, for example runs the interoperability platform (iAP) and so it took the lead on the technical aspects related to this.

The decisions taken at political level during the working groups in 2016 were given legally binding effect in Law n. 7-A/2016⁷³, of March 30. The Law approved the State Budget for 2016 and changed the legal regime for social support to energy consumption, looking to create a single model and an automatic entitlement to gas and electricity social tariffs. With this Law the leadership of the ASET passed to DGEG. In addition, national Law n. 178-B/2016⁶⁷ defines the main responsibilities of each of the entities involved in delivering the service.

11.5.4.2. Provide framework and set standards – Approach to governance

This section presents how decisions are made related to the “Provide framework and set standards” phase of the roadmap for integrated public services. This phase involves providing the legal and organisational framework by which the service is delivered and selecting the necessary standards.

11.5.4.2.1. Establish legal and organisational framework for the service

As explained in the section above, the legal basis for ASET was provided by Decree Law 7-A/2016, which established a single automated process for the assignment of the Social Energy Tariff to citizens by analysing all the data from the involved public and private organisations. **In terms of the wider legal framework which enabled the service, these was largely provided by existing legislation** that had been established to facilitate and enable data sharing over the interoperability platform iAP. These legislative steps include:

⁷³ Decree-Law 7-A/2016: <https://dre.pt/application/file/73966319>

- The **enforcement of the use of Open Standards** in public administrations' information systems for describing their internal data, according to Decree-Law n° 36/2011⁷⁴, of June 21. The law has been defined under the National Digital Interoperability Regulation of 2012, approved by Resolution of the Council of Ministers n°91/2012, of November 8⁷⁵.
- The **consecration of the only-once principle**, in accordance with Article 28-A of Decree-Law no. 135/99, of April 22⁷⁶, according to the wording established by Decree-Law no. 73/2014, of May 13⁷⁷. The scope of these decrees is to establish a set of rules and guidelines for public administration modernisation and increase the ease of use of public services for citizens.
- The **preferential adoption of the iAP Platform** as a means of exchanging data among public entities in accordance with the Resolution of the Council of Ministers no. 42/2015 of June 19⁷⁸.

ASET is also applied in compliance with Article 35 of the Portuguese Republic Constitution⁷⁹ and Article 6 (1) of the GDPR⁸⁰. For this reason the involved entities must receive the consent for data sharing from citizens, unless:

- a) the processing is necessary for the fulfilment of a legal obligation to which the controller is subject;
- b) the processing is necessary for the defence of vital interests of the data owner or another natural person;
- c) the processing is necessary for the performance of functions of public interest or for the exercise of the public authority of which the controller is invested.

Another important part of the **background legal framework is the European legislation regarding the prices and availability of energy to citizens**, established in 2011, emphasising that all citizens should have equal access to energy. In Portugal, the legislation creating the Social Energy Tariff, which aimed to lighten the burden of energy bills on low-income families, was in fact established in 2010, pre-empting the European legislation.

On the organisational level, an important adjustment created by the legislation establishing ASET, has been the **transfer of the responsibility to activate the tariff from the energy supplier to DGE**. This change was made by the Secretary of State for Energy because the energy suppliers were not promoting the reduced tariff as desired. Beyond the legislation described above, the resulting new organisational framework has also been formalised through the protocols described in Section 11.5.3.3.

⁷⁴ Decree-Law n° 36/2011: <https://www.anacom.pt/render.jsp?contentId=1090031>

⁷⁵ Resolution of the Council of Ministries n° 81/2012: https://joinup.ec.europa.eu/sites/default/files/inline-files/Digital_Government_Factsheets_Portugal_2019_vFINAL.pdf

⁷⁶ Decree-Law n° 135/99: <https://dre.pt/pesquisa/-/search/534640/details/maximized>

⁷⁷ Decree-Law n° 73/2014: <https://dre.pt/pesquisa/-/search/25343691/details/maximized>

⁷⁸ Resolution of the Council of Ministers no. 42/2015: https://dre.pt/home/-/dre/67540636/details/maximized?p_auth=7PgkXEza

⁷⁹ Article 35 of the Portuguese Republic Constitution: <https://www.wipo.int/edocs/lexdocs/laws/en/pt/pt045en.pdf>

⁸⁰ Article 6 (1) of the GDPR: https://edpb.europa.eu/sites/edpb/files/consultation/edpb_draft_guidelines-art_6-1-b-final_public_consultation_version_en.pdf

11.5.4.2.2. Set standards

The following section outlines how standards were selected for ASET at the technical, semantic and business process standards. In general, the decisions to use these standards (or draw on existing platforms) were made during the working meetings described in Section 11.5.4.1.

11.5.4.2.2.1. Technical standards

The information systems of the Public Administration speak different languages but have to exchange information in order to provide the ASET service. This is achieved through the use of the central **interoperability platform (iAP), which has been developed by and is maintained by AMA**, and the data exchange is conducted drawing on XML, SOAP and WSDL standards.

11.5.4.2.2.2. Semantic standards

AMA has developed the **Canonical Data Model (CDM)**, which today is the point of reference for data communication, and is used to deliver the ASET service. The services offered by the iAP are defined and described using the CDM and its specific functional and technical metadata. The entities willing to use the electronic services offered by the platform (e.g. those involved in delivering the ASET service), have to define or map their internal data model to the data model of CDM. The goal of this initiative is to standardise the languages and formats used by the catalogue of services offered by the iAP and facilitate the data exchange needed for ASET.

The CDM is based in a SOA and open standards with real time access to authentic sources of information and an Identity Federation mechanism. It includes a shared language based on common syntax, semantics and design and XML schemas defining services / processes and data. The application of the Canonical Data Model to enable the normalisation of information, by converting and transforming data formats, between the various entities connected to the iAP Platform is shown below in Figure 38.

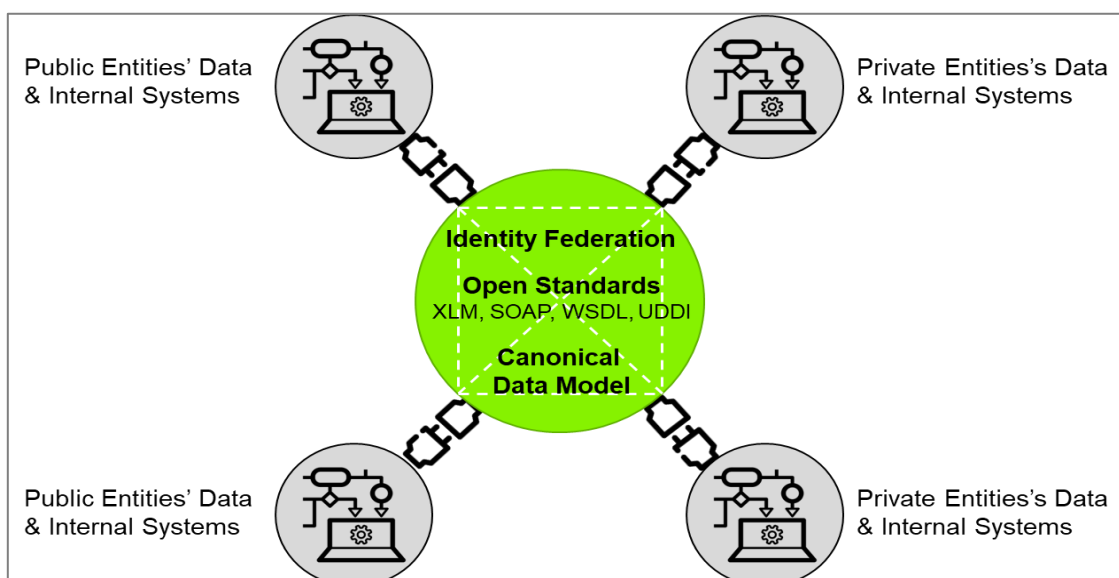


Figure 38: Identity Federation - Canonical Data Model

An important underlying law is Decree Law n° 36/2011, which established the adoption of Open Standards at national level that represents the technical enabler for the implementation of the ASET. The law established the National Regulation on Digital Interoperability in 2012, defining the

standards and digital formats which should be adopted by Public Administrations. The regulation clearly defines the data format, document format, web interfaces technologies, protocols for contents exchange, protocols for communication and integration and geographical information systems. The establishment of open standards enable the smooth and rapid implementation of ASET.

11.5.4.2.2.3. Business process standards and interfaces

The business process standards and interfaces by which ASET is implemented are described in Section Business process standards and interfaces 11.5.3.2. The development of these business processes and the selection of the interfaces to be used was done during the working meetings between the key involved entities (i.e. DGEG, TA, IISS) described in Section 11.5.4.1.

11.5.4.3. Monitor and maintain – Approach to governance

ASET is now a mature service which is running smoothly. Regarding the overall maintenance and performance of the service, **DGEG has overall responsibility and is tasked with verifying compliance with the established procedures for applying the social tariff** and for resolving any potential conflicts in the application of this tariff. However each entity involved retains responsibility for their own databases and systems and for ensuring that their tasks are completed smoothly. There are no regular working meetings between the parties involved, however on an ad-hoc basis such meetings may be organised in order to develop improvements on a technical level or to refine some interpretation of the law.

Regarding communication with citizens, a number of initiatives have also been put in place to ensure that the service is properly performing for them. An online complaints system has been set up which aims to enable citizens to question the application of the social tariff eligibility criteria and validate that the correct result has been awarded. A website and a call centre have been established to help citizens in this regard. In addition, to improve the awareness and reach of the ASET, various public entities, such as: “Entidade Reguladora dos Serviços Energéticos” (Energy Services Portuguese Regulator) – ERSE; Social Security and Tax Authority, coordinate with DGEG in a bilateral manner to ensure that they are all aligned and able to provide useful and correct information to consumers.

11.5.5. Lessons learnt

The development and delivery of ASET can be considered a success story and an excellent example of cross-sector collaboration. The automatic system for the application of the Social Energy Tariff now ensures that 14% of Portuguese households now benefit from the reduced energy tariff, with 786,000 households receiving the social tariff for electricity and 34,000 receiving it for natural gas⁸¹. The success of this model has meant that it is now being applied to other sectors (e.g., water supply and wastewater management).

A number of lessons can be taken from this case regarding both **organisational interoperability** and **integrated public service governance**.

⁸¹ The difference in the number of households receiving the tariff is due to the smaller size of the natural gas distribution network, which does not cover the entire national territory. In addition, the eligibility conditions for the natural gas social tariff are somewhat more restrictive than those to benefit from the electricity social tariff.

11.5.5.1. Lessons for organisational Interoperability

Lesson 1: Consider a pro-active service design to reduce burden on citizens

Under the model developed to deliver ASET, citizens do not have to actively apply for the reduced energy tariff. Instead using the data already held on these citizens by different organisations within the public administration, DGEG pro-actively initiates the assessment of whether the citizen is eligible for the reduced tariff. This change in organisational model, shifting the responsibility for initiating the assessment from the citizen to DGEG resulted in a large uptake in the number of citizens benefitting from the reduced tariff. Other organisations developing integrated services should look into whether similar pro-active designs could be implemented.

Lesson 2: Agree to protocols on top of legislation in order to define in detail organisational responsibilities

The core organisational responsibilities for ASET are defined in legislation. However, in order to add detail to the responsibilities provided in legislation, the organisations involved in delivering the service reached a number of protocols between them. These elaborated on points including how eligibility criteria would be applied to exactly what data would be exchanged. Organisations delivering integrated public services should consider a similar mix of legislation and protocols in order to clearly define responsibilities and tasks.

Lesson 3: Re-use existing infrastructure where possible to facilitate cross-sectoral collaboration

ASET is delivered drawing on the existing infrastructure provided by the national Portuguese interoperability platform (iAP). The existence of this infrastructure provides a common basis for organisations from different sectors to work together and collaborate. Where possible, public administrations should investigate the possibility of re-using such common infrastructures to provide new integrated services.

11.5.5.2. Lessons for integrated public service governance

Lesson 1: Shift governance arrangements between the development and operational phases

During the development of ASET a broad range of stakeholders – including high level political stakeholders – were involved in order to ensure the necessary input was gathered and an appropriately designed service was provided. Once the ASET was operational and working well, however, a smaller range of stakeholders was involved – those directly involved in service delivery. A light-touch governance approach was successfully pursued, with these stakeholders only collaborating in working meetings if a specific need for improvement was identified.

Lesson 2: Define key principles for eGovernment services in legislation

The development of ASET was greatly facilitated by the existence of key principles for eGovernment services (use of open standards, establishing the once-only principle, and mandating the use of the iAP Platform for data exchange) clearly established in law. These principles provided a framework under which ASET could be provided. Public administrations should define similar basic principles in law separate to the development of any particular service.

11.6. Summary table - Lessons learnt from case studies on organisational interoperability

Table 11: Summary table - lessons learnt on organisational interoperability

Case Study	Lessons learnt on organisational interoperability
X-Road BR	Formal interoperability contracts are crucial even for relatively simple use cases.
	The presence of an established infrastructure and standardised data exchange processes can greatly facilitate exchanges between organisations. They can mean it is not necessary to “align business processes” between organisations for simple use cases.
SBR	Pursue standardisation at the process level and also dedicate the necessary resources to maintain these process standards.
	Design and share standardised processes across organisations to reduce costs.
	Consider providing standard, unilateral SLAs to reduce the administrative burden.
	Assess how bilateral and multilateral agreements can be combined to formalise organisational relationships.
Digisos	Distribute organisational tasks and roles according to existing competences.
	Develop agreement templates to facilitate the formalisation of organisational agreements that provide clear principles on data ownership, processing and storage.
	Re-use existing systems and standards where possible.
Municipality ASP	Draw on existing technical infrastructure and resources where possible to provide the service and form the necessary connections between organisations.
	Pursue administrative simplification where possible to facilitate the formation and formalisation of organisational relationships. The case study achieved this by empowering the ASP Centre to reach a single interoperability agreement with the base registries from which data is accessed on behalf of all municipalities.
ASET	Consider a proactive service design to reduce burden on citizens.
	Agree protocols in addition to legislation in order to define organisational responsibilities in detail.
	Re-use existing infrastructure where possible to facilitate cross-sectoral collaboration.

11.7. Summary table Lessons learnt from case studies on integrated public service governance

Table 12: Summary table - lessons learnt on integrated public service governance

Case Study	Lessons learnt on integrated public service governance
X-Road BR	Reduce the need for new formal governance structures when setting up services on top of existing by building on existing technical infrastructure with

Recommendations for organising and governing integrated public services

	<p>established governance structures. This allows relatively light and informal approaches to service development to be pursued.</p> <p>Start with relatively simple use cases before moving on to more ambitious aspects.</p> <p>Political stakeholders should play an enabling role in setting up the necessary infrastructure for these projects, but should avoid involvement in technical implementation of new services except where there are roadblocks caused by disagreements between the involved organisations.</p>
SBR	<p>Involve the private sector in governance to motivate them while maintaining fora or bodies for public-only discussions.</p> <p>Balance rigidity and flexibility in the development of standards.</p>
Digisos	<p>Include a pilot phase in the project development in order to develop the service and ensure it meets user needs.</p> <p>Assess whether the service can be deployed without additional legislation.</p> <p>Identify mutual incentives in order to involve private solution providers in the development of the integrated public service.</p> <p>Develop supporting materials to promote solution uptake in a decentralised context.</p>
Municipality ASP	<p>Consider combining legal acts and organisational agreements to provide a clear governance structure.</p> <p>Plan for evolution of governance structures over the course of the project, ensuring the necessary input from a wide range of stakeholders during the development phases, and narrowing down to core stakeholders during the operational phases.</p>
ASET	<p>Shift governance arrangements between the development and operational phases.</p> <p>Define key principles for e-government services in legislation.</p>

12. ANNEX III: FIRST WORKSHOP ON ORGANISATIONAL INTEROPERABILITY AND INTEGRATED PUBLIC SERVICE GOVERNANCE

12.1. Introduction

12.1.1. Workshop report background

On 23 March 2017, the European Commission (EC) adopted the revised European Interoperability Framework (EIF), containing 47 recommendations aimed at helping Member States achieve interoperability together with an Interoperability Action Plan (IAP).

The EIF conceptual model defines a number of key concepts including Interoperability Governance, **Organisational Interoperability** and **Integrated Public Service Governance**, each one with specific recommendations for their implementation, available in the action plan. These concepts are at the core of the ISA² action: EIF Implementation and Governance Models, and activities to further develop them and provide guidance on them are foreseen under Actions 2 and 6 of the [Interoperability Action Plan](#)⁸²:

- **Action 2:** Identify and describe governance structures and good practices for interoperability coordination
- **Action 6:** Clarify and propose ways to formalise public administrations' organisational relationships as part of the establishment of European public services. Identify and develop common process models to describe business processes. Identify best practices

In line with this action, the European Commission is currently carrying out a study to identify and describe governance structures, **organisational interoperability** models and good practices for interoperability coordination for public administrations. As part of the activities included in this study, the European Commission will host two workshops: one to collect data to support the development of the study, and the second to validate the findings. This document contains the outcome of the discussion sessions of the first workshop.

12.1.2. Objectives of the Workshop

On 14 March, the European Commission organised a workshop on **Organisational Interoperability** and Public Service Governance. 41 participants took part in the discussions. This report provides an overview of the discussions and findings of the workshop.

The overall objectives of the workshop were to gather information and exchange challenges and good practices in relation to the implementation of three concepts defined in the European Interoperability Framework: Interoperability Governance, **Integrated Public Service Governance**, and **Organisational Interoperability**. The concept of Interoperability Governance having been

⁸² The EIF is accompanied by the Interoperability Action Plan (IAP), which outlines priorities that should support the implementation of the EIF from 2016 to 2020. The IAP is comprised of five focus areas, addressing issues related to the identification of mechanisms to govern interoperability, collaboration between organisations, engagement of stakeholders, and raising awareness of the benefits of interoperability. It also covers the development, improvement and promotion of key interoperability enablers, while considering the needs and priorities of end users.

thoroughly analysed in previous phases, was not treated with the same depth as the other two concepts. The focus was instead mainly placed on the **Integrated Public Service governance** and **Organisational Interoperability** concepts.

The workshop aimed to help administrations make use of these concepts in order to support the interoperability of their public services and, ultimately, improve their integrated public service provision.

12.1.3. Workshop approach

The workshop was divided into a number of sessions as listed below, with 2 of these sessions incorporating a break out session:

1. The key concepts of Interoperability Governance, **Integrated Public Service Governance**, and **Organisational Interoperability**;
2. Findings from previous studies regarding Interoperability Governance;
3. **Organisational Interoperability**, which included a break-out session;
4. **Integrated Public Service Governance**, which included a break-out session; and
5. Conclusions of the workshop.

The workshop began with a presentation of three of the key concepts of the EIF: Interoperability Governance, **Integrated Public Service Governance**, and **Organisational Interoperability**. During the presentation, the roles played by each concept was described and furthermore, the relationship between concepts was explained. The EIF recommendations related to these concepts, and materialised in the Interoperability Action Plan, were explained in detail. The findings from previous studies regarding Interoperability Governance were described and shortly discussed.

For the concepts of **Organisational Interoperability** and **Integrated Public Service Governance**, a presentation based on the findings and results of previous studies was also provided. Once the presentation was concluded, breakout sessions were held. The breakout sessions consisted in splitting the plenary in three groups allowing them to have discussions on prepared questions. Each group was moderated by one of three interoperability experts – Prof. Efthimos Tambouris, Prof. Maria Wimmer, and Prof. Herbert Kubicek - and a member of the organisational team. At the end of the day, the designated rapporteur from each group reported on their break-out discussions during the plenary session.

The section below provide the main findings of the workshop regarding **organisational interoperability** and **integrated public service governance** and a detailed summary of the items discussed during these two breakout sessions.

12.2. Overview of the discussions

12.2.1. Main Workshop Findings

The workshop allowed for an interesting confrontation between theoretical academic concepts and practitioners with extensive practical experience from different regions and Member States. A general emphasis was placed by workshop participants across both concepts discussed – **integrated public service governance** and **organisational interoperability** - on the motivation and goals behind any interoperability or integrated public service project. In relation to **organisational**

interoperability, shared goals are an important determinant of aligned business processes. Meanwhile for **integrated public service governance**, a common vision is required in order to motivate the integration project. The main reflections from the workshop on these two key concepts are presented below.

12.2.1.1. Organisational Interoperability

A repeated emphasis during the discussions on **organisational interoperability** was on “**why**” the **integrated public service project is being implemented**. Without a common vision on this, it will not be possible to align processes and activities. This is particularly important when trying to align across completely different organisations or administrations – where there can be cultural differences and a lack of trust which are challenging to overcome.

Workshop participants considered that there were also considerable challenges associated with building a common understanding of a project *within* an administration as well – and building a vision and goals across different levels. **Organisational interoperability** was described as providing a **bridge between legal and technical layers**. Here, part of the challenge is also to use the right tools in order to build an understanding across management/legal and technical levels. One interesting initiative discussed in this regard was the use of a “digitisation mediator” in Flanders – to help align different levels of government.

There are a **range of business modelling techniques** that can facilitate communication and provide a common language on a particular process. However they tend to be extremely technical, and in order to expand the conversation to non-technical audiences, other simpler models should be considered as well – **the tool should be selected for the audience**. It should be remembered also that the common language enabled by business process models is a tool, it is not itself the solution.

One final recommendation coming out of the discussions on **organisational interoperability** was also that discussions should **focus on capabilities and not on specifications** – this can help to build a more open conversation and overcome differences.

12.2.1.2. Integrated Public Service Governance

For **integrated public service governance**, as with **organisational interoperability**, workshop participants talked about the importance of common targets and goals to facilitate integration projects. With such common goals in place, participants discussed the use of service level agreements to formalise relationships. The example was provided of the [Electronic Exchange of Social Security Information](#) (EESSI) system, for which negotiations over these agreements started with legal terms of collaboration – and then moved to the operational level with the service level agreements.

Workshop participants also discussed the barriers and the facilitators of **integrated public service governance**. It was considered that clear leadership or hierarchy was a major enabling factor. When an integration project is being conducted by a network of peers (e.g. between Member States) on the other hand, it becomes difficult to know who to look towards. Another enabling factor is a high level of regulation, as this provides a common framework. The importance of the reuse of certain common tools and building blocks was another point of discussion. It was recommended that this be facilitated through registries providing a clear list of what tools are available.

Finally, the question of skills was addressed. Absence of skills can also lead to an absence of interest and a desire to remain in a comfort area. In such situations extra effort is needed to convince people to take an interest in integration projects. This should be facilitated by the use of layman's terms.

12.2.2. Detailed Summary of Break-out Sessions

12.2.2.1. Organisational Interoperability

12.2.2.1.1. Key decisions to achieve Organisational Interoperability

An important facilitator of **organisational interoperability** is keeping track of stakeholders, identifying and involving them, and understanding their relationships and respective responsibilities. One segment of the stakeholders is the end users, who should be the main point of focus. The aim is to make the service available to them and not just to the government.

Successful **Organisational Interoperability** needs a political direction with the mind-set of achieving better services and creating a clear view on the process of delegating tasks. To achieve this, there must be a willingness for trusted cooperation between the political sponsor and the departments that deliver the services and share information. Interoperability is only a tool for designing better services.

To reach the goal of better services and to create a clear view on the process of delegating tasks, it is also necessary to establish a clear hierarchy, as well as a strong coordination between the political direction and the participating department. The coordination aspects require both formal and informal agreements to be successful; to guarantee an independent implementation of those agreements, any coordinating tasks should not be handled at the political level. In certain circumstances, it can be preferable to first reach an agreement at an informal level and then allow access to commonly developed frameworks to a broader audience of interested parties in addition to the collaborating departments.

Organisational Interoperability can also be understood as a bridge between the legal and the technical levels of EIF.

(1) Example:

- The Flemish digital agency ([Informatie Vlaanderen](#)) is currently working on formalising the role of a Digitisation Mediator between different levels of government. This role began as an informal one, through discussions with interested parties on what is needed, how, etc. As this role has proven to be useful, the agency is now looking to make it official through political support so the roles and responsibilities can be further built on. The digitisation mediator would be responsible for data standards, providing common tools for all, etc.

By building this role up via informal discussions and agreements, the agency has been able to foster interest and ownership amongst the different relevant parties, without making them feel obliged. This has facilitated the development and success of this role.

12.2.2.2. Factors to take into account when implementing Organisational Interoperability and how they differ across service domains⁸³

The approach towards **Organisational Interoperability** differs between domains and can depend on a variety of factors such as the volume of cases handled and the number of actors involved.

⁸³ A service domain is a set of public services related to a specific sector such as health, transportation etc. A service domain has its own functions and processes and often abides to domain-specific, regulations.

Participants found that differentiation across domains can actually be positive as it ensures that the service maintains its autonomy. They are thus able to work effectively and efficiently in response to their unique characteristics. Some domains, for example, are highly regulated while others are much less or not at all – this will lead to differences in the way organisations interact. Where it is necessary to overcome differences between domains, it is recommended to focus on capabilities instead of specifications.

12.2.2.3. Main struggles in relation to the concept of Organisational Interoperability

A number of obstacles to Organisation Interoperability were discussed in the break-out sessions. When considering common European projects and services, there are considerable challenges in aligning processes across Member States. These need to be overcome through mutual negotiations at European level, as is being done for the single digital gateway⁸⁴. Cultural differences and lack of trust between organisations provide one barrier to interoperability. Meanwhile other barriers include power struggles between organisations and other more mundane issues such as time management and agendas. In order to overcome differences and establish trust, open approaches should be encouraged.

When considering the mind-set and skill-set of people in these the organisations, it becomes apparent that “siloed” thinking can provide another impediment. Some projects struggle to get started due to a lack of interest from stakeholders. It helps to have at least one strongly involved stakeholder to keep the drive in the project. Identifying such a stakeholder in practice can be difficult however.

12.2.2.4. Instruments used to formalise organisational relationships

Organizations use business process and architecture methods (concepts, notation languages), such as BPMN⁸⁵, SIPOC⁸⁶, EIRA⁸⁷, etc. to formalise their implementations. To use the diagrams and models proposed by those methods, an administration must have specific resources (skills) and a certain digital maturity. These methods can be too complex for non-technical people. Consequently, the use of simpler, or less IT related diagrams and models should be recommended, as well as their adaptation to the targeted audience.

Some projects use Service Level Agreements (SLA) to formalise their relationships. This can start with legal terms of collaboration (as was done for the EESSI⁸⁸). Organisations find it is easier to implement SLAs within administrations but harder between regions or between different political levels and hierarchy. Service level agreements can be defined as either bilateral or multilateral agreements. When possible, multilateral agreements are preferable.

The use of user guides and specific case studies by digitalisation projects can provide clarity and examples, and help people to better understand **organisational interoperability**.

⁸⁴ https://ec.europa.eu/growth/single-market/single-digital-gateway_en

⁸⁵ BPMN (Business Process Model and Notation) is a graphical representation for specifying business processes in a business process model. More information at <https://www.omg.org/spec/BPMN/>

⁸⁶ SIPOC (Suppliers, Inputs, Process, Outputs, and Customers) is a tool that summarizes the inputs and outputs of one or more processes in table form. The term SIPOC originates from the 1980s and is part of the total quality movement

⁸⁷ EIRA (European Interoperability Reference Architecture) is an architecture content meta-model defining the most salient architectural building blocks (ABBs) needed to build interoperable e-Government systems. More information at <https://joinup.ec.europa.eu/collection/european-interoperability-reference-architecture-eira>

⁸⁸ EESSI (Electronic Exchange of Social Security Information) is an IT system that helps social security institutions across the EU exchange information more rapidly and securely, as required by the EU rules on social security coordination. More information at <https://ec.europa.eu/social/main.jsp?catId=869>

Examples:

- In the [Ministry of Justice in the Netherlands](#), when developing common agreements, they identify priorities that are translated into immediate actions and create focus groups to develop business processes based on existing SLAs.
- The implementation of certain pieces of legislation can also help formalise organisational relationships. For instance, in Spain the introduction of legislation that prohibited different services to photocopy citizens' documents, pushed the different administrations to collaborate more to get the required data from each other. Although it took some time for the administrations to adapt to the new procedures and learn the benefits of an enhanced collaboration, this effort to facilitate administrative procedures for citizens translated into an improvement in service efficiency and organisational interoperability.

12.2.3. Integrated Public Service Governance

12.2.3.1. Relationship between Interoperability Governance and Integrated Public Service Governance

Participants understood interoperability governance as being a part of **integrated public service governance**. It is needed across the different service domains in order to provide integrated public services and enable their governance. However, definitions in practice may vary from one organisation (or Member State) to another and not be entirely aligned with the EIF.

12.2.3.2. Issues and decisions related to Integrated Public Service Governance

There were differing views from workshop participants on the extent to which the issues and decisions faced through **integrated public service governance** differ across domain. On the one hand, it was noted that there can be very different privacy requirements for different types of services. This can lead to differences in the levels of integration with other services that is possible. On the other hand, it was noted that most digital solutions can be used across different domains – there is a level of reusability for all digital solutions.

Digitalisation itself was also identified as a driver of increased collaboration across different departments. Other drivers of integrated public services can include political dictates and will from above, or a particular strong business need.

During the discussion on **integrated public service governance**, two approaches towards the implementation of a governance framework were described. In the first approach, the implementation projects (or initiatives) are created, then an organisation is identified to govern it. In the second approach, the projects are created inside a framework that already has a governing body. This body then ensures the project is built in an interoperable manner from the outset.

12.2.3.3. Case studies for Integrated Public Service Governance.

During this section of the break-out session, participants were asked to reflect on particular integrated public services that they were familiar with and how decisions were made across the different layers of the EIF in relation to them. Participants were asked to not only consider successful examples, but also those that experienced set-backs or failure. Participants also reflected on overall governance structures in their countries:

- **Single digital gateway:** This ongoing project has several configurations of working groups, some agreeing on standards and semantics, and other groups agreeing on processes. Organisational decisions on who does what and when are laid out clearly through work

programmes. Examples of the types of decisions made by the working groups also includes the categories of data to collect and requirements to identify where the necessary information is located. In the future, a committee will be appointed to make decisions on the legal level.

- **EESSI:** The system has a technical commission in which decisions related to the different layers of the EIF (technical, semantic, etc.) are discussed. The discussion on these different layers are then brought together. The technical commission also decides on the standards to be implemented and used.
- **Use of building blocks:** The use of particular digital building blocks as part of a digital public service is not made mandatory by most countries (Denmark provides one exception), and their use is not monitored at national level. It was suggested that the maturity of the building blocks provided at national level is one aspect that could be monitored in order to measure the administration's capacity to support the delivery of integrated public services.
- **Finland:** The Member State participant noticed that the maturity level of interoperability was fundamental for implementing projects. Maturity and demand are more important than the number of related ministries for example, to make an interoperability project work.
- **Greece:** The country has one overarching ministry for digital planning, to which all other ministries should respond, and most ministries have a small part that also deals with eGovernance. This role for the individual ministries is maintained as they are experts in their domain, and can collaborate with the central ministry of digital planning.
- **Germany:** It was observed that having too many related ministries (1 federal ministry and 16 Lander ministries) is counterproductive for decision making and implementation. This aspect worsens when two areas have to agree on something, as a total of 34 ministers have to agree.

12.2.3.4. *Main struggles on implementing Integrated Public Service Governance*

Several aspects, such as the level of openness of a service and the heterogeneous structure of records, impact the integration of public services. Those aspects, may lead to additional requirements and constraints. To cope with those difficulties, willingness for cooperation between departments is key. Establishing mechanisms to foster connections and relationships between members of the participant departments, as well as the continuous monitoring of the integration activities, could help.

Likewise, integration between services of various sectors (e.g. transport and environment) or belonging to different hierarchical levels, may prove difficult. The way to cope with this challenge is to have common targets and goals. If there is an existing relationship and communication channel, this connection should be taken advantage of to realise the first steps. Following this, exchanges can move higher (hierarchical levels) and broader (inter-department) to facilitate the integration process.

Moreover, paying too much attention to standardisation in the **integrated public service governance** process, may lead to projects not progressing properly as not all the participating departments are able to comply with all the required standards from the beginning of the process. To avoid those issues, the development should be driven by principles, which provide a general framework and allow a dialog between participants.

Another obstacle is linked to having strong leadership, either formal (through clear hierarchy, e.g. the Prime Minister) or informal (people with a "leader" character), who can push for integration. Identifying a leader is sometimes difficult when there is no hierarchy, such as when several Member States work together.

The lack of generalised service catalogues or registries to keep an overview of existing services, tools, etc. is another common issue. Currently, there is no clear view on what exists. It would also be useful to have a clear view of guidelines and best practices too. The Commission could play a role in helping to find and disseminate these.

A final problem commented on for integrated public service projects was that some solutions work well for one specific domain, but not for others. For example, base registries seem to work well for companies, while it appears that they are not so useful for municipalities. This is something to be taken into account when looking for solutions.

12.3. Conclusions

Through in-depth discussions with experts and stakeholders with direct experience working on integrated digital public service projects, the workshop was able to both provide input on both theoretical and practical aspects of achieving **organisational interoperability** and good **integrated public service governance**. On the theoretical side, participants pointed towards the close connection between these concepts and strong political leadership and vision. Meanwhile, on the practical side, concrete examples were provided in which these concepts were put into action – for example through the “digitisation mediator” in Flanders, and the mandatory use of digital building blocks described in Finland.

Some initial indications of potential case studies were provided for the study during the course of the day. However, these will need to be developed in considerably greater detail than was possible during the workshop. Future work during the study will focus on further describing and analysing such examples – elaborating much further in order to understand fully the challenges the identified practices are intended to overcome, their level of success, and the extent to which they could be replicated in other Member States and other scenarios.

The next steps towards implementing this will be a [survey](#) to gather further information on good practices related to **integrated public service governance** and **organisational interoperability**. The survey will be open between 29 March and 10 May 2019. In Autumn 2019, another workshop will be organised in order to discuss the findings of the project, once the case studies mentioned above have been fully developed.

13. ANNEX IV: SECOND WORKSHOP ON ORGANISATIONAL INTEROPERABILITY AND INTEGRATED PUBLIC SERVICE GOVERNANCE

13.1. Introduction

13.1.1. Project and document background

On 23 March 2017, the European Commission (EC) adopted the revised European Interoperability Framework (EIF), containing 47 recommendations aimed at helping Member States achieve interoperability together with an Interoperability Action Plan (IAP).

Among the **key components provided by the EIF conceptual model are the concepts of organisational interoperability and integrated public service governance**, which each come with specific recommendations for their implementation. These components are at the core of the ISA² action: EIF Implementation and Governance Models, and activities to further develop and provide guidance on them are foreseen under Actions 2 and 6 of the [Interoperability Action Plan](#)⁸⁹:

- **Action 2:** Identify and describe governance structures and good practices for interoperability coordination
- **Action 6:** Clarify and propose ways to formalise public administrations' organisational relationships as part of the establishment of European public services. Identify and develop common process models to describe business processes. Identify best practices

In line with this action, the European Commission is currently carrying out a **study to identify good practices in relation to organisational interoperability and integrated public service governance**, and to develop lessons and recommendations for their implementation by European public authorities.

As part of the activities supporting this study, the **European Commission has hosted two workshops**. The [first workshop](#), in March 2019, was used to collect information on challenges related to **organisational interoperability** and **integrated public service governance**, and potential good practices. This workshop was open to all interested participants and was promoted via Joinup and the ISA² channels of communication. All workshop participants were able to propose case studies that could be taken analysed as part of the study activities.

On the [event page](#) of the first workshop, a summary of the objectives and the agenda can be found, together with the workshop [presentation](#), and the [workshop report](#).

The **second workshop, in October 2019, was organised to present the initial findings of the study**, based on the input of the first workshop, desk research, academic experts, and a publicly available EU survey, on **organisational interoperability** and **integrated public service governance** and **discuss what lessons and recommendations could be drawn** concerning

⁸⁹ The EIF is accompanied by the Interoperability Action Plan (IAP), which outlines priorities that should support the implementation of the EIF from 2016 to 2020. The IAP is comprised of five focus areas, addressing issues related to the identification of mechanisms to govern interoperability, collaboration between organisations, engagement of stakeholders, and raising awareness of the benefits of interoperability. It also covers the development, improvement and promotion of key interoperability enablers, while considering the needs and priorities of end users.

these concepts. This document contains a report on the presentations and discussions held during this second workshop.

This second workshop was also open to all interested participants. The event page of the [second workshop](#) contains a summary of the objectives, the agenda, [the workshop presentations](#), and an introduction to the speakers. A short summary of the 5 case studies together with the factsheets developed for each one can be found [here](#). The discussions and findings of the second workshop will feed into the study report on **organisational interoperability** and **integrated public service governance**, which will be published in November 2019.

13.1.2. Objectives of the Second Workshop

The Workshop on **organisational interoperability** and **integrated public service governance** organised on 2 October 2019, by the European Commission had three primary aims:

- **Introduction to the study approach** towards **organisational interoperability** and **integrated public service governance**;
- **Presentation of five case studies** focussing on digital public services delivered in European countries (EU Member States and Norway) and the manner in which these services addressed challenges and issues related to **organisational interoperability** and **integrated public service governance**;
- **Discussion and validation of the main lessons on organisational interoperability and integrated public service governance** that can be drawn from the case studies. These validated lessons will be integrated into the study on **organisational interoperability** and **integrated public service governance**, which will be published in November 2019.

13.1.3. Workshop approach

The workshop approached its objectives through the following primary sessions:

- **Introductory Session** – In which the study approach to **organisational interoperability** and **integrated public service governance** was presented. In particular this included the **description of the roadmap for integrated public services** that was developed in order to analyse the organisational and governance challenges that confront instigators of new integrated public services. It also included a presentation of the case study approach adopted to investigate these concepts.
- **Presentation of case studies** – Delivered by five “case owners” from the relevant Member State who had worked on the selected digital public services (see below for details).
- **Break-out sessions** – To discuss and validate the lessons to be drawn from each case study.
- **Concluding session** - To feed back the main lessons and findings of the break-out sessions to plenary and present the remaining steps and deliverables of the study.

Additional information on the case studies and break-out sessions is provided below.

Presentation of case studies

The following case studies of digital public services were presented during the workshop:

- **Transfer of business register data over X-Road**, Estonia and Finland, presented by Mr. Tambet Artma, Head of the Business Register Division from the Estonian Centre of Registers and Information Systems. More information can be found on the [X-Road webpage](#).
- **Municipality Application Service Provider (ASP)**, Hungary, presented by Mr. Mihály Dán, e-Government Advisor for the Ministry of Interior. More information can be found on the [ASP webpage](#).
- **Digisos**, Norway, presented by Mrs. Hege Løchen, Senior Advisor for the Labour and Welfare Administration. More information can be found on the [Digisos webpage](#).
- **Standard Business Reporting (SBR)**, the Netherlands, presented by Mr. Frans Hietbrink, Strategic Advisor for the Tax and Customs Administration. More information can be found on the [SBR webpage](#).
- **Automated Social Energy Tariff**, Portugal, presented by Mr. Pedro Viana (*via video*), Digital Transformation Director for the Administrative Modernisation Agency. More information can be found on the [Automated Social Energy Tariff webpage](#).

Break-out sessions

During the afternoon session of the workshop, break-out sessions for each case study were organised, with the workshop participants splitting into groups, and visiting each break-out station. Each of the break-out sessions was hosted by one or more facilitators from DG DIGIT, a facilitator from Deloitte, and the case owner (with the exception of the Automated Social Energy Tariff case study, for which the case owner was not able to be present). Supporting materials (factsheets) on each case study were shared during the workshop,

During the break-out sessions, four or five draft lessons were put forward by the break-out session facilitator for each case study. Participants discussed, elaborated on and validated these draft lessons based on their own experiences, as well as raising additional comments and questions on the case study.

13.2. Workshop Summary

The following chapter provides a **summary of the main discussion points during the workshop**. The full minutes of the break-out sessions can be found in [Chapter 3](#).

Overall, the workshop allowed for the **critique and validation of the use cases and of a set of lessons related to organisational interoperability and integrated public service governance** developed through an analysis of the delivery of five digital public services (case studies) – Digisos, Automated Social Energy Tariff, Transfer of business register data over X-Road, Municipality Application Service Provider, and Standard Business Reporting.

The sections below introduce the theoretical background of the study and the case study approach pursued. They provide a brief summary of each of the five digital public services presented, and the main overall lessons in relation to **organisational interoperability** and **integrated public service governance** that were developed during the workshop break-out sessions.

13.2.1. Introductory session

Mr. Maximilian Strotmann (Deputy Head of Unit D2, Directorate General of Informatics, DG DIGIT, European Commission) opened the workshop, who emphasised the difficulty of tackling and addressing governance issues related to interoperability issues. He marked the need to make links

collectively and experiment to support governments promoting interoperable solutions at all levels. The session was chaired by Mrs. Victoria Kalogirou (Programme Manager, Unit D2, Directorate General of Informatics, DG DIGIT, European Commission).

This introduction was followed by a presentation on the study's theoretical background and approach and the selection of the case studies by Mr. George O'Neill (Consultant, Deloitte) and Mrs. Victoria Kalogirou. The study draws upon a **roadmap for integrated public services** which provides an overview of the main steps and decisions public administrations have to take in order to implement an integrated public service. This roadmap for integrated public services is used to illustrate what decisions have to be made in order to address **organisational interoperability** and **integrated public service governance** challenges.

The **four general steps illustrated by the roadmap** are:

- **Identify need for change** – Identifying the need for a new integrated public service
- **Plan and scope** – Setting up the bodies that will develop the integrated public service.
- **Engage and enable** – Instigating the organisational and legal changes necessary for the service and setting up the necessary standards across all interoperability layers.
- **Implement and integrate** – Continuing the legal and organisational changes and implementing any necessary new IT services.

The roadmap includes a feedback loop so that when the final phase is reached it feeds back into the initial “identify need for change” phase, and the process begins again.

Drawing on this roadmap, **organisational interoperability** and **integrated public service governance** can be understood in the following way:

- **Organisational interoperability**: Refers to WHAT decisions are made for a certain subset of (organisational) issues – choice of organisational model, structure and relationships; IT resources put in place; interoperability agreements, interfaces and business processes
- **Integrated public service governance**: Refers to WHO makes the decisions at each step of the roadmap and HOW those decisions are made.

In order to investigate these concepts, five case studies were selected which matched the following **selection criteria**:

- **Location/country**: Coming from a range of different countries;
- **Sector**: Representing a range of different sectors;
- **Organisational structure**: Including both centralised and decentralised models;
- **Maturity**: Fully operational services (advanced pilot can also be considered);
- **Level of government**: Covering digital public services provided by different levels of government (national, municipal) and including services involving collaboration across levels.
- **Good practice digital public service**: Representing good practices, as justified by performance or nature of the service.

The five case studies were selected from an initial longlist of 38 possible digital public services, which were identified through a survey and desk research. The five case studies selected are:

- **The transfer of business register data over X-Road**, Estonia and Finland - Automated cross-border transfer of data between Finnish and Estonian Business Registers over X-Road data exchange infrastructure;

- **Municipality Application Service Provider (ASP)**, Hungary - Cloud-based back-office IT system for Hungarian municipalities as well as front-office portal by which clients can access municipality services
- **Digital application for social security (Digisos)**, Norway - Digital process by which citizens can apply for financial assistance;
- **Standard Business Reporting (SBR)**, the Netherlands - Country-wide solution for system-to-system submission of business reports
- **Automated Social Energy Tariff**, Portugal - Automated system to award a reduced energy tariff to eligible citizens;

13.2.2. Presentation of the case studies

13.2.2.1. Transfer of business register data over X-Road; Estonia and Finland; Tambet Artma, Head of the Business Register Division at the Estonian Centre of Registers and Information Systems

X-Road is a data exchange infrastructure used in both Finland and Estonia that enables public organisations within these countries to securely transfer their data. The Finnish and Estonian authorities chose to federate their data exchange layers, meaning that public organisations from both countries would be able to use it for the cross-border exchange of data.

The national business registers have taken advantage of this federation to set up a service under which they can securely exchange business register data (for example when a Finnish company sets up a business in Estonia). Under the agreement, reached each business register can request information on companies and have the data automatically transferred over the X-Road.

13.2.2.2. Municipality Application Service Provider (ASP); Hungary; Mihály Dán, e-Government Advisor for the Ministry of Interior

The Hungarian government has developed a new cloud Application Service Provider (ASP), the Municipal ASP centre. It provides an IT back-office to all Hungarian municipalities and a front-office portal for users (the public administrations, citizens and businesses) to access different eGovernment services. The system was developed in order to promote digitalisation across Hungary's 3,178 local municipalities. It has now been adopted by almost all of these municipalities.

To set up the system, a consortium of national ministries and agencies was set up to develop the different functionality. When the project moved into its operational phase, the key players driving the project became the Hungarian State Treasury and NISZ National ICT Service Provider.

The project experienced some resistance from municipalities concerned due to the introduction of multiple new systems. In order to overcome this it was necessary to organise trainings (at county level), along with information days, consultations and on-site support.

13.2.2.3. Digital application for social security (Digisos); Norway; Hege Løchen, Senior Advisor for the Labour and Welfare Administration

Digisos provides a digital process by which citizens can apply for financial assistance. Financial assistance is a social security benefit that is distributed at municipal level. Under the process established by Digisos, the application is made available through a single national portal (hosted by the Norwegian Labour and Welfare Administration). Digisos is now available in 111 municipalities out of 422, covering about 50% of the population. The development of the service required close collaboration between national and municipal level (5 pilot municipalities) organisations as well as with private sector providers.

In order to develop and deliver the service, a range of agreements had to be established between the involved organisations. The agreement types include data processing agreements, collaboration agreements, and operating agreements. To help municipalities quickly reach the required agreements, template agreements are provided by the Digisos project team.

13.2.2.4. Standard Business Reporting (SBR); The Netherlands; Frans Hietbrink, Strategic Advisor for the Tax and Customs Administration

Standard Business Reporting (SRB) is a country-wide solution for system-to-system submission of business reports in the Netherlands. Organisations using it in the Netherlands include: Tax and Customs Administration; Business register; Central bureau of statistics; Education executive agency; Authority for public housing; and (in the private sector) banks. SBR aims to reduce administrative burden for businesses dealing with regulatory reporting.

The project is governed at the national level, drawing on a “coalition of the willing”. The SBR Programme provides a public-private body for the development and maintenance of standards (process, data, technology) for the solution. In addition, the public sector maintains a number of bodies within which public-sector only discussions are held on the update of the SBR solution. A framework of agreements is maintained by the SBR Programme detailing the different standards (process, data, technology) that public organisations commit to use if they make use of the SBR solution.

13.2.2.5. Automated Social Energy Tariff; Portugal; Pedro Viana, Digital Transformation Director for the Administrative Modernisation Agency

The Social Energy Tariff is a reduced energy tariff provided by the government to citizens who have a low income. Initially, citizens had to apply for this tariff, and it had a low adoption rate. To counter this the Portuguese Government developed an automated system to assess eligibility and award the tariff. This resulted in an increased uptake of the tariff from around 150 000 to 850 000 citizens.

The project required the cooperation of a number of different ministries, but was led by the Directorate-General for Energy and Geology (DGEG), which is responsible for the reduced tariff. The Administrative Modernisation Agency (AMA) provide the interoperability platform over which the necessary data for the service is shared. Over 40 entities are connected over this platform, mostly public sector but also some from the private sector.

The project gathered all involved entities and defined the web services and different information required for the service. The main advantage of the solution developed is that the citizen does not

have to do anything. The state is responsible for collecting all the necessary information and processing it.

13.2.3. Legal Interoperability

An additional presentation was delivered by Mrs. Zsofia Sziranyi (Programme Manager, from Directorate General of Informatics, DG DIGIT, European Commission) on the subject of legal interoperability (LIOP). It handled the topic of ensuring that organisations operating under different legal frameworks, policies and strategies are able to work together. Legal interoperability aims to ensure that when new legislation establishes a public service, it is consistent and compatible with other pieces within the existing legal framework. Moreover, legal interoperability has the ambition to warrant that this new piece of legal act enables the smooth design and implementation of the mandated public service.

In this respect, Zsofia emphasised the need for a multidisciplinary approach towards law-making, where actors like policy makers, public service managers, data scientists or IT architects agree on the requirements to be embedded in the legal act. **Organisational interoperability** has a key role to establish the top-down and bottom-up communication paths, which can foster such agreements among the main actors.

13.2.4. Main findings of the break-out sessions

Break-out sessions were organised in order to discuss the lessons that can be drawn from each case study (digital public service) presented during the workshop. Each break-out session was moderated by a European Commission facilitator, Deloitte facilitator, and the case owner.

For each break-out session, four or five draft lessons were presented. Participants commented and elaborated on these lessons based on their experiences, and raised additional questions. The main common lessons and points that can be extracted from these discussions (and which were reported back to the plenary session) were the following:

1. Minimisation of administrative burden

- Participants in general **agreed that minimisation of administration burden was a principle around which digital public services should be organised**. They pointed out that this principle should especially be taken into account when drafting the legislation establishing a new service.
- The principle is implemented in several of the case studies:
 - Digisos – template agreements are provided to municipalities who want to sign up for the service;
 - Automated Social Energy Tariff – this is a proactive service designed so that the citizen does not have to apply for it at all. The citizen's eligibility for the tariff is automatically assessed;
 - Standard Business Reporting – The digital government service (Logius) providing the digital gateway for SBR reports to public organisations has minimised the number of separate service level agreements it provides to the different organisations it serves. It instead provides standard service level agreements for all.
 - X-road – in order to reduce the efficiency for business, Finland and Estonia federated their exchange systems and automated the transfer of business registry information.
 - ASP Municipality – there is a provision to sign a one-to-one agreement with the service bus provider on behalf of all the municipalities.

2. Development of digital public services through a gradual approach (including pilots)

- Participants strongly endorsed this principle, while acknowledging that sometimes there could be political pressure to pursue big projects;
- During the X-Road break-out session, participants warned that there was a risk that if you “act big you fail big”. It is generally better to pursue smaller ambitions initially, demonstrate something works and then move forward with more ambitious projects;
- During the Digisos break-out session, which pursued a pilot approach, participants agreed that pilot projects could be a good way to familiarise organisations with new technology.
- The ASP Municipality also successfully pursued a pilot approach. First developing and testing functionality with a limited number of organisations.

3. Involvement of the private sector

- Participants agreed that for some types of services, the involvement of the private sector could be crucial (for example the use of a specific technology or for the overall functioning of the project). In the Digisos case study, the existing private vendors played an important role in developing the 4 digital solutions, and the private sector is also influential in the SBR project.
- The private sector can be a positive influence in promoting innovation. Actively incorporating the private sector in the governance of a project can provide it with motivation for its involvement.
- Participants showed some concerns, that when involving the private sector there is a need to avoid lock-in risks. This can be done by using standards, and renewing the procurement process after a number of years.

4. Provision of a legal framework for new digital services

- In one of the case studies looked at (Digisos), the digital public service was developed entirely within the existing legal framework. Meanwhile, for the X-Road business register example, legislation was passed that enabled federation of the Finnish and Estonian data exchange layers, which was a key enabler for the project. For two other cases, new legislation was passed to provide a legal basis (Automated Social Energy Tariff, and Municipality ASP).
- Participants noted that initially working within an existing legal framework can speed up progress at first. However it is likely that legal changes will eventually be necessary (e.g. for the Digisos case).
- Close collaboration between the business team developing a service and the legal department was recommended.
- What is generally needed is a legal framework for a service, but not legislation that is too restrictive. There is a need to maintain a level of flexibility.

5. Use of interoperability agreements

- Participants confirmed that formal interoperability agreements should be pursued for even the simplest of integrated public services.
- During the discussion on X-Road, participants noted that such agreements would need to cover multiple aspects (potentially in several documents) including on data and technical issues. Life-cycle management was another point that it was suggested could be

Recommendations for organising and governing integrated public services

included. Participants also noted that the use of open data might reduce the required level of detail for interoperability agreements

- During the discussions on the Automated Social Energy Tariff, participants commented on the relationship between interoperability agreements and legislation. Legislation should only cover “what not how”. Interoperability agreements can fill in some of the details on how.

6. Making use of existing technical infrastructure

- It was generally agreed that existing technical infrastructure should be reused where possible. However, this is as much for cost reasons as for reasons of improved governance.
- It may not be necessary to build out or use a common infrastructure, but common architectural principles should be used when developing infrastructure.
- A service oriented approach can then be pursued on top of the infrastructure

7. Involvement of policy makers (political stakeholders)

- One of the lessons suggested during the X-Road break-out session was that political stakeholders should enable a digital service project (e.g. by promoting the creation of the necessary infrastructure) but then step back. Participants noted, that political stakeholders are needed not just at the start of projects but also to overcome barriers and blocking factors.

8. Balancing flexibility and consistency for standards

- As demonstrated in the SBR case study, digital public services need to balance requirements for flexibility and rigidity when developing and maintaining standards. Rigidity is required to limit the impact on other parties from constant changes. However it is necessary to leave flexibility to develop additional codes and capabilities. Standards need to have some flexibility so that they can be adapted to meet new legislative requirements.

9. Standardisation on the process level

- During the discussions on the SBR case study, participants agreed that standardisation of business conduct should be the starting point for digital public services (both on the semantic and process level).

13.3. Conclusions of the workshop

Concluding remarks for the workshop were delivered by Mr. Georges Lobo (Programme Manager, Unit D2, Directorate General of Informatics, DG DIGIT, European Commission) and Mrs. Natalia Aristimuño Pérez (Head of Unit D2, Directorate General of Informatics, DG DIGIT, European Commission). **The main output of the workshop is the validated lessons on organisational interoperability and integrated public service governance.** The comments and elaborations on these lessons will **feed into the study on organisational interoperability and integrated public service governance** currently being drafted. This study will be **published and shared in November 2019.**

Information was shared about the SEMIC conference in Helsinki in October, and the interoperability academy winter school organised in collaboration with KU Leuven in December. Both events will provide opportunities to discuss issues related to those raised in the workshop. Several other related

events are also organised by ISA² and more information about them can be found on the [ISA² event page](#).

13.3.1. Follow-up to the workshop

Following the workshop, the study team will assess the comments and responses to the lessons on **organisational interoperability** and **integrated public service governance** presented during the break-out. This input, together with additional interviews with the case owners, will be used to finalise the case studies. On the basis of these finalised case studies and the lessons that can be drawn from them, a report on **organisational interoperability** and **integrated public service governance** will be published in November 2019.

13.4. Detailed minutes of the break-out sessions

The following section provides detailed minutes of each break-out session. For each session, four or five draft lessons were presented by the moderators. These lessons were discussed and elaborated upon in turn by the workshop participants. Additionally 4 EIF guidelines were presented to the participants, to be linked with the suggested lessons taken from the use cases. Due to lack of time during the break-out sessions, this exercise was not performed for most of the break-out sessions.

13.4.1. Transfer of business register data over X-Road

- **Case owner:** Tambet Artma
- **EC facilitators:** Cécile Guash and Maxim Chantillon
- **Deloitte facilitator:** George O'Neill

Four draft lessons that could be taken from the case study were discussed during the break-out session, as described below:

Lesson 1: Build on existing technical infrastructure to simplify governance issues.

- Building from scratch is often actually easier as you don't have to deal with the technical difficulties of interconnecting different systems.
- However, for cost reasons reuse of existing infrastructure is preferable. One platform is cheaper than multiple platforms.
- Instead of building a common infrastructure, a better approach is to build infrastructure according to common architectural principles.
- On top of the infrastructure, a service-orientated approach should be pursued.
- The Open Peppol network provides one example where services are established on top of a common infrastructure.

Lesson 2: Start with small, feasible projects with clear added value

- In general, participants strongly endorsed this principle. However they mentioned that there can be political pressure to pursue big projects. The risk is that "if you act big, you fail big".
- The best approach is to demonstrate that a solution works and then move forward by gradually expending the deployment of the solution.

Lesson 3: Even for simple cases, formal interoperability agreements (contracts) are necessary and can include issues from technical access specifications to security requirements and costs

- Participants felt that interoperability agreements were absolutely necessary to establish integrated public services (even in simple cases)
- Details such as costs, data formats, maintenance procedure can be included depending on the requirements of the project. Lifecycle management issues can also be included in such agreements.
- It was felt, however, that using open data might reduce the requirements for the scope and level of detail that needs to be included in interoperability agreements.

Lesson 4: Political stakeholders should open the door (e.g. pushing through the X-Road federation) but do not need to be involved in the details of particular projects

- Political stakeholders “officially” initiate a project, but they are often needed at later stages also, to re-inforce the execution of the “project”
- Political involvement is needed at the beginning of the project, but also when you want to mandate the use of a solution, or when there are barriers that need to be overcome.

Links with EIF Recommendations

- EIF Recommendation 25: Ensure interoperability and coordination over time when operating and delivering integrated public services by putting in place the necessary governance structure
 - It can be useful to create a separation between a more rigid core governance for the architecture, and more flexible governance structures (e.g. taskforces) to deal with ad-hoc issues.
- EIF Recommendation 26: Establish interoperability agreements in all layers, complemented by operational agreements and change management procedures.
 - It is advisable to establish separate change management procedures for different layers. For architectural issues, the key principles should be rigid. But for some data elements, more flexibility is required to address legislative and other changes.
- EIF Recommendation 28: Document your business processes using commonly accepted modelling techniques and agree on how these processes should be aligned to deliver a European public service
 - Not discussed
- EIF Recommendation 29: Clarify and formalise your organisational relationships for establishing and operating European public services
 - Not discussed

13.4.2. Municipality Application Service Provider (ASP), Hungary

- **Case owner:** Mihály Dán
- **EC facilitators:** Zsofia Sziranyi and Cécile Guash
- **Deloitte facilitator:** Lorenzo Carbone and Anita Cioffi

Introduction

Participants were welcomed by Zsofia Sziranyi and Cécile Guash, together with Lorenzo Carbone and Anita Cioffi, a brief introduction on the case was made and extra details were given by Mihály Dán, the representative of the Municipality ASP team. The following lessons were discussed:

Lesson 1: State responsibilities for each organisation in an official document to ensure a clear division of duties and prevent conflict of interests

- The case owner commented that the consortium is quite big. Powerful public administrations are in it so it was important to provide clear instructions.

Lesson 2: Changes in the governance structure from the development stage to the delivery stage can allow the new leader to be focused on any gaps and fill them accordingly

- In a continuous evolving environment, flexibility of legislation to allow changes of governance structure is crucial.

Lesson 3: A clear definition of responsibilities in legislation can increase the level of transparency and facilitate service delivery

- There were some concerns among participants that defining responsibilities in legislation could result in rigidity.

Lesson 4: Administrative simplification (an EIF principle) should be pursued where possible, as done through the creation of a single interoperability agreement between the Municipality ASP Centre on behalf of all municipalities with each base registry.

- The participants agreed on this lesson without further comments.

Lesson 5: The existence of a national technical infrastructure can help resolve not only technical interoperability challenges, but also semantic and organisational ones.

- NA

Other discussion points:

A series of other questions and discussion points were raised by the break-out session participants, and addressed by the case owner:

- Why was their resistance to the new system? Did municipalities feel there was a too high level of control? Was there resistance to cultural change?
 - Some municipalities felt that the data was not stored by them but by the central government and that raised some control issues for them. However the overall ownership of the data stays with the municipality, and the solution is free. This helped to reduce resistance.
- Why was this type of architecture implemented?
 - This was due to cultural factors – in particular, Hungary’s centralised culture.
- Are there other territorial structures affected by this?
 - In Hungary, the county and regional level are not autonomous so they do not need the new service and are not affected by the new legislation.
- Was there also resistance from the private sector?
 - There was resistance from some data and software companies as they lost business opportunities, after the centralisation of the services provided through ASP.
- How does the system deal with needs for local customisation?
 - There are templates forms that each municipality can adapt.
- How was the project funded?
 - Initially the project was partially funded by the EU, but in the future it will be funded at national level.
- Is there the possibility of collaboration between sectors using the ASP Centre? For instance, can the police collaborate with the municipality?

Recommendations for organising and governing integrated public services

- They can collaborate but it is not a machine to machine interaction yet.
- How do you measure the success of this project?
 - It can be seen as a successful project due to the increased levels of digitalisation now observed at municipal level.

13.4.3. Digital application for social security (Digisos), Norway

- **Case owner:** Hege Løchen
- **EC facilitator/s:** Zsofia Sziranyi
- **Deloitte facilitator:** Mira Sallamo

Introduction

Zsofia provided a brief introduction to the case and extra details were given by the case owner, Hege Løchen, from the Digisos team. Some initial questions were addressed about the Digisos case:

- The autonomy of the municipalities is a legal fact. There is no legal way for the national government to force the municipalities to join projects such as Digisos.
- The freedom of the municipalities also implies that they can have different rules on delivering financial assistance, for example some flexibility in the criteria used, etc.
- Up until now no legal constraints have been encountered, but it is expected in the future that some legal changes will be necessary. In that case, the Digisos team will cooperate with lawyers and the ministry.

Following these introductory points, participants discussed the following lessons:

Lesson 1: Template agreements can be used to enable the formalization of the organizational relationship between large numbers of stakeholders. The level of customization possible for these templates can differ according to the organisational preferences.

- The use of templates helps in saving time. Legal experts are not directly needed anymore to analyse the agreement, or they only have to go over minor parts of the agreement.
- Some customisation in the templates should be allowed, but not too much, because then the simplification effect is lost.

Lesson 2: A pilot approach with a limited number of organisations can help develop both technical solutions and organisational relationships.

- There are always some users that are afraid of new technology, in this case, the use of pilots can help to show that the project can really work.
- Pilot projects provide an alternative for Beta-versions going live.

Lesson 3: Private sector providers can add complexity to a project but may also be key for its success. They should be involved in the discussion from the beginning

- Inclusion of the private sector in the project was important and inevitable. The development of the 4 different software solutions was done by private sector companies.
- The private sector can provide a good mix of innovative software techniques and development to a project. In general it can promote the use of innovation.
- The inclusion of big private players in the sector can be beneficial when a standard has to be adopted, as the bigger company has more leverage to use the standard and other companies will follow.
- Private companies can promote the sustainability of a service, as they can be relied upon to continue providing a service for a longer time.

Recommendations for organising and governing integrated public services

- Involvement of private companies can also bring risks of lock-in. To avoid this a standards-based approach should be pursued, with a new round of public procurement every 7-8 years, and the public sector maintaining ownership of the system.
- It is necessary to provide the correct commercial incentive to convince private companies to get involved.
- Data and privacy protection issues can be a concern when transmitting data to private parties. An analysis regarding the GDPR is required.
- There can be an issue related to procurement and the way in which private parties are selected. The procurement regulation acts should be followed but issues can appear with existing providers, and procedures can take a long time to appoint a private party provider.
- For the longer term, and to promote cost reduction, a good option is to pursue open source standardisation.
- There is a certain risk of ownership involved when including a private vendor. Good agreements have to be arranged on topics such as user licenses, maintenance, updates, and the possibility to access the source code.
- The Netherlands had some issues with open contracts resulting in contracting people without the correct knowledge. A private company contracted to help analyse and develop software for the Netherlands taxation office lacked detailed knowledge about the Netherlands law.
- The Danish municipalities have a joint procurement project: Kombit (<https://www.kombit.dk/aboutkombit>)

Lesson 4: Working within existing legal boundaries can speed up the development and the deployment of the service

- It seems indeed to be possible to start this project within existing legal boundaries, but eventually legal changes will be necessary, especially when digitalising older laws.
- It is recommended to have a close collaboration between the business team and the legal department. The business team should first assess what it can do within the existing boundaries. Only after this step, should the business team and legal team sit together and come up with clear requirements for legal changes.
- There should be a process of co-creation between the IT team, the legal team and the business teams. Lawyers and IT specialists should work together to find the best solution.
- It is often not easy to implement legal changes to enable a project. It can take several years before changes are included in a legal act.
- The actual legal basis for an integrated public service should be checked carefully.

13.4.4. Standard Business Reporting (SBR), The Netherlands

- **Case owner:** Frans Hietbrink
- **EC facilitators:** Miguel Alvarez Rodriguez and Maxim Chantillon
- **Deloitte facilitator:** George O'Neill

Introduction

Following a brief description of the case study, an initial questions was raised about the objectives of the SBR project:

- The overall aim is to simplify the process for the users. The idea is to make it as simple and logical as sending an email. Everybody knows in what fields the e-mail address should be, or the topic title, the CC and BBC or the text content.

Lesson 1: Standardisation on the process level can encourage take-up of a common solution. To be successful, structures must be put in place to properly maintain these standards.

- Standardisation is the key for developing any solution.
- When it comes to the use of standards, first use the standards agreed in international or national agreements (example: ISO-codes), only after these standards have been assessed, should new definitions be put forward.
- Standardisation of business conduct is the start for anything (both for the semantics and the processes). Semantics have to be clear for the users.
- Use open data, and standardise the way you send and receive open data.
- One side agreements are used. This means that it is decided from one side only to do the communication always in the same way.
- A need for a standard can be given by only one external party (a bank), this new standard can be developed by them and be re-used by the national service, or other parties in other sectors.
- It can be good to try to find similar processes to develop a common one.
- Standardisation can be used in many cases, it should be possible to have separate processes that make use of the same standards

Lesson 2: It is necessary to find a balance between providing consistency and flexibility for standards (e.g. providing a data architecture, but allowing flexibility for organisations to provide their own data definitions)

- If a standard or other base document is changed, it has an impact on all reports and parties. Therefore a standard should be rigid.
- Despite the rigidity of a standard, there should always be room to develop extra codes, because sometimes there's need of additional aspects regarding the architecture. When there are some key principles, and the legislature decides on something new, standards and agreements need to be flexible enough to integrate this.
- This balance between consistency and flexibility also has value for the governance approach. There is a need to provide a rigid structure to deal with the different actors, but also allow flexibility when actors request it and the project requires it.
- A good overall taxonomy should be in place.
- Data concepts only needs to be created when the need for them arise.
- When standards or processes are flexible, bear in mind that other stakeholders are also using them, and have to adapt to any changes.

Lesson 3: Public-private governance structures can be an important and necessary way to encourage private sector involvement. Public-sector only communication channels are also valuable as are bilateral ones. They can be maintained in parallel.

- The business interest of the private sector is usually in the driving seat of new technology and developments. So a private sector involvement is beneficial for the public sector.
- If the project, such as the project for management of documents, is only made for the public sector, there shouldn't be a need to involve the private sector. On the other hand, in the case of SBR, there is always a need for private sector accounting service providers.
- Whether there is a formal or informal role for the private sector, it will ultimately be the public sector who decides.
- Involving the private sector depends on the maturity of the market.
- Involving the private sector in governance can provide a good motivation (incentive) for the private sector to get involved.
- Having public sector discussion fora to discuss policy issues without lobbying from the private sector can be beneficial. Decisions benefitting only one company need to be avoided.
- From Estonia, the project Reporting 3.0 is a similar project, which involves Public-Private collaboration. (<https://www.emta.ee/et/uudised/palga-ja-toojou-andmete-esitamine-muutub-2018-aasta-algusest-automaatseks>)

Lesson 4: To minimise the number of agreements required, public organisations (such as Logius) can provide a single service level agreement valid for all public consumers using its services.

- Logius has standard service level agreements (SLAs) at different levels. These SLAs are not imposed, but users can freely choose between them according to their needs.

13.4.5. Automated Social Energy Tariff, Portugal

- **Case owner:** Pedro Viana
- **EC facilitator:** Miguel Alvarez Rodriguez
- **Deloitte facilitators:** Lorenzo Carbone and Anita Cioffi

Following a brief description of the case study, the following draft lessons were discussed by participants:

Lesson 1: Reduction of administrative burden on the citizen should be maintained as a leading principle when designing new integrated public services

- The Automated Social Energy Tariff provides an example of a “proactive service”.
- The reduction of administrative burden reduces the complexity and represents a good example of process optimisation (data is provided only once).
- Citizen-centric approach: the automation of the social tariff brings an added value to the customers and makes the service user-friendly and focused on an improvement of the “citizen experience”.
- The reduction of administrative burden should be prioritised not just for the design of new integrated public services but for “the design of new legislation”.
- Participants raised concerns related to the privacy of customers since not all users would be happy that energy providers share with DGEg their data to verify the eligibility criteria. In particular, is it possible for eligible customers to protect their own data and not be included in the social tariff? A proposal from one of the attendees was the introduction of an

authorisation gate: the energy provider should inform the customers on their status in the bill and ask them if they would apply for the social tariff or not.

- In the future, the national budget will finance the social tariff. Since the service is free, if the number of customers under the social tariff drastically increases this will have an impact on the public expenditure.

Lesson 2: Protocols can be used to clearly define the role of different public organisations in delivering a service. These protocols can build on legislation defining the service and include details on eligibility criteria for the service and on what data must be transferred to provide the service.

- Legislation should not say “how” but only “what”.
- It is necessary to have a common framework and good practices to avoid confusion.
- The law defines the roles and responsibilities under the automatic social tariff. This could represent a constraint for the changes. What is needed is a legal framework and not a tight legislation.

Lesson 3: Re-use of existing infrastructure can facilitate cross-sectoral collaboration and enable the effective development and governance of new services. For this case, the re-use of the iAP Platform was a key success factor for the project.

- The existence of a data exchange platform that supports interoperability data standards is indeed a pre-condition for the success of such a project.
- The infrastructure guarantees interoperability both cross domain and cross border.
- One of the attendee raised a doubt regarding semantic interoperability. It was clarified that the interoperability is guaranteed thanks to the iAP platform (canonical data model) where DGEG, TA and IISS share data (they use the national base registry).

Lesson 4: Definition of key principles for eGovernment services in legislation provides a common basis which facilitates the development of new services and reduces barriers to effective **integrated public service governance**

- For this service we see a number of key principle such as:
 - “once only principle”
 - “digitalisation first but not only”
 - “no wrong door policy”.
- Participants had several other questions related to the service, including:
 - Is the initiative compliant with the GDPR?
 - How does DGEG define the household?
 - Do the energy providers receive a re-fund for the application of the social tariff?

Recommendations for organising and governing integrated public services

13.5. Agenda of the Workshop

Topic	Content	Presenter	Timing	
Registration & Welcome			09:30 – 10:00	
Opening	• Introduction to the workshop	Max Strotmann, Deputy Head of Unit D2 DG DIGIT Georges Lobo, Programme Manager, Unit D2 DG DIGIT	10:00 – 10.15	
Introducing the study	• Organising and governing digital public services	George O’Neill, Consultant, Deloitte	10:15 – 10:35	
Selection of case studies	• Overview of good practice digital public services	Victoria Kalogirou, Programme Manager, Unit D2 DG DIGIT	10:35 – 10:50	
Presentation of the case studies	<ul style="list-style-type: none"> • Exchange of business register data xRoad, EE/FI • Municipality ASP, Hungary • Digisos, Norway • Standard Business Reporting, The Netherlands • Automated Social Energy Tariff, Portugal 	<ul style="list-style-type: none"> • Tambet Artma, Centre of Registers and Information Systems, Estonia; • Mihály Dán, Ministry of Interior, Hungary; • Hege Lochen, Labour and Welfare Administration, Norway; • Frans Hietbrink, Tax and Customs Administration, The Netherlands • Pedro Viana, Digital Transformation Director, Administrative Modernisation Agency, Portugal (via video call). • <i>Moderator:</i> Victoria Kalogirou, Unit D2 DG DIGIT 	10:50 – 11.50	
Legal Interoperability	‘Legal context: an enabler or a constraint?’	Zsofia Sziranyi, Programme Manager, Unit D2 DG DIGIT	11.50 – 12.00	
Lunch break			12:00 – 13:00	
Break-out sessions	Digisos, NO (facilitator: Zsofia Sziranyi, DG DIGIT)	Automated social energy tariff, PT (Miguel Alvarez Rodriguez, DG DIGIT)	xRoad (Business registers), EE/FI (facilitator: Cecile Guash, DG DIGIT)	13.00 – 14.15
Coffee break			14.15 – 14.25	
Break-out sessions	Municipality ASP, HU (facilitators: Zsofia Sziranyi and Cecile Guash, DG DIGIT)	Standard Business Reporting, NL (facilitator: Miguel Alvarez Rodriguez, DG DIGIT)		14.25 – 15.10
Coffee break			15.10 – 15.20	
Conclusion	Feedback from break-out sessions Conclusion	<i>Moderator:</i> Georges Lobo, Programme Manager, Unit D2 DG DIGIT Break-out session facilitators: Zsofia Sziranyi, Miguel Alvarez Rodriguez, Cecile Guash, DG DIGIT Natalia Aristimuno, Head of Unit D2 DG DIGIT	15:20 – 16:00	

13.6. Communication materials

This chapter provides an overview of the communication materials produced over the course of the study. These materials include:

- Five factsheets on the case studies developed;
- Three infographics on the study findings;
- Three articles and a blog post on the study findings;
- 2 videos on
 - “Organising interoperability for borderless digital public services”; and
 - “Recommendations for Organisational Interoperability and Integrated Public Service Governance

13.7. Factsheets

Five factsheets were developed summarising the main results of the case studies.

13.7.1. Factsheet: X-Road – Exchange of information between Estonian and Finnish Business registers

Case summary

X-Road is a data exchange infrastructure used in both Finland and Estonia that enables public organisations within these countries to securely transfer their data.

Both countries have recently federated their X-Road infrastructures. The national business registers have taken advantage of this to set up the first cross-border data transfer project under this model.

Under the agreement reached each business register can request information on companies and have the data automatically transferred over X-Road.

The data is transferred free of charge between the two business registers. Such data is needed, for example, when a company from one country sets up an office in the other country.

Lead organisations
Estonian Centre of Registers and Information Systems; Finnish Patent and Registration Office (the Estonian and Finnish business registers)

Country
Estonia; Finland

Level of government
National; cross-border

Service provided
Automated transfer of data between Finnish and Estonian Business Registers over X-Road

Project duration
June 2018 - present

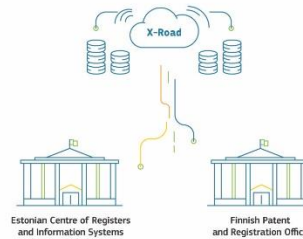


Interested in more?
X-Road: Access to business register data



Organisational interoperability

- The data exchange process is mediated by X-Road, which enables each business register to identify, authenticate and use the other organisation's dataset.



Formal agreements

- The principal interoperability agreement is the contract between the two business registers and accompanying technical annexes. The contract specifies details including the type of info to be exchanged, technical access details, security requirements and costs.
- A crucial background agreement is the trust federation agreement between Finland and Estonia which enables data exchange across the two X-Road ecosystems. This was finalised before the business register project began.

Aligning business processes

- X-Road provides a standardised business process for the transfer of data. As a consequence of the relatively straight-forward use-case, no further alignment of business processes is required.

Integrated public service governance

- A relatively informal project governance approach was set up by the business registers. Small project teams (5 or 6 people) from each organisation reached the necessary agreements, with no extensive approval process required. This was possible due to the straightforward use-case and the existing technical infrastructure.

Governance Structure

- A separate X-Road governance structure maintains the X-Road technical infrastructure. The Nordic Institute for Interoperability Solutions develops and updates the X-Road software, and X-Road operators in both countries implement it.
- Political stakeholders (up to the Prime Ministerial level) pushed for and established the X-Road Federation but were not involved in the specific business register project.
- A bilateral relationship exists between the two business registers, formalised in the contract between them.

Interoperability Layers

Legal: Concerns such as privacy are dealt with in the bilateral contract between the two business registers.

Organisational: The organisational framework is provided by the X-Road model as well as standardised processes for data transfers.

Semantic: Data standards and definitions were not further harmonised during the project. Existing definitions were provided in the contract.

Technical: The standards for data exchange are determined by X-Road.

Lessons learnt

- Even for simple cases, formal interoperability agreements (contracts) are necessary and can specify issues from technical access specifications to security requirements and costs.
- Start with small, feasible projects with clear added value.
- Build on existing technical infrastructure to simplify governance issues.
- Political stakeholders should open the door (e.g. pushing through the X-Road federation) but do not need to be involved in the details of particular projects.

13.7.2. Factsheet: Standard Business Reporting

Case summary

Standard Business Reporting (SBR) is a country-wide solution for system-to-system submission of business reports such as tax returns and annual accounts in the Netherlands.

SBR is used across a range of sectors and domains, and has also been adopted by the private sector (banks).

The SBR Programme is the public-private body that has been set up to develop and maintain a set of technical, semantic and business process standards for the reports.

👤

Lead organisations
Ministry of the Interior, Logius (Digital Government Service), Tax and Customs Administration

📍

Country
The Netherlands

🏛️

Level of government
National

👤

Service provided
System-to-system business reporting

📅

Project duration
2019 - present

Business individually submits each required report

DIGIPOORT

Each report sent to the relevant public body

Interested in more?
Standard Business Reporting



Organisational interoperability

- All public SBR business reporting chains (where the report is submitted to a public organisation) make use of a common digital gateway – Digipoort – which is maintained by Logius.
- As an example, in the case of taxation, the report is sent straight from the tax or accounting software to Digipoort, which validates it and forwards it on to the public organisation for which it is intended.

📄 Formal agreements

- All organisations responsible for the development of SBR information chains sign up to the SBR framework of agreements. They commit to make use of the technical, data and process standards defined in this framework.
- Logius provides a service level agreement, which commits to a defined level of service through Digipoort for each individual business reporting chain it has agreed to support.
- Individual businesses have commercial contracts with their tax, accounting or other software providers – who update their software to make the direct SBR system-to-system submission possible.

📄 Aligning business processes

- A standardised process for the system-to-system submission of a business report has been created, and is maintained and updated by the SBR Programme.

Integrated Public Service Governance

- The SBR Programme maintains a set of technical, semantic, and business process standards for the submission of business reports.

🏛️ Governance Structure

- The SBR Programme is a public-private governance body representing all users of the SBR solution. It maintain decision-making bodies for:
 - Strategic issues – SBR Council
 - Tactical issues – SBR Platform
 - Operational discussions (update of standards) – SBR expert groups
- The public sector also maintains a set of public-sector only bodies (SBR steering committee, SBR tactical committee, working groups) to coordinate public sector positions on SBR decisions.
- Individual public organisations also maintain bilateral relationships with the (umbrella) organisations, which submit reports to them in order to directly discuss issues related just to their reporting chain.

🌐 Interoperability Layers

Legal: No legal changes were required to set up the SBR Programme as it started as a voluntary mechanism. Since then, for some individual business reporting chains (e.g. corporate tax returns), legislation was introduced to require the use of SBR as the only system-to-system solution for reporting.

Organisational: Process standards for system-to-system submission are defined by the SBR Programme.

Semantic: The data architecture is standardised by the SBR Programme. Organisations can define their own data definitions for individual reports – these definitions are published in the Netherlands taxonomy.

Technical: Standards are defined by the SBR Programme.

💡 Lessons learnt

- Standardisation on the process level can encourage take-up of a common solution. To be successful, structures must be put in place to properly maintain these standards.
- It is necessary to find a balance between providing consistency and flexibility for standards (e.g. providing a data architecture, but allowing flexibility for organisations to provide their own data definitions).
- Public-private governance structures can be an important and necessary way to encourage private sector involvement. Public-sector only communication channels are also valuable as are bilateral ones. They can be maintained in parallel.
- To minimise the number of agreements required, public organisations (such as Logius) can provide a single service level agreement, which is valid for all public consumers using its services.

13.7.3. Factsheet: Digital application for social security (Digisos)

Case summary

DIGISOS provides a digital process by which citizens can apply for financial assistance. The application is made through a single national portal (hosted by the Norwegian Labour and Welfare Administration), but processed at municipality level.

The service required close coordination between national and municipal stakeholders, as well as with multiple private providers. To facilitate this, the service was first developed with five pilot municipalities, before being offered to other local administrations.

Digisos is now available in 101 municipalities out of 422, covering almost 50% of the population.

Lead organisations
Norwegian Labour and Welfare Administration (NAV), and Bergen municipality

Country
Norway

Service provided
Digital application for social security with user tracking of application process

Level of government
National and Local

Project duration
2016-present (in production)

Citizen sends application → **NAV collects application** → **KS transforms to correct standard and forwards to municipality** → **Municipalities (local NAV office) handle the application for the citizen** → **Private solution providers provide digital social systems to the municipalities**

Interested in more? DIGISOS

Organisational interoperability

- To deliver the service, data (the application) flows from the NAV portal, through the FIKS platform (operated by KS), to the relevant municipality.
- NAV was selected as the portal because it already serves this function for other national level social security benefits.
- FIKS is a pre-existing platform. It was selected as the bridge between NAV and the municipalities because KS already has the right to process municipality data.
- Municipalities have a pre-existing relationship with one of four private providers for their local IT systems to record financial assistance applications. Digisos worked closely with these four private providers to ensure that the developed solution was compatible with each system.

Formal agreements

- Municipalities can choose to participate in Digisos on a voluntary basis. If they do so, they must individually reach a number of agreements with each of the national entities involved.
- In order to ease this process, Digisos developed template agreements to be used by municipalities. These templates could be customised, but doing so slows down the process of finalising the necessary agreements.
- The templates provided include for a 'collaboration agreement' to govern the cooperation between the parties and a 'data processing agreement', to regulate the processing of personal data by the data processors.

Aligning business processes

- The different roles of the involved organisations and processes that each should be responsible for were clear from the beginning of the project.
- Additional complexity was added by the presence of the four different private providers for the local IT systems. Separate processes had to be developed for each system, working closely with each provider.

Lessons learnt

- Template agreements can be used to enable the formalisation of the organisational relationships between large numbers of stakeholders. The level of customisation possible for these templates can differ according to organisational preferences.
- A pilot approach with a limited number of organisations can help develop both technical solutions and organisational relationships.
- Private sector providers can add complexity to a project but may also be key for its success — they should be involved in discussions from the beginning.
- Working within existing legal boundaries can speed up the development and deployment of the service.
- Involvement of end-users (citizens) was crucial for the success of the system design and usability.

Integrated Public Service Governance

- A key feature of the governance structure for the development of the service was the input from the pilot municipalities. These pilot municipalities represented the point of view of the other municipalities, and continue to play a key role for the further development of the service.

Governance Structure

- The project steering committee (representatives from NAV, KS and five pilot municipalities) leads and oversees the project team delivering the Digisos service. It has the final say on the development of the service.

Interoperability Layers

Legal: Agreements were reached within the existing law to provide a solid and sustainable legal framework for the new roles and processes.

Organisational: Decisions are reached commonly with the involved stakeholders. The solution is voluntary for the municipalities, who can choose to adopt it when they like.

Semantic: The collaboration between the pilot municipalities, KS, NAV and the IT providers has resulted in a standardised terminology. All functional developments and documents have their own product description and glossary with the common definitions.

Technical: The KS standards and the existing FIKS Platform are used to ensure technical interoperability.

13.7.4. Factsheet: Municipality Application Service Provider

Case summary

The Hungarian Government has developed a new cloud Application Service Provider (ASP), the Municipal ASP Centre. It provides an IT back-office to all Hungarian municipalities and a front-office portal for users — public administrations, citizen and business —, to access different eGovernment services.

Ten different integrated services are provided, from local tax management to industrial and commercial management.

-  **Lead organisations**
Hungarian State Treasury, Hungarian Ministry of Interior
-  **Country**
Hungary
-  **Level of government**
National and Local
-  **Service provided**
Cloud-based back-office IT system for Hungarian municipalities as well as front-office portal by which clients can access municipality services
-  **Project duration**
EU supported pilot project “Establishing a Municipality ASP Centre” ran between 2012 and 2015. The full implementation of the Municipality ASP Centre started in 2016



Municipalities



Enterprise Service Bus



Municipality ASP Centre Service



Base Registries





Interested in more?
Hungarian Municipality Application Service Provider Centre




Organisational interoperability

-  **Formal agreements**
 - The Municipality ASP Centre follows a centralised model with the the framework system and integrated services overseen and operated by the Hungarian State Treasury.
 - The Municipality ASP Centre draws on data from base registries to deliver its services. This exchange of data is intermediated by the government service bus, KKSZB, by which the Municipality ASP Centre is able to exchange information with the involved entities without the need to create new interfaces or adjust semantic definitions.
-  **Aligning business processes**
 - There is a Service Agreement between each municipality and the State Treasury. The agreement covers the services that will be provided through the Municipality ASP Centre, the obligation of the municipality to connect to the system and the handling of the data.
 - The Municipality ASP Centre has just one single contract on behalf of all connected municipalities with each of the base registries involved. This contract describes the data required by the Municipality ASP Centre.
 - The principle responsibilities and tasks of each of the stakeholders involved in the Municipality ASP Centre are defined in legislation, as is the obligation for base registries to share their data through the government service bus.
-  **Integrated public service governance**
 - The business processes for the Municipality ASP Centre were developed within the project consortium's "integration and eGovernment" workin group. The State Treasury led this process.
 - For interconnection with base registry data, the working group worked directly with developers from the government service bus.
- The Municipality ASP Centre was initially developed by a consortium of public stakeholders. The consortium is still active as some aspects of the Municipality ASP Centre are being further developed. Responsibility for the Municipality ASP Centre has shifted to a more limited number of public stakeholders in its operational phase.

Integrated Public Service Governance

-  **Governance Structure**
 - The initial project consortium led by the Governmental IT Development Agency included the Ministry of the Interior, The State Treasury, and four state-owned IT companies. Decisions were made by the Project Steering Committee, representing each consortium member. Working groups provided input for the Steering Committee to decide upon.
 - For the operational phase, decision making powers are split between the State Treasury — with overall responsibility for the Municipality ASP Centre — and the Ministry of Interior and its state-owned IT, responsible for the IT infrastructure. Daily operations are overseen by the State Treasury.
-  **Interoperability Layers**
 - Legal:** To set up the Municipality ASP Centre, legislation was passed to define roles and responsibilities of stakeholders. The Municipality ASP Centre also operates according to rules and principles defined in previous legislation.
 - Organisational:** The original organisational structure for the Municipality ASP Centre, business processes, and division of tasks were developed by the project consortium during the initial pilot phase. Based on these decisions, these processes, tasks, and responsibilities were formalised in legislation.
 - Semantic:** The Municipality ASP Centre re-used data definitions defined by the base registries. Therefore, it was not necessary to develop and define new data definitions.
 - Technical:** The technical interoperability of the data exchange between the base registries and the Municipality ASP Centre is provided by the government service bus (KKSZB), which enables the connection of the different systems in use by the municipalities.

 **Lessons learnt**

- Changes in the governance structure from the development stage to the delivery stage can allow the new leader to be focused on any gaps and fill them accordingly.
- Administrative simplification (an EIF principle) should be pursued where possible, as done through the creation of a single interoperability agreement between the Municipality ASP Centre on behalf of all municipalities with each base registry.
- State responsibilities for each organisation officially documented to ensure a clear division of duties and prevent conflict of interests.
- A clear definition of responsibilities in legislation can increase the level of transparency and facilitate service delivery.
- The existence of a national technical infrastructure can help solve not only technical interoperability challenges but also semantic and organisational ones.



13.7.5. Factsheet: Automated Social Energy Tariff

Case summary

In 2016, the Portuguese Government decided to create a new automated system to award a reduced energy tariff to eligible citizens – the Automatic Social Energy Tariff (ASET).

The Directorate-General for Energy and Geology (DGEG) is the lead organisation for the automated system. It collects information on citizens' energy contracts from energy suppliers. Identity details on citizens holding potentially eligible energy contracts are sent via a pre-existing data exchange infrastructure to the social security and tax authorities. These authorities assess and communicate which citizens are eligible for the reduced energy tariff.

The implementation of ASET has resulted in a huge increase in the number of citizens receiving the reduced tariff (from around 150 000 to around 850 000).

Lead organisations
Directorate-General for Energy and Geology (DGEG); Tax Authority; Informatics Institute of Social Security; Administrative Modernisation Agency (AMA)

Country
Portugal

Service provided
Automated assessment of eligibility and award of a reduced energy tariff

Level of government
National

Project duration
June 2016 – present

The diagram illustrates the data flow for the ASET system. Energy providers send data to the Directorate-General for Energy and Geology (DGEG). DGEG then shares information with the Administrative Modernisation Agency (AMA). The AMA shares information with the Tax Authority (ITA) and the Information Institute of Social Security (IISG). The ITA verifies the annual income threshold, and the IISG verifies the annual income threshold. The AMA also shares information with DGEG.

Interested in more?
Automatic Social Energy Tariff



Organisational interoperability

- The structure of ASET was greatly influenced by the existing interoperability infrastructure in Portugal – the interoperability in public administration (IAP) tool. This infrastructure provides a means and standards for public organisations to exchange data.
- The service was designed to minimise administrative burden on citizens, who are automatically assessed for their eligibility for the tariff, without any need for them to apply.
- The organisations transfer the minimal amount of data necessary to provide the service. For example, the social security and tax authorities assess which citizens are eligible for the tariff. They transmit this information in the form of a positive or negative response, and do not share the actual social security or tax data.

Formal agreements

- The roles and responsibilities of the involved parties are defined in legislation.
- Protocols were signed between the Tax authority, Informatics Institute of Social Security, AMA, General Directorate of Energy and Geology, and energy operators EDP Distribuição – Energia SA and REN – Gasodutos, SA. These protocols specify which data should be transferred and how to transfer it as well as providing the exact terms and conditions for determining and confirming the eligibility of citizens for the reduced tariff.
- All these protocols were previously considered by the National Authority for Personal Data Control as compliant with the principles of personal data protection and applicable law.

Integrated Public Service Governance

- ASET was initially developed through working meetings between the Office of Secretary of State for Energy, Office of Secretary of State for Finance, Office of Secretary of State for Social Security, DGEG, AMA, Informatics Institute of Social Security, and Tax Authority.

- These parties agreed between them on the organisational model, data sources and shared services to be used.

Governance Structure

- Today, the DGEG has overall responsibility for the delivery of the ASET, acting as a leader in the assessment of eligibility for the reduced energy tariff.

Interoperability Layers

Legal: The responsibilities of the involved organisations are defined in legislation. ASET was also built on top of existing legislation which defined the interoperability context in Portugal. This legislation already mandated the use of open standards, promoted the IAP platform, and established the once only principle.

Organisational: The pre-existing IAP platform is used to transfer data between the organisations. These organisations also signed protocols defining the data to be transferred.

Semantic: The earlier implementation of open standards and the use of the IAP Canonical Data Model, which allows the semantic normalisation of data between the entities connected to the IAP, meant no changes to data semantics in the integrated systems was necessary.

Technical: Technical interoperability is enabled through the existing IAP platform.

Lessons learnt

- Protocols can be used to clearly define the role of different public organisations in delivering a service. These protocols can build on legislation defining the service and include details on eligibility criteria for the service and on what data must be transferred to provide the service.
- Reduction of administrative burden on the citizen should be maintained as a leading principle when designing new integrated public services.
- Re-use of existing infrastructure can facilitate cross-sectoral collaboration and enable the effective development and governance of new services. For this case, the re-use of the IAP Platform was a key success factor for the project.
- Definition of key principles for eGovernment services in legislation provides a common basis which facilitates the development of new services and reduces barriers to effective integrated public service governance.



13.8. Infographics

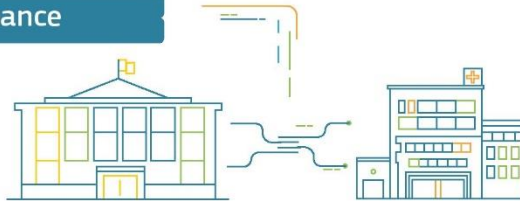
13.8.1. Infographic: Key Concepts for Organising Interoperability



The European Interoperability Framework gives guidance, through a set of recommendations, to public administrations on how to ensure cross-organisational relationships.

Interoperability Governance

This refers to decisions on interoperability frameworks, institutional arrangements, organisational structures, roles and responsibilities and other aspects of ensuring interoperability at national and EU levels.



Example



The National Interoperability Framework for Poland is a legislative document which sets requirements regarding how public administrations can achieve interoperability.

Integrated Public Service Governance

Ensures the interoperability of different shared services and data sources that help public administrations at all levels across Europe deliver more effective digital public services.



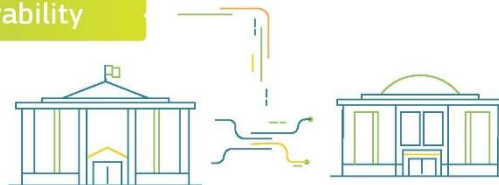
Example



The SBR public private partnership provides, selects and updates standards for business reporting (e.g. tax) to a number of public authorities in the Netherlands.

Organisational Interoperability

This refers to the way in which public administrations align their business processes, responsibilities and expectations to achieve commonly agreed and mutually beneficial goals.



Example



PROMETA provides a common framework for modelling and managing business processes in Luxembourg.



INTERESTED IN MORE? See the EIF implementation and governance models action page on the role of interoperability in public organisations.

13.8.2. Infographic: Recommendations and good practices for organising interoperable digital public services



EUROPEAN INTEROPERABILITY FRAMEWORK IMPLEMENTATION

RECOMMENDATIONS FOR ORGANISING INTEROPERABLE DIGITAL PUBLIC SERVICES

In order to fulfill the European Commission's vision of borderless digital public services, public administrations must tackle both organisational and governance challenges.

The European Interoperability Framework (EIF) provides a model for addressing these and other interoperability issues, which it labels as "organisational interoperability" and "integrated public service governance".

Implementing the following recommendations will help public administrations deliver more effective integrated public services.

ORGANISATIONAL INTEROPERABILITY

- ✓ Pursue the minimisation of administrative burden where possible, to facilitate good and clear organisational relationships
- ✓ Consider a mix of different types of interoperability agreements and legislation to formalise organisational relationships
- ✓ Make use of existing technical infrastructure where possible
- ✓ Pursue standardisation on the process level and allocate the resources to maintain the standards
- ✓ Design and divide processes in a user-centric manner

INTEGRATED PUBLIC SERVICE GOVERNANCE

- ✓ Develop digital public services through a gradual approach
- ✓ Consider how to involve the private sector from the start of the project
- ✓ Assess whether and how the planned digital public service can be delivered within the existing legal framework
- ✓ Involve policy makers to facilitate the creation of new infrastructure and resolve blocks, but avoid their direct involvement in implementation
- ✓ Balance flexibility and consistency when selecting standards

If you want to know more about these principles or how organisational and governance challenges to interoperability can be addressed, please visit our website:

https://ec.europa.eu/isa2/actions/continuously-updating-european-interoperability-strategy_en
<https://joinup.ec.europa.eu/collection/nifo-national-interoperability-framework-observatory>



CHECKLIST

GOOD PRACTICES FOR ORGANISING INTEROPERABLE DIGITAL PUBLIC SERVICES

This checklist guides public administrations in designing and implementing interoperable digital public services. The good practices were identified in a series of EIF workshops with interoperability practitioners and selected case studies from public administrations across Europe.

Formal agreements



- Use formal interoperability agreements even for simple cases to specify issues from technical access specifications to security requirements and costs.
- Minimise the number of agreements required by providing a single service level agreement which is valid for all public consumers using its services.
- Use template agreements (customisable) to enable the formalisation of organisational relationships between large numbers of stakeholders.

Governance (structures)



- Build on existing technical infrastructure to simplify governance issues.
- Set up public-private governance structures to encourage private sector involvement.
- Formally document the responsibilities for each organisation to ensure a clear division of duties and prevent conflicts of interest.
- Provide a clear definition of responsibilities in legislation thereby increasing the level of transparency and facilitating service delivery.
- Use protocols to clearly define the role of different public organisations in delivering a service.

Standardisation



- Find the right balance between providing consistency and flexibility for standards (e.g. providing a data architecture, but allowing flexibility for organisations to provide their own data definitions).
- Standardisation on the process-level can encourage take-up of a common solution. To be successful, structures must be put in place to properly maintain these standards.

Design & implementation approach



- Start with small, feasible projects with clear added value.
- Take a pilot approach with a limited number of organisations that can help develop both technical and organisational relationships.
- Working with existing legal boundaries can accelerate the development and the deployment of the service.
- Re-use of existing infrastructure can facilitate cross-sectoral collaboration and enable the effective development and performance of new services.
- Maintain as leading principle the reduction of administrative burden on the citizen when designing new integrated services.
- Define key principles for eGovernment services in legislation as they provide a common basis which facilitates the development of new services and reduces barriers to effective integrated public service governance.

Stakeholder involvement



- Leverage political stakeholders as "door openers". No need to consult them on the details of particular projects.
- Involve private sector providers from the beginning – although they might add complexity to a project, they can be key for its success.
- Involve end-users (citizens) as they can be key for the success of the system design and usability.

If you want to know more about these principles or how organisational and governance challenges to interoperability can be addressed, please visit our website.

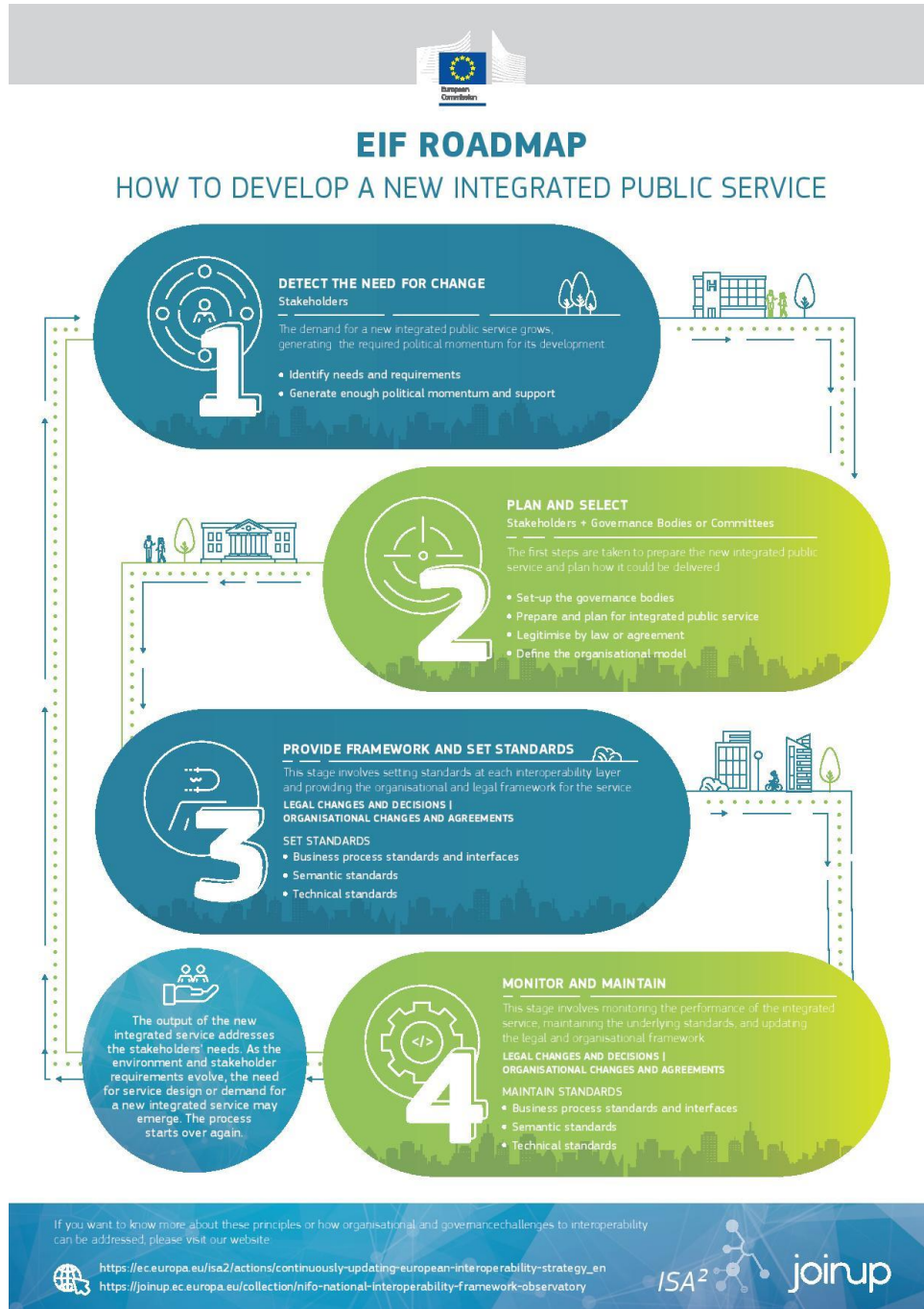


https://ec.europa.eu/isa2/actions/continuously-updating-european-interoperability-strategy_en
<https://joinup.ec.europa.eu/collection/nifo-national-interoperability-framework-observatory>

ISA²

joinup

13.8.3. Infographic: How to develop a new integrated public service



13.8.4. Articles

Over the course of the project, three articles were developed to communicate the progress and findings of the study. The table below provides an overview and a link to these articles:

Title	Summary
<p>Article 1: Upcoming EIF Workshop on Integrated Public Service Governance and Organisational Interoperability - Introducing our approach</p>	<p>This article was used to promote an upcoming study workshop. It provided a first look at the roadmap for integrated public services used as a framework during the study.</p> <p>Link: https://ec.europa.eu/isa2/actions/continuously-updating-european-interoperability-strategy_en</p>
<p>Blog post: Organising interoperability for borderless digital public services</p>	<p>This blogpost introduced organisational and governance aspects of interoperability as a crucial element of the development and delivery of European digital public services. It describes the challenges associated with getting organisations with different priorities and capabilities to agree on how they will collaborate. It presents the aim of the study to present concrete case studies and good practices on how to face these challenges.</p> <p>Link: https://ec.europa.eu/isa2/organising-interoperability-borderless-digital-public-services_en</p>
<p>Article 2: Introducing the case studies</p>	<p>This article presented the five case studies developed during the study, providing a brief introduction to the integrated public service developed in each:</p> <ul style="list-style-type: none"> • Access to business register data over X-Road • Standard business reporting • Digisos - Digital application for social security • Municipality ASP • Automated social energy tariff <p>Link: https://joinup.ec.europa.eu/collection/nifo-national-interoperability-framework-observatory/news/discover-our-eif-case-studies</p>
<p>Article 3: How to organise and govern integrated public services? – Enabling interoperability</p>	<p>This article presented the main findings of the study. It introduces the study aim of providing guidance to public organisations trying to work together to share data and information and provide seamless integrated digital public services for citizens and businesses. It presents the series of recommendations developed during the study on how organisations can govern these services and address issues related to organisational interoperability.</p> <p>Link: https://ec.europa.eu/isa2/actions/continuously-updating-european-interoperability-strategy_en</p>

13.8.5. Videos

Over the course of the study, two videos were developed to introduce the concepts explored and to communicate the main findings.

Title	Summary
Video 1: Organising interoperability for borderless digital public services	<p>This video presents the advantages of developing interoperable and integrated digital public services. It explains that organisational and governance aspects are a major challenge to developing these services and presents the ongoing efforts by the ISA² Programme to meet these challenges.</p> <p>Link: https://www.youtube.com/watch?v=lor2ozvgtwl&feature=emb_logo</p>
Video 2: Recommendations for Organisational Interoperability and Integrated Public Service Governance	<p>This video introduces the final results of the study. It presents the good practices and recommendations developed for implementing organisational interoperability and integrated public service governance in practice. It explains how following these recommendations can support public administrations in delivering effective and seamless digital services for their users.</p> <p>Link: https://www.youtube.com/watch?v=XztLzHhl4f4</p>



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