Interoperability Academy

IMAPS eLearning

July 2021
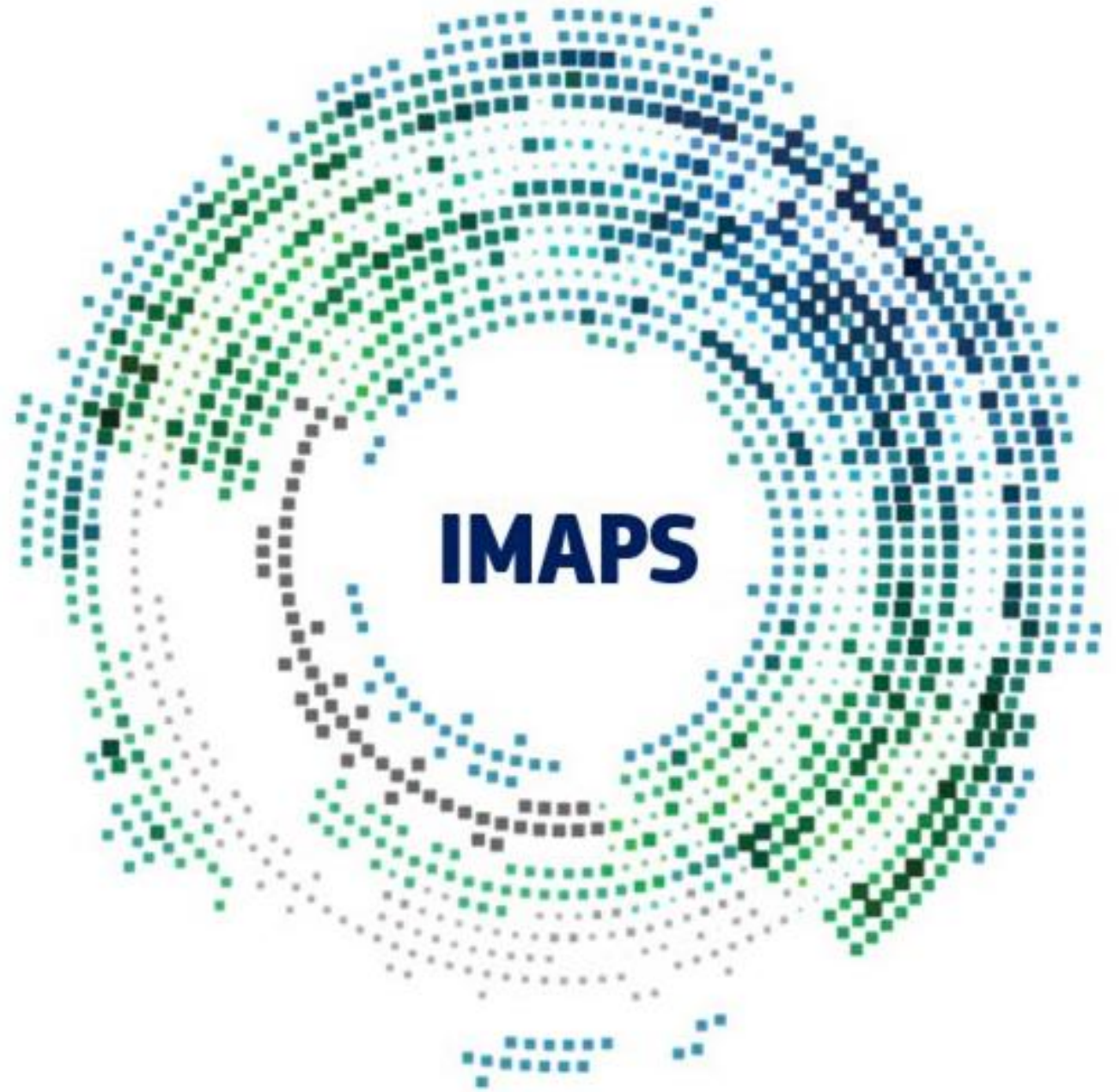
IMAPS eLearning

Module 2

IMAPS in practice

Interoperability Maturity Assessment of a digital Public Service

About this eLearning

Welcome to this eLearning on IMAPS, the **Interoperability Maturity Assessment of a Public Service**. It is the beginning of your learning journey through IMAPS.

This eLearning is composed of **2 modules**. This second module has for objective **to give a highly practical overview of the IMAPS assessment**. The first module of this eLearning provides you with **general knowledge on IMAPS**, its concept, context and practicalities.

The completion of this module will take approximately **30 minutes**.

It is required to **complete the first module** before starting this one and recommended to follow the online course on the European Interoperability Framework (EIF) to acquire a general understanding of the concept of interoperability.

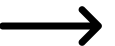A **self assessment** is available at the end of the course where you can test your knowledge.

Technical information

To help you navigate through this eLearning, here are a few **additional explanations**:

To go through this module, different **clickable elements** can be used:

- The **circled numbers** at the bottom of the pages direct you directly from a chapter to another;
- The **arrows** on the lower-right corners lead you to the next page of the module;
- Some **light blue icons** are also clickable and conduct to specific slides.

This module has different learning objectives:

- Ensure **practical understanding** of the setup of the IMAPS survey;
- Ensure future users understand how to **select & scope** their digital public service for the assessment;
- Guide the future users on **how to collect relevant information** in preparation of the assessment;
- Give a preview of the different sections covered by the IMAPS survey and enable future users know **how to navigate** the survey and complete their assessment;
- Show how the IMAPS assessment works in practice through a **case example**.
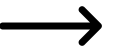
Audience of this eLearning

For whom is this eLearning module relevant?

- This eLearning has been developed to introduce IMAPS to **future users in public administrations** without prior knowledge or experience in using IMAPS.

- The eLearning is targeting **professionals** working on or interested in **interoperability, administrative simplification or digitalisation of administrative procedures.**

👉 This module will guide you through the IMAPS survey, based on the **example of a digital public service**, i.e. an online tax declaration service for citizens offered by the Ministry of Finance. You will discover the overall structure of the IMAPS survey questionnaire, examples of questions and a preview of the IMAPS results, the related interoperability score and recommendations.

Table of content

Online tax declaration in the spotlight

The digital public service owner of a region of an EU Member State wants to explore opportunities to improve the existing online tax declaration service provi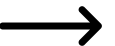ded to its citizens regarding interoperability aspects and to make adaptations to the digital public service, if needed. This example of an online tax declaration service will be used as a reference through this eLearning to illustrate how the IMAPS survey works in practice. This icon 🔍 indicates when examples are given based on the use case.

Filling in your tax declaration is by definition a **complex, burdensome and repetitive task**. In their paper version, citizens need to allocate a significant amount of time to firstly understand the tax document and to fill it in with the relevant information.

The paper version of tax declaration requires information from **various sources**. Citizens need to provide the same information multiple times and to align with different entities, which is **time-consuming** and creates more occasions to make **mistakes**, which leads to **administrative burden** for both citizens and the entities involved (e.g. clarification requests, compliance checks, etc.).

To enable effective and **efficient exchange of information** between the entities involved and to simplify the procedure for citizens, it was important to think of a **centralised, automatised and optimised system**. This is why this government decided to provide their tax declaration as an online service.

Online tax declaration in the spotlight

A digital public service is defined by three main elements: its **service provider**, the **user group** targeted and its **delivery channel**. This slide also provides examples of interoperability items assessed by IMAPS. The elements are presented for the case of the online tax declaration service.

| Service Provider	User Group	Delivery Channel	Examples of interoperability items
Tax declaration is a **regional** digital public service depending of the Ministry of Finance.	Development and improvement of the public system for tax declarations is accessible to **all the citizens aged over 18**.	Process is entirely digitalised, but the citizens still receive a letter at their place of residency. For people who do not have access to computers, **help desk** and material have been made available.	Pre-filled boxes, **digital** opportunity to review your declaration, **support** & extended info, **monitoring** of the sending, **multilinguism** etc.
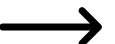
Structure of the IMAPS assessment

The IMAPS assessment is composed of three elements: an **online questionnaire** (1) leads to the **interoperability score** (2) of the assessed digital public service as well as to a global report with **tailored recommendations** (3).

STEP 1	STEP 2	STEP 3
Online questionnaire	**IMAPS interoperability score**	**IMAPS assessment report & recommendations**
Available on EUSurvey, the online questionnaire counts 46 questions and takes **around 45 minutes** to be completed.	Indicates the behavioural interoperability **maturity level** of your digital public service. There are five levels of interoperability: ad hoc, opportunistic, essential, sustainable and seamless	Provides you with **specific recommendations** on how to improve the behavioural interoperability of your digital public service and can support you in your internal decision-making process.

1   2   3   4   5   6   7   8   9

Discovery of the IMAPS survey

Organisational overview

👉 This section provides an **overview of the structure** of the IMAPS survey, as well as several examples of the types of questions you can expect as they appear on the EU Survey interface.

Structure of the survey

IMAPS v2.0.0

Fields marked with * are mandatory.

Pages

| Start | Introduction | Service Identification | Service Delivery | Service Consumption | Service Management |

The Specific Privacy Statement related to this questionnaire can be found below.

The Interoperability Maturity Assessment of Public Services (IMAPS) - Self-assessment Questionnaire is referred to as "survey" in the following sections.

By submitting your survey, you agree with this privacy statement.

The survey is composed of four main sections focussing on specific aspects of the digital public service. The survey is available in English.

The processing of your personal data is confidential. You can read the entire privacy statement of the IMAPS survey here.

The majority of assessment questions are multiple choice, however, you may be asked to provide additional information under an open-ended form.
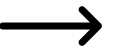
1 2 3 **4** 5 6 7 8 9

Discovery of the IMAPS survey

Organisational overview

👉 This section provides an overview of the structure of the IMAPS survey, as well as several examples of the **types of questions** you can expect as they appear on the EU Survey interface.

Types of questions

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* D1. Does your digital public service publish open data?
More Info

***Enabler** / Manifestation*   *EIF Interoperability View: L. O.* **S.** *T*

○ Not applicable, open data are not relevant for the solution
○ No, the digital public service does not publish open data
○ Yes, the digital public service publishes its open data

The "**more info**" link provides the user with additional explanation to understand the technical aspects of the questions.

The questions can be flagged "**enabler**" or "**manifestation**". Enabler are linked to the elements which enable the digital public service. Manifestations define the way the digital public service is presented to the end user.

The **EIF Interoperability View** refers to the L.O.S.T. environment, i.e. the Legal, Organisational, Semantic and Technical aspects of behavioural interoperability.

⭐ 1 2 3 **4** 5 6 7 8 9   →
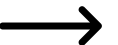
Discovery of the IMAPS survey

The IMAPS' conceptual model

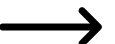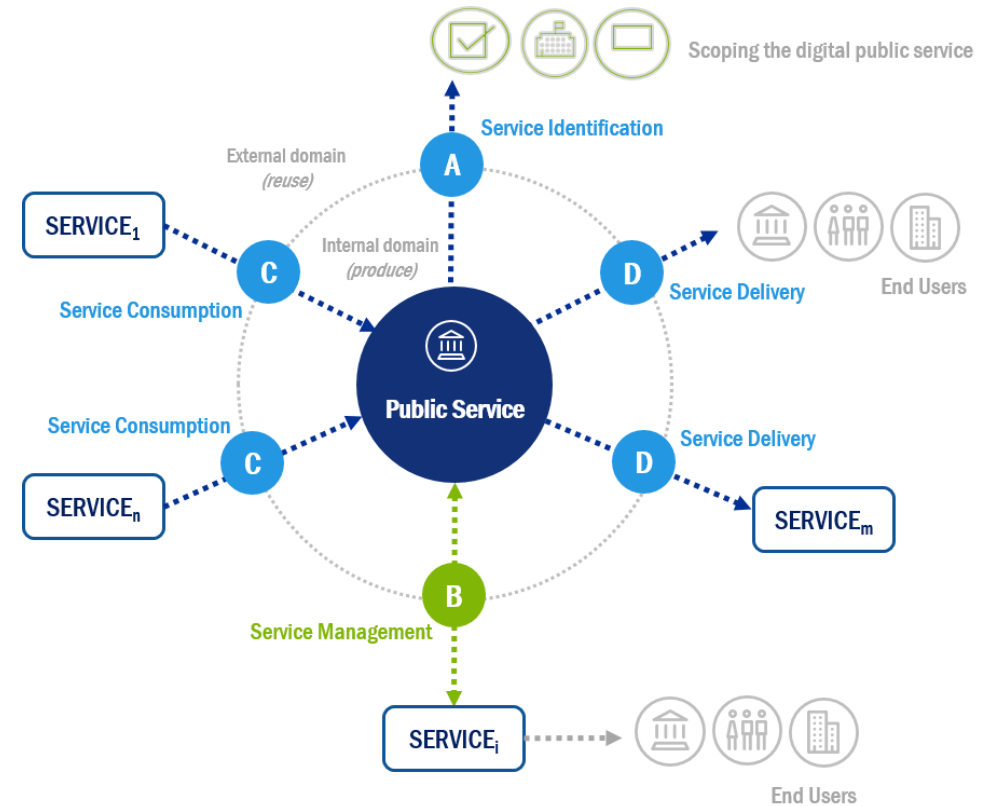The IMAPS assessment is composed of **four main sections** which will be presented in detail further in the course.

I	Service Identification
II	Service Delivery
III	Service Consumption
IV	Service Management

Focus on the Service Identification section

I

The **Service Identification** section scopes the digital public service under assessment by determining the public service owner, and capturing any other key elements of the digital public service under assessment (e.g. target group, administrative level).

What is the context of your digital public service? You will be asked to provide the following information:

Details of the person of contact:	*Name, Surname, mail, phone number*
Country of the organisation providing the public service:	*EU Member State*
Name of the digital public service:	*Online tax declaration for citizens*
Description of the process and underlying activities (initiation, processing, delivery of an outcome):	*This service is initiated by the public administration that first gathers the info related to the tax declaration and builds the file. Then, the administration reaches out to the citizen to validate the info and ensure nothing is wrong or missing. Once the information has been validated, the file is uploaded on the private online space of the citizen. In this way, the citizen can proofread his/her declaration and eventually report a mistake.*
Appearance of the outcome to the end user group:	*The digital public service is available to the citizens through an online application.*
Which public administration is responsible for providing the digital public service, which sector is it linked to?	*Ministry of Finance/competent tax authorities*
At what administrative level is the digital public service provided?	*Regional*
Who is the end users group?	*Citizens*

Focus on the Service Delivery section

The public administration delivers the digital public service towards end users i.e. citizens, businesses or other administrations. We call this **Service Delivery.** The digital public service that is being delivered represents the focal point of the IMAPS in terms of correctly scoping and delimiting the digital public service under evaluation. If Service Delivery is scoped correctly, the scoping of the other areas becomes more straightforward. The Service Delivery area focuses on the data, information and knowledge delivered by the digital public service, the Service Delivery Enablers and the Service Delivery Manifestations.

How is your digital public service delivered to the end users? IMAPS looks at the following elements:

|	
Which type of **data, information and knowledge** are transferred?	*Personal data linked to financial activities*
Service Delivery enablers (data privacy, multilinguism, inclusion in a service catalogue, authentication mechanisms, certification procedure, etc.)	*Data privacy, multilinguism, authentication mechanisms*
Service Delivery manifestation (delivery channel, pre-filling of the data, transparency, feedback mechanisms, equal access, administrative level restriction, etc.)	*Pre-filling of the data, transparency, feedback mechanisms, equal access*
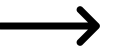
Focus on the Service Delivery section

👉 This slide gives a concrete example of a question within the **Service Delivery** section which illustrates how the digital public service example (i.e. online tax declaration) scored.

About the question & the selected answer

When taking the IMAPS assessment, the digital public service was only available in the regional language. However, it would be relevant to provide this digital public service in other languages. Indeed, several languages are recognised at the national level in this EU Member State and the end users of the service can also come from other European countries.

The EIF Interoperability View refers to interoperability layers and indicates with which EIF layers the question is associated.

About the recommendation

Improvements can be made in order to further enhance the level of behavioural interoperability of this digital public service. As a matter of fact, **multilinguism** is a key aspect of behavioural interoperability that is not implemented in the online tax declaration. It would then be interesting to offer a **multi-lingual interface** in a first place. **English** could be a relevant choice of language as it is known by a wide range of the end users of this digital public service. Focussing on the end user's experience is key to improve the behavioural interoperability of a digital public service.

As multilinguism is linked to semantical and technical aspects of behavioural interoperability, the assessment also recommends to take the **SIMAPS** and **TIMAPS** assessments to provide further insights on these questions.

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* **D5. To what extent is multilingualism supported?**

More Info

*Enabler / **Manifestation***   *EIF Interoperability View: L. O.* **S. T.**

○ The digital public service is only available in a single language and it is not applicable to be available in more languages
◉ The digital public service is only available in a single language. It could be applicable to be available in other languages, but there are no provisions in place.
○ Multilingualism is considered partially and only at a technical level
○ Multilingualism is considered adequately at a technical level and/or partially at a semantic level
○ Multilingualism is considered fully both at a semantic and technical level

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D5. To what extent is multilingualism supported? More Info Enabler / Manifestation   **EIF Interoperability View** L. O. S. T.

Your answer   ✔ The digital public service is only available in a single language. It could be applicable to be available in other languages, but there are no provisions in place.   150 out of 500 points

Recommendation: **Your digital public service is not multilingual. Consider at a minimum offering a multi-lingual interface. Offer it in one or several languages which best reflect the composition of your user community. You can further investigate the extent of multilingualism using the Semantic Interoperability Maturity Assessment of a Public Service (SIMAPS) and the Technical Interoperability Maturity Assessment of a Public Service (TIMAPS).**
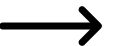
Focus on the Service Consumption section

👉 For delivering the digital public service towards the end user, the digital public service may be required to consume services of other public administrations or businesses. This area is called **Service Consumption.** There are various types of services that can be consumed by digital public services: Functional service; Security service & Base registry service.

What are the services of other public administrations or businesses used to deliver to digital public service? You will be asked to provide the following information:

|	
Data, information and knowledge -Manual or digital consumption of other services?	*Digital consumption of other services*
Data, information and knowledge - Self-production or reuse of consumed services?	*Reuse of consumed services*
Service consumption enablers (legal means, way of handling the data)	*The data is processed in full compliance with the GDPR*
Service consumption manifestations (type of services consumed in order to work, implication of data exchange, subscription to automatic updates of services)	*Implication of data exchanges with administrations providing financial information*
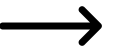
Focus on the Service Consumption section

This slide gives a concrete example of a question within the **Service Consumption** section which illustrates how the digital public service example (i.e. online tax declaration) scored.

About the question & the selected answer

In order to gather all the information needed to establish the online tax declaration of each citizen, the digital public service owner needs to **collect data from different sources** (i.e. all the organisations possessing relevant data for the tax declaration). Some data are automatically and digitally sent to the digital public service. For some others, the digital public service owner needs to proactively reach out to the external organisations. This step can be done either by mail (digitally) or by letter (manually).

The EIF Interoperability View refers to interoperability layers and indicates with which EIF layers the question is associated.

About the recommendation

It is recommended to further digitalise this digital public service's consumption of other services. By replacing the letters by mails or by automating the sharing of relevant data through **digital and secured channels** with the digital public service owner, significative improvements will be made. This would for example prevent mistakes while transferring data and thus increase the data quality, accuracy and completeness; accelerate the processes; increase the efficiency and lower the costs of data collection.

Taking the Technical Interoperability Maturity Assessment of a Public Service (TIMAPS) or the Organisational Interoperability Assessment (OIMAPS) will help you find **concrete ways to interact more digitally** with other organisations.

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* C1. How does the digital public service currently consume other services (manually versus digitally)?
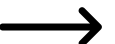More Info

Enabler / *Manifestation*   *EIF Interoperability View: L.* **O.** *S.* **T**

○ Fully manually
◉ Mainly manually, some digitally
○ Mix of manual and digital consumption
○ Mainly digitally, some manually
○ Fully digitally

C1. How does the digital public service currently consume other services (manually versus digitally)? More Info
Enabler / Manifestation   EIF Interoperability View: L. O. S. T

Your answer   ✔ Mainly manually, some digitally   120 out of 480 points

Recommendation: **You are currently consuming most of the services manually. You could enhance your interoperability by 'digitalizing' the consumption further. This will create benefits in the areas of data quality, throughput time, costs and interoperability. Fully digital consumption of services also enables straight through processing and/or real-time processing. Try to find ways to interact more digitally with related organisations using the Technical Interoperability Maturity Assessment of a Public Service (TIMAPS) and the Organisational Interoperability Maturity Assessment of a Public Service (OIMAPS).**

⭐ 1 2 3 4 5 **6** 7 8 9 →

Focus on the Service Management section

IV

This area focuses on important **Service Management** aspects in the area of sharing and reuse as well as for the design of the digital public service. Digital public services are considered more interoperable if documentation, source code, services and support is provided towards other administrations and business for reuse. In addition this area covers important design aspects that ensure future-proof behavioural interoperability such as architecture, processes, orchestration, procurement and service level management.

How is your digital public service managed in the area of sharing, reuse and design? IMAPS looks at the following elements:

| Data, information and knowledge	*Is your service modelled on a reference architecture framework? How are data and metadata managed? How are legal, technical, organisational and semantic aspects considered? Is your data consistent? Is there a catalogue of specifications?*
Service management enablers	*Do you share components and knowledge with the external environment? How does the security profile work? Which tools are put into place to ensure data protection? Is there a Service Level Agreement?*
Service management manifestations	*What is the level of clarity of the terms and conditions, data policies for data owner?*
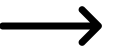
Focus on the Service Management section

IV

This slide gives a concrete example of a question within the **Service Management** section which illustrates how the digital public service example (i.e. online tax declaration) scored.

About the question & the selected answer

When creating the digital version of the tax declaration, the digital public service owner ensured to align with the European legal framework. This includes **transparency on the use of private data**. However, some legal terms and notions are not explicitly defined. This complicates the end user's experience, as the end user might need to make additional researches to understand all the terms and conditions.

The EIF Interoperability View refers to interoperability layers and indicates with which EIF layers the question is associated.

About the recommendation

In order to improve the end user's experience and the level of behavioural interoperability of your digital public service, it would be relevant to further develop the definition of the legal terms and conditions of the digital public service. To ensure the quality of these definitions and facilitate this work, a public service **description or a license** can be used.

Taking the Technical Interoperability Maturity Assessment of a Public Service (TIMAPS) or the Legal Interoperability Assessment (LIMAPS) will help you find **concrete ways to make clear the terms and conditions** to the end users.

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* B11. Are all terms and conditions of the digital public service operation clearly and explicitly defined?
More Info

Enabler / **Manifestation**   *EIF Interoperability View:* **L**. O. S. **T**

○ No, they are not clearly defined
● Yes, they are partially defined
○ Yes, they are fully defined

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B11. Are all terms and conditions of the digital public service operation clearly and explicitly defined? More Info
Enabler / Manifestation   EIF Interoperability View: L. O. S. T

Your answer ✔ Yes, they are partially defined

Recommendation: **Currently, the terms and conditions of the digital public service operation are partially defined to its end users. Consider fully defining the legal terms and conditions of your public service using a public service description or a license. You can use the Legal Interoperability Maturity Assessment of a Public Service (LIMAPS) and the Technical Interoperability Maturity Assessment of a Public Service (TIMAPS) to further investigate how to make clear the terms and conditions of the public service to the end users.**

450 out of 600 points
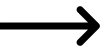
IMAPS results

Once the survey has been completed, the tool automatically provides **recommendations** to upgrade the digital public service's performance in terms of behavioural interoperability, based on the answers provided to each question. It also calculates the **interoperability maturity score** and the **related levels of interoperability.**

Summary

Your Score 6712

Maximum Score 10000

Section	Score for this Section	
Service Delivery (D)	2988	
Service Consumption (C)	1480	
Service Management (B)	2244	

Survey Score Conversion Table

	Maturity Level				
	1	**2**	**3**	**4**	**5**
Service delivery (D)	0-1000	1001-2000	2001-3000	3001-4000	4001-5000
Service consumption (C)	0-400	401-800	801-1200	1201-1600	1601-2000
Service management (B)	0-600	601-1200	1201-1800	1801-2400	2401-3000

Maturity Level	Maturity Stage	Interpretation
1	Ad Hoc	Poor interoperability - the digital public service cannot be considered interoperable.
2	Opportunistic	Fair interoperability - the digital public service implements some elements of interoperability best practices.
3	Essential	Essential interoperability - the digital public service implements the essential best practices for interoperability.
4	Sustainable	Good interoperability - all relevant interoperability best practices are implemented by the digital public service.
5	Seamless	Interoperability leading practice - the digital public service is a leading interoperability practice example for others.

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1 2 3 4 5 6 7 8 9
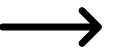
The IMAPS specialisations

As illustrated by the different examples of questions and recommendations presented in this eLearning, the IMAPS assessment can be **complemented by specialised versions**. These IMAPS specialisations provide additional recommendations on specific aspects of the digital public service.

After taking the IMAPS assessment, the respondent receives a report that includes **scoring and recommendations** for improving the behavioral interoperability maturity of the digital public service.

Depending on the elements tackled by the IMAPS survey, these recommendations can **trigger the need for further assessment** of the digital public service in terms of **legal**, **organisational, semantic** and **technical** behavioral interoperability which can be executed by either the public service owner or other delegated respondents.

LIMAPS
Legal behavioral interoperability

The respondent requires expertise in lawmaking, policymaking & decision-making.

OIMAPS
Organisational behavioral interoperability

The respondent requires expertise in business process modeling & organisational aspects of the digital public service.
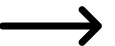
SIMAPS
Semantic behavioral interoperability

The respondent requires expertise in data models, semantic standards & specifications.

TIMAPS
Technical behavioral interoperability

The respondent requires expertise in information business, APIs & machine to machine interfacing.

Key takeaways

Since 2018, **more than 200 digital public services have been assessed** with the IMAPS survey. You can use IMAPS for assessing all **types of public services** in various sectors, from finance to mobility, justice, health or public procurement and many more.

What is the added value of an IMAPS assessment?

1 The user of the IMAPS assessment **gets insight into the interoperability** maturity of its digital public service as well as practical guidance for improving interoperability aspects.

2 The IMAPS assessment supports the optimisation of the **user experience** and the **service quality** of digital public services. This implies positive change for citizens and business who will experience seamless delivery of digital administrative procedures, in particular in a cross-border context.

3 The IMAPS assessment gives access to **interoperability requirements**, **standards** and **good practices** which can guide public administrations in the design of future digital public services, which are **interoperable by default**.

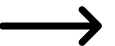Test your knowledge and **start your own IMAPS assessment** of a digital public service of your choice!

Credentials

Start your assessment

[**I**MAPS Survey](#)

[**L**IMAPS Survey](#)

[**O**IMAPS Survey](#)

[**S**IMAPS Survey](#)

[**T**IMAPS Survey](#)

Want to know more?

Visit IMAPS on the ISA2 website

ec.europa.eu/isa2/actions/imaps

Visit the IMAPS community on Joinup

joinup.ec.europa.eu/collection/imaps-interoperability-

maturity-assessment-public-service

Contact us DIGIT-IMAPS@ec.europa.eu

More on the programme

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