Ref. Ares(2024)1181473 - 16/02/2024

Impulse

Identity Management in PUbLic SErvices

D7.12 Community management, briefings and demonstrations for end users, DIHs and stakeholders

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Deliverable nature:	Report (R)
Dissemination level: (Confidentiality)	Public (PU)
Delivery date:	15/02/2024
Version:	2
Total number of pages:	52 (+170 in Annex)
Keywords:	Community of Stakeholders ; Stakeholders assessment ; Key actors engagement ; Dissemination events

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101004459

Executive summary

One of IMPULSE's WP7 objective is to create and maintain appropriate relations with the Community of Stakeholders – including related projects and stakeholders participating in other work packages – with the aim of disseminating and communicating the outcomes of IMPULSE through the appropriate tools and channels, fostering further and close collaboration.

Within WP7, T7.4 is responsible for "Community management, briefings and demonstrations for end users, DIHs and stakeholders". As for its implementation, this task is carried out in two simultaneous and complementary stages, involving:

- The construction and ongoing management of an Open Community, involving a variety of stakeholders, both in form and scope of operation, expertise and interest, whose mission is to work together to realise and deploy the project.
- The participation in large-scale events, at levels ranging from local to national and European, in order to firstly present the results of the project using specially designed materials but also secondly reach out to new and growing open communities.

This deliverable took place in close collaboration with the activities of the other work packages. Indeed, each of the work packages having its own specialty and therefore its own related stakeholders, the Open Community has logically been nourished by them. This task therefore strives to bring together these stakeholders to make them work together under the aegis of IMPULSE as a whole so that synergies emerge.

As a result, the actions of Task 7.4 have already led to:

- The complete assessment of all the IMPULSE project stakeholders, in terms of impact, influence and interest in it.
- The general evaluation of the engagement of these stakeholders to the project, in particular on the issues of opportunities and risks that this may represent.
- The development of procedures to ensure this commitment, mainly on the means implemented or to be implemented (communications, actions, activities, etc.).
- The holding different activities, either indirectly within other work packages but participating in the Open Community, or also directly under the umbrella of T7.4 with joint activities.

It should be noted that the tasks carried out during the first period covered by this deliverable (M1-M18) turn out to be primarily its theoretical implementation, which goes hand in hand with that of the project.

This deliverable is the update of the task, for the second part of the project (M19-M36) and shows the result of the strategy that has been led during this time period:

- The update regarding the complete assessment of all the IMPULSE project stakeholders, in terms of impact, influence and interest in it.
- The update of the general evaluation of the engagement of these stakeholders to the project, in particular on the issues of the risks identified in M18.
- The update regarding the different activities conducted during the second part of the project, either within other work packages or also directly under the umbrella of T7.4.

Document information

Grant agreement No.	**101004459**	**Acronym**	**IMPULSE**
Full title	**Identity Management in PUbLic SEervices**		
Call	DT-TRANSFORMATIONS-02-2020		
Project URL	https://www.impulse-h2020.eu/		
EU project officer	Giorgio CONSTANTINO		

Deliverable	**Number**	D7.12	**Title**	Community management and stakeholders' engagement.
Work package	**Number**	WP7	**Title**	Innovation and exploitation management, dissemination and communication.
Task	**Number**	T7.4	**Title**	Community management, briefings and demonstrations for end users, DIHs and stakeholders.

Date of delivery	**Contractual**	M36	**Actual**	M37
Status	version 2		☐Final version	
Nature	☒Report ☐Demonstrator ☐Other ☐ORDP (Open Research Data Pilot)			
Dissemination level	☒Public ☐Confidential			

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Summary (for dissemination)	This deliverable tackles the management and continuous building of an open Community of Stakeholders, involving the participating public administrations, members of the Digital Innovation Board, the Advisory Board and the communities built in WP6 around DIHs in different EU countries; and engaging with relevant external organisations – especially additional public administrations, DIHs, innovative SMEs, GovTechs and entrepreneurs – to get feedback on the IMPULSE assessment, technology and pilots. One of main goals is the briefing and demonstration of the project results to the community of interest, with the aim of disseminating the outcomes to the specific audience of engaged stakeholders and, thus, promote and underpin the use of the eID-related disruptive technologies by public administrations alone and/or in partnership with private companies. Specific materials such as exemplary manuals for specified end user groups have been developed focusing on target groups within the Community of Stakeholders.
Keywords	Community of Stakeholders ; Stakeholders assessment ; Key actors engagement ; Dissemination events

Version Log			
Issue Date	**Rev. No.**	**Author**	**Change**
26.01.2024	1	Bertille Auvray (TES)	First draft
31/01/2024	1.1	Marco Vianello (IC)	Deliverable review
31/01/2024	1.2	Kristrún Gunnarsdóttir (RVK)	Deliverable review
02/02/2024	1.3	Alicia Jimenez (GRAD)	Deliverable review
15/02/2024	**2**	**Bertille Auvray (TES)**	**Final version**

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Abbreviations and acronyms

AB: Advisory Board
AEI : Agency for European Integration and Economic Development
AI: Artificial intelligence
ARH: City of Aarhus, Denmark
BDIH: Basque Digital Innovation Hub
CEI: Call for expression of interest
CEL: CyberEthics Lab. Srls
dApps: Decentralized Applications
DEP: Digital Europe Programme
DIB: Digital Innovation Board
DIH: Digital Innovation Hub
DIN: Deutsches Institut für Normung e. V.
DoA: Description of action (IMPULSE project)
Dx.x: Deliverable
EDIH: European Digital Innovation Hub
e-ID: Electronic identification
ERTZ: Basque Government – Security Department – Ertzaintza
Fh ISI: Fraunhofer Institute for Systems and Innovation Research
GIJON: City of Gijón, Spain
GRAD: Fundación Centro Tecnolóxico de Telecomunicacións de Galicia
ICERT: Infocert S.p.A.
ICT: Information and Communication Technologies
LUT: Lappeenrannan-Lahden Teknillinen Yliopisto
MOP: Municipality of Peshtera, Bulgaria
NGO: Non-Governmental Organization
PAs: Public administration-s
RTOs: Research and Technology Organisations
RVK: City of Reykjavik, Iceland
STP: Sofia Tech Park
TES: Association du Pole de Competitivite Transactions Electroniques Securisees – DIH
TREE: Tree Technology SA
Tx.x: Task
UC/IC: Union of Italian Chambers of Commerce / InfoCamere
UNE: Asociación Española de Normalización
WP: Work package (IMPULSE DoA)
WG: Working Group

1 Introduction

1.1 Reminder of the task

IMPULSE is carrying out a user-centric and multidisciplinary impact analysis on the integration of blockchain and AI for eID in public services. In order to assure a coordinated co-creative demand-driven approach in which the opinions from relevant organisations (even beyond participating partners) are taken into account in all phases, a Community of Stakeholders has been created. This community is thought as being open in order to allow its extension to any other interested parties during and beyond the lifespan of the project.

Given this scope and in the framework of WP7 (innovation and exploitation management, dissemination and communication), Task 7.4 addresses the notion of Community management, briefings and demonstrations for end users, DIHs and stakeholders.

This task is divided into two main categories of activity, both independent and complementary. The first is the creation, management and animation of a community of stakeholders gathered around the same theme of interest and ambition. The second is the demonstration of the project to these stakeholders at European, national and local events, with the aim of gathering essential feedback for the development, deployment and sustainability of the IMPULSE solution.

During the first period of the project, which is equivalent to the time span covered by this task (M1-M18), it was mainly the first category of activities that has been developed, as this period was primarily dedicated to setting up the project. Whereas the second part of the project (M19-M36) saw a growth in IMPULSE presentation events (briefings, demonstrations) and the growth of the stakeholder community.

Within this task, and more generally for the whole project, TES is responsible for the engagement with the Community of Stakeholders through a set of interactive and appealing activities. Special attention to:

- Creating and maintaining a stakeholders' contact list, identifying the relevant stakeholders (including citizens, IT companies, citizens, associations, public servants, etc.) and public services.
- Coordinating engagement and liaison of stakeholders and public services during the different phases.
- Organising briefings and demonstrations of the project results (T7.4).
- Promoting the cooperation with other institutions (and related projects) as well as the scale-up and uptake of the IMPULSE solution by other public administrations.

1.2 Aim of the deliverable

This deliverable aims to present the activities carried out on stakeholders' engagement and community management, beyond the participating partners, as well as the result of the set up strategy in terms of communication and community expansion. This deliverable is the end of the project update.

More specifically, this version will attempt to highlight the changes between the first version of this deliverable (D7.11), which focused on the M1 - M18 period, and the second between M19 - M36. The aim will be to see whether the work carried out during the IMPULSE project and its ambitions to set up an Open Community have worked.

1.3 Research questions

The following research questions were covered in activity 7.4:

- Have the players involved in the IMPULSE Open Community remained the same?
- What kind of impact have they had on the project and vice versa?
- What influence have the stakeholders had on the project and vice versa?
- What stakeholder engagement risks has the project faced? Any it had not considered?
- Has the level of stakeholder commitment remained the same?

1.4 Relation to the whole project

Goal 1: Specify the requirements, acceptance and impact on the use of eID technology from regulatory, technical, operational and societal standpoints through the engagement of stakeholders in a co-creative demand-driven research process, including pilots in 5 different countries.

- **SO1.4** – Test and validate the IMPULSE approach in 5 European countries (Spain, Bulgaria, Denmark, Iceland and Italy) with the support of DIHs and their innovation ecosystems for cross-region/field comparisons from diverse social, economic and cultural perspectives and further engagement of innovative IT suppliers. KPI: No. of trained users (>25), involved DIHs (>7); solution readiness by pilot (1 or 2) stage (>50% and >90).

Goal 5: Define clear, tangible and specific roadmaps for the introduction, adoption, escalation and long-term sustainability of the holistic eID framework, supporting public services at different levels.

- **SO5.4** – Build a community to encourage the scale-up and adoption of the IMPULSE solution through the engagement of DIHs, which will be trained to support the implementation of the IMPULSE initiative locally, as well as new public administrations and service providers in general and other stakeholders relevant for the business ecosystem. KPI: No. of interested public administrations (>20) and innovative IT suppliers (>25) and trained DIHs (>10).

Section 4 details the consecution of the different Goals KPIs and other expected outcomes expected from the community involvement during the project

1.5 Timeline

The task 7.4 began in February 2021 (M1) and lasted until the end of the project (M36). This deliverable 7.12 (V2) takes place at the end of the project duration (M36), to provide a final view of the project's progress in terms of stakeholder relations within the Open Community, to assess the evolution of stakeholder engagement in the project, particularly following participation in various events where the project will be presented.

1.6 Document architecture

This deliverable is divided into two parts:

- Part 1 is dedicated to the presentation of the results of the IMPULSE stakeholders' engagement approach, specifically regarding the mapping, their interests, involvement and affiliated risks.

- Part 2 is focusing on the action plan and activities undertaken to favour the Open Community, with specific actions oriented towards DIHs and EDIHs.

2 IMPULSE' stakeholders engagement approach – the final assessment

2.1 Stakeholders mapping

This paragraph highlights if the stakeholders remained the same or changed. Below is the representation of the stakeholders IMPULSE had decided to involve and/or rely on, as presented in V1 of this deliverable.

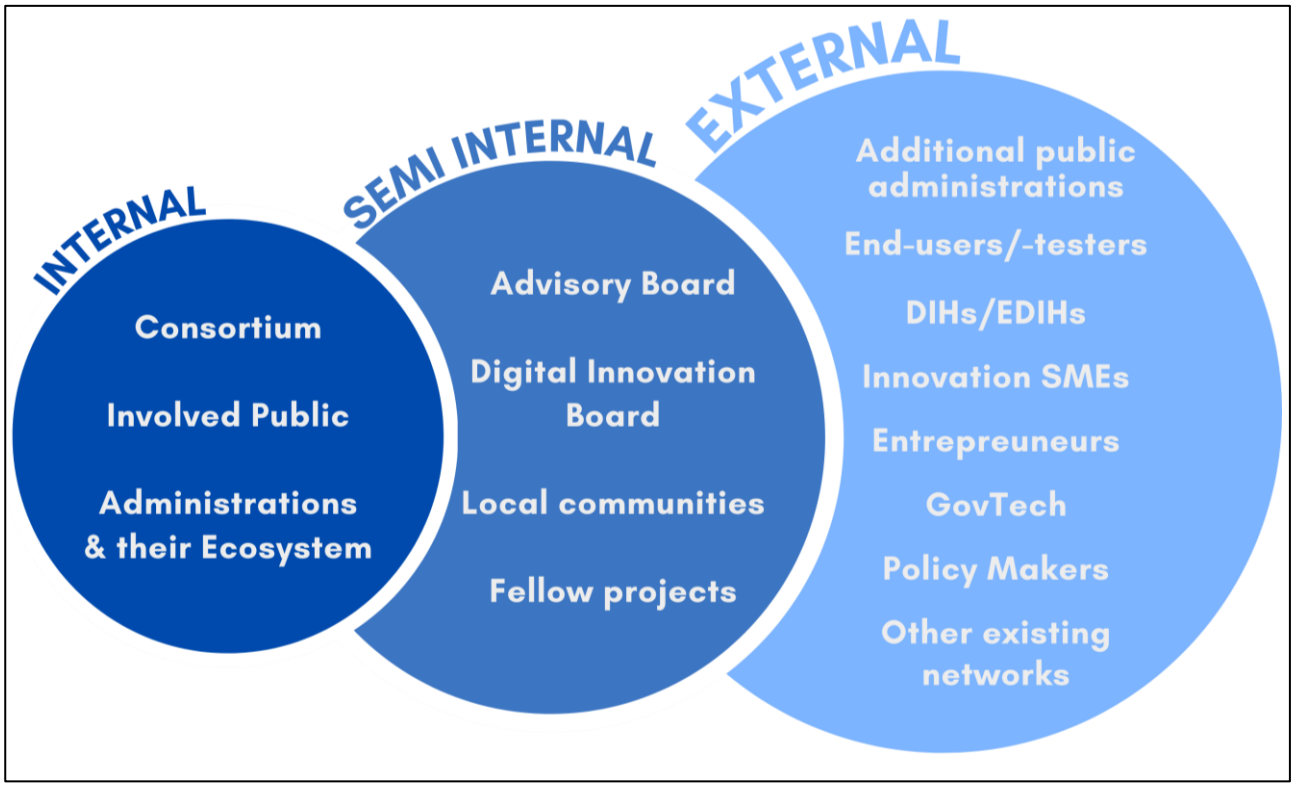

Figure 1: Stakeholders list.

2.1.1 Internal stakeholders – Stakeholders already involved in the project

By internal stakeholders it is meant those who are directly and actively involved in the project. These include all the partners in the consortium, and the public administrations involved, as well as their associated networks.

2.1.1.1 IMPULSE consortium

One partner left the project in October 2022.

2.1.1.2 Involved public administrations

No change.

2.1.1.3 Public administrations' network

The PAs network only had minor changes between the first and second period – more information in available in part 3.2.4 Update of public Administrations' network assessment, of this report.

2.1.2 Semi-internal stakeholders – Stakeholders enrolled during the project

A distinction is also made at mid-level of involvement for semi-internal stakeholders. These are the various partners or groups of interests who support the project but are not fully part of the consortium. This is the case of the Advisory Board, the Digital Innovation Board, the Communities (in the sense of WP6) and the fellow projects financed and running at the same time as IMPULSE in the framework of the EU programme DT-TRANSFORMATIONS-02-2020 or other calls in which similar disruptive technologies for Public Administrations are aimed to be developed

2.1.2.1 Advisory Board (AB)

The Advisory Board (AB) consists of international experts with proved experience in the different fields addressed in IMPULSE. Their function within the project is to give advice and complement partners' expertise on specific topics areas. The AB during the first period was made up of the following members:

- Danube Tech (Austria)
- Data Competence Center for Cites and Regions – DKSR (Germany)
- University of Amsterdam (The Netherlands)
- University of Torino (Italy)

In the second period, new members joined the Advisory Board (AB): Similar to the incorporation of new fellow projects, additional AB members have been recruited by IMPULSE in the second half of the project. This has allowed a more proactive approach to get feedback from experts in different areas addressed within IMPULSE. Representatives from the organisations below have been collaborating actively with the consortium:

- dvMP Department of Spatial- and Environmental Planning in Kaiserslautern (Germany)
- Universiteit van Amsterdam (The Netherlands)
- Walt.id (Vienna)
- University of Torino (Italy)

In the third period the Advisory Board (AB) count on a mix of previous participants and new members, that allowed to have a more complete view on the outcomes of IMPULSE.

- Universiteit van Amsterdam (The Netherlands)
- University of Torino (Italy)
- Proud Engineers (Estonia)
- SonicBee (The Netherlands)

2.1.2.2 Digital Innovation Board (DIB)

No change.

2.1.2.3 Local communities

No change.

2.1.2.4 Fellow projects

- DECIDO Project – evidence and Cloud for more InformeD and effective pOlicies: Decido is a three-year EU-funded project that aims to boost the use of EOSC (European open science cloud) by Public

Authorities enabling innovation in the policy making sector, removing European fragmentation, allowing cross-support and cross-collaboration and the use of secure compute – and data – intensive services.

2.1.3 External stakeholders – Stakeholders to be engaged in the project

External Stakeholders are individuals or groups outside a business or project, but who can affect or be affected by the business or project. In the context of IMPULSE, those stakeholders are any additional public administrations, end-users, Digital Innovation Hubs (DIHs) as well as European Digital Innovation Hubs (EDIHs), innovative SMEs, entrepreneurs, GovTech, policy makers and other established networks.

2.1.3.1 Additional public administrations

No change.

2.1.3.2 End-users / -testers

No change.

2.1.3.3 Digital Innovation Hubs / European Digital Innovation Hubs

The network grew during the second half of the project (see 3.1 The specific collaboration with Digital Innovation Hubs)

2.1.3.4 Innovative SMEs

No change.

2.1.3.5 Entrepreneurs in the private sector

No change.

2.1.3.6 GovTech

No change.

2.1.3.7 Policy Makers

Table 1: External Participants – Extract from D3.6

Participant No.	Professional Roles	Country
1	Policy maker of the European Parliament	Italy
2	Chief Information Officer at City Council	Ukraine
3	Policy maker of the National Association of Italian Municipalities (ANCI)	Italy
4	Digital Identity expert	Netherlands
5	Data ecosystem expert	Germany
6	Digital Identity Management expert	Estonia
7	Blockchain and SSI expert	Germany
8	Policy maker of the Agency for Digital Italy (AGID)	Italy
9	Government Digital Innovation expert	Spain
10	Policy maker of the Lazio Region	Italy
11	Digital identity expert	Netherlands
12	Blockchain expert and data spaces solutions architect	Spain

13	Chief Technology Officer of SSI solutions	Finland
14	Head of Technology and IT expert	Poland
15	CEO and Former Chief Legal Officer	Estonia
16	Digital Transformation and Business Development Consultant at the European Commission	Sweden

2.1.3.8 Other existing networks

- **EBSI** (related to WP5 work)
- **DIH World** (related to both WP6 and WP7 work)
- **ENOLL** (related to both WP6 and WP7 work)
- **EGPA** (related to both WP2 and WP7 work)
- **CENELEC** (related to both WP3 work)
- **Women in AI** within this task: meetings were held with the Woman in AI (WAI) network from Austria, organised by AEI (then still in the project) to discuss their possible involvement in the project's open community.
- **NLAB4CIT** (related to both WP7 work)
- **UNE** (related to both WP3 work)
- **ETSI** (related to both WP3 work)
- **EUDIV** (related to both WP3 and WP5 work)
- **EDIH Network**, withing this task: through our participation in DIH-World, whose leader is now co-leader the Digital Transformation Accelerator (DTA). IMPULSE, via TES has also been invited to an EDIH working group about AI for PAs as follow up of the project.
- **EDIH French Corridor: network of all the French EDIHs**

2.1.3.9 European Commission and Standardisation bodies

Apart from the network we were already in partnership with, we were in contact with two standardization bodies (UNE CTN 71/SC 307 and CEN/TC 224). Furthermore, we had the opportunity to meet the EC several times for alignment of the IMPULSE results with the latest regulations and standards (mainly eIDAS2). Finally, we contributed to EBSI with some new feature deployments using their infrastructure.

2.2 Assessment

Once the list of stakeholders has been drawn up and updated, it is a matter of making an evaluation. In the first deliverable, this evaluation served to take stock of the current situation at the beginning of the project (M1), in this case also at mid-term (M18). It allowed the definition of the expectations and perspectives for the project and its stakeholders and thus envisaging the way to reach them by also setting up the activities for that. In this second phase (M36), it allows evaluating the progress made and seeing if the goals have been reached.

2.2.1 Stakeholders classification – Engagement matrix

The stakeholder engagement matrix is the transcription of the current (C) and desired (D) levels of engagement by the project of each individual stakeholder, as well as for some a potential (P) level. For the second version of this deliverable, a new type has been added, as of final (F) level achieved.

C	Current engagement level
D	Desired engagement level
C / D	When the current and desired levels are the same
P	Potential additional level to take into consideration
F	Final engagement level achieved

It provides a baseline at the beginning of the project and invites regular assessment of its evolution during the project and a report at the end. Underlying this, it also gives an initial idea of the efforts that will be needed to ensure stakeholder engagement.

The level of commitment is divided into five categories, from the lowest to the highest:

Unaware	U	Unaware of project and potential impacts
Resistant	R	Aware of project and potential impacts and resistant to change
Neutral	N	Aware of project yet neither supportive nor resistant to change
Supportive	S	Aware of project and potential impacts and supportive to change
Leading	L	Aware of project and potential impacts and actively engaged in ensuring project success

This evaluation was carried out during the first version of the deliverable for task 7.4. In this deliverable, it is the final version that is proposed, which will enable us to highlight any changes in the commitment matrix and thus gauge the impact of IMPULSE in the open community.

For ease of understanding, the full table (M1 – M18 – M36) can be found in the Annex and only the updated version (M1 – M36) comparison is below. Similarly, when only the final level (F) is mentioned, this means that the final level (F) and the desired level (D) correspond.

Table 2: Stakeholders classification (Desired vs. Final)

Stakeholder	U	R	N	S	L	Comments
IMPULSE PAs					**F/D**	The final result is **LEADING** as they were involved all along and pursued their tasks.
PAs ecosystem				**F/D**		They remain **SUPPORTIVE** as they collaborate / provide feedback especially during the piloting activities and workshops.
End-users testers		**F**		**F/D**		In the end, the end-users who tested the solution fall into two categories: **SUPPORTIVE** and **RESISTANT**, depending mostly on their answers and feedback provided during the second piloting phases (more information in WP2 deliverables + WP6 roadmaps)
Final end-users		**F**	**F**	**F/D**		Due to the fact that this category remains uneasy to assess either since it is heterogeneous in terms of e.g. level of knowledge and/or interest in a solution as envisaged by the project, the final result varies from the more positive side as **NEUTRAL** and **SUPPORTIVE**. The **RESISTANT** consideration remains however at the end of the project as when the project was presented to them, some felt that it was either dangerous, pointless or difficult. For more information, see WP6 (workshops).
Advisory Board				**D**	**F**	The AB is considered fully **LEADING** as they have provided valuable feedback for the project and already think of further collaboration on the project topic.
Digital Innovation Board					**F/D**	The desired level, that is of **LEADING**, has been achieved as they actively collaborate with the consortium (e.g., pilot cases, roadmaps) and showed interest in bringing the result further (See 3.1 The specific collaboration with Digital Innovation Hubs)
Communities				**F**	**D**	They are considered as **SUPPORTIVE** as final level as they mostly provided support to the pilots but due to the different delays with the piloting activities, it was not as easy as expected to bring them into a leading level.
Additional PAs (already aware)				**F**	**D**	Additional PAs are considered as **SUPPORTIVE** of the project and the wish it has. However, for future project, they could be quite motivate in taking a leading position.
Additional Pas		**F**		**F/D**		When contacted and after the presentation of the project, they showed a real interest and were **SUPPORTIVE** of the project (e.g., they would like to receive the roadmaps, kept in the loop if the project is brought further, etc.). However, some were **RESISTANT**, and it's important to bear this in mind as a lesson for a possible next phase of the project.
DIHs (already aware of the project)					**F/D**	The desired and final levels of **LEADING** correspond as they would like to pursue the research started in the project by using its results.
DIHs				**F/D**		The desired and final levels of **SUPPORTIVE** correspond, as they would like to pursue the research started in the project by using its results and some expressed their wish to integrate the IMPULSE network.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101004459

Stakeholder	U	R	N	S	L	Comments
EDIHs				**F/D**		The desired and final levels of **SUPPORTIVE** correspond, as they would like to pursue the research started in the project by using its results and would like to be involved in more IMPULSE-type projects (the DTA has invited IMPULSE, via TES, to take part in the EDIH working group on AI for public administrations)
GovTech			**F**	**D**		Considering given GovTech's low contact rate, a **NEUTRAL** level would be more appropriate. They could probably be more involved in implementing a solution than in research.
Innovative SMEs			**F**	**D**		Considering given Innovative SMEs' low contact rate, a **NEUTRAL** level would be more appropriate. They could probably be more involved in implementing a solution than in research.
Entrepreneurs in private sector			**F**	**D**		Considering given Entrepreneurs' low contact rate, a **NEUTRAL** level would be more appropriate. They could probably be more involved in implementing a solution than in research.
Policy makers			**F**	**D**		Policy makers have provided useful feedback for the project and some of them also participated to the EAB, however if considered as a whole, the level remains **NEUTRAL**, as they were interested, provided feedback, but for the most part their contribution was limited to the participation in the round table.
Other established networks			**F**	**D**		Connections were made with some relevant network leading to interesting perspectives (IMPULSE information sharing throughout their networks, presentations, networking, etc.) so the desired and final level are logically **SUPPORTIVE**.
Fellow projects				**F/D**		The sisters' project were **SUPPORTIVE** all along the project, as different activities and events were shared to increase the impact of communication, encouraging cross-participation and a wider spread of the benefits brought by them to public administrations, relevant stakeholders and citizens in general. Exchange of ideas and lessons learnt was also a valuable outcome for improving several processes.
European Commission and standardisation bodies				**F**		These institutions were aware of the project and let us participate in their progress activity meetings. Also in the case of the EC with some bilateral meetings. Their participation was very **SUPPORTIVE** to understanding status of strategic plans, initiatives, regulations.

2.2.2 Stakeholders implication and influence over the project

At the same time, the potential interest of the stakeholders was defined, as well as the impact that the project could have on them and, conversely, the influence that they could have on the project in M18. This assessment is made by indicating the level of each category, from low to high. The analysis below is for the current period (M19-M36), which should highlights any changes between the first phase (M1-M18) and this one.

High	Significant involvement in all or most parts of the project
Medium	Implication which can vary from less to more depending on activities
Low	Little or no implication
*	Not foreseen, since it is not the ultimate goal / planned perspective, but possible
level	To keep the expectation at a reachable level

For ease of understanding, the full table (M1 – M18 – M36) can be found in the Annex and only the updated version (M1 – M36) comparison is below.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101004459

Table 3: Stakeholders implication over the project

Stakeholder	Interest for the project (Project expectation)	Impact of the project on them (Project expectation)	Influence over the project (Project expectation)	Interest for the project (M19-M36)	Impact of the project on them (M19-M36)	Influence over the project (M19-M36)	Comments
IMPULSE PAs (i.e., case studies)	High	High	High	High	High	High	After the 36 months, it is possible to state that the interest, participation and impact remain the same throughout the project and/or equally for all pilot cases.
PAs ecosystem	High	High	High	High	Medium	High	As expected, thanks to the various IMPULSE activities during the second part of the project, the interest and the influence of PAs ecosystems over the project have reached a higher level. Only the impact reached a medium level as what the project brought to them is more knowledge for the future than something tangible (such as the app) that they already have at their disposal.
End-users testers	High	Medium	High	High	Medium	High	As expected, they had a high influence over the project (via their feedback for example). Yet the level of impact on them directly, as considered only as tester remains quite medium (they might find an interest and start to think about the use of eID).
Final end-users	Medium	High	High	Medium	Medium	Medium	They have not been informed massively on the project as it is a research project, so the level remains medium for all the three categories. However, thanks to different workshops and webinars, some of them have been informed and expressed their interest in knowing more.
Advisory Board	High	Medium *	High	High	High	High	High interest can be considered since the members have accepted, on a voluntary basis, to participate in the project. They also had a great influence on the project thanks to their valuable feedback on the deliverables. Impact on them can be expected in the form of future partnerships in projects or conferences and also for the provision of additional information for their current activities based on the results obtained in the project in relation to an eID wallet use acceptance.
Digital Innovation Board	High	Medium *	Medium	High	Medium	Medium	High interest can be considered since the members have accepted, on a voluntary basis, to participate in the project. They also had a great influence on the project

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101004459

Stakeholder	Interest for the project (Project expectation)	Impact of the project on them (Project expectation)	Influence over the project (Project expectation)	Interest for the project (M19-M36)	Impact of the project on them (M19-M36)	Influence over the project (M19-M36)	Comments
							thanks to their valuable feedback on the deliverables. Impact on them can be expected in the form of future partnerships in projects or conferences.
Communities	High	High	High	High	Low	High	Positive interest has been expressed and discussion were done during the second part of the project. Other connection were done and feedback were given.
Additional PAs (already aware)	High	High	High	Medium	Low	Medium	In terms of result, hight interest for the project has been seen, some of them also said they would be willing to join another project on the same topic, like IMPULSE 2.0). The impact on the project remains medium as they provide information about their current situation as PA but didn't actively provide feedback on the project activities/results.
Additional Pas	Medium	High	Medium	High	Medium	Medium	In terms of result, hight interest for the project has been seen, some of them also said they would be willing to join another project on the same topic, like IMPULSE 2.0). The impact on the project remains medium as they provide information about their current situation as PA but didn't actively provide feedback on the project activities/results.
DIHs (already aware of the project)	High	Medium	High	High	Medium	High	For those contacted, a clear interest for the project and its deployment. However, the impact on them remains medium has the project mostly provided knowledge and inspiration to them but no active actions. The fact remains that they shared a lot about their expectations and services regarding the digital transformation of PAs.
DIHs	High	Medium	High	High	Medium	High	For those contacted, a clear interest for the project and its deployment. However, the impact on them remains medium has the project mostly provided knowledge and inspiration to them but no active actions. The fact remains that they shared a lot about their expectations and services regarding the digital transformation of PAs.

Stakeholder	Interest for the project (Project expectation)	Impact of the project on them (Project expectation)	Influence over the project (Project expectation)	Interest for the project (M19-M36)	Impact of the project on them (M19-M36)	Influence over the project (M19-M36)	Comments
EDIHs	High	Medium	Medium	High	Medium	High	For those contacted, a clear interest for the project and its deployment. TES, as leader of an EDIH, has been invited to take part into the EDIH working group on "AI for public administrations' in which it will pursue the work of IMPULSE. However, the impact on them remains medium has the project mostly provided knowledge and inspiration to them but no active actions. The fact remains that they shared a lot about their expectations and services regarding the digital transformation of PAs.
GovTech	Low	Low	Medium	Medium	Low	Low	When discussing with some GovTech, they expressed their interest in the project, however they were not actively involved in the project.
Innovative SMEs	Low	Low	Medium	Medium	Low	Medium	Within IMPULSE, innovative SMEs were sporadically involved. Thus the levels remain low for the impact of the project on them, but reached a medium level for their interest as they were willing to help and influenced some of the results (they provided help for the roadmaps as well as potential features for an IMPULSE 2.0).
Entrepreneurs in private sector	Low	Low	Medium	Low	Low	Low	No data.
Policy makers	High	Medium	High	Medium	Medium	Medium	Policy makers have shown a high interest for the project and its impacts, some asked to be kept up to date of the project's results. Some of their advice was collected and implemented in the project. However, apart from three individuals, of whom two participated in the expert advisory board and two to the final conference by submitting a contribution, their role in the project was limited to the participation in one round table.
Other established networks	Medium	Low	Medium	Medium	Low	Medium	Those contacted have showed interest in the project and are willing to share IMPULSE results (such as the roadmaps). The impact remains the same since they were not foreseen as end-users but more as information broker.

Stakeholder	Interest for the project (Project expectation)	Impact of the project on them (Project expectation)	Influence over the project (Project expectation)	Interest for the project (M19-M36)	Impact of the project on them (M19-M36)	Influence over the project (M19-M36)	Comments
Fellow projects	High	Medium	Medium	High	Low	Medium	The sister projects were relevant to make a kind of network for twofold related activities. On the one hand, digitalization of Public administrations services with different technologies, where we found complementary solutions and in fact we collaborated in evaluating ETAPAS ethic protocol inside IMPULSE. On the other hand, to identify "competitor projects" on the use of similar solutions (e.g., TOKEN) that helps to identify gaps make improvements in our results
European Commission and standardisation bodies	High	Medium	Medium	High	Medium	High	We were in contact with 2 standardization bodies (UNE CTN 71/SC 307 and CEN/TC 224) . Furthermore, we had the opportunity to meet the EC several times for alignment of the IMPULSE results with the latest regulations and standards (mainly eIDAS2). Finally, we contributed to EBSI with some new feature deployments using their infrastructure

2.3 Identification of risks

The identification of risks stems from the need to answer the question “what could go wrong?”. This makes it possible, from the outset of the project, to consider all the possibilities and to highlight points of vigilance. It should also be noted that it is possible to consider that risks do not only have a negative connotation (threat to the proper conduct of the project) but also a positive one, i.e. hidden opportunities (for example, challenges to be considered in order to go beyond the limits of the project).

For this part, risks are taken into consideration on a case-by-case basis depending on the stakeholder and is shown their occurrence or not during the second phase of the project.

This section deals with events that have actually occurred, known as "risks". We will then answer the question: "Did what we had identified happen? Did we have to deal with any unforeseen circumstances?

This project has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No 101004459

Table 4: Risks assessment

Stakeholder	Risk to be considered in terms of engagement	Did it occur?
IMPULSE PAs (i.e., case studies)	• Lose interest during the project. • Not easy to recruit user testers for experimentation. • Changing team and no involvement from new one.	• The first round of pilot suffered some complications and some pilots leaders couldn't proceed with their experimentation. • Despite the first less positive experience, they were even more involved in the piloting activities during the second round, leading to good results.
PAs ecosystem	• Despite being supportive, drop out before experimentation or after the first round of pilots.	• The first round of pilot suffered some complications and some pilots leaders couldn't proceed with their experimentation. One might have thought that the second round would suffer from that. • Despite the first less positive experience, they were even more involved in the piloting activities during the second round, leading to good results.
End-users testers	• Difficulties to recruit testers. • Do not understand the necessity of the solution. • Do not understand the testing process. • Little or no feedback provided.	• More people participated in the second round of pilot. • They provide valuable feedback, not only positive but also negative, allowing to question even more the solution and bring the research further.
Final end-users	• Do not see any benefit in the solution. • Do not understand how to use the solution. • Potentially resistant to experiment / to change their way of doing (i.e., identify digitally). • Reluctant to use the solution with regard to data protection issues.	• Few of them were actually involved in the project. • However, those involved were active in providing feedback.
Advisory Board	• Fail to create the AB with the planned members (extract from the DoA). • Few availabilities. • Do not provide enough feedback. • Consortium fails to take into account feedback, resulting in AB not seeing no point in providing it.	• Same and new persons participated in the AB. • They provide specific feedback and details to help the partners to work and write their deliverables. • One advisor even invited IMPULSE to be presented in another event.
Digital Innovation Board	• Fail to create the DIB from the planned members (extract from the DoA). • No match making with pilot case to build communities. • No capacities / interest in bringing the experimentation on their territory.	• The second part of the project saw a diminution in the collaboration of the DIB due to less availabilities of its members. • However, two of them participate in the writing of the roadmaps (WP6) by providing their recommendations.

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Stakeholder	Risk to be considered in terms of engagement	Did it occur?
Communities	• Consortium fails to create them. • Unsuccessful match making between pilot and DIH. • Not any actual help during the experimentation.	• The match making that already happen during the first period continued (with perspective even after the end of the project) • New collaboration were done with 2 other pilots. • Two pilots didn't develop a community within the project, but by themselves outside.
Additional PAs (already aware)	• Fail to maintain interest already expressed. • Fail to maintain connexion between needs and what IMPULSE can offer. • Lack of interest with time (e.g., if contacted too soon). • No participation in the activities where they are expected too.	• The PAs that were already aware of the project were interested in the project however no testing could happen, partly due to the short time available to experiment. • Some municipalities expressed their interest in receiving the result of the project.
Additional PAs	• Consortium fails to attract them. • Fail to maintain interest already expressed. • Fail to maintain connexion between needs and what IMPULSE can offer. • Lack of interest with time (e.g., if contacted too soon). • No participation in the activities where they are expected too.	• Connection was a bit complicated as IMPULSE was a research project and didn't offer an actual app but its testing. • Interest in following "only" result was sometimes difficult to raise and/or maintain. • Some municipalities still expressed their interest in being kept in the loop in case of an IMPULSE 2.0.
DIHs (already aware of the project)	• Consortium fails to maintain regular contacts, leading to drop out. • No interest in participating in the DIH dedicated activities.	• The DIH already aware of the project kept their interest. • They participated in the workshops, webinar et event the project organised. • Interest in following the results of the project is high.
DIHs **EDIHs**	• Consortium fails to attract new one. • No answer or refusal when contact it. • No time available. • See interest but no capacity (e.g., financial or human). • Different schedule due to agreement signature and launch of internal activities before participating in new one. • Fatigue of solicitation from various projects.	• Despite a first period of the project where contacts did not lead to the expected results, the second period was more clement. • The number of connections increased thanks to a genuine interest in IMPULSE. • The only downside was that the right connections came late in the project. • Continued contact with the DIHs needs to be made with the partners, in the expectation of a future project.
GovTech	• Fatigue of solicitation from various projects. • No interest in the solution. • Already expiring that same solution. • Do not see how to make connexion with private sector.	• Connection with GovTech were scarce and didn't lead to full collaboration

Stakeholder	Risk to be considered in terms of engagement	Did it occur?
Innovative SMEs	• Due to the growing interest on topics related to IMPULSE (AI, blockchain, SSI) there is a risk of fatigue in terms of participation in research projects. • No interest in the solution. • Already expiring that same solution. • Do not see how to make connexion with private sector.	• Innovative SMEs showed interest in the project and would be interested in participating in future similar work. • A risk that was not expected is the fear of competition from IMPULSE. We had to reassure them that the project was really about research and sharing knowledge.
Entrepreneurs from private sector	• Fatigue of solicitation from various projects. • No interest in the solution. • Already expiring that same solution. • Do not see how to make connexion with private sector.	• Connection with Entrepreneurs were scarce and didn't lead to full collaboration
Policy makers	• No answer to solicitation due to fatigue of solicitation from various projects. • Extremely busy schedule. • Difficulty to engage.	• They were actively involved in the roundtables. • They didn't actively participated in the project outside of those.
Other established networks	• Consortium fails to get in touch with most relevant ones. • Network loses interest after the networking activity and no longer follow the project. • Unilateral benefit.	• The number of connection with established network grew during the second period due to prospection combined with high interest for the work, the results and in finding synergies.
Fellow projects	• Project failed to communicate with each other. • No equal share of info / good practice. • Projects run at different pace. • Conflict of interest especially in selecting and inviting external participants (e.g. policy makers, experts, participants for surveys).	• Continuous discussions were held. • Cross-project activities have been performed (webinar, knowledge exchange, etc.)

3 Action Plan

The final stage of this stakeholder assessment is the action plan. This is the transition from what has been planned to what is actually done. While considering the notion of process, this action plan is a living plan (not immutable) since it will be fed by feedback provided by the implementation of actions and the updating of the various engagement matrices.

The actions are thus to contact the different stakeholders according to the defined modalities and to follow the engagement procedures. For the first period covered by this deliverable (M1-M18), we were rather upstream of this action phase. Indeed, for the most part, it was about setting up the project (consortium, pilot cases, tasks, etc.) and starting the promotion of the project in its generality (in the absence of results for the moment). considering the fact that the first project time concentrates on setting up the experimental second half of the project. In this sense, the second part of the project was more dedicated to the promotion of the project and the Open Community collaboration.

3.1 The specific collaboration with Digital Innovation Hubs

3.1.1 Collaboration difficulties

It was indicated in deliverables 6.1 and 7.11 that collaboration with DIHs and EDIHs was rather laborious despite numerous contacts. It was not until the second part of the project that collaboration became more widespread, thanks to the implementation of a different strategy.

The decision was made to keep trying to contact different DIHs and EDIHs, but mostly via the network partners already had. So, for example, GRAD has contacted the Spanish EDIHs in which it participates and TES has used DIHNAMO, the EDIH it leads, to reach the French EDIH corridor and other European partners to either take part in the project or relay information.

Finally, various events were organised, specifically targeting the hubs and their ecosystems. These events were presented as events organised by IMPULSE, but without necessarily talking only about the project, in order to place it in a wider context.

3.1.2 Digital Innovation Board

The collaboration continued during the second part of the project, with less regular general meetings but more 1on1 to discuss specific part of the activities.

One workshop was held in collaboration with CyberEthics Lab (CEL) on “e-ID, ethics and Democracy”. The discussions were fruitful as the participants shared their views, from DIHs perspective about those topics, which helped CEL in its work.

TES also took the opportunity of its participation in Real Corp 2022, to meet in person the representatives of DIHOST, on 15 November 2022, at the Fachhochschule St. Pölten It was an opportunity to discuss the continuation of DIHOST and IMPULSE collaboration but also to open new horizons in the framework of this partnership.

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Figure 2 Picture of DIHOST and TES in St Pölten

Finally, DIHOST and the Basque Cybersecurity DIH participated in the development of roadmaps, sharing their findings and recommendations, both in terms of keeping pace with technological developments and ensuring the security of user data. Those findings can be found in the EU Roadmap (WP6 – D6.3).

3.1.3 Widening the network: events organisation and participation

3.1.3.1 Event participation

IMPULSE got the opportunity to be presented during a webinar organised by DIH-World on "Other relevant initiatives". On 8th November 2022, IMPULSE participated in the webinar organised by DIH-World for Digital Innovation Hubs interested in collaborating with other relevant initiatives. It was an opportunity for us to present our work in progress and our means of collaboration with Digital Innovation Hubs (DIHs) and European DIHs (EDIHs), but above all what the latter can obtain from it.

At this occasion, the invitation for the first webinar fully organised by the project was shared, helping us getting more participants.

3.1.3.2 IMPULSE 1st webinar

This first webinar for Digital Innovation Hubs and their ecosystems was organised to present opportunities for collaboration. Although the event was primarily aimed at Digital Innovation Hubs, it was open to anyone who wanted to learn more about the project and the opportunities for collaboration. Whether they were a public administration, an SME, a policy maker, a tech provider, a laboratory, etc. The webinar was a complete presentation of the entire project, from the technology part, to the pilots, the assessment (social, economic,

etc.) and the collaboration opportunities. Many partners participated (GRAD, LUT, CEL, DIN, Fh ISI and TES), to ensure a representation of the consortium and that the questions asked would be duly answered. The full presentation, including the questions asked during the webinar) can be found in the Annex.

The programme was the following one:

In terms of registration, 49 persons ordered a free ticket, from 20 different countries:

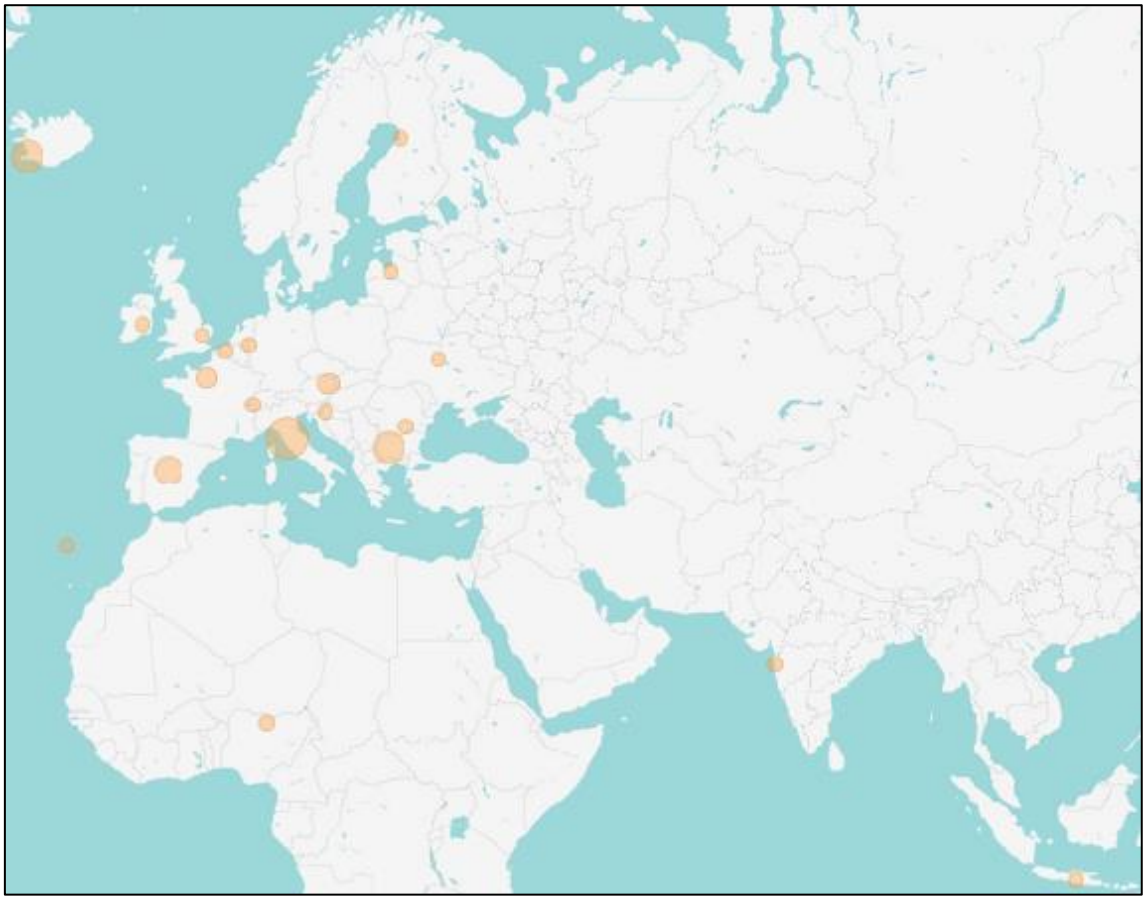
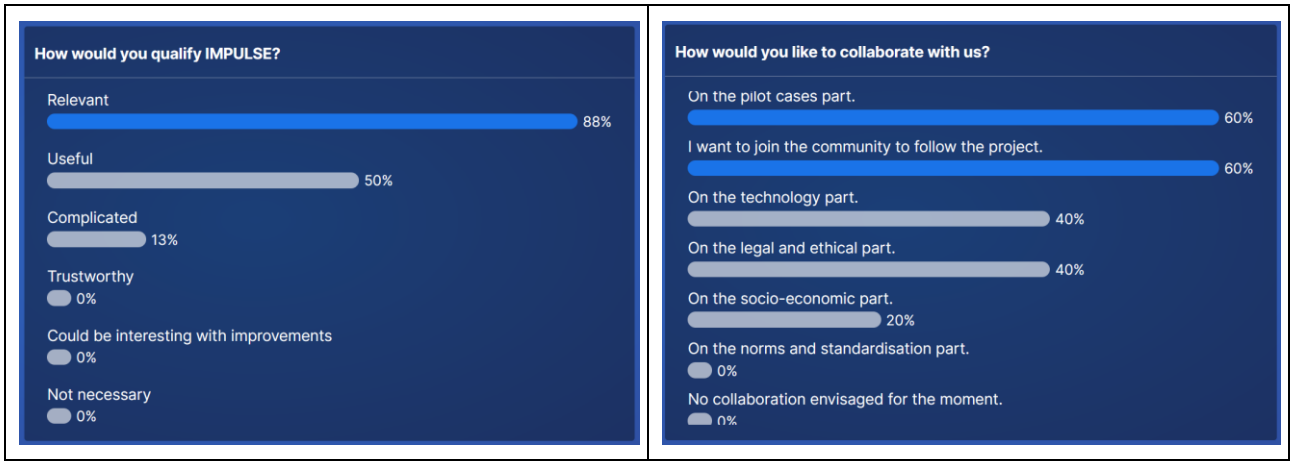


Figure 3 1st Webinar: Distribution of orders by country and region – extract from Eventbrite

Pays	↓ Participants
Italy	8
Iceland	6
Bulgaria	6
Spain	5
France	4
Austria	4
Ireland	2
Croatia	2
United Kingdom	1
Ukraine	1
Switzerland	1
Romania	1
Portugal	1
Nigeria	1
Netherlands	1
Latvia	1
Indonesia	1
India	1
Finland	1
Belgium	1
Total	49

Figure 4 1st Webinar: Number of order per countries – extract from Eventbrite

Polls were also presented during the webinar, especially about the IMPULSE solution as well as the collaboration the participants could expect:



3.1.3.3 Presentation in Reykjavik

The EDIH in Reykjavík, Iceland (EDIH-IS), organises a series of so-called CoLabs that are attended primarily as webinars (online), however, also hosted on site in Reykjavík and open to attendance in person. The City of Reykjavík's PA – one of the IMPULSE partners – joined forces with EDIH-IS to co-host a conference 21st September 2023, both online and offline, titled: Disruptive innovation. The implications of new-emerging eID and eGov solutions.

The conference opened with a CoLab#4 webinar/presentation, hosted by Sverrir Geirdal, the EDIH-IS director. The main opportunity here was introducing the Hub to a wider audience: its mandate in Iceland, who the main supporters are locally, and the Hub's topical focus on business development in AI, big data and access to HPC and, not the least, cybersecurity. Accordingly, the topic of the webinar centred on building a community in Iceland around AI and cybersecurity, e.g., through a National Cooperation Center for Cybersecurity (NCC-IS), and a national defence programme involving the offering of Iceland as a testbed for novel cybersecurity applications. The audience also learned that policy developments in these matters are very relevant to the Hub, also bringing together data scientists and public/governing institutions for their prominence as data owners and data processors, thereby drawing attention to eID and eGov developments like IMPULSE as pertinent engagement opportunities.

The webinar is available @ https://www.youtube.com/watch?v=cPniJ-gAe1Q&t=406s

Figure 5 An assortment of CoLab webinars

According to the pre-registration record (MS-Forms),108 persons registered in advance for the event: 60 attending online, 48 attending in person (duplicates removed), however, according to the streaming service, the number of online viewers came to 200 in total.

Country	Numbers
Iceland	67
Italy	10
Spain	7
Germany	4
Denmark	3
France	2
Finland	2
* Unidentified	13
Total	108

* 13 pre-registrations came from yahoo and gmail accounts, .com .eu and .org with no obvious indication of origin.

Figure 6 Panel on Disruptive innovation, including Fh ISI & TES as panellists

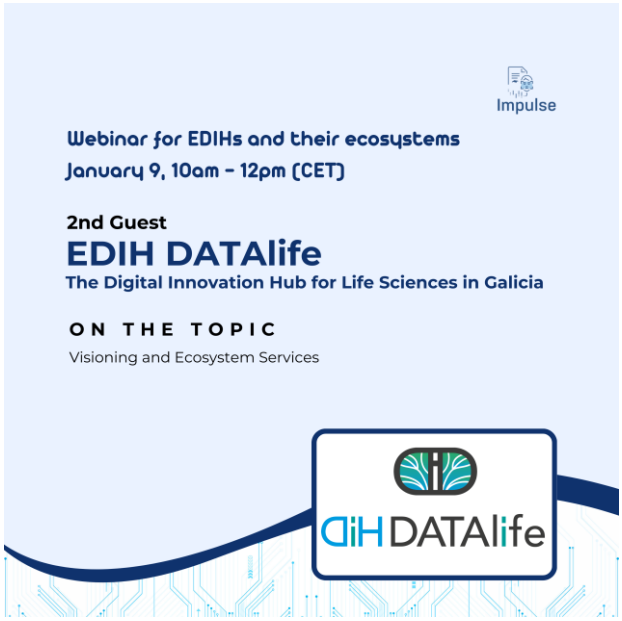
3.1.3.4 IMPULSE 3rd webinar

The theme of this webinar was the support EDIHs provide to public services in their digital transition, in line with the EU's Digital Compass 2030. On this occasion, the Digital Transformation Accelerator (DTA) was the keynote speaker and presented their action in line with public services and three EDIHs presented their initiatives to promote collaboration with the public sector, in the fields of healthcare, digital identity and construction. The theme was not only a focus on IMPULSE and eID management, but rather a more general one to bring the project into a bigger perspective.

The participation of the DTA, also known as EDIH Network, helped in spreading the information about our webinar as they also shared it on their network. This participation was done thanks to the help of TES, as the latter participated in the DIH-World Steering Committee, network led by CARSA. Now, CARSA is leading the consortium, contracted by the European Commission, for implementing the Digital Transformation Accelerator (DTA)**,** which provides support to the network of European Digital Innovation Hubs (EDIH).

The programme was the following one (the full presentation can be found in the Annex):

Figure 7 3rd webinar program



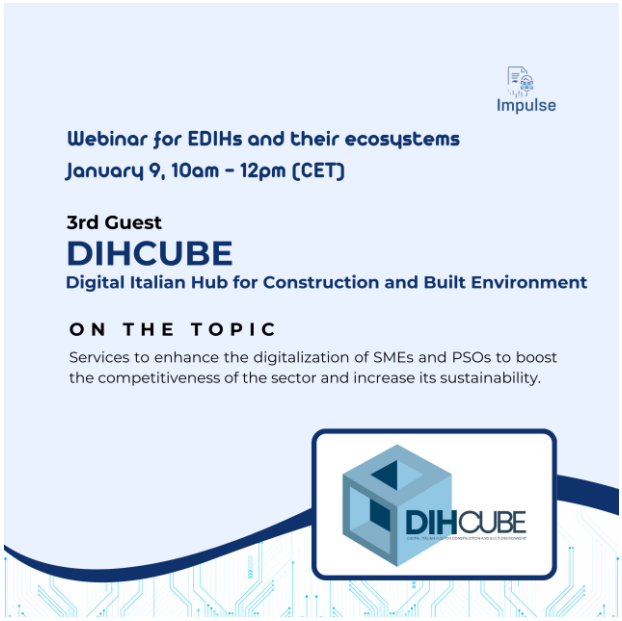


Figure 8 Visuals to prendre the speakers on LinkedIn

In terms of registration, 44 persons ordered a free ticket, from 15 different countries:

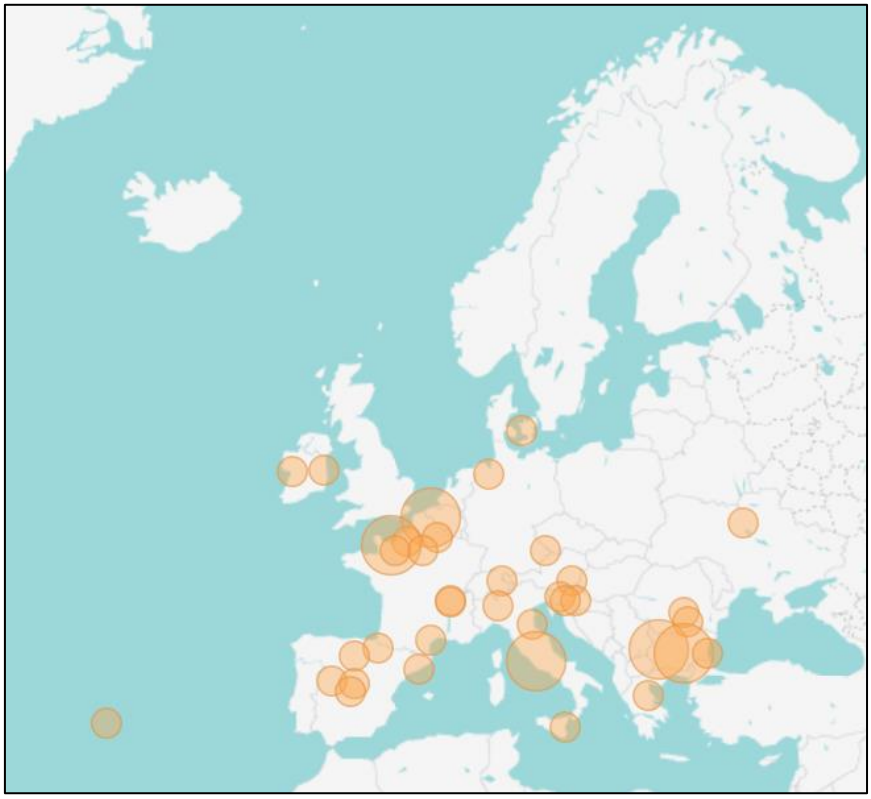


Figure 9 2nd Webinar: Distribution of orders by country and region – extract from Eventbrite

Pays	↓ Participants
France	12
Spain	6
Bulgaria	6
Italy	5
Slovenia	2
Romania	2
Ireland	2
Germany	2
Ukraine	1
Portugal	1
Liechtenstein	1
Greece	1
Denmark	1
Croatia	1
Austria	1
Total	44

Figure 10 2nd Webinar: Number of order per countries – extract from Eventbrite

In the end, 47 persons participated in the webinar, coming from various European Digital Innovation Hub:

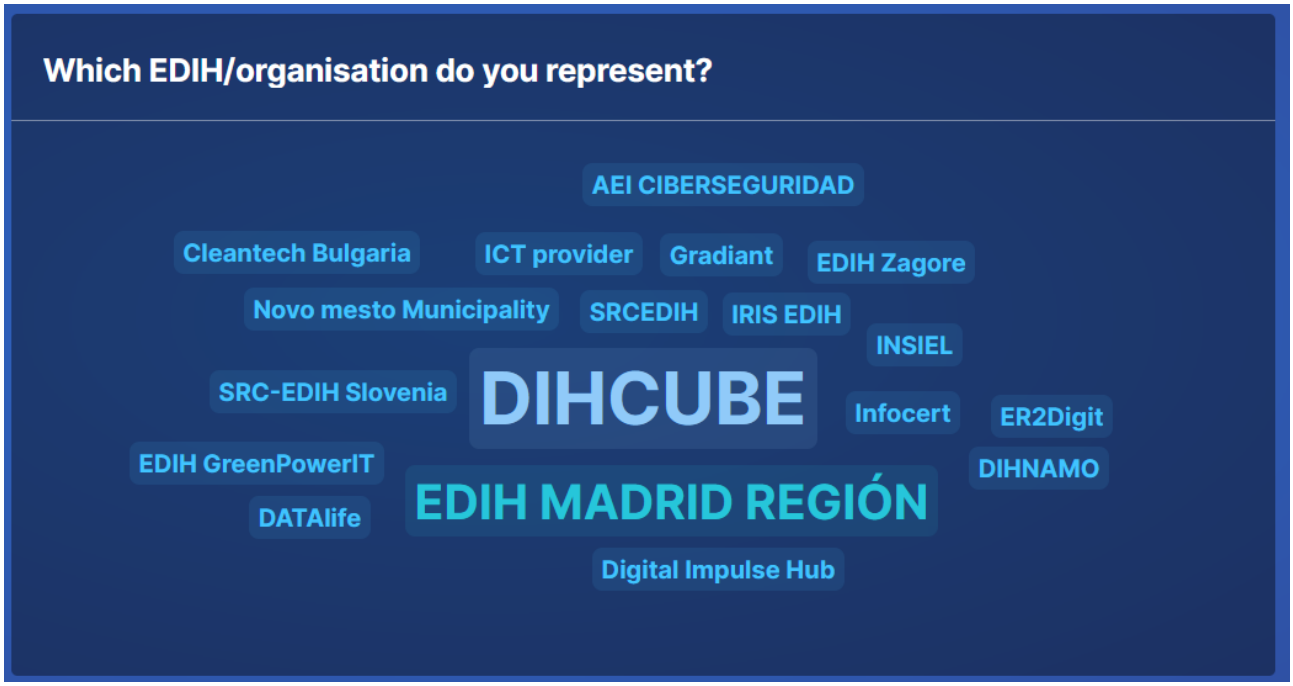


Figure 11 2nd Webinar: Extract from Slido.com poll

3.1.4 Results from the different activities with Digital Innovation Hubs

The network grew during the second half of the project the thanks to the determination of the team to be part of this promising and relevant network. As a result, collaborations have been formed and requests have been made to share the project results, enabling them to be disseminated on an even wider scale; IMPULSE is invited to continue its work within the EDIH network (in particular the WG for AI for public administration), and to be able to count on the support of several EDIHs in its future projects. This will ensure the continuity of the project beyond its completion.

The following figure represents the network created with different hubs, with whom we worked more closely:

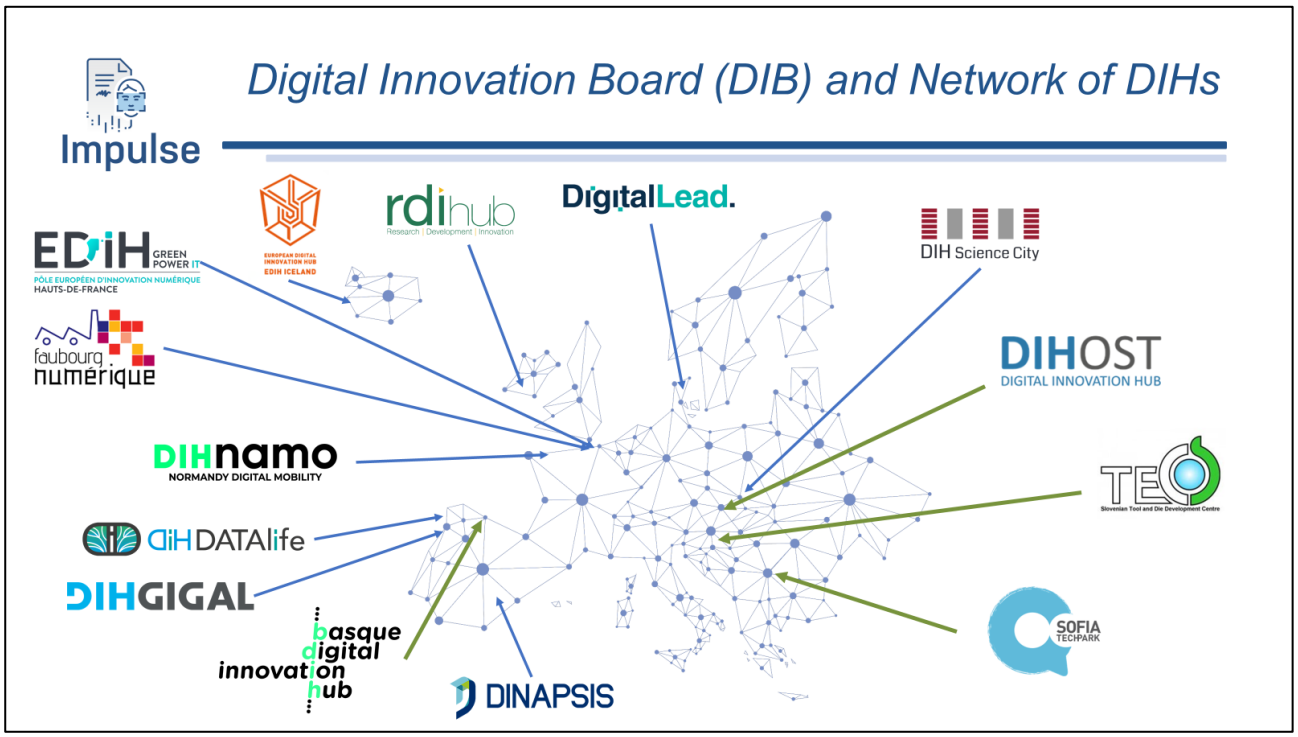


Figure 12 Extract from presentation of the IMPULSE Final Conference

- **Basque Digital Inovation Hub (DIB member) – Spain:** is a connected network providing Basque companies with assets and smart industry services for training, research, testing and validation. Website.

- **Sofia Tech Park (DIB member) – Bulgaria:** Sofia Tech Park develops activities to support start-ups, small and medium enterprises, science, education and innovation. Website.

- **Tecos (DIB member) – Slovenia:** development and tracking of the most advanced technologies and scientific research achievements and their transfer to industrial practice in the fields of toolmaking and processing of materials, both polymeric and metallic. Website.

- **DIHOST (DIB member) – Austria:** Comprehensive service programme to increase the transformation capacity and transformation speed of SMEs in Eastern Austria with regard to digital innovations. Website.

- **Dinapsis – Spain:** Digital Operation Centre for the water and environmental health sector in the Spanish territory. Website.

- **DIHGigal – Spain:** Digital Innovation Hub of Galicia aiming at boosting the digitisation of industrial companies in Galicia by helping them to innovate, optimise processes and achieve sustainable growth in the digital era. Website.

- **DIH Datalife – Spain:** Digital Innovation Hub for Life Sciences in Galicia. Its main mission is to accelerate the digital transformation of the entities that are within its strategic sectors (agro/sea food, biotechnology, forestry/wood and healthcare). Website.

- **DIHNAMO – France:** Regional ecosystem promoting the digital transformation of local businesses and local authorities, with particular expertise in the field of connected, safe and sustainable mobility. Website.

- **DIH Faubourg Numérique – France:** DIH-FbN provides technical assistance for the development of prototypes and digital solutions relating to the concepts of connected objects, digital twins and advanced data processing. Website.

- **EDIH Iceland – Iceland:** EDIH-IS is the Icelandic national European Digital Innovation Hub to be established in collaboration with the national technology transfer office, major universities, Icelandic Centre for Research, industry representatives and the Icelandic government. Website.

- **RDI Hub – Ireland:** Centre of excellence which fosters entrepreneurship and business growth. Website.

- **DigitalLead – Denmark:** DigitalLead is Denmark's national cluster for digital technologies and functions as a focal point for digital innovation – both for companies that develop digital solutions and for other sectors that need innovative digital solutions. Website.

- **DIH Science City – Slovakia:** Innovation centre using a combination of university environment, research and business. We provide knowledge transfer from research to practice, consultancy in the field of digital transformation and dissemination of successful digital innovation projects.. Website.

- **GreenPowerIT – France:** The EDIH is a one-stop shop for companies (start-ups, SMEs and ETIs) and public administrations, offering a wide range of services in the sectors of retails & e-business, mobility & logistics, smart industry, public administration, health, environment, etc. Website.

A more extensive list of DIHs/EDHs who have participated in the webinars and interacted with IMPULSE is available below:

- SCR-EDIH - Slovenia
- Minasmart - France
- Corsica.ai - France
- GreenPowerIT - France
- IoT Digital Innovation Hub - Spain
- Next-Gen-BIoTechEDIH - Bulgaria
- DInO - Germany
- digihub.li - Liechtenstein
- Data2Sustain - Ireland
- EDIH Zagore - Spain
- DIH Cube - Italy
- Digital Construction Hub - Bulgaria
- ART-ER DIH
- ER2Digit - Italy
- Circular Helth EDIH - Italy
- CyberEDIH - Spain
- EDIH Health Hub - Greece
- DIgital Impulse Hub - Spain
- Crobohub - Croatia
- EDIH Appliced CPS - Austria
- AzoresDIH - Portugal

3.2 Activities carried out during the second period (M19-M36)

3.2.1 Events participations – where IMPULSE has been presented (within T7.4)

- **Real Corp – Vienna, Austria (paper presentation); 14-16 November 2022:** Preparation and submission of the abstract "Impact assessment of disruptive technologies on electronic identities (eID) for the improvement of digital public services for citizens" for validation to the REAL CORP committee. The conference also led to a meeting with a person who had subsequently joined the EAB, in particular to discuss issues relating to the pilot activities.

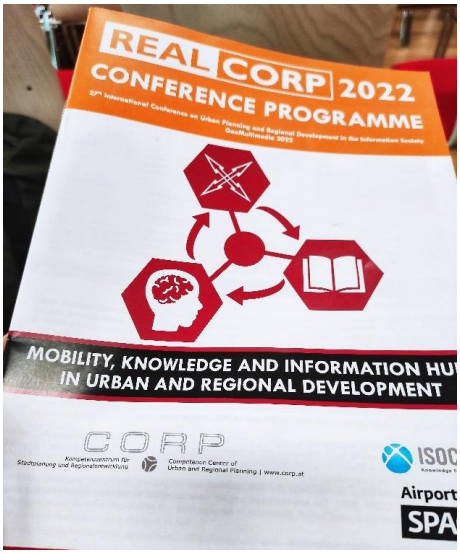


Figure 13 Picture at Real Corp 2022, Vienna

- **C&T, Lahti, Finland (paper presentation); 29 – 31 May 2023**: Workshop "1st workshop on exploring disruptive technologies from the local community perspective" with the presentation of a paper preparation on “Exploring potential actionable roadmaps for the adoption, escalation and sustainability of advanced eID technology by Public administrations”, presenting the process leading to the 7 IMPULSE roadmaps.

Figure 14 Picture at C&T, Lahti, 2023

This project has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No 101004459

- **Identity Week, Amsterdam, The Netherlands (stand)**; **13 – 14 June 2023**: This event is the world's leading identity event that brings together the brightest minds in the identity sector to promote innovation, new thinking and more effective identity solutions. It allowed ALiCE and TES to present IMPULSE onsite and networking was done with service and products providers (such as iProov, Idemia, Digidentity, Aratek, etc.).

Figure 15 Picture at Identity Week 2023, Amsterdam

- **EGPA Zagreb, Zagreb, Croatia (paper); 5 – 8 September 2023**: Presentation of a paper on "Promoting the three pillars of sustainable development through the digital transformation of public services" based on WP2 – Task 2.6.

Figure 16 Picture at EGPA Conference 2023, Zagreb

- **TRUSTECH, Paris, France (stand); 27 – 30 November 2023**:

TRUSTECH is the event dedicated to innovative payments and identification solutions, welcoming international exhibitors, sponsors and start-ups. This is an opportunity for them to present their latest innovations and announce product and solution launches on their stands or during pitch sessions on the Innovation Stage, an area located at the heart of the event. The 2023 edition included more than 200 exhibitors, 100 international speakers and nearly 8,000 participants. GRAD partner also got the opportunity to go to the Innovation Stage to talk about "IMPULSE Digital Wallet: Pioneering ethical self-sovereign identity solutions for public administrations and business across Europe".

Figure 17 Picture at TRUSTECH Paris 2023, Paris

- **OLLD 2022 – 2023:** Attempt on participating at Open Living Lab Days in 2022 (not selected – the presentation can be found in the Annex) and in 2023 to present a paper on "Public engagement and active citizenship through digital public services", as well as organise a workshop called "From traditional to digital public services - how can living labs contribute to getting out of the madhouse of bureaucratic public administration?". The aim of the workshop was to provide the audience with knowledge about the current state of public services in Europe and the pitfalls they face, the experiments underway to enable them to become more digital while remaining accessible, and the support that living labs could provide. The idea was to present IMPULSE, offer the possibility to test the solution and get feedback. However, we were not selected (the presentation done was a video, hence it cannot be added in the Annex but can be shown during the review).

3.2.2 Events organisation

The final conference is already highly mention in other deliverables, however what is of interest in this one was the panel discussion and the opportunities for collaboration that resulted. The panel discussion was about "Digital ID wallet: a new way of thinking about Europe's digital Identity."

Figure 18 Full program of IMPULSE final conference in Rome

For this occasion, 4 panellists were invited:

- **Gilda De Marco** (online) is a Business Analyst and EU projects expert INSIEL S.p.A. the in-house ICT provider of the Region of Friuli-Venezia Giulia (northeast Italy). Currently she is leading for Insiel the SUNRISE project, funded by EU in Horizon Europe programme, and related to resilience of Critical Infrastructure in pandemic context.
- **Henk Marsman** (on stage) is a researcher and principal consultant at SonicBee. He is a contributor to the recent study on ”Human-Centric Digital Identity: for Government Officials”, published by the OpenID Foundation, and a frequent public speaker on digital identity and ethics.
- Drs. Rob Brand (on stage) is a Senior Policy Officer in the Directorate for Digital Economy at the Ministry of Economic Affairs and Climate Policy. In line with his active involvement in realising the eIDAS regulation from the start in 2014, he holds responsibility for the Dutch policy on the eIDAS Trust Services.
- David Goodman (online) is Chief Information and Security Officer (CISO) at iGrant.io, a Swedish start-up based in Stockholm. He works in digital transformation, specifically the areas of digital identity and cybersecurity, data protection and privacy regulation as well as artificial intelligence and distributed ledger technologies.

Figure 19 Slide presenting the first panellists

The questions asked to the panellists were:

- What is a digital wallet and why do I need one?
- What is Europe's policy on digital identity ?
- How far are digital wallets from being used by everyone?
- Should there be specific security and privacy principles for digital wallets?
- Can we achieve an inclusive, ethical and social digital wallet?

As a result of the panel, the panellist were really enthusiastic about the project and also:

- would like to discuss potential follow-up in the near future (with Rob Brand),
- GRAD and TES have been invited to the European Identity and Cloud conference in Berlin, that is about standardization (W3C, OpenID, ToIP, IEEE, IETF) and digital identity as such, national identity, user adoption, wallets, eIDAS2 and ethics (by Henk Marsman),
- finally one panellist participated in the EU roadmap by proving that valuable recommendations (by David Goodman)

The panel video can be found on the UnionCamere Youtube channel, at: 02.00.35 Panel session I: Digital ID Wallet: A new way of thinking about Europe's digital identity

3.2.3 Update of public Administrations' network assessment

Table 5: Public Administrations' network assessment

Who are the most relevant stakeholder(s) in your ecosystem?		
ARH	**M1-M18**	Decision to work only with on stakeholder (Værestedet, a drop in center) as the experimentation will be done in their premises.
	M19-M36	During the project, the Aarhus case relocated, and as a result, we engaged an entirely new group of stakeholders, including an Open Workshop for vulnerable citizens. Furthermore, we had an even closer collaboration with our IT security organization than anticipated.
ERTZ	**M1-M18**	The most relevant stakeholders are the citizens as beneficiaries ; the Ertzaintza's investigation units who check that the IMPULSE tool complies with the corresponding regulations and criminal prosecution processes ; the Ertzaintza's internal network and internet services (DGTSI) for the tool implementation ; the Basque DIH for question of cybersecurity.
	M19-M36	Citizenship remains our primary stakeholder. The new Basque Cybersecurity Agency, Cyberzaintza, has expressed interest in IMPULSE due to its connection with another project on digital identity that we are beginning to analyse and assess.
GIJON	**M1-M18**	In the first phase, part of the Gijon staff was involved in one way or another in the project. In the second phase, selected citizens (among the 43,000 people who already use the Gijón App) will represent the main stakeholder of the pilot as they will experiment the solution.
	M19-M36	The people involved remained mainly the same as in the first period.
MOP	**M1-M18**	Local organisations such as representatives of civil organizations and NGO (e.g., Association “Centre for sustainability and Economic Growth” and energy agency REAP) ; citizens ; DIH.
	M19-M36	No particular change. We managed to involve also another neighbouring municipality, Municipality of Bratsigovo, by organizing bilateral meetings with them and sending communication materials, but they did not participate in the actual test of the IMPULSE solution. Their role was mainly in Dissemination, i.e. to inform their citizens and their local network of IMPULSE solution and outcomes.
UC/IC	**M1-M18**	Business Register (IC/UC): Trust Service Provider in charge for certifying company representatives and for providing them with credentials; Digital Identity provider: Trust Service Provider in charge for recognizing physical persons and for providing digital identities ; Entrepreneur: Owner or representative of the company and the the one who operates the impulse wallet ; Company: whose information are accessed within the Digital Drawer.
	M19-M36	No change.
RVK	**M1-M18**	1. Any customer of RVK's online services among the resident population, especially the target pilot group (2022), comprised of physically disadvantaged persons through their CSOs and NGOs ; 2. Governing institutions (state/municipal), whose role is agenda-setting and policy development in the areas of technological progress that can be associated with IMPLUSE (incl.ÍST standards body) ; 3. The newly established EDIH, involving private enterprise and services, existing innovation accelerators and academic institutions.
	M19-M36	1. Customers of public services (municipal and state) are relevant because their views and experiences help flesh out concerns about accessibility, inclusion, security, confidence and trust--the target pilot group being in direct communication on those issues; 2. Governing institutions responsible for the Digital Transformation Programme benefit from the lessons learned from the pilots, esp. in areas that can directly influence policy on trust services, accessibility and eGov developments more generally; 3. The new EDIH-IS can serve as a vehicle for communication: outreach and knowledge exchange, also after the project finishes.

How / Why are your stakeholders relevant for your case and/or for the project?		
ARH	M1-M18	This stakeholder is relevant for the experimentation as it is in contact on a daily basis with the end-users who will test the solution. Also, the staff there helps already the end-users on the topic of ID document and administrative procedures.
	M19-M36	The employees at the protected workshop were cultural bearers in relation to the participants. Their acceptance of us depended 100 percent on our good contact and the trust the employees showed us
ERTZ	M1-M18	Citizens are important because they will ultimately be the real beneficiaries of the tool. The project's ability to convince them of its virtues and the benefits of its use is a priority. As far as the Ertzaintza and its different departments are concerned, it will lead to an optimisation of the resources allocated to police work, and they will have to adapt to this new digital police-citizen interaction. The DIH will play an active role in all matters relating to technological innovation and its implementation in public systems.
	M19-M36	Due to the increase in crimes committed, online, using a tool like IMPULSE not only facilitates citizen interaction with the police but also opens the opportunity to do so with the rest of the administration. It also demonstrates that secure technology does not have to be complicated or unfriendly. The participation of a Cybersecurity Agency not only enriches knowledge but also improves communication and cross-cutting collaboration.
GIJON	M1-M18	In the first phase, the staff is considered important as it carries out tests to check that everything works, that the environment is controlled and that the services that can be accessed are the necessary ones. In the second phase, the selected citizens will gain in importance, because at the same time they represent the end-users that Gijon works for on a daily basis as well as the testers who will evaluate the project.
	M19-M36	The expectation from the first phase were achieved in regards with citizens.
MOP	M1-M18	These are mainly civil organizations, which provide very good connection with citizens. They work every day with them, and they also have access to vulnerable groups, for example such citizens, which suffer from energy poverty. We intend to involve in the pilot activities citizens from various socio-economic groups, not only young and computer literate citizens. As well as Sofia Tech Park because they will provide a link with the large and rich representatives of the IT and research sectors.
	M19-M36	No change.
UC/IC	M1-M18	Entrepreneurs and, indirectly, also companies are the foundation of the local communities and the ones that will mostly benefit from the introduction of the IMPULSE solution.
	M19-M36	Entrepreneurs and, indirectly, also companies are the foundation of the local communities and the ones that will mostly benefit from the introduction of the IMPULSE solution making the PA services easier to be accessed. The Italian Business Register is the official source of economic information, facilitated by the Chambers of Commerce Association. The data used to confirm that a person is the legal representative of the company will aid public services in automatically verifying this attribute.
RVK	M1-M18	1. Customers of public services (municipal and state) are relevant to the development of those self-same services, especially to flesh out concerns about accessibility, inclusion, security, confidence and trust. The target pilot group will be in direct communication on those issues ; 2. Governing institutions responsible for the Digital Transformation Programme will benefit from the lessons learned during the pilots, esp. in areas that can directly influence policy on trust services and eGov more generally ; 3. The new EDIH can service as the main communication for all outreach and knowledge exchange.

How / Why are your stakeholders relevant for your case and/or for the project?		
	M19-M36	The connections were partially in place for categories 1 and 2 and communications proven to be useful, however, it took considerable additional effort through meetings, informal conversations, interviews and workshops, to establish interest and participation in IMPULSE activities; 3. The EDIH-IS began organised activities early year 2023 and the project has been in an ideal position to establish connection and organise an event with the hub, in line with the kind of outreach IMPULSE has organised with other EDIHs across Europe.

	How did you attract them to participate in the project?	
ARH	M1-M18	The collaboration was already in place before the project, so this is just a continuation. The question of attracting other stakeholders may arise for the second round of pilots.
	M19-M36	When we decided to move our case to a new location, we contacted some people from our network and utilized existing good collaborative relationships.
ERTZ	M1-M18	The Ertzaintza is on the way to adapting to the technological revolution that society is experiencing and must therefore align itself with it. This, moreover, has been defined by the management of the Ertzaintza and the Regional Ministry of Security as a priority in the steps to be taken in the coming years. This is why the participation of the different police departments, as well as public institutions, are already committed to the project. On the other hand, citizens must be motivated to participate by the Ertzaintza and achieve a solid engagement that allows for the interaction of all parties. To this end, the following actions to attract citizens must be prioritised: provide detailed information (objective, evolution, project development, etc.) ; ensure and promote transparency ; guarantee the protection of personal data ; take action to ensure the trust in the institutions.
	M19-M36	We continue to convey to both citizens and various departments the advantages and security, both ethical and technical, of Impulse.
GIJON	M1-M18	Although we are still working on it, it will be thanks to the fact that they are already users of the Gijón App.
	M19-M36	Because they were involved in the first phase, or because we're currently in the collaboration phase, their involvement was garnered through their existing engagement with the Gijón App.
MOP	M1-M18	MOP is already partnering with these organizations on some other social initiatives.
	M19-M36	No change.
UC/IC	M1-M18	To attract them, the idea is to be able to include a potential IMPULSE workshop in an existing activity / event (whose topic overlaps with the project's theme) to ensure participation and to put it into perspective with another topic they might already be familiar with for example.
	M19-M36	We organized at the chamber of commerce of Genoa an event dedicated to both the entrepreneurs and the Public Administration to show the capability of IMPULSE solution. To attract the guest we offered an overview of the new technologies used in the project: AI and blockchain.
RVK	M1-M18	The connections are already there for categories 1 and 2, and communications already proven to be useful. The EDIH is new and will start its organised activities in the autumn. The project is in ideal position to establish connection and organise events with the hub, given the outreach IMPULSE organises to other EDIH units across Europe.
	M19-M36	The connections were partially in place for categories 1 and 2 and communications proven to be useful, however, it took considerable additional effort through meetings, informal conversations, interviews and workshops, to establish interest and participation in IMPULSE activities; 3. The EDIH-IS began organised

How did you attract them to participate in the project?		
		activities early year 2023 and the project has been in an ideal position to establish connection and organise an event with the hub, in line with the kind of outreach IMPULSE has organised with other EDIHs across Europe.

What do they find interesting about the project?		
ARH	M1-M18	There is a strong interest in the locker solution as the staff already deals with administrative issues. In particular, when documents are lost, a member must accompany the person who has lost his or her papers to make the necessary arrangements (time allowed). Thus, the opportunity of the lockers would make it possible to limit the rate of document loss.
	M19-M36	They would like to strengthen relations with us through projects like Impulse. However, concerning Impulse itself, it is interesting for them to participate in order to contribute to shaping the development of the future as well.
ERTZ	M1-M18	The citizens who participated in the WP2 workshop were enthusiastic about the possibility of speeding up the process of filing complaints.
	M19-M36	In the case of Cyberzaintza, collaboration with the Basque Certification Authority for an adaptation of the European Directive on digital identity.
GIJON	M1-M18	For the moment, this question remains unanswered. This issue will be addressed in more detail once the first phase of integration with the use case has been developed, and will thus feed into the second phase of experimentation.
	M19-M36	In our collaboration, their fascination with the project stemmed from the notable emphasis on interoperability and the swift identification processes it boasts.
MOP	M1-M18	In regards to IMPULSE, they are interested mainly on topics related to digital identification, data privacy and data protection, innovative technologies like Blockchain and how these could be used to protect personal data.
	M19-M36	They were interested in disruptive technologies like AI and Blockchain. Also, IMPULSE represents an alternative to the current status quo in terms of digital identity of citizens and they were interested in this topic.
UC/IC	M1-M18	Streamline the procedure of identification both from a citizen and for an entrepreneur's prospective.
	M19-M36	Streamline the procedure of identification for both citizens and entrepreneurs. The use of new technologies has enhanced the user experience in the authentication process for public services.
RVK	M1-M18	1. this group has stakes in the game, so to say. The outcome of IMPULSE can directly affect their experiences of using online services which is why they are involved; 2. this group makes all the policy decisions and develops the strategic agendas, hence, are interested in what IMPLUSE has to offer , 3. We still have to find out what exactly will interest them about IMPULSE
	M19-M36	1. This group is considered as having high stakes in the development of eID and eGov services but they primarily found interesting the possibility of using facial recognition as opposed to existing eID solutions; 2. These state agencies make all the policy decisions and develop the strategic agendas for eID and eGov developments. Their expressions of interest in IMPULSE centred primarily on questions about the project bringing something new to light that these agencies had not already taken into account; 3. We learned that the topical focus of the EDIH-IS overlaps with those aspects of IMPULSE that directly concern the use of AI in data processing and cybersecurity.

How do you evaluate their interest for the project? (unaware, resistant, neutral, supportive or leading)		
ARH	M1-M18	Current and desired levels are evaluated at SUPPORTIVE.
	M19-M36	They remain SUPPORTIVE.
ERTZ	M1-M18	As for the citizen, the level of interest is evaluated as SUPPORTIVE.
	M19-M36	From both, citizenship and different areas of the Basque Government, SUPPORTIVE.
GIJON	M1-M18	Currently the level is evaluated at NEUTRAL but the expectation is for them to be SUPPORTIVE, while taking into account that they might be potentially RESISTANT.
	M19-M36	Throughout the project's duration, their engagement has been consistently SUPPORTIVE, demonstrating a keen interest in its success. As the project concludes, their proactive involvement serves as a testament to their sustained enthusiasm and commitment.
MOP	M1-M18	SUPPORTIVE
	M19-M36	They remain SUPPORTIVE.
UC/IC	M1-M18	NEUTRAL / SUPPORTIVE
	M19-M36	No change.
RVK	M1-M18	1. was rather NEUTRAL for some time, however, recently much more engaged in preparation for the 1st pilot - so - SUPPORTIVE ; 2. So far also been rather NEUTRAL, however, also now much more engaged as the pilots are underway - so - SUPPORTIVE ; 3. The agencies that now are part of the new EDIH, and RVK has been in touch with, have been rather NEUTRAL. We hope to change that before the end of the year 2022.
	M19-M36	1. Could be seen as a combination of Resistant, Neutral and Supportive; 2. Neutral; 3. Neutral

How do you communicate with them?		
ARH	M1-M18	Email and direct conversation since ARH building and the Værestedet premises are closely located.
	M19-M36	No change.
ERTZ	M1-M18	Currently all communication is done through email, except for the dissemination that is done through Twitter and some telcos.
	M19-M36	Email
GIJON	M1-M18	By email and/or by the messaging service available in the APP Gijón (PUSH type service via mobile phone).
	M19-M36	E-mail and social network for dissemination.
MOP	M1-M18	Mostly email and telco.
	M19-M36	Adding to what we previously did, we also organized bilateral physical meetings with these stakeholders, and one point in the agenda was the progress of IMPULSE.
UC/IC	M1-M18	Mostly email and telco, ultimately via workshops.
	M19-M36	Webinar, workshops, social media.
RVK	M1-M18	Online conferencing equipment (interviews / presentations), telco, email, in-person meetings.
	M19-M36	Online conferencing equipment (interviews / presentations), telco, email, in-person meetings and workshops.

Have you identified a risk in terms of their collaboration? (lack of interest, disinterest during the project, resistant in experimenting, etc.)		
ARH	M1-M18	The risk regarding Værestedet isn't high since they have a real interest. The greatest risk is rather with the end-user testers because of their own personal difficulties (deeply vulnerable citizens, e.g. homeless citizens or citizens with severe psychical and social problems). Information about the experiment will only be given shortly before it takes place and there is a risk that few or no people will agree to experiment.
	M19-M36	We identified new risks due to the absence of an attendance requirement for the citizens utilizing the open workshop, Due to the relatively low number of users, there was a real risk that there would be very few participants in the case.
ERTZ	M1-M18	No high risk has been fully identified so far.
	M19-M36	No high risk has been fully identified so far.
GIJON	M1-M18	Although no general appeal has been done, a lack of interest might be foreseen and/or a reluctance to use something new from an administration.
	M19-M36	No change.
MOP	M1-M18	Due to the voluntary character of the collaboration, they might lose interest at some point in the project activities, especially in the phase of testing and providing feedback on the IMPULSE solution.
	M19-M36	Main barrier which we identified during the tests with citizens was the lack of confidence in providing personal data during the tests. Unfortunately, some citizens declined participation, although they initially took part in workshops dedicated to requirements elicitation.
UC/IC	M1-M18	Prioritization of their own business activities VS a European Research Project, they have to see a potential advantages of the solution respect to the incumbent technology (SPID in Italy) to be attracted in the participation.
	M19-M36	Potential advantages of the solution compared to the incumbent technology (SPID in Italy) still exist. Some users express concerns regarding privacy (GDPR) during the onboarding procedure (where my data is stored and communicated?).
RVK	M1-M18	Yes, we have identified risks of maintaining interest. lack of relevance, outright opposition) to IMPULSE tech (SSI / BC /AI), and more - applying variably to the three categories of stakeholders.
	M19-M36	Yes, we have identified risks of maintaining interest. lack of relevance and outright opposition to IMPULSE tech (SSI / BC /AI) and using facial biometrics even - applying variably to the three categories of stakeholders.

How did you and/or how will you mitigate or eliminate that risk?		
ARH	M1-M18	One of the solutions to limit the risk is the opportunity to be offered a passport (identity document allowing many procedures and recognition) whose cost is often too high for these people (i.e., 100 Danish kroner, or about 14 euros).
	M19-M36	We endeavored to engage users with a consistent attendance record more actively than those with uncertain attendance. Additionally, we employed employees as ambassadors to promote inclusivity within the primary target group for the case. By filling the test users' drawers with small gifts, such as candy, we ensured there was always something new and exciting awaiting them. This strategy encouraged them to open the drawer daily with the Impulse app, resulting in a high number of participants and numerous interactions with both the locker and the app.
ERTZ	M1-M18	Appropriate measures will be considered and implemented if necessary.
	M19-M36	Continuing to explain that security, ethics, values, and respect for rights are the foundation of any technological development, especially when it comes to the digital world.
GIJON	M1-M18	Communicate and explain to them the scope of the project and the impact it can have for Gijón.
	M19-M36	Communicate and explain to them the scope of the project and the impact it can have for Gijón. Maybe involved civil organizations
MOP	M1-M18	One way to attract and maintain a collaboration with civil organizations in such EU initiatives, is by establishing a long-term collaboration with them and both sides have mutual benefits, i.e. we support them on their EU initiatives, and they support us on our initiatives. Which is something MOP is trying to manage with the identified organisations.
	M19-M36	We dealt with the trust problem with citizens by explaining to them their GDPR rights, emphasizing on the fact that they can withdraw from the project, including their personal data, at any time they wish.
UC/IC	M1-M18	Implementing the pilot solution in a real business service environment (Enterprise Digital Drawer) could let them appreciate the technology of IMPULSE solution
	M19-M36	During the workshop, we thoroughly explained how Impulse manages user data, emphasizing that it is treated in accordance with the regulations.
RVK	M1-M18	Communication has been (and will be) key to igniting and maintaining interests, and to have clarity on relevance or lack thereof.
	M19-M36	In and through communication and sharing: providing enough time to trial the technology, converse about the experience, what is (potentially) useful or not, and allowing enough time to clarify and explain. That said, it appears impossible to determine what might change people's minds who are already resistant or outright opposed.

4 KPIs

Title	Description	Aim	KPI	Result
Experimental workshops with DIHs	Workshops for DIHs to become familiar (information and training) with disruptive eID technologies, get involved in the experimentation and piloting, and foster adoption and scalability.	Extend the Community of Stakeholders and spaces for experimentation, get advice/support for the development/ improvement of accessible secure eID in public services.	**Participation of representatives of at least 14 DIHs in at least 10 EU countries.**	• 35 DIHs from 15 different countries
Briefings	Presentation of the results in sessions (mini-demonstrations) conceived for a specific group of stakeholders and addressing thematic areas such as latest trends and regulations, disruptive technologies, security awareness campaigns to protect the privacy of citizens on the Internet, etc.	Extend the reach of IMPULSE to key target audiences to promote the adoption of the IMPULSE approach in as many locations as possible.	Attendance of **at least 70 representatives of the target audiences in 6 European countries with the support/hostage of DIHs**.	• Presentation during DIH-World (Europe) • Digifed (France) • EDIH Iceland CoLab (Iceland) • EDIH French Corridor (France) • IMPULSE 3rd Webinar with the support of the DTA (Europe)
Demonstrations	Demonstrations of the IMPULSE outcomes at 2 major, multi-stakeholder, pan-European events geared towards potential customers in the framework of expos, industry events, international conferences, such as EGPA Conference, Blockchain Expo, Info Security Europe and Identity Week. These demonstration activities will ensure the outcomes are publicised to a wide range of stakeholders and will pave the way for the deployment of the solutions at European level with the participation of institutions from different countries.	Ensure that the impact assessment and developed solution are publicised to a wide range of stakeholders, paving the way for the improvement of the assessment mechanisms as well as for the deployment of new digital public services in other public administration, but also for the extension to other domains.	Demonstration of IMPULSE at 2 events with at least 500 participants each, **totalling up to 1000 potential viewers of demonstrations**.	Participation in: • Real Corp • EGPA (paper presentation) • Identity Week (stand) • TRUSTECH (stand) • C&T Lahti (paper) • (Attempt at OLLD) Even though the exact amount of potential viewers can be define, it is still possible to guarantee a minimum of 200 viewers per event.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101004459

Title	Description	Aim	KPI	Result
Collaboration with international networks:	Synergy with and participation in international networks will contribute to the achievement of the goals. The involvement of partners as members of associations and expert groups relevant for the project will be encouraged.	Boost synergies in the domain of disruptive technologies applied to the provision of public services.	Participation in discussions, working groups, events, etc. with **more than 10 international networks**.	Only those within T7.4 • DIH-World • EDIH Network • Women in AI (WAI) • EDIHs French Corridor • EGPA • ENoLL
SO1.4	**Test and validate the IMPULSE approach in 5 European countries** (Spain, Bulgaria, Denmark, Iceland and Italy) with the support of DIHs and their innovation ecosystems for cross-region/field comparisons **from diverse social, economic and cultural perspectives and further engagement of innovative IT suppliers**.		No. of trained users (>25), involved DIHs (>7); solution readiness by pilot (1 or 2) stage (>50% and >90).	As for DIHs: Basque Cybersecurity DIH, Sofia Tech Park, TECOS, DIHOST, DIHNAMO, DIH Faubourg Numérique, RDI Hub, DigitalLead, EDIH Iceland
SO5.4	**Build a community to encourage the scale-up and adoption of the IMPULSE solution** through the engagement of DIHs, which will be trained to support the implementation of the IMPULSE initiative locally, as well as new public administrations and service providers in general and other stakeholders relevant for the business ecosystem.		No. of interested public administrations (>20) and innovative IT suppliers (>25) and trained DIHs (>10).	As for the 35 DIHs from 15 different countries in the IMPULSE network, half of those have been familiarised with the IMPULSE solution/project in order to arouse interest to pursue it in their own country/region.

5 Conclusions

Within the 36 months of its duration, IMPULSE has managed to form and strengthen a community of stakeholders, bringing together both external and internal actors around a common ambition and that distinguishes itself by its very diverse requirements and needs, but also by its interests and goals.

Thanks to the communication strategy, developed from the start, the project succeeded in addressing this colourful diversity and its challenges with the aim of making IMPULSE attractive and interesting. This not only for the progress of the project itself, but also to give rise to a desire to continue what has already been started within the project.

As stated in the first version of this report, the first 18 months of the project basically served to lay the theoretical foundations of the project, to prepare for the experimental phase and the careful selection of potential stakeholder and interest groups and created individual channels to address its potential followers.

The second half allowed us to put this into action. The collaborations and partnerships have borne fruit. Notably in terms of interest in the project and its results. The feedback received at the various events and workshops in which the project participated or which it organised. The highlights were undoubtedly the last webinar for the EDIHs, which demonstrated the success of the actions to grow the network of digital hubs that could be relayed, and also the final conference, which has already raised opportunities for concrete partnerships.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101004459

6 Annex

6.1 M1-M18 Stakeholders implication over the project (V1)

Table 6: M1-M18 Stakeholders implication over the project

Stakeholder	Interest for the project (Project expectation)	Impact of the project on them (Project expectation)	Influence over the project (Project expectation)	Interest for the project (M1-M18)	Impact of the project on them (M1-M18)	Influence over the project (M1-M18)	Comments
IMPULSE PAs (i.e., case studies)	High	High	High	High	High	High	Logically both current assessment and expected are the same, reflecting a general high level since they are essential parts of the project. However, it is important to ensure that interest and implication will remain the same throughout the project and/or equally for all pilot cases.
PAs ecosystem	High	High	High	Medium	Low	Medium	As for now, interest has been showed as they are aware of the project and its activities, but since little activity inducing an impact has been performed the level of interest is logically medium and the impact on the PA ecosystem remains low. However, as they have participated in the questionnaire of WP2 (D2.1), they already had a medium influence. For the second part of the project, all levels should be high.
End-users testers	High	Medium	High	Low	Low	Low	Some might have been informed by the experimentations planned but not the majority, hence the current levels remain low. But is expected a high influence over the project (via their feedback for example). Yet the level of impact on them directly, as considered only as tester remains quite medium (they might find an interest and start to think about the use of eID).
Final end-users	Medium	High	High	Low	Low	Low	They have not been informed massively on the project, so all three levels are low. But, despite a potential medium interest, there is a hope for a high impact on them in mid-/long terms with the solution as developed by IMPULSE and one can expect a high influence over it since their acceptance of the solution would also define its relevancy.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101004459

Stakeholder	Interest for the project (Project expectation)	Impact of the project on them (Project expectation)	Influence over the project (Project expectation)	Interest for the project (M1-M18)	Impact of the project on them (M1-M18)	Influence over the project (M1-M18)	Comments
Advisory Board	High	Medium *	High	High	Medium	Medium	High interest can be considered since the members have accepted, on a voluntary basis, to participate in the project, yet the influence remains medium as only few actions has been done until M18. Nevertheless, more actions involving them are planned, hence the high level of influence.
Digital Innovation Board	High	Medium *	High	High	Medium	Medium	High interest can be considered since the members have accepted, on a voluntary basis, to participate in the project, yet the influence remains medium as only few actions has been done until M18. Nevertheless, more actions are planned, involving them, hence the high level of influence.
Local Communities	High	High	High	Medium	Low	Medium	Positive interest has been expressed and for the moment only matchmaking meetings between a pilot and its affiliate DIH have been conducted, but good perspectives are underway so the level of influence is medium. For the next period, all categories should reach a high level.
Additional PAs (already aware)	High	High	High	Medium	Low	Low	The current level of interest is on medium since some of the contacted PAs have expressed an interest for the project outputs and see also opportunities locally. However since no activity has been jointly performed, they wait to see which implications would have IMPULSE on them, which also explains the current low level of impact and influence. Higher levels are expected for all categories during the second part of the project since first result will be shared.
Additional Pas	Medium	High	Medium	Low	Low	Low	Since they are unaware (see previous table in sub-section 3.2.1) current levels are low. In terms of expectations, at least a medium interest for the project is foreseen, taking into account the potential for resistance and also to keep it at a reachable level. It is the same for the influence over the project, but one could expect "enthusiasm" over the solution.
DIHs (already aware of the project)	High	Medium	High	High	Low	Low	For those contacted, despite a few number of meetings yet, a clear interest for the project and its deployment. As for the second part of the project, a high level of influence over it is expected since they activities where their

Stakeholder	Interest for the project (Project expectation)	Impact of the project on them (Project expectation)	Influence over the project (Project expectation)	Interest for the project (M1-M18)	Impact of the project on them (M1-M18)	Influence over the project (M1-M18)	Comments
							participation and expertise are planned. Also, as ultimately they are not fully considered as end-users but more like transformation vector, the level of impact of the project on them remains medium.
DIHs	High	Medium	High	Low	Low	Low	Since no contact action has been done yet, the current levels are low. As for the second part of the project, a high level of influence over it is expected since they activities where their participation and expertise are planned. Also, as ultimately they are not fully considered as end-users but like transformation vector, the level project impact on them remains medium.
EDIHs	High	Medium	Medium	Low	Low	Low	Since no contact action has been done yet, the current levels are low. As for the second part of the project, a high level of influence over it is expected since they activities where their participation and expertise are planned. Also, as ultimately they are not fully considered as end-users but more like transformation vector, the level of impact of the project on them remains medium. The medium level for influence over the project comes from schedule consideration as potentially they are busy with the officialisation of their EDIH status and may focus, for their first months of existence on their own internal activities.
GovTech	Low	Low	Medium	Low	Low	Low	They are unaware for the majority, hence the current low levels. For the second part, the levels remain low in terms of interest and impact on them, since IMPULSE is a research and innovation action project and the developed solution is not expected to go on market. But one could expect implication over the project (via advice and feedback on results), as well as interest for effective further development (IMPULSE n°2).
Innovative SMEs	Low	Low	Medium	Low	Low	Low	They are unaware for the majority, hence the current low levels. For the second part, the levels remain low in terms of interest and impact on them, since IMPULSE is a research and innovation action project and the

Stakeholder	Interest for the project (Project expectation)	Impact of the project on them (Project expectation)	Influence over the project (Project expectation)	Interest for the project (M1-M18)	Impact of the project on them (M1-M18)	Influence over the project (M1-M18)	Comments
							developed solution is not expected to go on market. But one could expect implication over the project (via advice and feedback on results), as well as interest for effective further development (IMPULSE n°2).
Entrepreneurs in private sector	Low	Low	Medium	Low	Low	Low	They are unaware for the majority, hence the current low levels. For the second part, the levels remain low in terms of interest and impact on them, since IMPULSE is a research and innovation action project and the developed solution is not expected to go on market. But one could expect implication over the project (via advice and feedback on results), as well as interest for effective further development (IMPULSE n°2).
Policy makers	High	Medium	High	Medium	Low	Medium	The first contacts were difficult, but at the policy round table (the event they attended) there was good interaction, but afterwards there was no further contact, hence the moderate level of interest on the project as well as the impact of IMPULSE on them. Higher levels of interest and impact are expected in the second period when concrete results will be made available. So far the influence has been low, even though the preparation phase (circulating the questions among partners, etc) and also the writing of the D3.5 probably contributed to bringing to the surface many interesting points.
Other established networks	Medium	Low	Medium	Medium	Low	Low	Those contacted have showed interest in the project, but more opportunities will come later this year (2022) and next one, hence the current medium impact. Also, the impact would remain the same since they are not foreseen as end-users but more as information broker.
Fellow projects	High	Medium	Medium	Medium	Low	Low	An interest from medium to high, following results delivery, is quite logical as the projects stem from the same funding topic and knowledge sharing is expected. For the moment few activities have been jointly performed (hence the low impact and influence levels), but they are expected to go higher since e.g., co-organised workshops or events are planned.

6.2 M1-M18 Stakeholders classification (Current vs. Desired) (V1)

Table 7: M1-M18 Stakeholders classification (Current vs. Desired)

Stakeholder	U	R	N	S	L	Comments
IMPULSE PAs					**C / D**	Current and desired at the same level on **LEADING**, since they are part of the consortium. Yet, a focus on: maintaining regular contact and exchange to ensure the co-creation process.
PAs ecosystem				**C / D**		Currently considered as **SUPPORTIVE** since they have already agreed to collaborate / provide feedback, hence the desired level remains as the current. It can be mentioned that others may join the project later on (see sub-section 6.1.2 on PAs ecosystem).
End-users testers			**C**	**D**		As for now, they are considered as **NEUTRAL** since even if some of them have been informed, no activity has been performed yet. However, we can expect a level equal as **SUPPORTIVE** (as they will provide valuable feedback during the various IMPULSE activities in which their participation is planned).
Final end-users	**C**	**P**		**D**		Currently, they remain **UNAWARE** since the solution has not been broadly promoted yet. This category is not easy to assess either since it is heterogeneous in terms of for example level of knowledge and/or interest in a solution as envisaged by the project. One can think about potential foreseen it as **RESISTANT**, to consider how to limit this risk.
Advisory Board				**C / D**		It is considered as already **SUPPORTIVE** since its members have agreed to be part of it and will remain at this level, since its function is to provide advice and feedback on the project.
Digital Innovation Board				**C**	**D**	It is considered as **SUPPORTIVE** for the moment because its members have agreed to be part of it and have already shown a great interest in the project (and its further applications). But the desired level is on **LEADING** as they are expected to actively collaborate with the consortium (e.g., pilot cases) and possibly deploy the experimentation on their territory (see paragraph 3.1.2.2).
Local Communities				**C**	**D**	They are considered as **SUPPORTIVE** for the moment because interest has been showed for this type of collaboration from both sides. The desired level is **LEADING** since the communities' members are expected to closely collaborate on various task, e.g., pilot experimentations (see paragraph 3.1.2.3).
Additional PAs (already aware)			**C**		**D**	Additional PAs have been approached in different events and/or specific presentations for them have been done. Yet, the current level in on **NEUTRAL** as even if they have already shown some interest, they are waiting for the first results / workshops where they can participate, so considered them as already **SUPPORTIVE** would perhaps be too great an assumption. However, the desired level is **LEADING** as they are expected to be able to take over the project on their territory.

Stakeholder	U	R	N	S	L	Comments
Additional Pas	C	P		D		Currently they are **UNAWARE** since they will be approached during the second part of the project (e.g., through briefings and demonstrations), they are then expected to be **SUPPORTIVE** of the project. However, one might take into consideration that they potentially could be **RESISTANT**, both in terms of how to approach them as well as for the roadmaps writing in WP6.
DIHs (already aware of the project)				C	D	Currently they are **SUPPORTIVE** since high interest has been expressed by those contacted and with which meeting were held as they see the potential of the whole or part of the project for themselves or their members. The desired level is of **LEADING** if they also want to experiment on their own territory.
DIHs	C			P	D	Since no contact has been done, they are **UNAWARE**, but they are expected to be, if not **LEADING** at least **SUPPORTIVE**.
EDIHs	C			D	P	Currently, since no contact has been done, they are **UNAWARE**, but they are expected to be **SUPPORTIVE** of the project and depending on their interest and availability, potentially **LEADING**.
GovTech	C			D		For the majority they are currently **UNAWARE** but they are expected to be **SUPPORTIVE** in the second part of the project as the latter needs their private-public collaboration expertise for further IMPULSE development.
Innovative SMEs	C			D		For the majority they are currently **UNAWARE** but they are expected to be **SUPPORTIVE** in the second part of the project as the latter needs their private sector knowledge and expertise for further IMPULSE development / deployment.
Entrepreneurs in private sector	C			D		For the majority they are currently **UNAWARE** but they are expected to be **SUPPORTIVE** in the second part of the project as the latter needs their private sector and market knowledge and expertise for further IMPULSE development / deployment.
Policy makers		P		C / D		They are currently considered as **SUPPORTIVE** because some of those who were approached provided really useful insights. Logically, that level should remain the same. However, the idea of having them **RESISTANT** should be taken into consideration.
Other established networks			C	D		Connections have already been made with some relevant network. However no significative action has been taken from both side, so the current level is **NEUTRAL**. Interesting perspectives have been expressed (IMPULSE information sharing throughout their networks, presentations, networking, etc.) so the desired level is logically **SUPPORTIVE**.
Fellow projects			C	D		As for the majority, the current level can be considered as **NEUTRAL** since all the projects were financed together on the same topic. It is expected to have a minimum level of **SUPPORTIVE** for the rest of the respective projects as cross-project meeting as well as co-organised workshop (possibly led by IMPULSE) are being planned.

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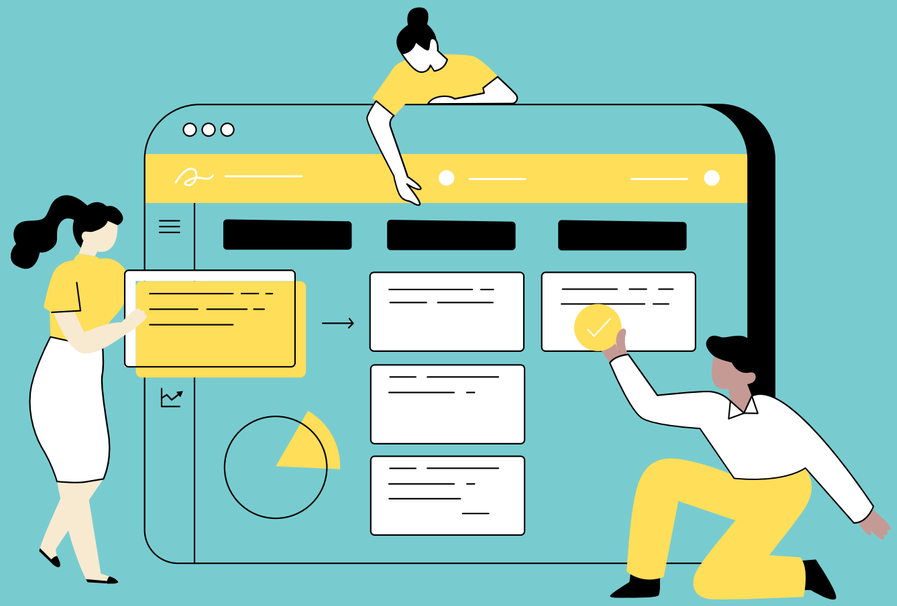
How can the living lab approach meet the challenge of using eID for public services

The example of the European project IMPULSE



Open Living Lab Days 2022

GOAL of the workshop

Between knowledge sharing and interactive sessions, participants will explore how a living lab approach can be integrated into EU projects via the example of IMPULSE, a project evaluating the impact of using eID for public services.

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WORKSHOP TRACKS choice

The theme chosen is: “Transformation: addressing digital and green transformation, urban planning & development, zero pollution, also through smart and emerging technologies”. The workshop builds on the IMPULSE project, which is conducting a multidimensional and user-centric analysis, in the manner of a living lab, of the transformative impact of Blockchain and Artificial Intelligence (AI) on electronic identities (eID), for the improvement of digital public services. The workshop therefore fits into the theme by addressing the issues of digital transformation of services for the benefit of all citizens through disruptive but promising emerging technologies.

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OUTCOMES

This workshop aims to get participants to reflect on:

- Both knowledge of the challenges that can be faced when a project is set up in a co-creative and user-centred way, but also ideas on how to develop good practices to tackle them.
- How the use of a user-centred co-creation approach, combined with research and innovation and real-life experimentation with local communities, can be beneficial for the sustainability and acceptance of the results of a Europe-wide project.
- The opportunity to discover and experience a new eID solution, integrating AI and Blockchain, for the use of online public services, and explore opportunities it can offered to living lab operating or wishing to operate in this field.

As the project on which the workshop is based will still be ongoing, perspectives for collaborations will be offered:

- Invitation to participate in workshops organised by the IMPULSE project, e.g., on ideation of new fields of deployment and innovation, or socio-economic/-political acceptance and impact assessment.
- Access to the roadmaps that will be developed including pathways and good practices, for the sustainable adoption of disruptive-technologies to enhance digital identity management in public services.
- Possibility to get in touch with the project experts in order to collaborate or get support for the development of similar projects or living lab testing activities.

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METHODOLOGY description

The workshop is divided into two parts, alternating times for presentation (P) and questions (Q): the first is devoted to the living lab approach used to run the project and the second to its objective of evaluating the impact of using eID for public services. Interactive polls (e.g., Slido) will be used and presenters will move among the participants to guarantee maximum participation. The questions will be used to introduce the different steps of the workshop and open the dialogue.

The user-centred co-creation approach of the project (45 min)

- (P): IMPULSE presentation (focus on the approach and the pilot experimentations)
- (Q): How can the living lab approach contribute to the success of European projects?
- (Q): What challenge do you face most in your daily LL work?
- (Q): What can we do to crash our project? Thinking from the opposite.

Impact analysis on the integration of eID solution in public services (45 min)

- (P): IMPULSE eID solution demo presentation and real time demo testing by the participants
- (Q): How do you feel about using the solution?
- (Q): What are the barriers to this solution (trust, ethical, etc.)?
- (Q): How could this solution be deployed more widely (new services, level, etc.)?

(**NB**: Any data collected will be done following validation by the participant of a consent form for GDPR compliance and stored on a private and secure server owned by the project leader located in the EU)

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AUDIENCE

This workshop is for living labs and technology providers who work or want to work with public authorities on digital issues, mainly artificial intelligence, blockchain and e-identity. However, it has been designed to be open to all the actors, namely public authorities, industry, academia and citizens. Indeed, anyone can participate since the workshop is based on an electronic identification solution that can be used by individuals regardless of their knowledge background to access online services in a secure manner. Thus, any participant will be considered an asset as an end-user representative to feed the dialogue on the digital transformation of public services.

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VALUE FOR PARTICIPANTS

This workshop aims to foster dialogue so that digital solutions are not seen as an additional burden on local communities but as a way to contribute to their development. As well as demonstrating that the large-scale adoption and deployment of these solutions is more than necessary to face all the current challenges: inclusion, environmental footprint, citizen participation, etc. In addition, this workshop aims to empower its participants to become actors of the project on which it is based, between co-creator and solution provider, by offering them the possibility to contribute to the development of an EU eID solution initiative.

Thanks to the expected various exchanges, the participants will be equipped with ways to:

- Improve the access and the users experience for online services
- Facilitate social and ethical inclusion for all
- Fostering the growth and adoption of eGovernment services
- Reduce online identity fraud and theft
- Increase knowledge on disruptive technologies and how they can be used in favour of citizens
- Reduce environmental pollution by reducing presential needs without cutting jobs

In a nutshell, the idea is to include this workshop in a more global approach of co-creation so that the living labs and all the actors that make them up can take over the digital transformation to make local communities intelligent and sustainable places.

European Network of Living Labs

WORKSHOP FACILITATOR(S)

THE TEAM BEHIND IT ALL

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Italian case study leader for IMPULSE

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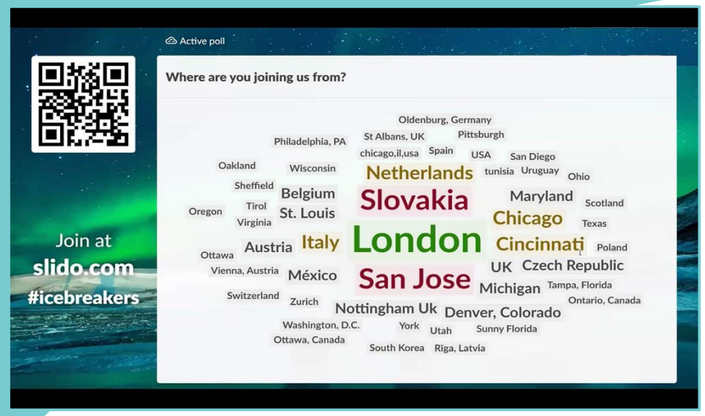
AUDIOVISUAL MATERIALS



Step 1: Ice breaker

Where do you come from?

Step 2: Presentation

Living Lab approach (slide 10)

Step 3: Question(s)

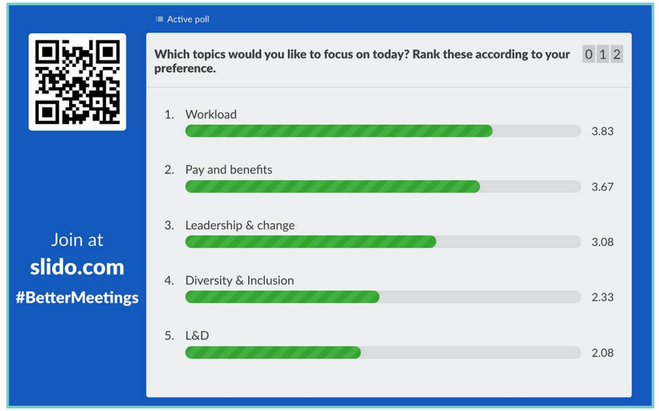
With selection of answers

Step 4: Open Dialogue

To include every participants

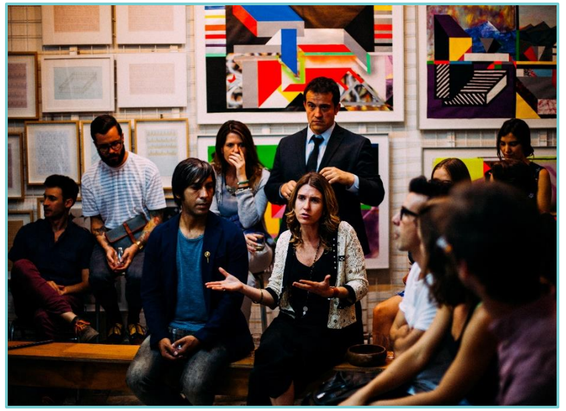
Step : Presentation

Testing & reflecting on eID solution



Step 6: Question(s)

With selection of answers



Step 7: Open Dialogue

To include every participants

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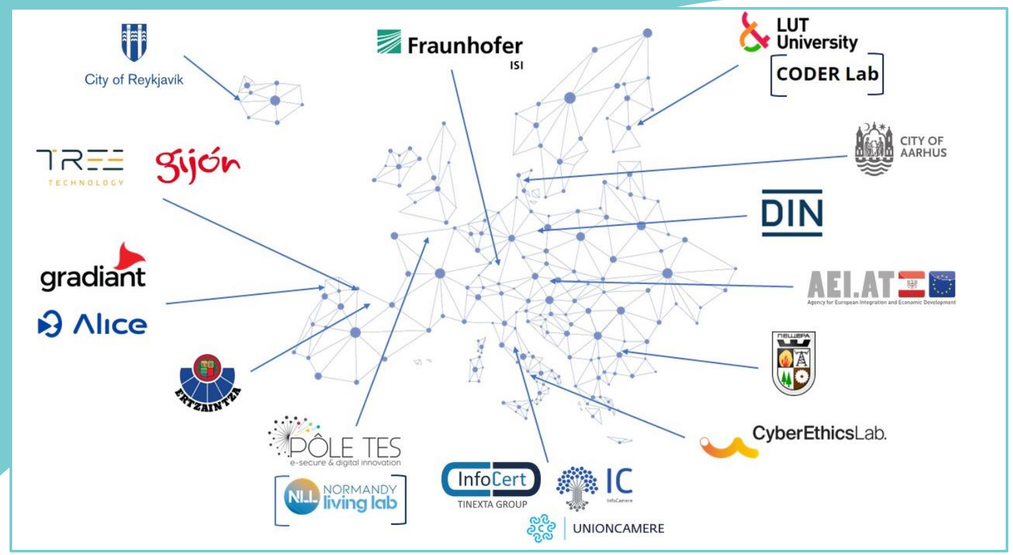
AUDIOVISUAL MATERIALS



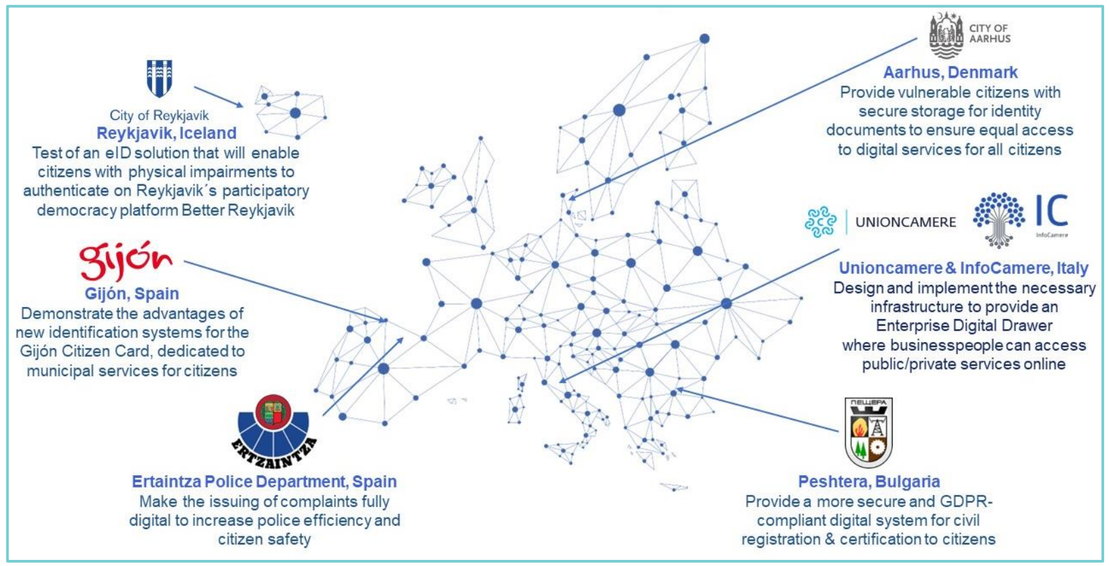
Consortium

Including

[Living Labs]

Pilot cases

Example



Impulse

IMPULSE Demo

To be tested by participants

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Impulse

How can the living lab approach meet the challenge of using eID for public services

The example of the European project IMPULSE

Open Living Lab Days 2022

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Impulse

Identity Management in PUblic SErvices

Webinar for DIHs / EDIHs and their ecosystems
December 13th, 2022

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101004459

Poll on **Slido**

Impulse

Webinar **agenda**

- General presentation of the IMPULSE project
- The use of AI and Blockchain for eID management
- Pilot case methodology and expected results
- Impact of eID from a socio-economic, legal, ethical, legal and standard perspective
- Open community of stakeholders
- Upcoming activities
- Final Q/A session + Wrap-up

Impulse

Impulse

Identity Management in PUblic SErvices

General presentation of the project

Impulse

The **project**

HORIZON 2020

LE PROGRAMME DE RECHERCHE ET D'INNOVATION DE L'UNION EUROPÉENNE

2021
2024

15
partners

+3M€

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101004459

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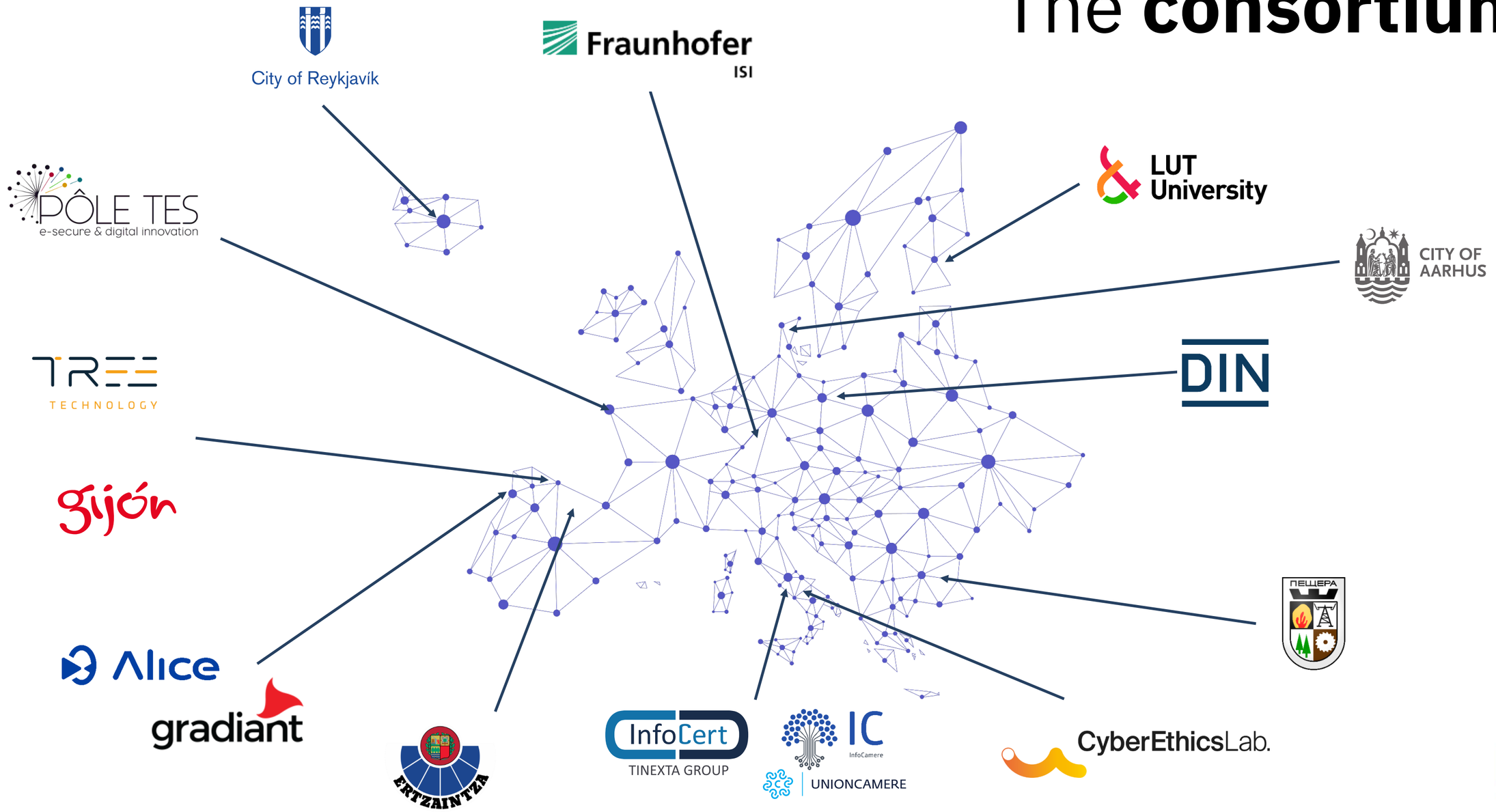
The **consortium**



Impulse

Project **objectives**

IMPULSE aims to
develop a **method for evaluating eID management**
when accessing **online public services**,
using **AI** and **Blockchain**.

Evaluation

- **Benefits**
- **Risks**
- **Costs**
- **Limitations**

Impacts

- **Socio-economic**
- **Legal**
- **Ethical**
- **Operational**

Policy & Regulation

- **GDPR**
- **eIDAS Regulations**
- **Existing national e-identity systems and standards**

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Expected **main results**

A framework for a holistic integration of AI and Blockchain technology

Actionable roadmaps for the adoption, escalation and sustainability of advanced eID technology

Impulse

A main **focus**

How a single adaptive eID solution can be useful to a whole ecosystem,

from the micro-level of citizens to the macro-level of government?

Impulse

Impulse

Identity Management in PUblic SErvices

The use of AI and Blockchain for eID management

gradiant
Connectivity · Intelligence · Security
for your business

Impulse

Centralized eID **management systems**

- Traditional and existing eID management systems are based on centralized architectures
  - **User ID and password**
    - ✓ Centralized identifiers
      - ✓ Controlled by third parties -> Data breaches
    - ✓ Many passwords to track
      - ✓ Weak password easy to remember
      - ✓ Same passwords on many sites
  - **Identity Providers (IdPs)**
    - Only one password but…
    - Identities are controlled by a unique third party -> IdP
    - IdPs learns things about us -> habits, interests
    - Unwanted Correlations
  - **User Certificates (PKI)**
    - ➢ Good but...
    - ➢ They are not very respectful of user privacy
    - ➢ Installation process is complex for the average user
    - ➢ Centralized root of trust

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IMPULSE as a **Decentralized alternative**

- IMPULSE intends to **solve the centralized eID system issues**
  - Not only technical but also **inclusive** and **use experience** issues

- IMPULSE purposes a **decentralized** and **self-sovereign** eID management system based on a **verifiable credential** (VC) model upon **blockchain**
  - **Decentralized**: There is not a centralized entity in charge of the user identity
  - **Self-Sovereign Identity (SSI):** The user identity data remains under the user control
  - **VC model**: A VC is a cryptographic non-repudiable set of statements which contains identity attributes of the user (e.g. name, family name, fiscal code, payment account number, etc.)

- IMPULSE eID management system consists of a:
  - **User registration process**: A user **requests** their identity **verifiable credential** through a digital onboarding process based on face recognition and document validation
  - **User authentication process**: A user **presents** their identity **verifiable credential** to be authenticated in online public services.

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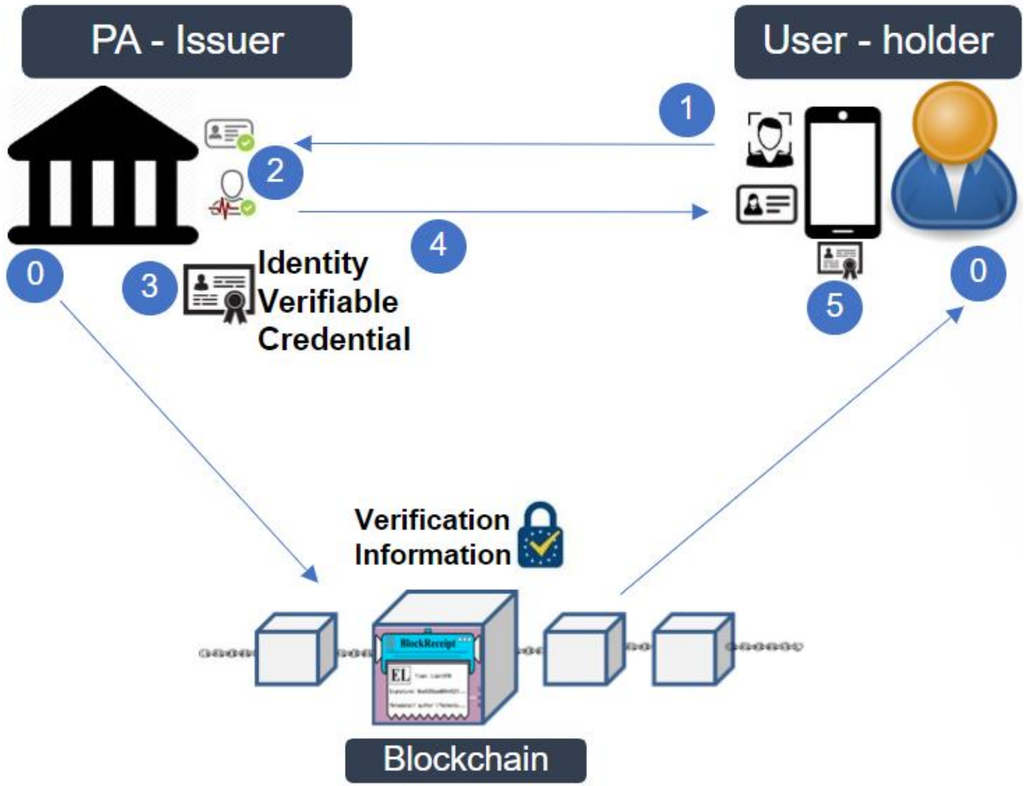
User **Registration**

- User **registration/enrolment**
  - ✓ The first time a user request a web PAS, a registration process based on a digital onboarding must be completed.



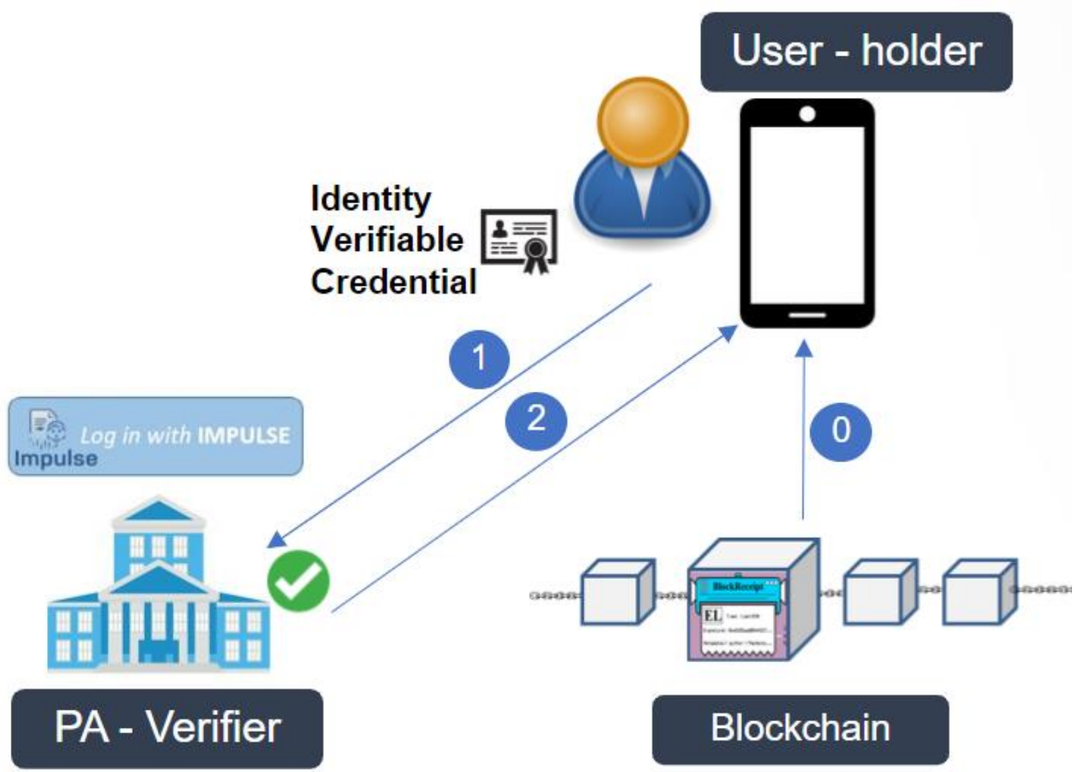
[0.1] The PA registers verification information
[0.2] The user recovers verification information

1. The user captures a selfie and an identity doc (ID) photo to be sent to the PA
2. The PA performs face correlation between selfie and ID doc, and document verification over the ID doc
3. The PA issues the user ID VC
4. The PA sends to the user the VC
5. The VC is stored in the user device in a secure manner

Impulse

User **Authentication**

- User **authentication** -> Verifiable credential presentation
  - ✓ When an enrolled user requests a public service, the PAS needs to verify their identity



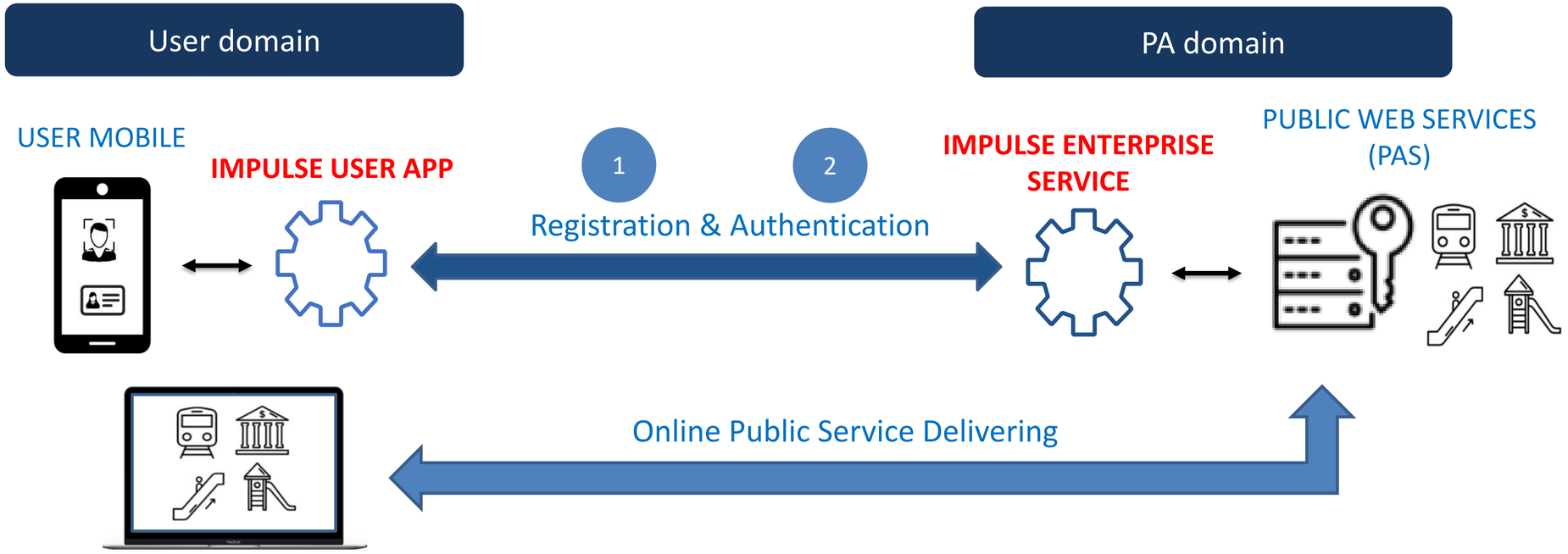
[0] The user recovers verification information

1. The user presents their ID VC
2. The PAS deliver to the user the online public service

Impulse

IMPULSE **Integration & Instantiation**

- Public administrations can choose any online service to be integrated with the IMPULSE eID management system.



- Installation of an Android APP from the Google PlayStore + Deployment of a container

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Identity **Model**

- The solution is based on the EBSI/ESSIF ecosystem.
- Focused on Public Administrations -> Governance model.
- IMPULSE participates in the EBSI Early Adopters program.
  - **Access to the Pilot environment**
  - **Access to detailed documentation**
- The solution uses de EBSI Identity Verifiable Credential Schema.

ebsi
European Blockchain

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Roadmap of **improvements**

- *Trusted Execution Environments*: protect identity data in the user and corporative wallets.
- *Remote QSeal Service*: Identity Credentials signed with a qualified signature.
- *Informed Consent Service*: Management of the user consent of sharing data through Smart Contracts.

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Q/A **session**

How is AI used in IMPULSE?

In IMPULSE, we have two AI modules based on computer vision, optical characters recognition (OCR) and deep learning techniques. The first module is the face-matching module focused on the facial identity verification between a user selfie and its ID document and the second one is the digital ID document verification module that assess whether a photograph of an ID document corresponds to a genuine document (in other words, it has not been forged).

Each of these two modules has two verification methods. For the face-matching, it performs the following detection techniques:

- Face-matching detection: the ID document photo matches with the taken selfie, otherwise, it should be considered as an attack or impostor.
- Selfie liveness detection (anti-spoofing): checks if a selfie is from a real person, otherwise it should be considered as a presentation attack.

Similarly, the forgery detection module has two components:

- Copy-move forgery is a specific type of image tampering where a part of the image is copied and pasted on another part. In the context of ID documents, this forgery technique may be used in order to alter the image by reproducing some characters and respecting the utilized fonts and size. Hence, the objective of this verification component is to detect similar regions of the same image.
- Imitation forgery occurs when the font, size, colour, and any other morphological characteristics of the text present on the ID documents is imitated, in order to introduce fake or manipulated data. Due to the available means, imitation forgery is always imperfect, leaving deviations in size, skewness and rotation with respect to the official text. This module aims to detect these traces left by the tampering process, thus obtaining evidence that the ID document is not legitimate.

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Q/A **session**

Any info on false positive percentages on AI process?

There are two modules that use AI in IMPULSE: biometrics and document verification. In relation to the document verification module, we are currently implementing the second version, so this KPI has not been measured yet, but will be in the future, especially in the framework of the next round of pilots.

What will be stored in the blockchain?

The DID Documents of the public administrations that contain their verification methods (public keys), and the URLs to find those public administrations. No user information is stored.

Are you using the common messaging interface code from the bitcoin project? What is your strategy for keeping bitcoin messaging code sync with other changes to the messaging layer in the blockchain system?

The blockchain used is EBSI (ethereum-based), and all our communication with the blockchain is performed through APIs that allows us to easily create unsigned transactions to invoke the Smart Contracts of the ledger. Then, we sign those transactions and upload them to the blockchain. The authentication mechanism against these APIs is based on SIOP (Self-Issued OpenId Provider) and consists of presentations of proof assertions of DID ownership and verifiable credentials.

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Identity Management in PUblic SErvices

Pilot case methodology and expected results

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Pilot **cases**

City of Reykjavik

Reykjavik, Iceland
Better Reykjavik participatory democracy portal

Gijón, Spain
Public services app

Ertaintza, Spain
Issuing complaints entirely online

CITY OF AARHUS

Aarhus, Denmark
Electronic access to personal information and services

UNIONCAMERE

Unioncamere & InfoCamere, Italy
Enterprise digital drawer

Peshtera, Bulgaria
Civil registration & certification

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Pilot **methodology**

Pre-pilot survey

All participants fill a pre-pilot survey

Survey consists of demographic information and background knowledge

Testing of IMPULSE solution

All participants test the IMPULSE solution

During testing, participants can note issues or problems they have

Post-pilot survey

After testing the IMPULSE solution, participants are asked to fill a survey to find out their feelings and opinions of IMPULSE

Interviews

Few participants are interviewed one-on-one to get supporting answers and more qualitative results regarding the IMPULSE solutions.

Focus group

Six to eight participants are asked to participate in a focus group activity where they share their opinions and feelings together to map out problematic parts in the IMPULSE solution

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1st round of pilots' **results**

- Technical challenges when setting up the IMPULSE solution on the case sites
- The onboarding was somewhat cumbersome
- Lack of information if something works/fails
- No privacy policy or information of data storage
- Some parts of the app were confusing
- What if the cameras do not work properly or are not good enough (low image quality)?

- Majority perceived facial recognition as secure and trustworthy, as well as easier and more secure than other biometric identifications
- Signing in is fast and the solution is easy to use
- The solution provides a good (or better) alternative for the current systems in place and most would use it in the future after technical improvements
- Overall the solution is considered safe (with some reservation)

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What **next?**

- Examine and evaluate the results from 1st piloting round
- Transform the results to relevant features and functionalities to the IMPULSE solution
- Improve the IMPULSE solution based on the results
- Evaluate the improved IMPULSE solution during the 2nd round of pilots
- Finalize the IMPULSE solution within the scope of the project

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Q/A **session**

How were participants selected for the case studies?

Each public administrator (case owner) sent invites through their own communication channels to gather participants. The participants were not selected but rather people were invited to participate.

How many people participated in the case studies?

Around 40 people in total with one case study still in progress and their participants are not included.

Did participants ask questions about the technologies used?

Yes, there were some questions. Regarding blockchain, some asked how the blockchain is actually used but that was from people who had more knowledge of blockchain in general. Most participants did not have questions about blockchain.
Regarding facial recognition, some participants had questions how well it works and if other biometric identifiers could be used as well.

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Q/A **session**

Are there case-specific differences in the results of the pilot project?

Yes there are differences because the participants were somewhat different within each case. As some of the participants are more or less technically proficient depending on the case location, there is a difference in the participants' perception of technology. For example, the Italian UnionCamere & InfoCamere participants work with new technology, and they have a deeper knowledge on facial recognition and blockchain technology. This also enables them to have more concerns and questions when using such technology. On the other hand, participants from Peshtera do not interact with new technology that often and have less questions about facial recognition and blockchain.
To summarize: More knowledge brings more questions while less knowledge brings 'blind trust'.

Can we possibly make an observation on the perception of people from different neighborhoods in the pilot cities?

Unfortunately, no as the participants' address is not collected so the area they are living is not known. Some observations can be made in a larger scale by comparing the pilot cities/countries against each other but within one pilot city, the participants cannot be differentiated based on a more specific location (such as a different neighborhood within the city).

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Identity Management in PUblic SErvices

Impacts of the use of eID: socio-economic impact

Fraunhofer ISI

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Digital Identity Systems: **Social & Political impacts**

- Inclusion
  - Digital identities are key for digitising public and private services
  - Digital services can be easier, faster and cheaper to access than analog services, and provide greater transparency and thus fairness
  - Legal identity basis for general participation in social, political & economic life
- Enable higher-value public sector work
  - Time savings for civil servants allow for redeployment
- But: depends on simplicity of architecture & processes
  - IMPULSE: facial recognition & AI to enable maximally easy onboarding & log-in

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Digital Identity Systems: **Economic impacts**

- Numerous positive economic impacts from widespread adoption of digital identities and digital processes
  - Cost savings to public administrations, citizens and firms
  - Increased consumption of services
  - Reduction of the informal economy
- But: country/use case characterstics determinative for effects
- IMPULSE: at this point, we mainly see time/cost savings for citizens and public administrations

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The question of **acceptance and adoption**

- Key Question: what drives acceptance and adoption?
  - For citizens: quality and size of services ecosystems, and usability
  - For public institutions: legal mandates
  - For firm: economic rationality

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Identity Management in PUblic SErvices

Impacts of the use of eID: legal and ethical impacts

CyberEthicsLab.
Responsible Research and Innovation

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IMPULSE **eID approach**

The challenge

Human Centred Technology

Data Sovereignty

More Inclusive Society

Co-creative approach

Impulse eID

an eID system that leaves no one behind

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IMPULSE results: **Regulation and Ethics**

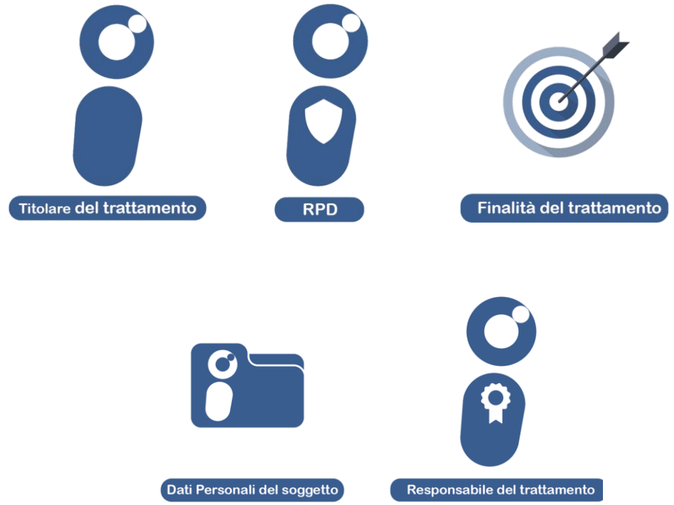
as drivers for *Research and Responsible Innovation*

Why Demand for more secure digital services

Why Allow GDPR compliance: data subjects (**citizens**) are **the owners** of their **own personal data**

What Support citizens with **full management** of their **personal data, monitoring their consent** in compliance with ethics and regulatory frameworks (e.g., GDPR, eIDAS)

How User devices, **ethics assessment, graphical icons, smart contracts, blockchain, recommendations for solution developers and policy makers**



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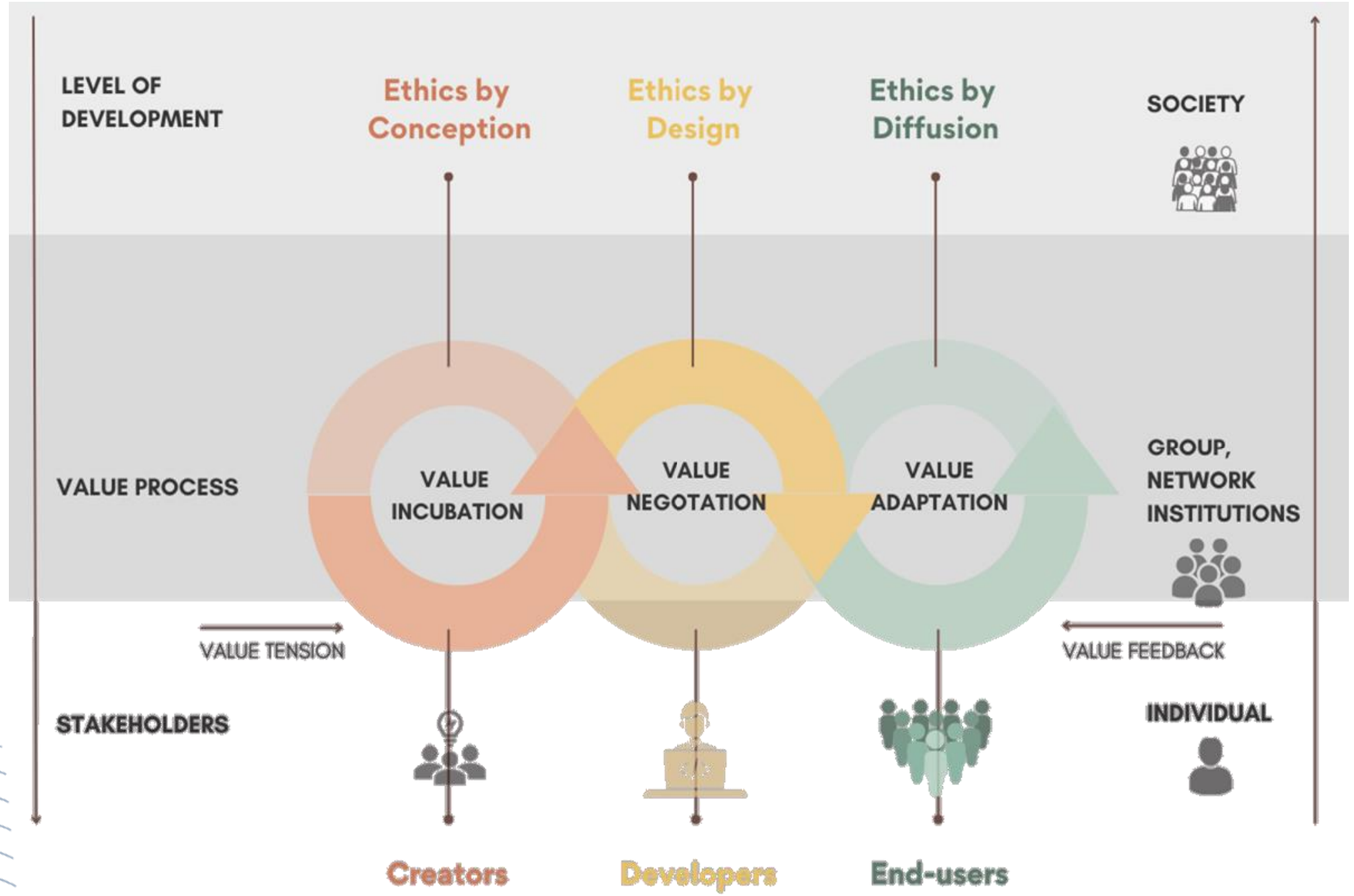
Next? **Ethics assessment & Final Policy brief**



- Empower data subjects
- Create a new DevOps mindset with a multidisciplinary team
- Embed ethical values through their assessment
- Take care of societal impact since conception
- Include Stakeholders' view

What could we do together: co-creation through feedback loop

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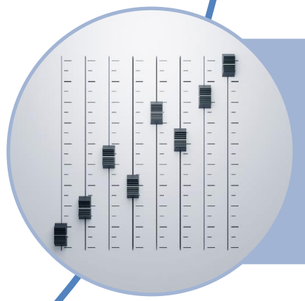
Ethic and Legal: **first results**

Experimental approach through the use of pilots

Identifying people’s real needs and expectations regarding eID



Giving people full control on their data and consents with smart contracts

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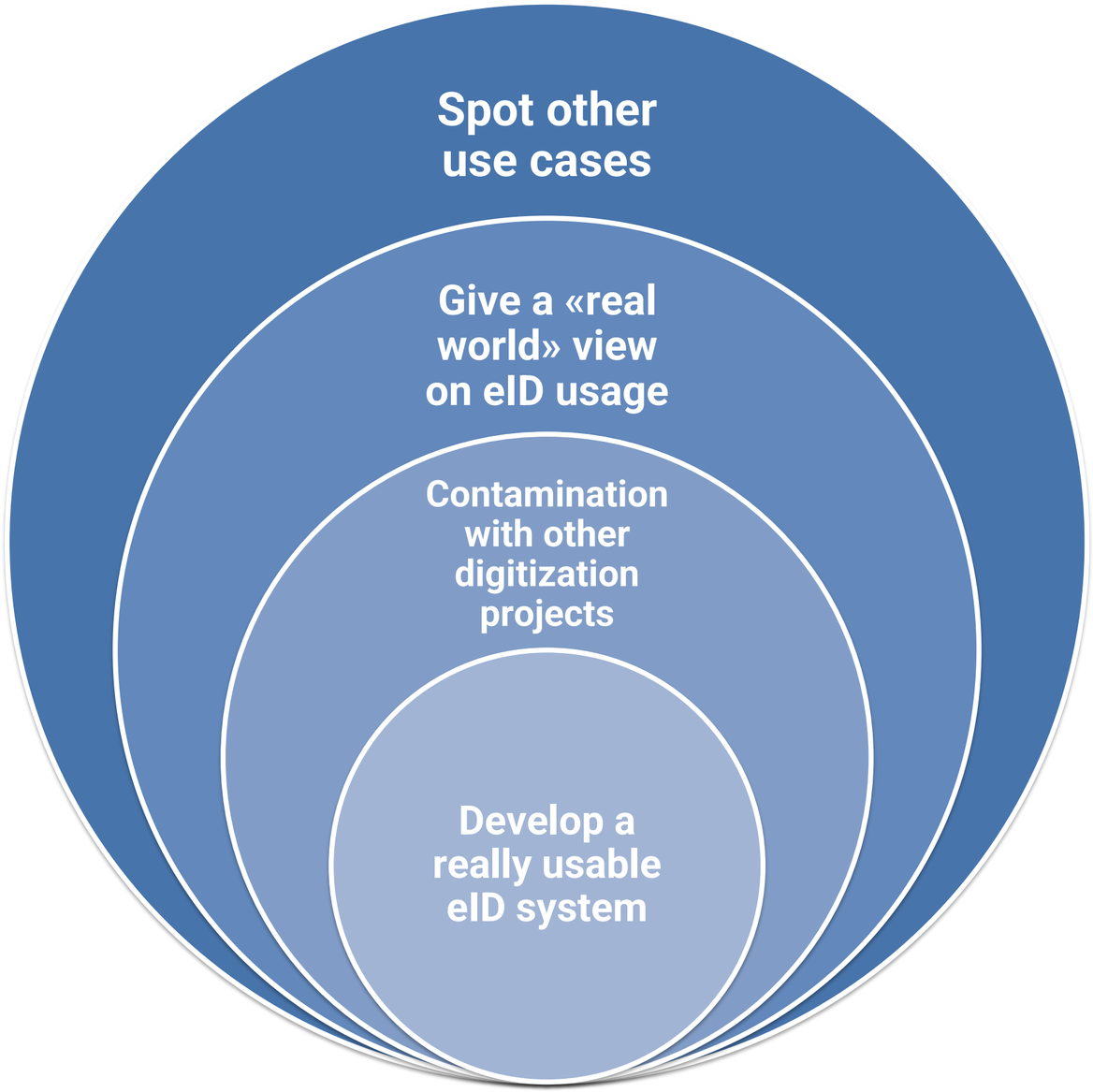
Collaboration **for progress**



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Identity Management in PUblic SErvices

Impacts of the use of eID: norms and standards

DIN

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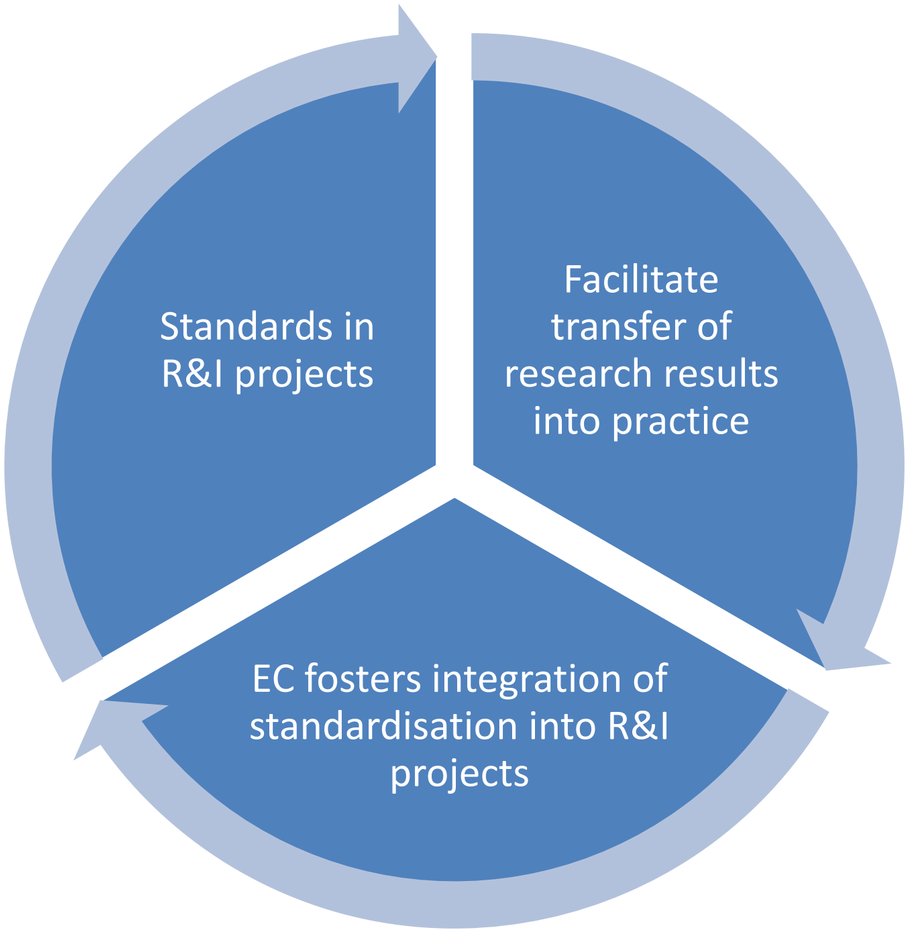
What are **standards**?



Standardisation is part of IMPULSE

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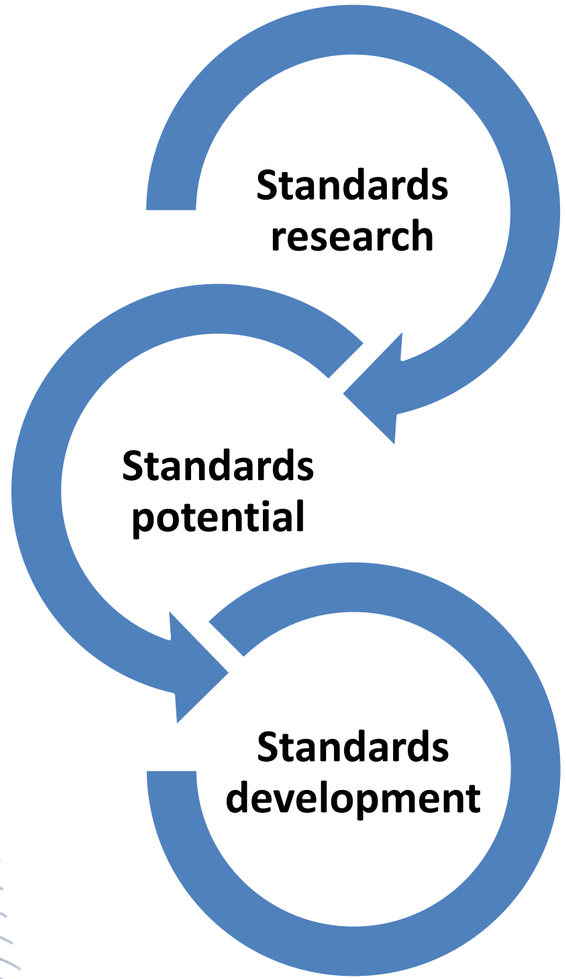
Standardisation **in R&I projects**



- **Identifying standards relevant for the project**
- Assessment of identified standardization activities
- Provide insights from standards, standardization work

- **Comparison of identified standards with new potential topics**

- **Initiation of new standards** (e.g. CEN Workshop Agreement)
- **Input to existing standards, standardization activities**
- Development of standardization roadmaps
- Dissemination of developed standards

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Standardisation **in IMPULSE**

Analysis of the standardisation landscape relevant for IMPULSE

- What is the state of the art?
- Identification of relevant standards and standardisation committees
- Aligning the developed solutions with already existing standards

Overview of highly relevant standards for IMPULSE on our website

https://www.impulse-h2020.eu/standards/

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Standardisation **in IMPULSE**

Formal standards are developed in the framework of international, European or national standardisation organisations like ISO (International Organisation for Standardisation), CEN (European Committee for Standardisation) or DIN (German Institute for Standardisation)

DIN SPEC 4997
Privacy by Blockchain Design: A standardised model for processing personal data using blockchain technology

UNE 71307
Digital Enabling Technologies – Decentralized Identities Management Model on Blockchain and other Distributed Ledger Technologies. Part 1: Reference Framework

CEN/TS 16921
Personal identification – Borders and law enforcement application profiles for mobile biometric identification systems

ETSI TS 119 182-1
Electronic Signatures and Infrastructures (ESI); JAdES digital signatures; Part 1: Building blocks and JAdES baseline signatures

ISO/IEC 20889
Privacy enhancing data de-identification terminology and classification of techniques

ISO/IEC 27001
Information technology – Security techniques – Information security management systems – Requirements

ISO/IEC 30107 series
Information technology — Biometric presentation attack detection

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Standardisation **in IMPULSE**

Informal standards, or sometimes called consortia standards, are usually developed in a closed body of experts where not all interested stakeholders are involved, such as W3C.

Decentralized Identifiers (DIDs) v1.0

Verifiable Credentials Data Model v1.1

Verifiable Credentials JSON Schema Specification

JSON-LD 1.1

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Standardisation **in IMPULSE**

Provide input to already existing standards

- Implement project results into standardisation
- Get in contact with experts outside the project

CEN/TC 224 - Personal identification and related personal devices with secure element, systems, operations and privacy in a multi sectorial environment

CEN/CLC/JTC 19 – Blockchain and Distributed Ledger Technologies

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Identity Management in PUblic SErvices

Open Community of Stakeholders

PÔLE TES
e-secure & digital innovation

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One project, **two boards**

Multi-stakeholder collaboration for smooth, efficient and user-centered eID management by public services

Digital Innovation Board

- Support experimentation
- Attract innovative technology suppliers
- Build bridges among public administrations and technological companies
- Assess and develop new policies
- Foster the cooperation between DIHs and cluster networks

Advisory Board

- Receive updated information on the progress of the project
- Take part in the demonstration activities
- Give advice on project's actions, to (re-) orientate them if necessary
- Complement partners' expertise on specific topics areas

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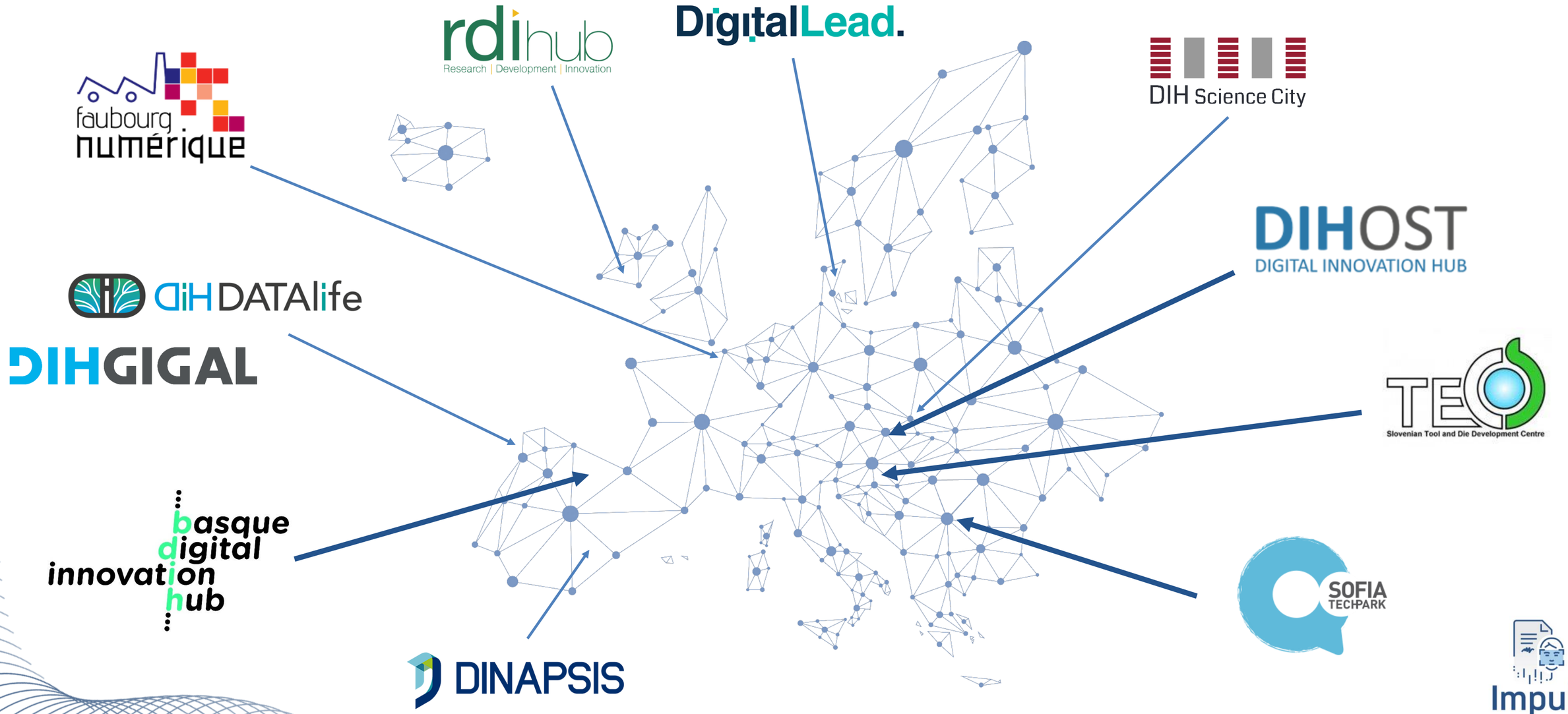
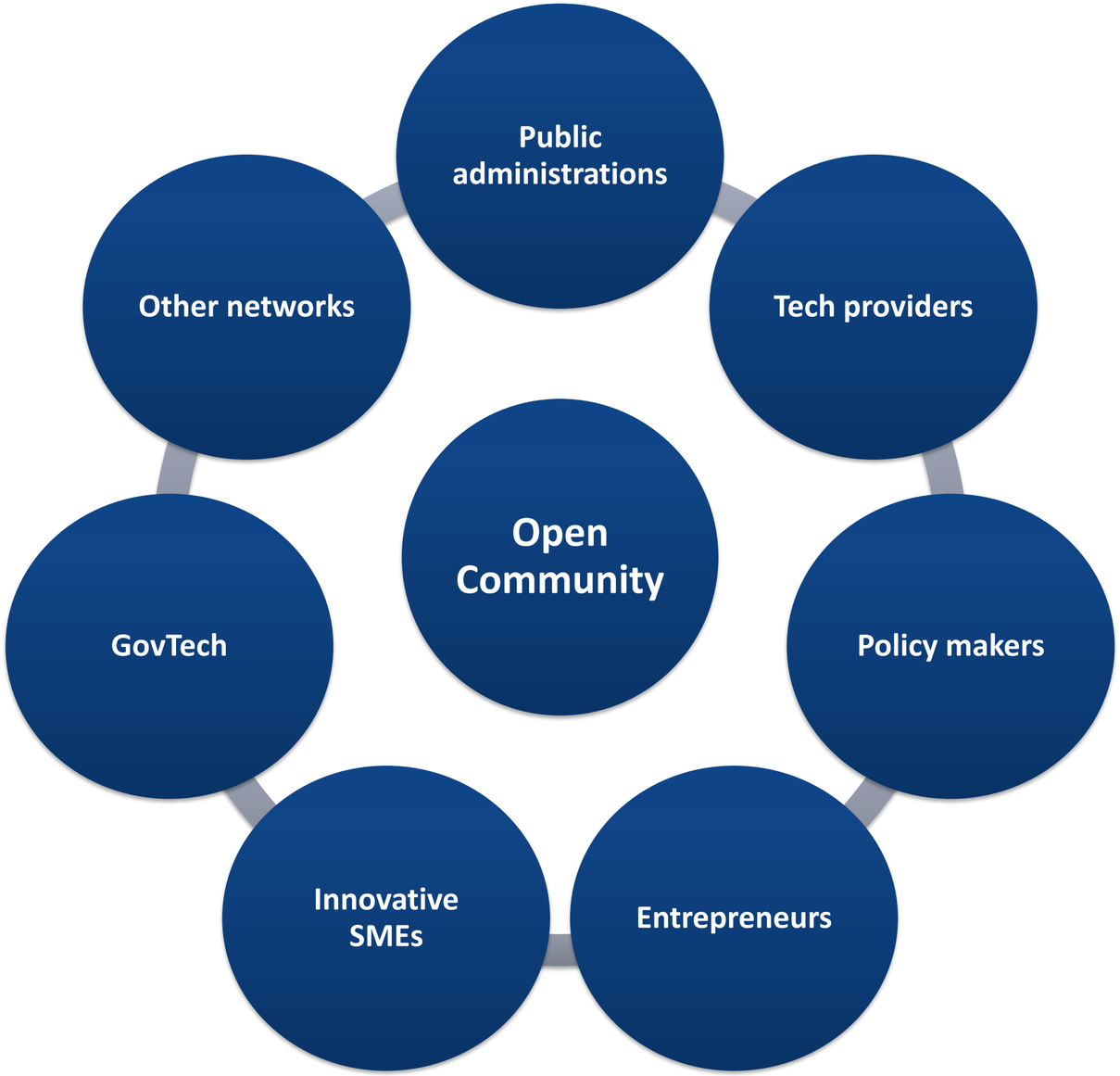
Digital Innovation Board and DIHs **network**



Working with other **external stakeholders**

To achieve meaningful impacts, gain acceptance and promote the adoption of disruptive eID concepts in public services, collaboration with external stakeholders is crucial.



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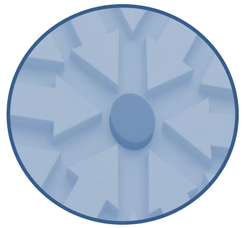
How to **collaborate**

Collaborate in the implementation of a framework for a holistic integration of AI and Blockchain technology to support secure and privacy preserving eID management

Co-create a single adaptive eID solution for public services and other organisations

Participate in the publication of a portfolio of services provided by your organization, be identified as local contact point and support organisation for the benefit of all public services across Europe

Access, adapt and exploit the research results of the project for the benefit of your own sector of activity



Join a community to discuss topics of interest to you or your ecosystems in relation to our action themes

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Q/A **session**

What kind of support do you expect from the external stakeholders?

As part of our work in the project, we seek to create stakeholder communities "to further validate the results of the pilot experiments and to foster the adaptation, adoption and development of the IMPULSE solution for and in new contexts, as well as to foster the creation of new products, services and technological solutions that could be built on top of the IMPULSE solution. More specifically many activities would benefit from the support and expertise of external stakeholders. For example, the support could be (but not exhaustively):

- **Technologies**:, assess technical performance of the solution (software quality, safe, secure, etc.).
  - TARGETS: tech providers, GovTech, entrepreneurs, DIHs, EDIHs, LegalTech actors, academics, public administrations, etc.
- **Pilot experimentation**: test the solution and give feedback/advice to make it the most suitable for public administrations and users (user-friendliness, user acceptance, accessibility, usability, etc.)
  - TARGETS: DIHs, EDIHs, public administrations, citizens (as end-users), etc.
- **Pilot implementation**: help to define how to run an iterative experimentation and involve the actors of the quadruple helix (Government, Society, Academic Research & Business).
  - TARGETS: DIHs, EDIHs, public administrations, citizens (as end-users), living labs, academics (PhD students).
- **Policy recommendations**: generate guidelines and recommendations in terms of increased awareness, transparency, trust, potential barriers and risks, impact, etc. to support disruptive technologies adoption.
  - TARTGETS: policy makers, regional agencies, DIHs, EDIHs, living labs, legal actors, etc.
- **Business model development**: participate in the assessment of economic viability, specifically building on economic, financial and cost-benefit and market analyses of the IMPULSE solution as currently developed.
  - TARGETS: GovTech, entrepreneurs, public and private actors, DIHs, EDIHs, etc.
- **Ideation of new fields of deployment for the solution**: identify ancillary public and private-sector products, services and technology solutions that could be built around the IMPULSE solution (e.g., how IMPULSE can serve as a platform for other actors).
  - TARGETS: DIHs, EDIHs, tech providers, GovTech, entrepreneurs, DIHs, EDIHs, LegalTech actors, academics, public administrations, policy makers, regional agencies, etc.

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Identity Management in PUblic SErvices

Upcoming activities

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What's **next**?

Thematic meeting

• **Wednesday 14th December 2022**	Bulgaria
• **Thursday 26th January 2023**	Spain
• **Thursday 2nd February 2023**	Italia
• **Thursday 16th February 2023**	Germany
• **Thursday 23rd February 2023**	France
• **Thursday 2nd March 2023**	Nordic countries

Registration still possible for tomorrow

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What's **next**?

Thematic meeting

Organisation of thematic roundtables on IMPULSE topics with relevant consortium members, at the invitation of the project or at your suggestion. Round table discussions also for networking and collaboration.

Online survey

Survey that will be used to better understand the uses, needs, interests and appreciation of users, of all types and nationalities, for an eID solution as we are developing.

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Q/A **session**

What will happen with the solution after the project is finalized? Are there any intentions to submit IMPULSE 2.0?

The project aims to assess the use of disruptive technologies (blockchain and Artificial Intelligence) from different points of view (technical, legal, ethics, socio-economic) for the creation of an electronic identity to be validated in public services. IMPULSE is an R&D project targeting TRL6 “technology demonstrated in relevant environment (industrially relevant environment in the case of key enabling technologies)”. Therefore, the consortium is fully aware of the fact that the solution resulting from the pilots will not be ready for the market yet. However, one of the actions being carried out within the project is the development of roadmaps for future improvements, refinements and exploitation, paving the way for commercialization. This is also underpinned by strong efforts engage with DIHs, public administrations and other potential end users. Another actions is the writing of an exploitation management plan, which will be also about the future of our results.

Who will maintain the technical parts?

The further along we get in the project, the more we think about the post-project period. For the moment, no decision has been taken and the beginning of 2023 will be partly devoted to find an answer to this question.

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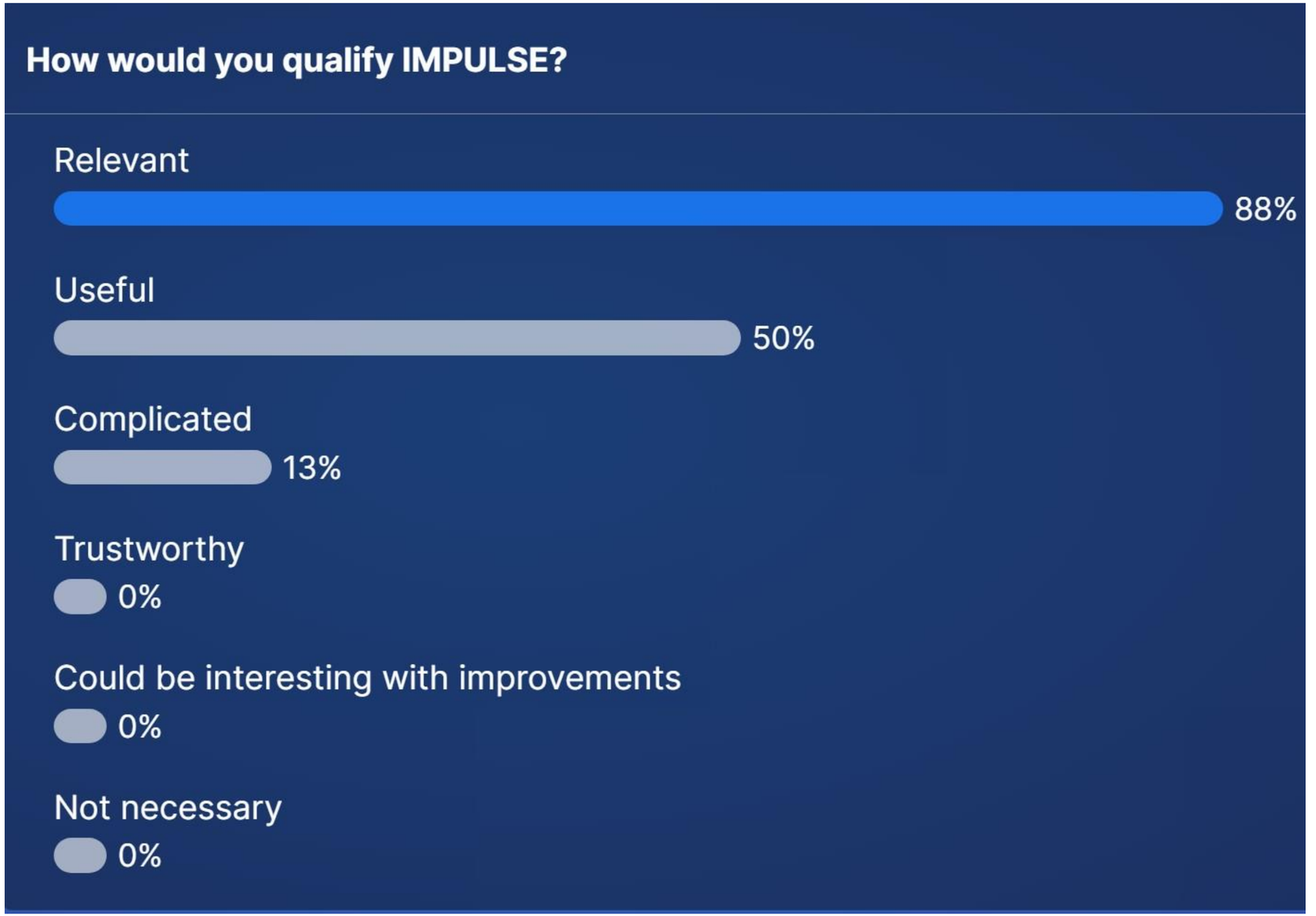
Poll on **Slido**



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Poll on **Slido**

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Contact-**us**

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Social Media

Twitter: @Impulse_EU
LinkedIn: @IMPULSE project H2020

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Thank you for your attention

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Identity Management in PUblic SErvices

Webinar for DIHs / EDIHs and their ecosystems
January 9th, 2024

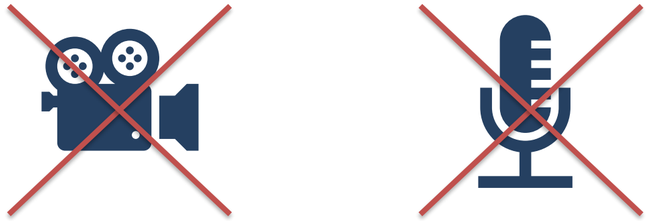
This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101004459

This session will be recorded

By continuing to be in the meeting, you are consenting to be recorded.

Please keep you microphone and camera off

For everyone’s convenience.



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To ask your questions during the webinar

Each session will be followed by a Q/A session – Please go on slido.com and enter the code #6595774

For any technical issue

Contact us at this address: benjamin.cheret@pole-tes.com

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Q/A **session**

Use SLIDO to ask your questions

Code #6595774

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Which EDIH/organisation do you represent?

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Webinar **agenda**

PROGRAM

Welcome
10:00 - 10:05

Keynote speaker: Digital Transformation Accelerator
10:05 - 10:15

IMPULSE project presentation
10:15 - 10:45

Municipality of Novo Mesto | The role of digital tools in transformation of public organizations in local communities
10:45 - 11:05

EDIH DATAlife | Visioning and Ecosystem Services
11:05 - 11:25

DIHCUBE | Services to enhance the digitalization of SMEs and PSOs and boost the competitiveness and sustainability
11:25 - 11:45

Closing
11:45 - 12:00

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First **presentation**

KEYNOTE SPEAKER

DTA

Digital Transformation Accelerator

Strengthen the digital capabilities of SMEs and public sector organisations and accelerate digital transformation by focusing on capacity building and the exploitation of cutting-edge technologies in key sectors in each EU Member State.

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General Presentation

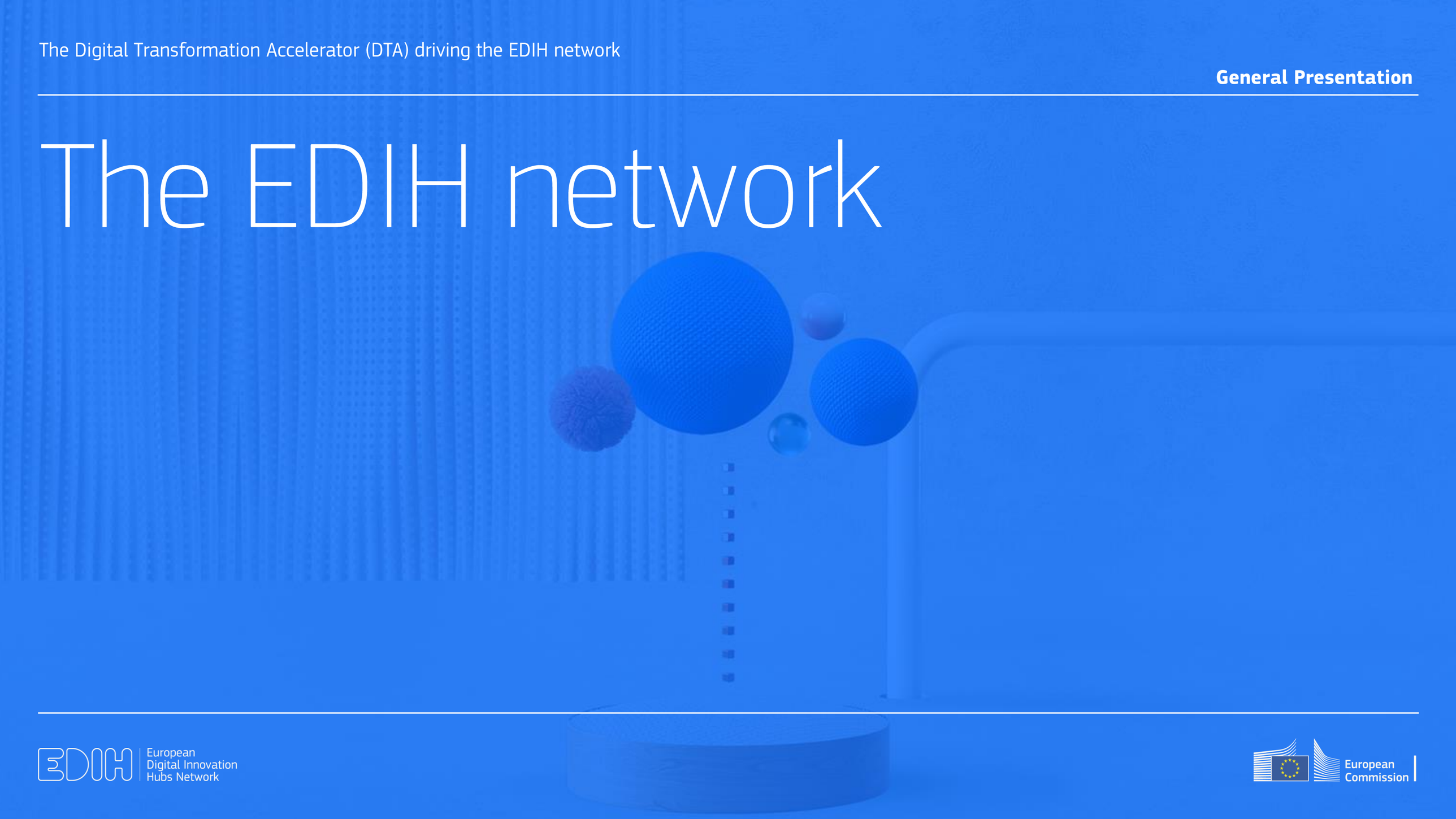
The Digital Transformation Accelerator (DTA) driving the EDIH network

09/01/2024 – Marie Bourdon, DTA (CARSA)

European Digital Innovation Hubs Network

European Commission

The EDIH network



The EDIH Network Today

151 EDIHs

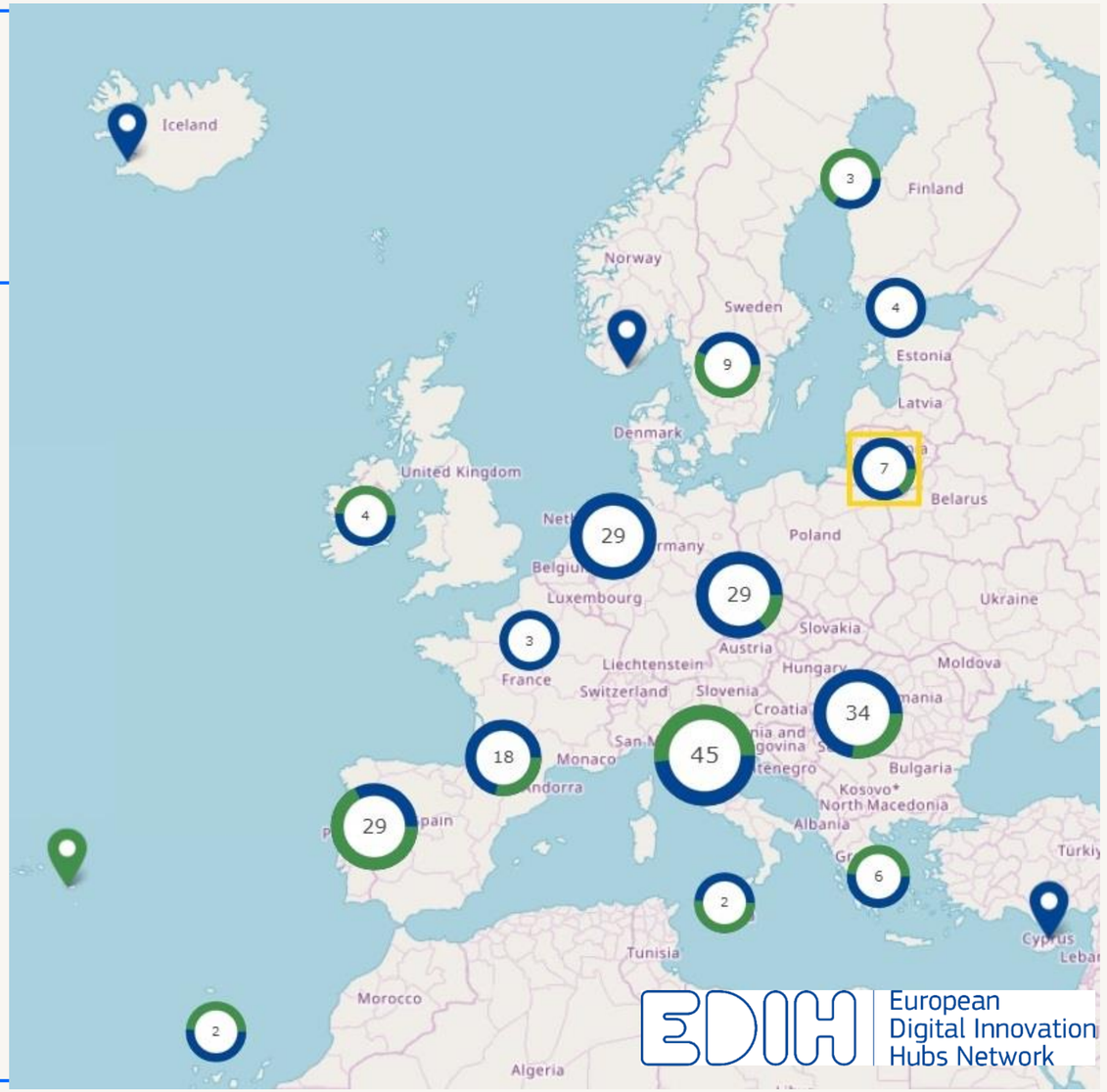
76 Seal of Excellence EDIHs

30 countries

15 categories of services

36 sectors

30 types of technologies



EDIH

Services

- Digital Maturity Assessment: assess companies' digital maturity and needs.
- Test before invest: offer technical advice and testing to support its digitalisation.
- Guidance: provide financing advice and networking opportunities.
- Training Skills: help gain essential skills for a successful digital transformation.

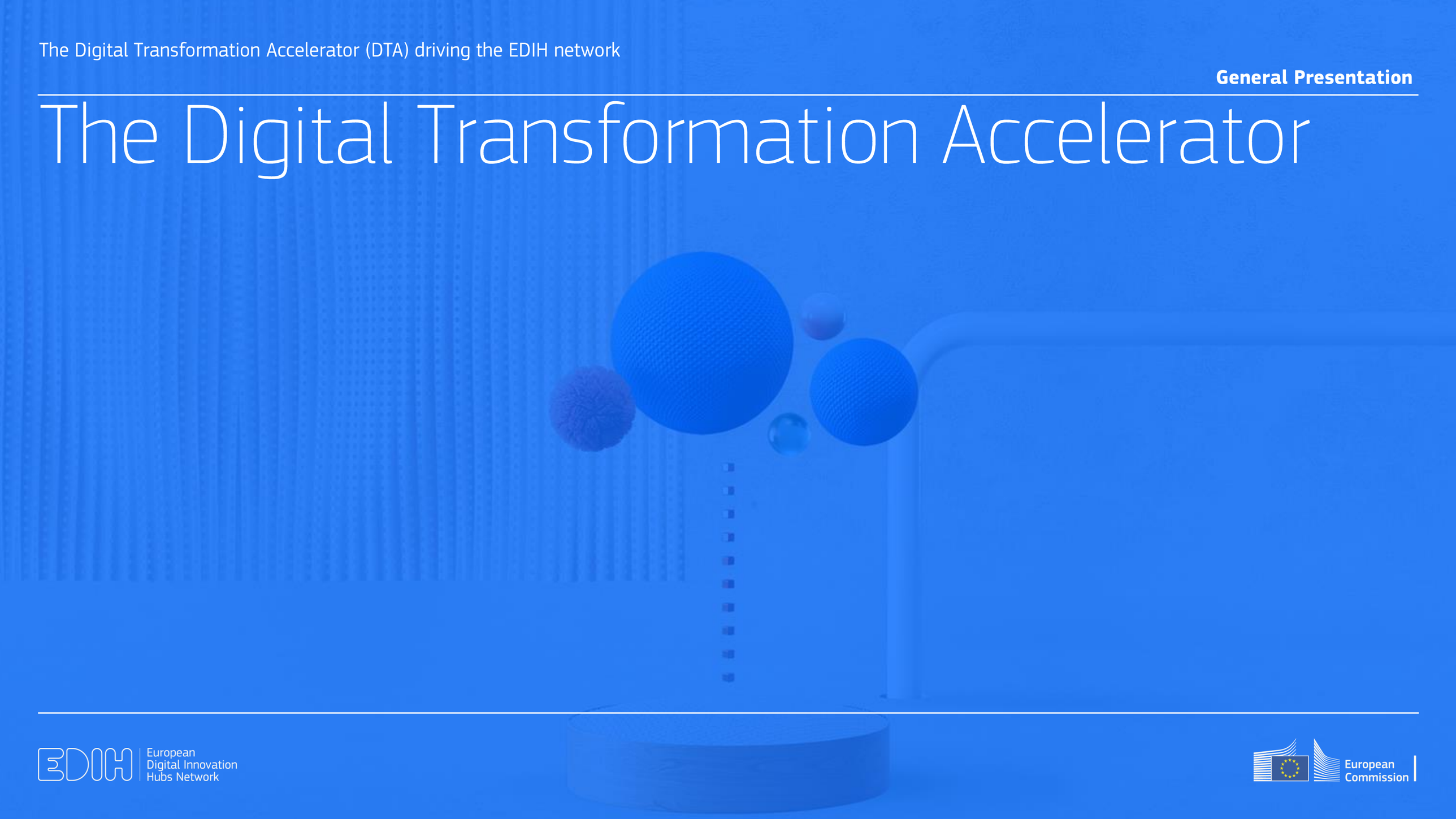
EDIHs focused on PSOs

- By now, 18 EDIHs provided services to PSOs, in 9 countries.
- A total of 240 services registered, including 191 finalised.
- Main type of services:
  - Networking and access to innovation ecosystems (35%),
  - Test before invest (32,5%),
  - Support to find investment (21%);
  - Training and skills development (11%).

EDIHs focused on PSOs

- Main technologies used: AI and Decision support, Cloud services, Cybersecurity, IoT, Virtual reality.
- Customer primary sectors mainly being General public services (68%), Education (12,5%) and Health (10%).
- Higer representation of Large sized PSOs (above 250 employees): 57%; 28% Medium sized and 15% small sized (under 50).

The Digital Transformation Accelerator



Objectives of the Digital Transformation Accelerator (DTA)

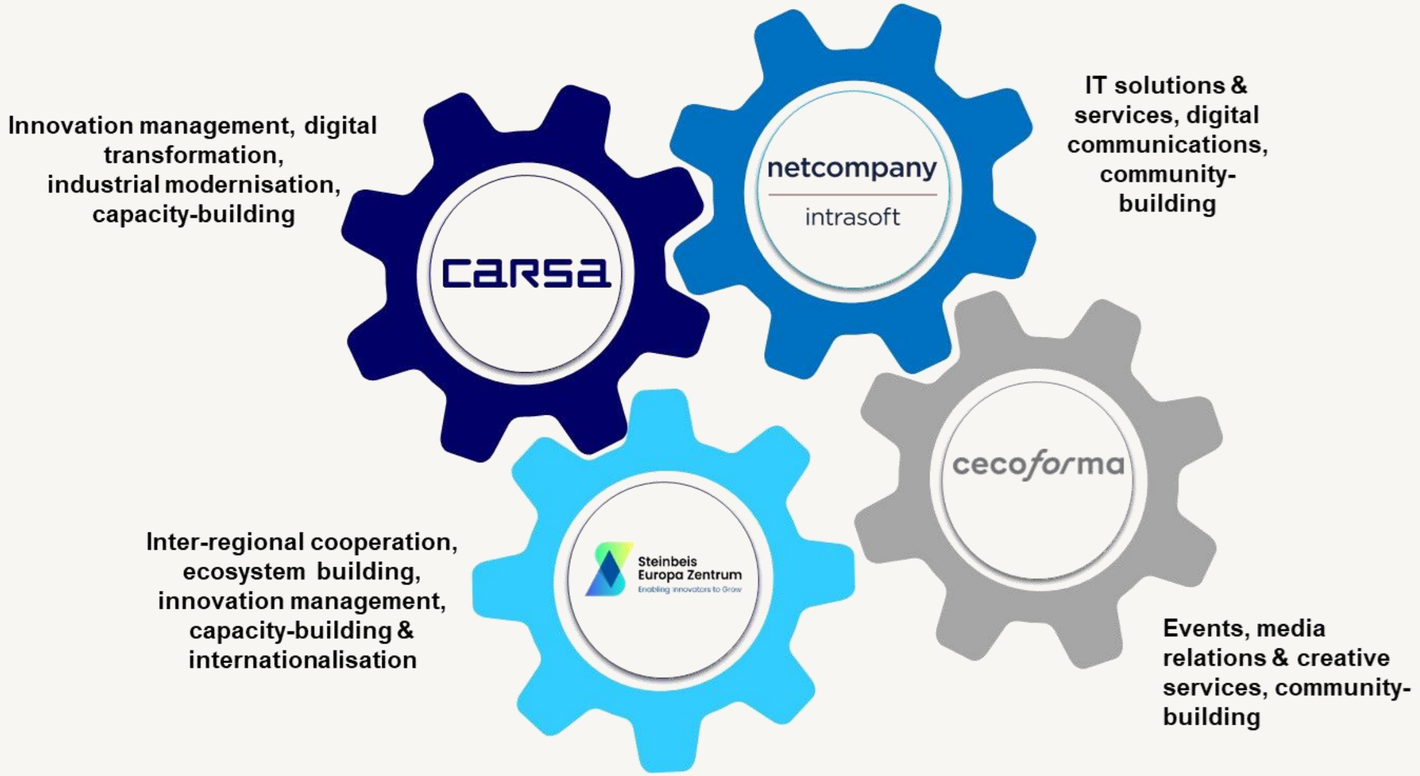
Support the creation, development and growth of the EDIH Network;

Facilitate collaboration between European Digital Innovation Hubs (EDIHs);

Build up the (digital) capacity of EDIHs through training sessions, and

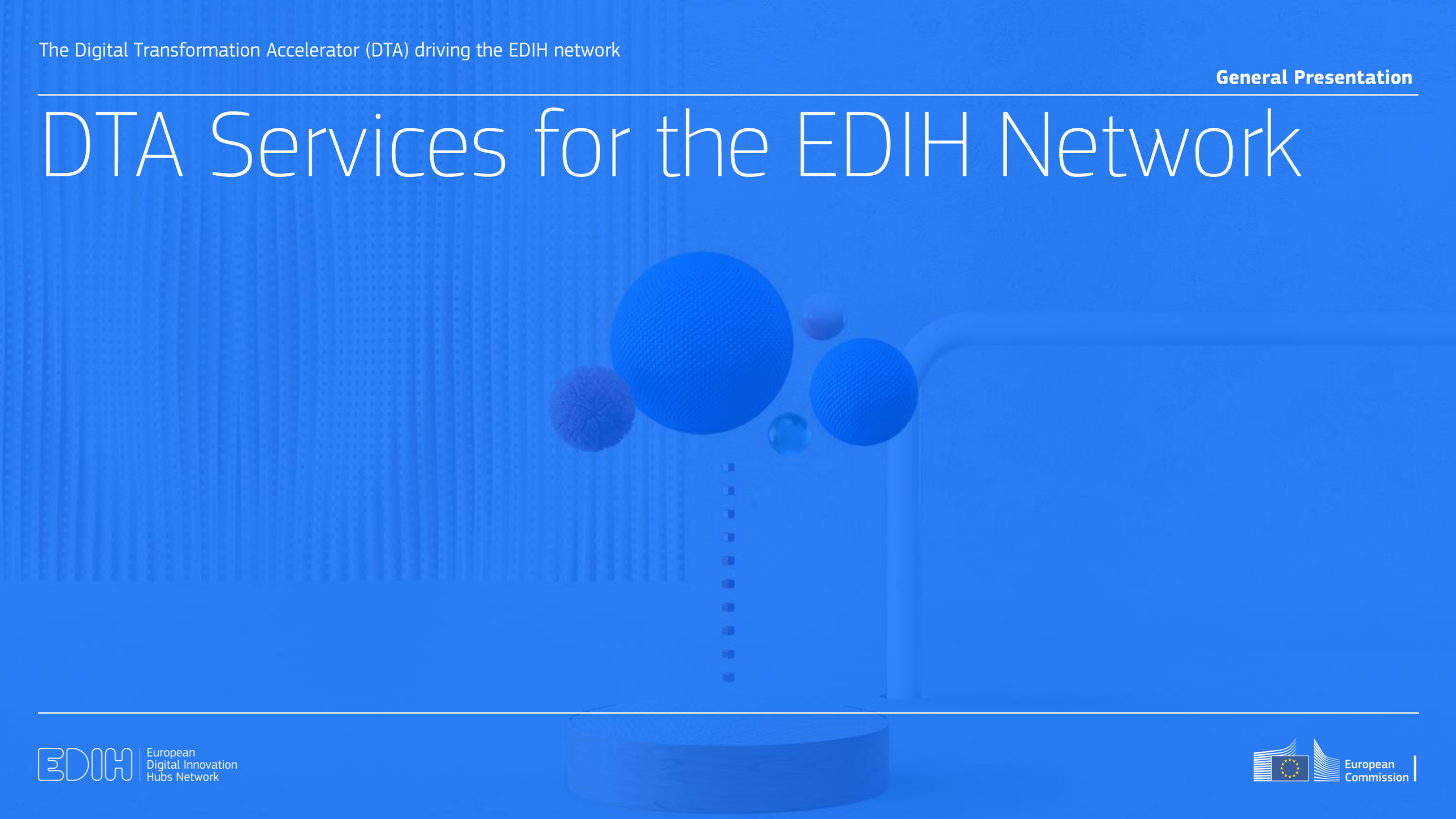
Provide guidance and advisory support.

Who is the DTA team?



Single point of contact:
support@edihnetwork.eu

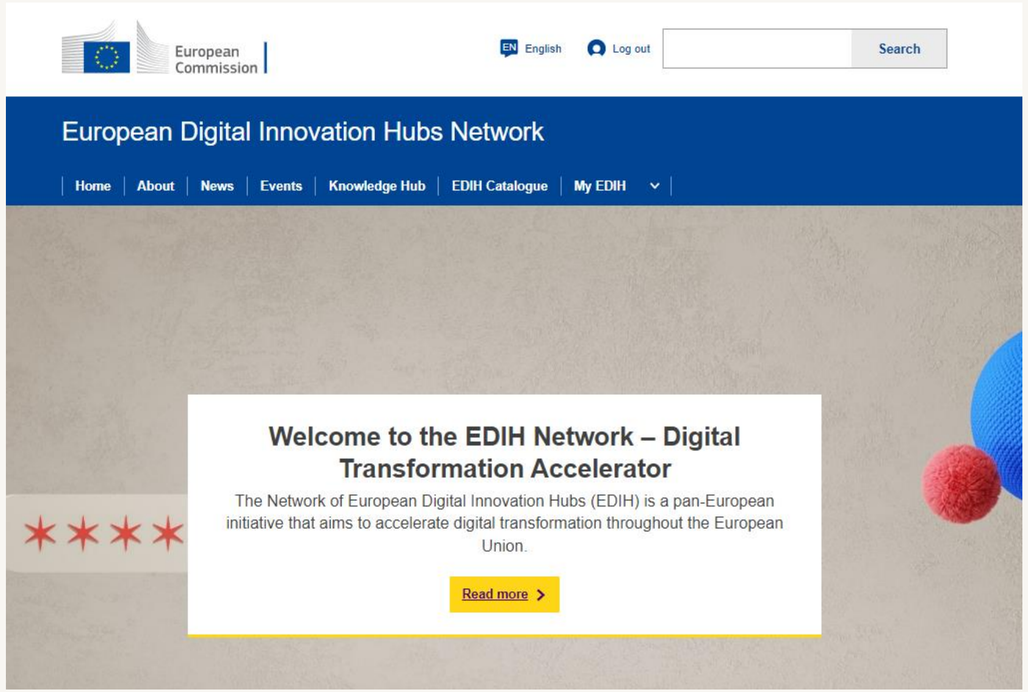
DTA Services for the EDIH Network



DTA Services

EDIH Network Online Portal

- EDIH Network Online Portal is the central point for providing DTA services to EDIHs and other stakeholders.
- The EDIH network portal has a private area for logged in users (EDIHs) providing a series of tools and functionalities.



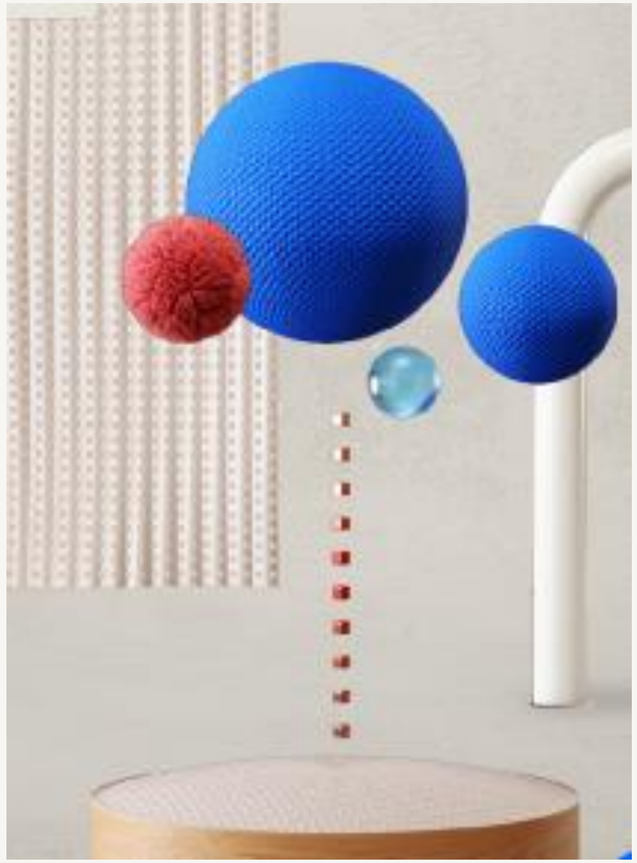
https://european-digital-innovation-hubs.ec.europa.eu/home

DTA Services

Digital Maturity Assessment (DMA) Tool

Measures and compares the digital maturity of the registered customer.

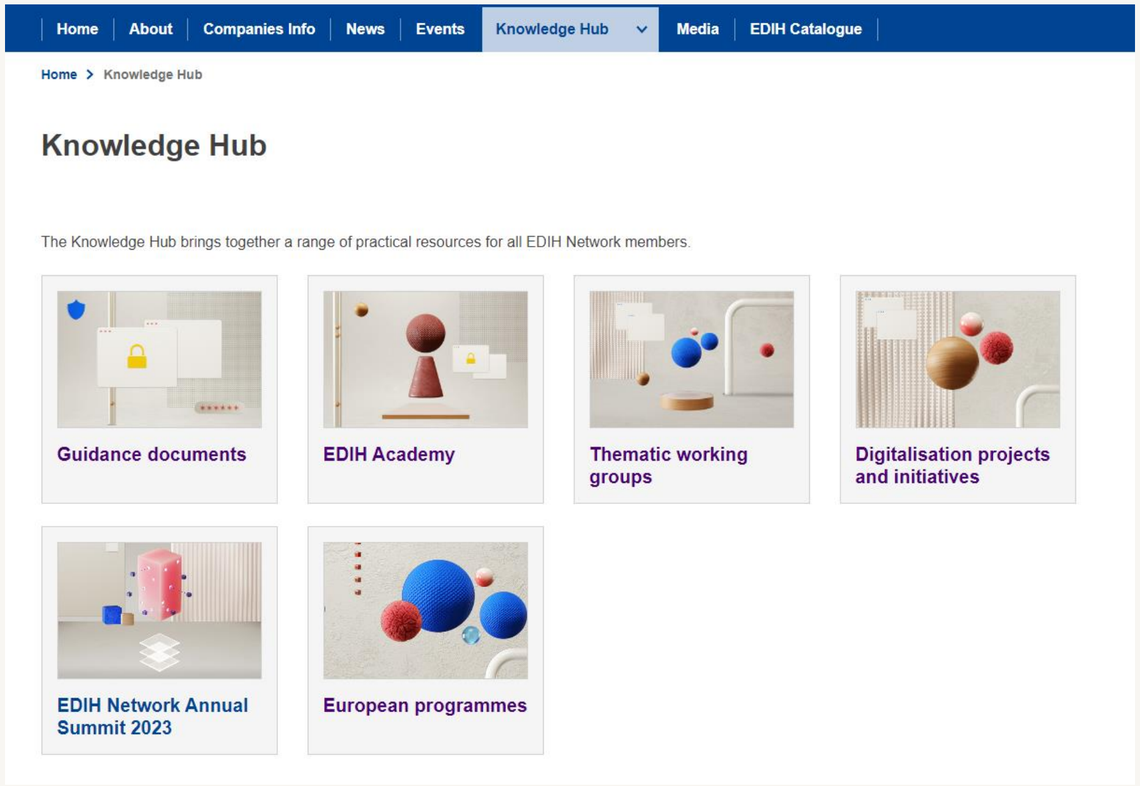
Thanks to this tool, EDIHs can guide companies and public sector organisations successfully along their digitalisation journey.



DTA Services

Knowledge Hub

- Guidance documents: Contains supporting material, reports, quick-user guide, FAQ, etc. in order to help and inform EDIH Network members.
- EDIH Academy: Provides access to a wide range of online training resources for all EDIH Network members.
- Thematic working groups: composed of EDIHs with shared interests.
- Digitalisation projects and initiatives: repository of projects, tools, and initiatives shaping the digital landscape in the EU.
- European Programmes: repository of the available information that has been presented at events, webinars, etc.



WG on AI for public administrations

Objectives:

- Discuss the challenges and seize AI opportunities for public administrations in the EU. Jointly identify EU funding opportunities.
- Enhance possible synergies with relevant EU initiatives (e.g. AI Test and Experimentation Facilities, GovTech platform and pilots, AI-on-demand platform, Sandboxing).
- Foster interoperability and re-usability of AI-enabled solutions in the public sector.
- Ensure the uptake of human-centric, ethical AI in the public sector and contribute to the creation of a European GovTech market.

Key figures:

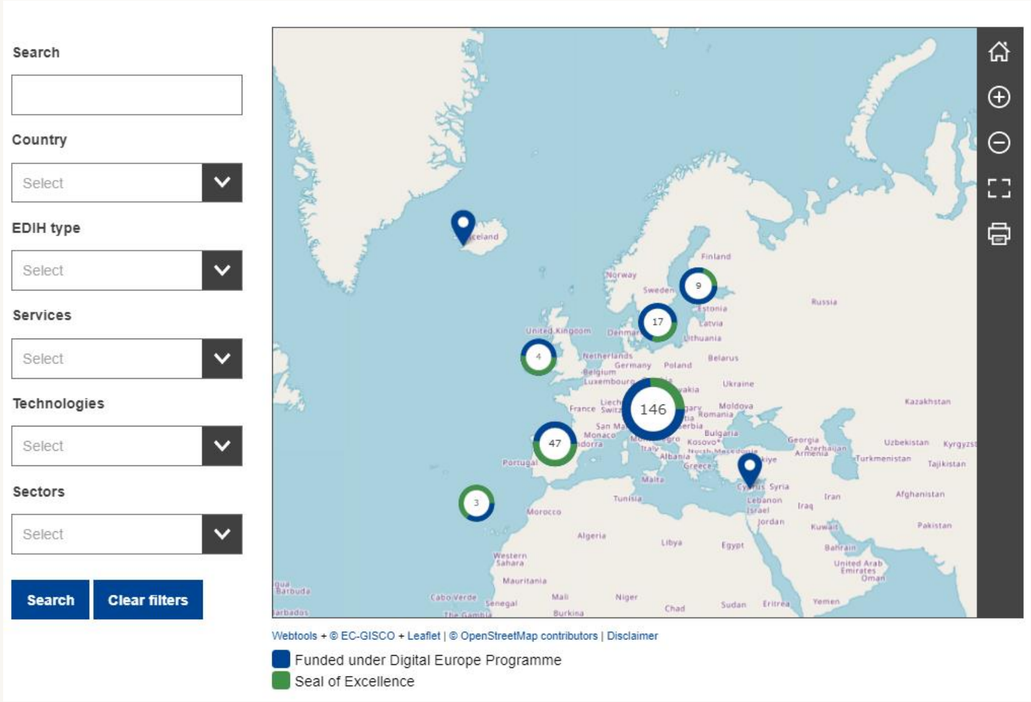
- 7 WG meetings.
- 30+ EDIHs from 10+ MS.
- 20+ speakers: EDIHs representatives, research centers, national authorities; EU institutions.

DTA Services

EDIH Catalogue

The interactive online directory of all European Digital Innovation Hubs:

- Used for identifying EDIHs in a specific region/country, technology field, sector, service provided, keywords etc. through filters.



DTA Services

Events and Networking

- Promote community-building and matchmaking.
- Recognise Best Practices.
- Strengthen the EDIH network.
- Connect with stakeholders.

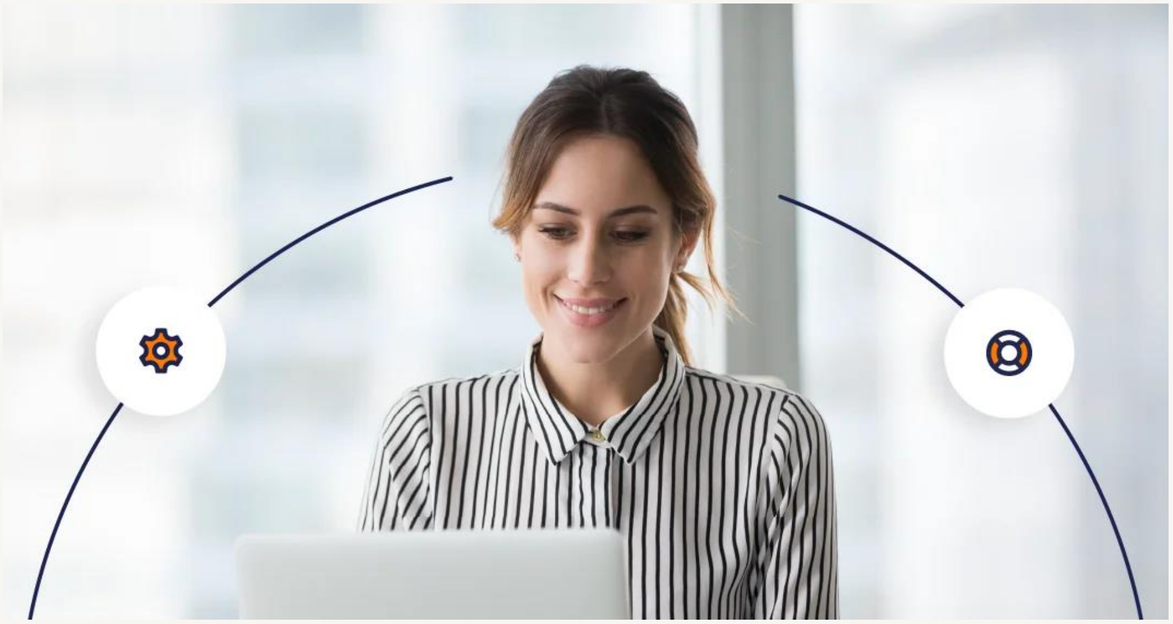
DTA Services

Helpdesk

Serves as the primary contact point for the EDIH Network, offering on-demand guidance and support for all matters related to the DTA and the network.

How to contact the Helpdesk:

support@edihnetwork.eu



Any question?

Contact us on support@edihnetwork.eu

EDIH

General Presentation

Thank you!

EDIH European Digital Innovation Hubs Network

European Commission

Impulse

Identity Management in PUblic SErvices

The project

Impulse

The **project**

HORIZON 2020

LE PROGRAMME DE RECHERCHE ET D'INNOVATION DE L'UNION EUROPÉENNE

2021
2024

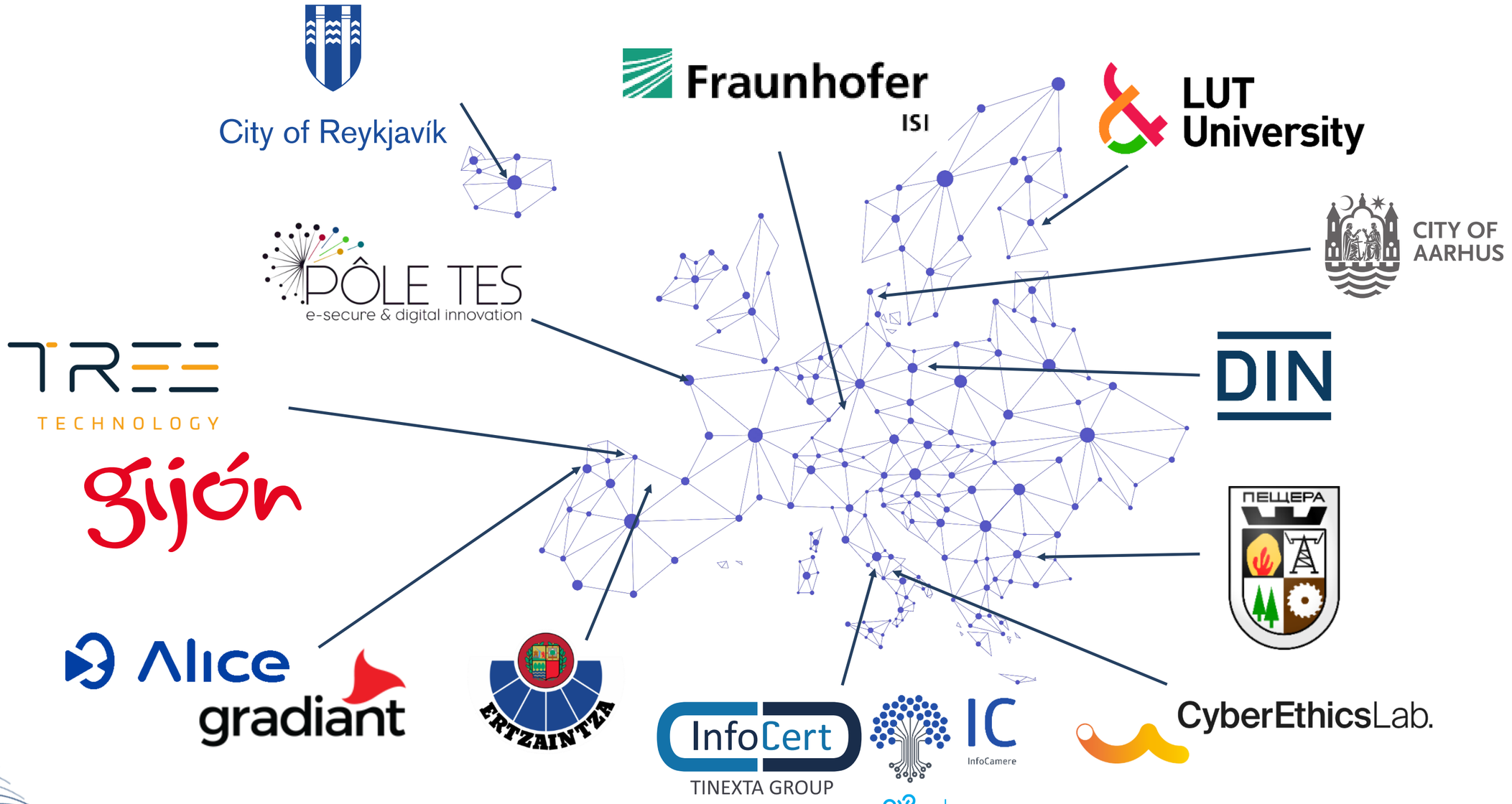
15
partners

+3M€

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101004459

Impulse

The **consortium**



Impulse

Project **objectives**

IMPULSE aims to
develop a **method for evaluating eID management**
when accessing **online public services**,
using **AI** and **Blockchain**.

Evaluation

- **Benefits**
- **Risks**
- **Costs**
- **Limitations**

Impacts

- **Socio-economic**
- **Legal**
- **Ethical**
- **Operational**

Policy & Regulation

- **GDPR**
- **eIDAS Regulations**
- **Existing national e-identity systems and standards**

Impulse

IMPULSE **eID approach**

The challenge

Data Sovereignty

Human Centred Technology

How a single adaptive eID solution can be useful to a whole ecosystem,

from the micro-level of citizens to the macro-level of government?

Co-creative approach

More Inclusive Society

an eID system that leaves no one behind

Impulse eID

Impulse

IMPULSE **eID approach**

Challenges from different countries

Human Centred Technology

Data Sovereignty

How a single adaptive eID solution can be useful to a whole ecosystem,

from the micro-level of citizens to the macro-level of government?

More Inclusive Society

Co-creative approach

Impulse eID

an eID system that leaves no one behind

Impulse

Expected **main results**

A framework for a holistic integration of AI and Blockchain technology

Actionable roadmaps for the adoption, escalation and sustainability of advanced eID technology

Impulse

Pilot **cases**

City of Reykjavik

Reykjavik, Iceland
Better Reykjavik participatory democracy portal

Gijón, Spain
Public services app

Ertaintza, Spain
Issuing complaints entirely online

CITY OF AARHUS

Aarhus, Denmark
Electronic access to personal information and services

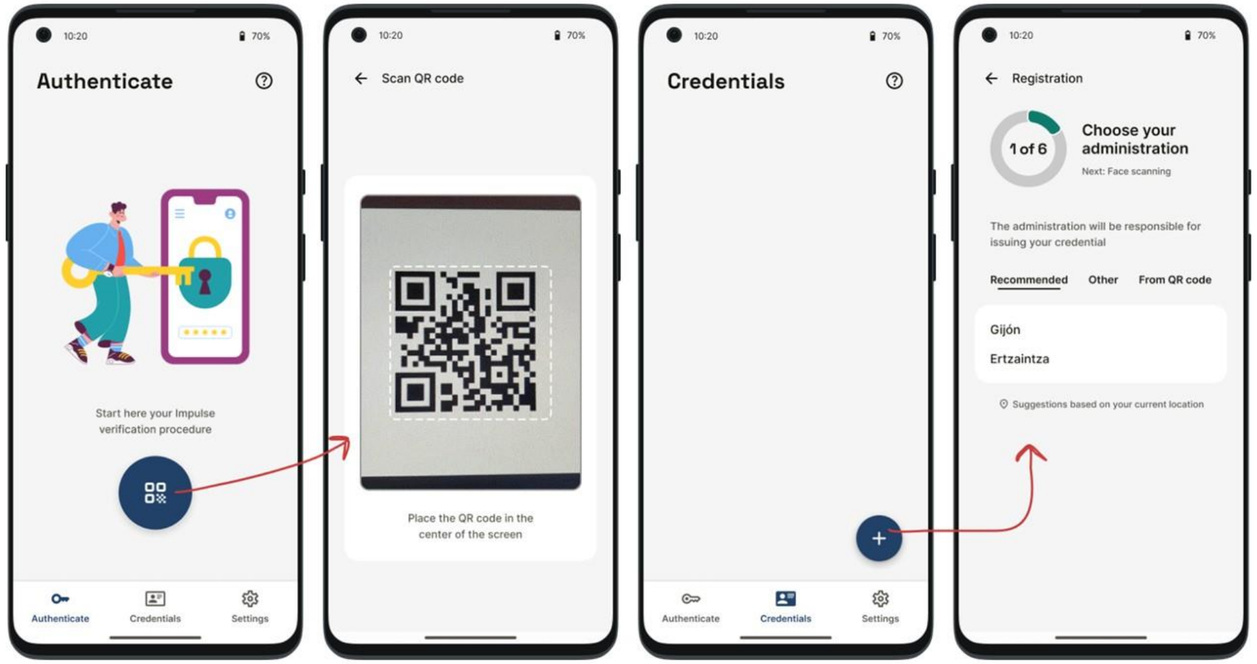
UNIONCAMERE

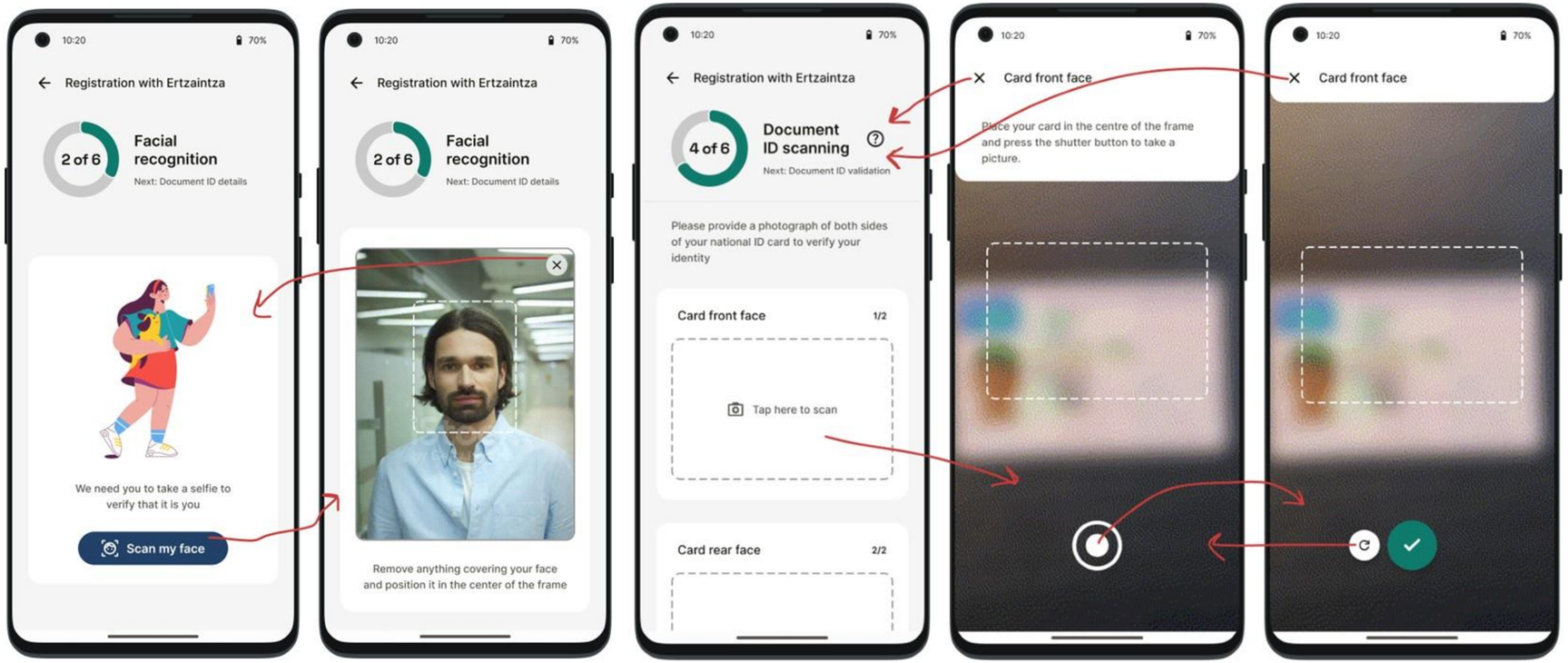
Unioncamere & InfoCamere, Italy
Enterprise digital drawer

Peshtera, Bulgaria
Civil registration & certification

Impulse

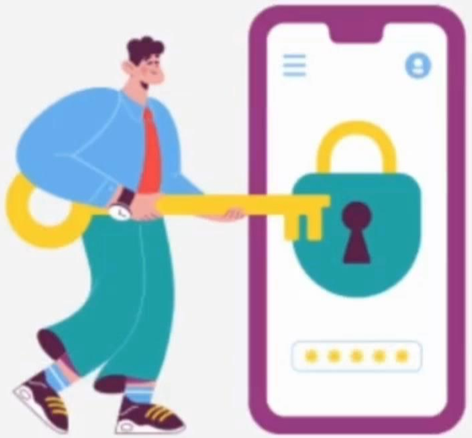
IMPULSE **app**





Impulse

Authenticate



Start here your IMPULSE verification procedure

Authenticate | Credentials | Settings

Actionable **roadmaps**

Background research

Technologies used

Pilot case

Findings and recommendations

To go further

Many participants were reluctant to take part in the pilot tests when they understood that an image of both sides of their ID card would be taken during the on-boarding process.

ENSURE sufficient **TRUST**. This involves ensuring transparency, but also further factors: recruiting trusted multipliers (individuals, organisations) to use the solution; having **TRUSTED ACTORS** vouch for the quality and security of the solution (e.g. data protection authorities, consumer rights organisations)

As noted in several pilot cases, citizens were sceptical about the relevance of a new electronic identification solution such as IMPULSE when a solution is already existing and working.

It is important to **TAILOR** the **SALES PITCH** to the audience and most importantly to each country and describe the advantages of a new eID over the existing technology/process if one already exists.

Impulse

Be the **support**

Multi-stakeholder collaboration for smooth, efficient and user-centered eID management by public services

Digital Innovation Hub

- **Support experimentation**
- **Attract innovative technology suppliers**
- **Build bridges among public administrations and technological companies**
- **Assess and develop new policies**
- **Foster the cooperation between DIHs and cluster networks**

Impulse

DIHnamo

NORMANDY DIGITAL MOBILITY

Un projet porté par le PÔLE TES e-secure & digital innovation

et co-porté par next move collaboration is the driver

www.dihnamo.org

Cofinancé par la Commission Européenne dans le cadre du programme Digital Europe

UNION EUROPÉENNE
Fonds européen de développement régional

RÉGION NORMANDIE

DIHnamo

NORMANDY DIGITAL MOBILITY

is co-led by

PÔLE TES
e-secure & digital innovation

next move
collaboration is the driver

specialised in connected, safe and sustainable mobility

Is helping public administrations in their digital transformation by providing them to

- use open source solutions
- use Artificial Intelligence for their policy-making
- improve their cybersecurity
- bring them into contact with companies that are ready to supply digital technology solutions

More about DIHNAMO

Why are we taking part in IMPULSE project ?

DIHnamo
NORMANDY DIGITAL MOBILITY

- An occasion to **learn more about the capabilities of the public sector**
- An opportunity to **explore a new digital solution** for eID management
- **Exchange knowledge** with a variety of stakeholders
- **Meet other EDIHs** which support the public sector

First **presentation**

1st Guest

Municipality of Novo mesto

ON THE TOPIC

The role of digital tools in transformation of public organizations in local communities – from efficiency of services to market disruption through open data.

Impulse

Role of digital tools in transformation of public services

Vision of digital transition of public organizations through three properties of digital technologies

Peter Geršič, Municipality of Novo mesto, Slovenia

NOVO MESTO

SRC-EDIH

Shaping Europe's digital future

Co-funded by the European Union

SRC-EDIH

src-edih.rc-nm.si

The SRC-EDI is an European digital innovation hub (EDIH) that supports the digital transformation of manufacturing companies and public organizations in Slovenia with an emphasis on five key technologies: HPC, artificial intelligence, cyber security, block chain and robotics.

Co-funded by the European Union

Municipality of Novo mesto, Slovenia

Challenges of digital transition in local communities – four starting points

One – „Small local community“ is where challenges become an immediate reality.

Two – Small communities are more resilient/adaptable due to their size and self-understanding.

Three – Small communities are always lacking resources due to several factors (people, funds).

Four – Digital tools can be super useful for building adaptability and resilience of communities.

Understanding three pillars of „digital effect“

Support / Enhancement	Accessibility of information	Enabling / disruptive change
Better operation, process, due to more **efficient potential** of digital technology.	„Leveling the field“ – provides **access** to information for **everyone**, there is no longer a gap between e.g. groups of different wealth.	A service or product **not possible without** some **digital feature of** technology (Uber, 100% lossless copying, machine learning…).
efficiency	openess	disruption

Relating to the three pillars through goals

Digital processes and ICT support	e-democracy e-governance	„Smart City“
ERP systems, accounting, document systems, e-archive, GIS, spatial planning…	Public inclusion through digital tools, empowerment of citizens, open data initiatives for development of new approaches…	Management and analytics systems based on IoT approaches for urban and rural areas development, machine learning, simulations...

How to make practical use of the concept

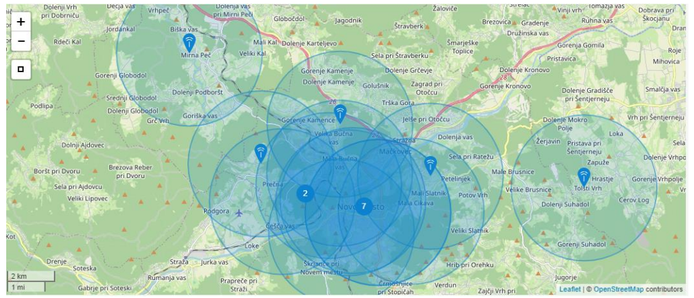
Three cases for employing three pillars in practice

Digital platform for books exchange (digital-analog library)

Lockers for books for 24/7 contactless borrowing of books through library digital system…

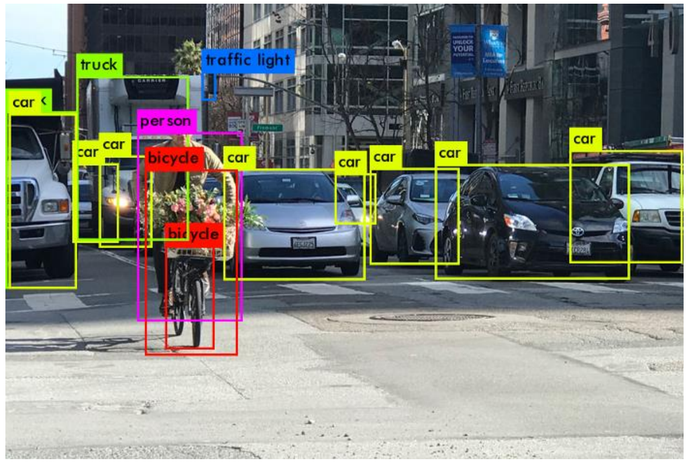
Open municipality data and infrastructure for further research (crowdsource)

Open data from sensors on pollution, climate, traffic, usage of public services in standardized manner… to be transparent and to entice research & collaboration…



Employ machine learning and pattern recognition for traffic management

IoT systems with light AI techiques can change how we approach mobility management.



SRC-EDIH
Co-funded by the European Union
NOVO MESTO

SRC EDIH
European digital innovation hub

Thank you!

Peter Geršič, Municipality of Novo mesto, Slovenia

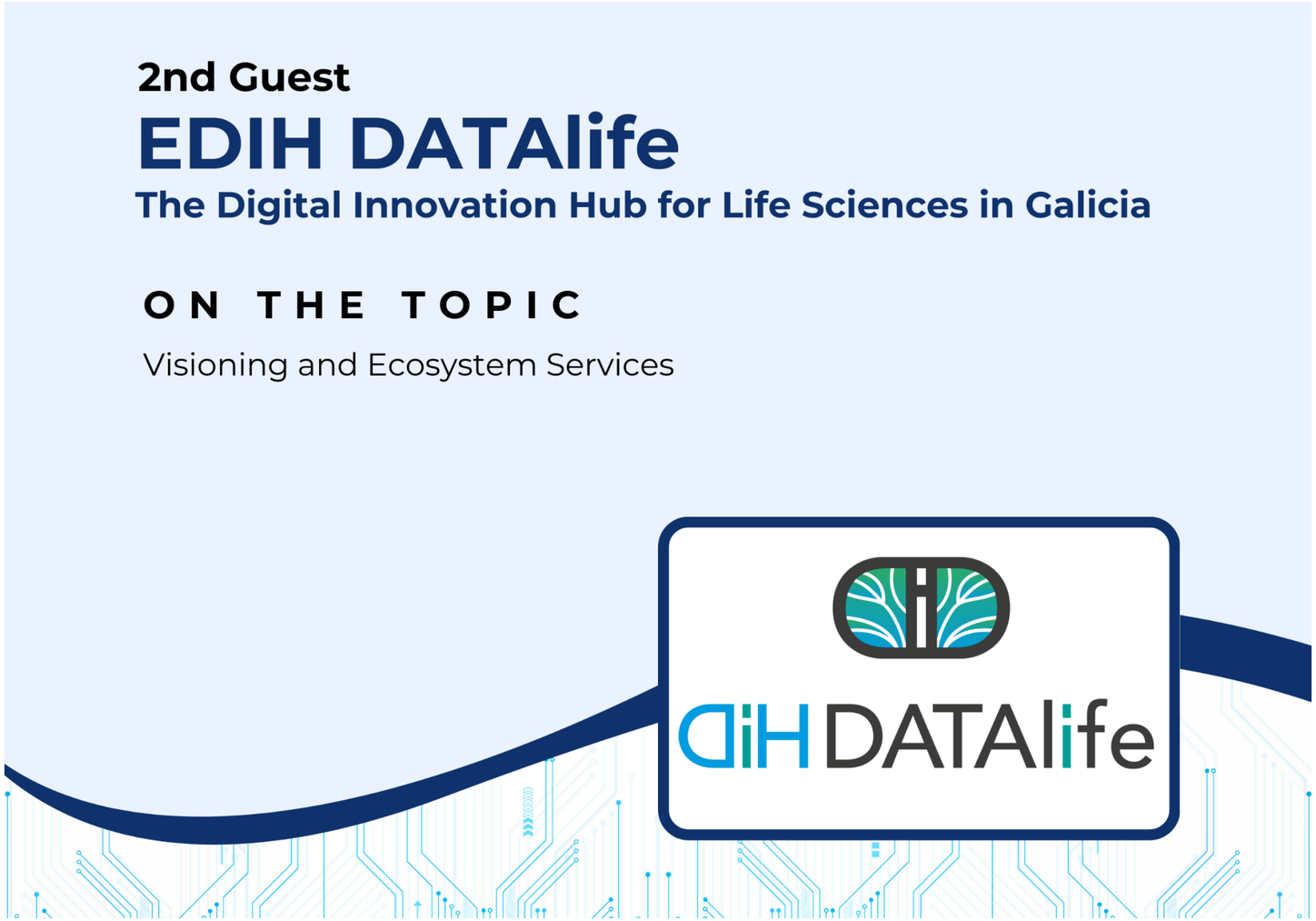
NOVO MESTO

SRC-EDIH

Shaping Europe's digital future

Co-funded by the European Union

First **presentation**



Impulse

Co-funded by the European Union
NextGenerationEU

GOBIERNO DE ESPAÑA
MINISTERIO DE INDUSTRIA, COMERCIO Y TURISMO

Plan de Recuperación, Transformación y Resiliencia

Escuela de organización industrial

EDIH DATAlife Project

EDIH DATAlife's initiatives for the public sector
Impulse 3rd webinar for EDIHs

This project has received funding from Digital Europe programme under Grant Agreement No 101083755

Topics

01. About DATAlife

02. Digitalization Calls

03. Policy support

04. Facilities

About DATAlife

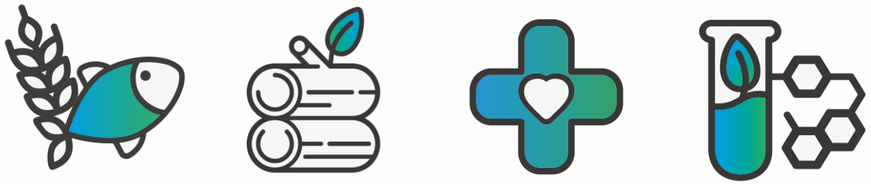
About DATAlife

Non-profit association
Selected as strategic in competitive call by Regional Government (2019)

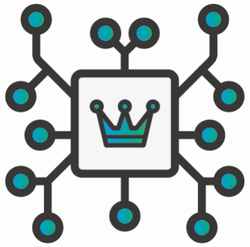
Differential factor DATAlife

Interconnected value chains

Agri-sea food
Forestry-Wood
Health-Care
Biotechnology



Data is king



Disruptive technologies serve you:

- To be analyzed: AI
- To be captured automatically: IoT
- To be secured: Cybersecurity
- To be managed: High performance computing
- Etc.

This project has received funding from Digital Europe programme under Grant Agreement No 101083755

DATAlife Membership

RTOs

energylab

gradiant

Technological Centre

CESGA
Centro de Supercomputación de Galicia

ANFACO CECOPESCA

AKADEMIA

Universidade de Vigo

USC
UNIVERSIDADE DE SANTIAGO DE COMPOSTELA

feuga
fundación empresa universidad gallega

Clusters

Cluster de la Acuicultura
Centro Tecnológico del Cluster de la Acuicultura

bioga

CMD
Cluster da Madeira e o Deseño de Galicia

CLUSTER TIC GALICIA

CLUSTER SAÚDE DE GALICIA

ANFACO CECOPESCA

Pulling Companies

FINSA
soluciones en madera

ZENDAL

NOSO CAPITAL

vodafone

Televes

This project has received funding from Digital Europe programme under Grant Agreement No 101083755

Timeline DATAlife

2019

- Founding of DATAlife
- Selected as strategic by regional government
- Collaboration agreement with Galician Innovation Agency (GAIN)

2021

- HIBA Project with 4 other DIHs

2022

- 5 roadmaps with SMEs: laboratory, dairy, gerontologic services, sustainability and certification
- DIXITEGA – Data Space for sharing data in meat value chain
- **Selected as EDIH by EC**

2023

- Kick off EDIH DATAlife

2024

- SOS Food (Horizon)
- AgriFood TEF
- HIBA +

This project has received funding from Digital Europe programme under Grant Agreement No 101083755

Digitalization Calls

DATAlife moviliza 12 proyectos

Conecta HUBS

12 empresas

Conecta COVID

35 empresas

XUNTA DE GALICIA | AXENCIA GALEGA DE INNOVACIÓN

CiH DATAlife

This project has received funding from Digital Europe programme under Grant Agreement No 101083755

Collaboration in Open Calls

- The Galician Agency for Innovation (GAIN) included DATAlife as a collaboration partner in 2 R&D&i calls: ConectaHubs and ConectaCovid.
- DATAlife was part of the whole cycle of the open calls:
  - Defining the call before it was launched, particularly priorizing objectives & technologies
  - Organizing infodays
  - Improving projects and consortia composition
  - Revising submitted projects, providing GAIN with a report on alignment with goals
  - Supervising project, providing ecosystem services
  - Dissemination activities (press releases, social Network, presenting in EU networks, etc)
  - Providing SMEs with report on DATAlife's activities during project

This project has received funding from Digital Europe programme under Grant Agreement No 101083755

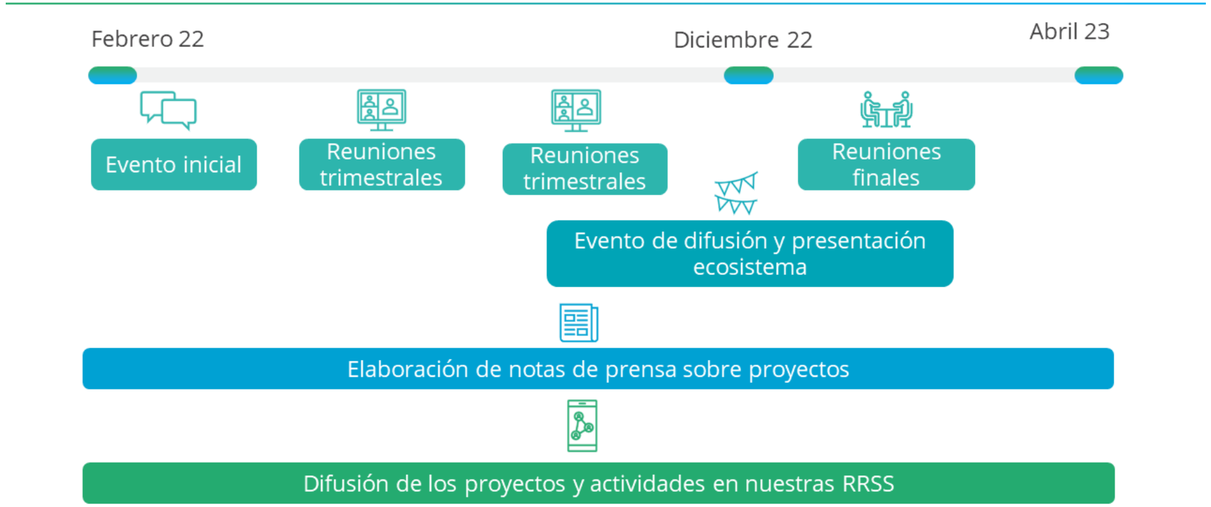
“Conect” Calls (regional government)

Conecta Hubs
3 projects supported
2 million €

Conecta Covid
9 projects supported
4 million €

Follow up actions

Strategy focused on making evangelizing actions, mentoring and promotion of the improvements of each project

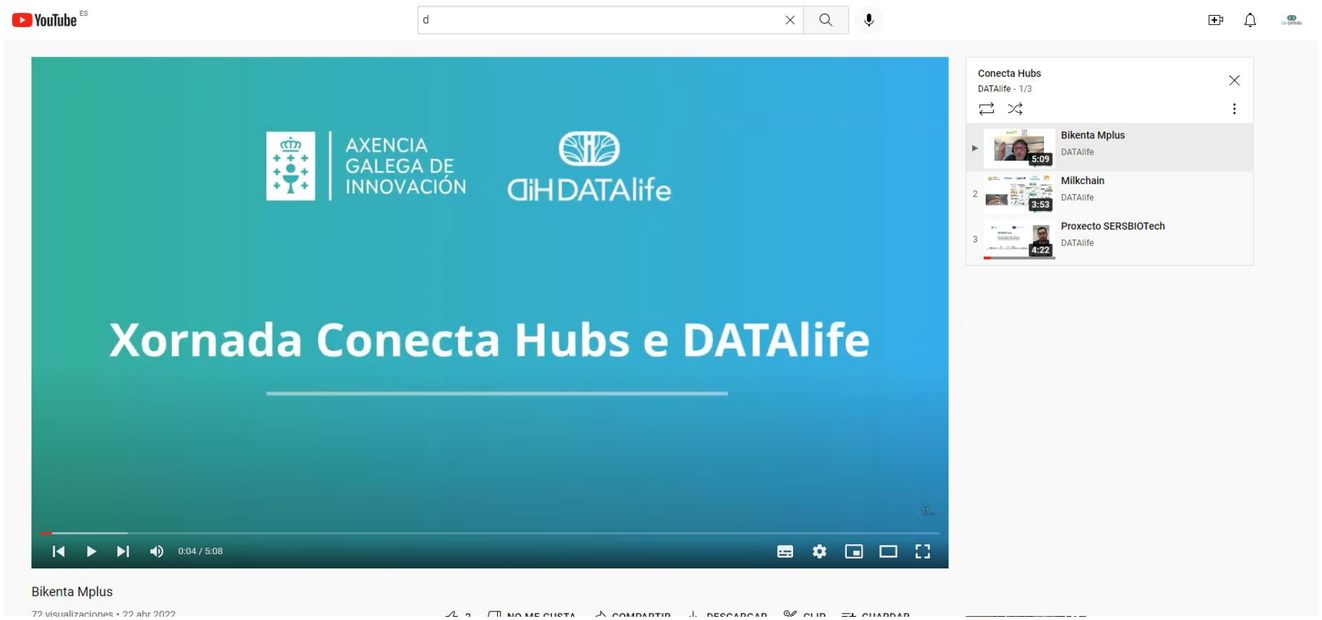


All actions supported had been delivered in a proper report by project (12)

35 SMEs involved!

This project has received funding from Digital Europe programme under Grant Agreement No 101083755

Conecta – Online Activities



This project has received funding from Digital Europe programme under Grant Agreement No 101083755

NanoDCov

Visita al CiMUS

SMART VITAMINS · USC · idis · AXENCIA GALEGA DE INNOVACIÓN · CiH DATAlife

Avances del proyecto NanoDCoV

Escrito por Lucía Gómez • Clasificación Actualidad, Noticias

El pasado 6 de junio el equipo de **DATAlife** se reunió con varios componentes de las diversas entidades que están sacando adelante NanoDCoV. Éste es uno de los nueve proyectos que apoya el **HUB** a través de la convocatoria Conecta Covid. Son ayudas promovidas por la Axencia Galega de Innovación (GAIN) para apoyar aquellas iniciativas que abordan la investigación en relación con la Covid-19.

SERSBIOTech

Visita a las instalaciones de Itelsis

itelsis · Mestrelab Research · Lincbiotech · sixtema · gma · AXENCIA GALEGA DE INNOVACIÓN · CiH DATAlife

Avances proyecto SERSBIOTech

Escrito por Lucía Gómez • Clasificación Actualidad, Convocatorias

El pasado 3 de mayo, el equipo de **DATAlife** visitó las instalaciones de **Itelsis** para reunirse con las entidades que forman parte del consorcio de SERSBIOTech. Éste es uno de los proyectos que moviliza a través de la convocatoria Conecta HUBS, unas ayudas promovidas por la Axencia Galega de Innovación da Xunta de Galicia (GAIN) destinadas a **proyectos colaborativos de I+D+i alineados con los retos del Hub.**

Actualidad DATAlife

Bikenta Mplus

El proyecto pretende poner a disposición del **sector forestal** una **herramienta digital** para la promoción, simplificación y mejora de la gestión sostenible de los montes de mayor superficie.

Jornada de divulgación para conocer el proyecto:

24 de marzo
12:00-13:00 horas

AXENCIA GALEGA DA INDUSTRIA FORESTAL · CMD · MADERA+ · asefor · CiH DATAlife

Bikenta Mplus – Jornada de divulgación

Escrito por Lucía Gómez • Clasificación Actualidad, Convocatorias, Eventos

Bikenta Mplus es uno de los proyectos colaborativos financiado a través de la convocatoria Conecta HUBS de la Xunta de Galicia y la Axencia Galega de Innovación – GAIN y gestionado por el Clúster da Madeira e o Deseño de Galicia (CMD). Pretende construir una **herramienta digital** para la promoción, simplificación y mejora de la gestión sostenible de los montes, integrando variables de la **calidad de la madera**. La herramienta se pondría a disposición del **sector forestal** y estaría dirigido, sobre todo, para aquellos montes gestionados de manera comunal por los vecinos.

Collaboration in Open Calls

Proposals for shared industrial facilities that are supported by a strategic Galician DIH obtain extra-points in the evaluation. An example: Sionlla Biotech, a facility for biotech industry in Santiago de Compostela, with modular labs for renting, common spaces, etc

This project has received funding from Digital Europe programme under Grant Agreement No 101083755

Policy Support

HUB IBERIA AGROTECH HUB

Digital maturity diagnosis of the Galician agro-marine food sector

- Quantitative & Qualitative analysis of Galician ecosystem
- Mapping of the ICT agrifood sector: quite solid and growing
- Mapping of non-commercial technology providers
- Defining areas for improvement
- Conclusions

This project has received funding from Digital Europe programme under Grant Agreement No 101083755

Diagnosis – Roundtables

2021

14.12.2021
- Lugo
- Livestock-meat

medrar smart solutions

16.12.2021
- Lugo
- Livestock-dairy

medrar smart solutions

21.12.2021
- Pontevedra
- Fishing

MAREIRA BIZI

21.12.2021
- Vigo
- Forestry

INOVA

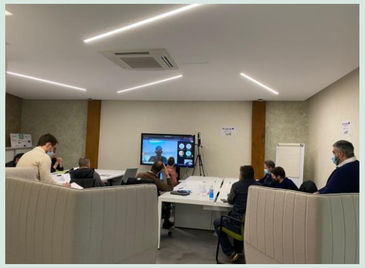
Diagnosis – Roundtables

2022

15.03.2022
- Lugo
- Horticultural

17.03.2022
- Sober (Lugo)
- Viticulture

22.03.2022
- Lugo
- Food



23.03.2022
- Lugo
- Forestry

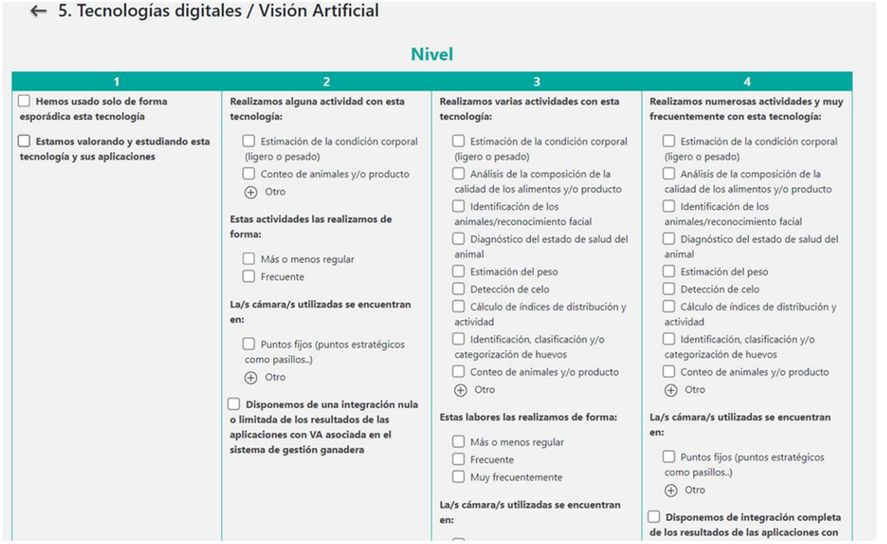
24.03.2022
- Viveiro - P. Celeiro
- Fishing

Diagnosis – Surveys

Methodology presented in April 2021 by the Joint Research Centre (JRC) of the European Commission to measure the impact of digital innovation hubs on the digital maturity of companies

\+

Own developed methodology for a segmented and more in-depth digital maturity assessment. So far, available questionnaires for: forestry, agriculture, cattle breeding and food industry. Results analyzed and compared with a Power BI tool.



GALICIAN FOODTECH ECOSYSTEM MAP 2023

MONOSECTOR

MULTISECTOR

STARTUP & SCALEUP COMPANIES

situm INDOOR POSITIONING · eliter · Innogando · HIFAS VET · psvet · i-grape laboratory · Monet viticultura · PropPlantae · oSIGris · PERFECT NUMBERS · BENIU · néboda · MAREIRA BIZI · TRAZUM · FISH WORLD TRACK · marexi · marine instruments · MADERA+ · asefor · SMART VITAMINS · celtalga · ODS PROTEIN · LIQUIDO · AWA · himikode · MINDSAIC · bionix · TASTELAB · Arnigal cultivos Extractos de árnica

3edata · muutech monitoring solutions · TRIPLEALPHA · NIGAL · Aleutos · KIWANDA · RIA21 · COFRICO · NEWMIND · antaNorte · BAÜP · TOTALGRC Gestión Automatizada de Ciberseguridad · L@ndín Informática

KNOWLEDGE CENTERS

GRANXA CAMPUS TERRA · APLTA · ROF CODINA FUNDACIÓN · CIAM

CIAM · ESTACIÓN DE VITICULTURA E ENOLOXÍA DE GALICIA

CSIC · Cluster de la Acuicultura · ANFACO CECOPESCA · CETMAR CENTRO TECNOLÓGICO DEL MAR

CIS MADEIRA · Centro de Investigación Forestal LOURIZÁN · XUNTA DE GALICIA · CONSELLERÍA DO MEDIO RURAL

CTC centro tecnolóxico da carne · ANFACO CECOPESCA

Universidade de Vigo · gradiant · USC · atlanTTic · Universidade de Vigo · CITIUS Centro Singular de Investigación en Tecnoloxías Intelixentes

ECOSYSTEM SUPPORTERS

XENÉTICA FONTAO

ANFACO CECOPESCA · Cluster de la Acuicultura

CMD Clúster da Madeira e o Desenho de Galicia

clúster alimentario de galicia

DiH DATAlife · Fundación Juana de Vega

MULTISECTOR

FUNDING

unirisco EL VALOR DEL CONOCIMIENTO · Bio&Tech Smart Capital NOSO CAPITAL · xesgalicia

INCUBATORS & ACCELERATORS

VIAGALICIA · BFFood business factory · the_foodtech lab BIOINCUBATECH

Main goals achieved

- Results published in our website, with general report and reports per vertical (agriculture, forestry, husbandry, etc.) → have been used at regional and national level to feed digitalization strategies
- Conclusions were presented to technological providers, with guidance on needs and how to adapt product/service for the sector
- Results presented to regional administration (XUNTA of Galicia), which also participated in their public presentation: fostering dialogue between agencies (Galician Innovation and Rural Agencies)
- Our experience of this diagnosis provided us with ideas to improve the draft questionnaire used in the survey of the Ministry of Agriculture, launched after our diagnosis and with a wider coverage (MAPA)

Galician Blue Economy Strategy

- Participation in revision and ellaboration of this Strategy
- Identification of fields of interest for DATAlife participation

This project has received funding from Digital Europe programme under Grant Agreement No 101083755

Ministry of Agriculture, Fisheries and Food (MAPA)

- Set of recommendations for improving the methodological approach (agrifood monitoring platform)
- Support for data curating of the referred report
- Analysis of results for Galician region

This project has received funding from Digital Europe programme under Grant Agreement No 101083755

Ministry of Agriculture, Fisheries and Food (MAPA)

State of the digital transformation in the Spanish agri-food system

- Diagnosis
- Challenges
- Recommendations

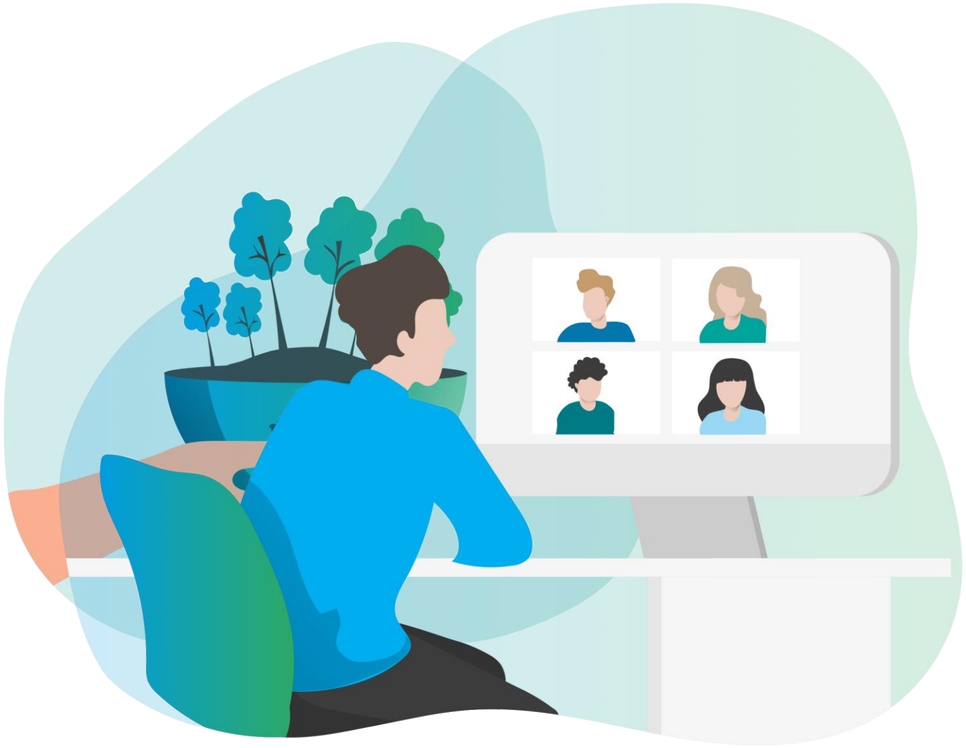
Roundtable seminar 05/07/2023; MAPA (Madrid)

This project has received funding from Digital Europe programme under Grant Agreement No 101083755

EDIH DATAlife

- Visioning for digital transformation, i.e. policy support, is a task within our EDIH project
- At the end of the project sectoral reports identifying digitalization needs and policy recommendations will be made public.
- The reports will be based on our day-to-day EDIH work:
  - Sector roundtables (15 in 2023, 350 in attendance)
  - SME individual interviews
  - European technological and legislative trends

This project has received funding from Digital Europe programme under Grant Agreement No 101083755



Facilities - Demolabs

Demolab IoT Forestry

Hardware

Tag identifying the tree

RFID tags for tree and and for soil version (buried)

CIF LOURIZAN: Forestry research center of regional administration

Temperature and humidity sensors

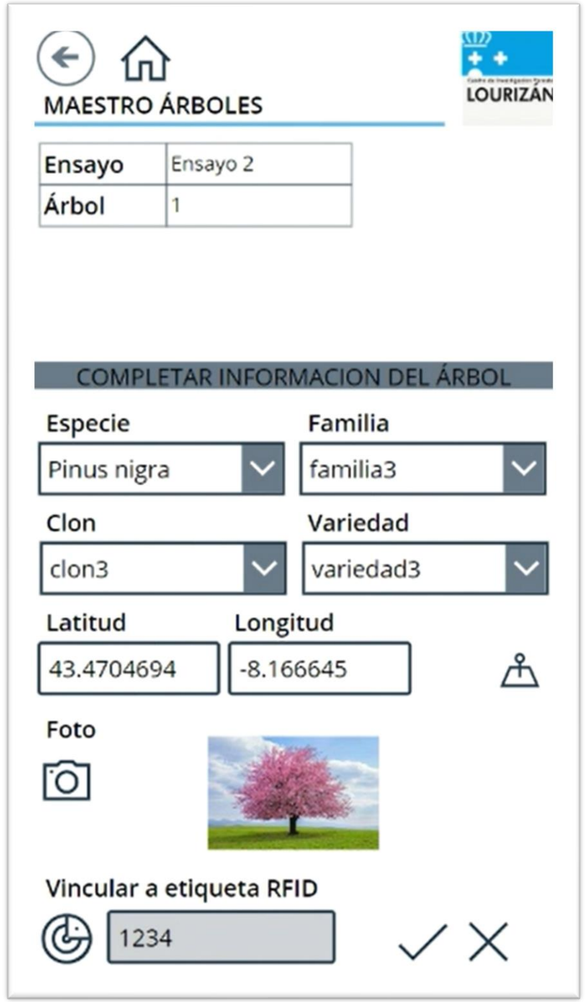
Other kind of Hw available: dendrometer, soil sensors, etcl

Deliverables demolab (examples)

Software

Lourizán Tutorial Tree Track App

Parte 3. Edición y mediciones



Agrifood TEF

- In 2024 DATAlife and its member Gradiant will join Agrifood TEF, a 60 million European project funded by the DIGITAL EUROPE program to provide Testing and Experimentation Facilities for Agrifood technology providers
- The core of the project will see the 150-year-old Research Centre for Agrifood – CIAM – transformed in a lab for AI and Robotics.

This project has received funding from Digital Europe programme under Grant Agreement No 101083755

Thank you!
Any questions?

Lucía Castro Díaz

Manager

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www.dihdatalife.com/en/edih/

EDiH DATAlife Project

Bioresources – Sustainability – Health

This project has received funding from Digital Europe programme under Grant Agreement No 101083755

First **presentation**

3rd Guest

DIHCUBE

Digital Italian Hub for Construction and Built Environment

ON THE TOPIC

Services to enhance the digitalization of SMEs and PSOs to boost the competitiveness of the sector and increase its sustainability.

DIHCUBE
DIGITAL ITALIAN HUB FOR CONSTRUCTION AND BUILT ENVIRONMENT

Impulse

DIHCUBE

DIGITAL ITALIAN HUB FOR CONSTRUCTION AND BUILT ENVIRONMENT

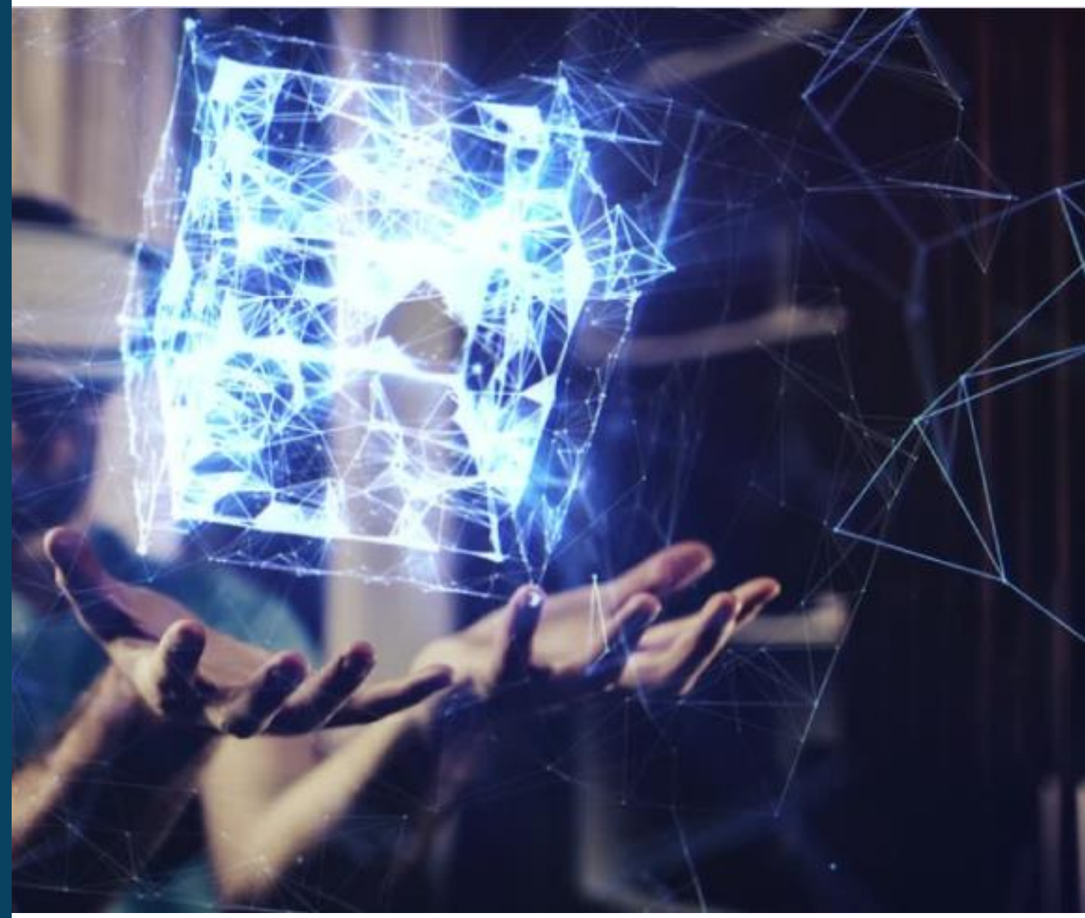
Digital Italian Hub for Construction and Built Environment

Luigi Perissich – Secretary General Federcostruzioni

Co-funded by
the European Union

DIHCUBE

DIHCUBE is the **Digital Italian Hub for Construction and Built Environment,** with the aim of increasing the digital maturity level of the construction industry, through the provision of services for the entire supply chain.



I PARTNER

DIHCUBE , co-funded by the European Commission and the Ministry of Enterprise and Made in Italy, consists of a team of **12 partners** with highly qualified technical figures from universities and research institutes, who are able to offer services and consultancy.

ANCE ASSOCIAZIONE NAZIONALE COSTRUTTORI EDILI

UNIVERSITÀ DEGLI STUDI DI NAPOLI FEDERICO II

stress

FEDERCOSTRUZIONI

UNIVERSITÀ DEGLI STUDI DI BRESCIA

STAM MASTERING EXCELLENCE

POLITECNICO MILANO 1863

smile DIGITAL INNOVATION HUB

ENTE NAZIONALE PER IL MICROCREDITO

UNIVERSITÀ POLITECNICA DELLE MARCHE

Deloitte.

Consiglio Nazionale delle Ricerche

Co-funded by the European Union

TARGETS

SMEs and small mid-caps

Public Sector Organizations

Professionals

Manufacturers of materials, components and machinery

SERVICES

Access to digital and prototyping solutions supporting the construction sector with high qualified staff :

- Assessment
- Technology consulting
- Pilot projects

Allowing ambitious projects to become reality:

- Market Maturity Assessment;
- Dedicated workshop on specific funding opportunities + follow-up activities;
- Dissemination of financial tools and promotion of Microcredit .

Tutoring with experts to implement innovative technologies:

- Skills assessment
- Virtual/Augmented Reality
- Training

Development of an innovation ecosystem :

- Start up
- Events
- B2B
- Open innovation

Co-funded by
the European Union

TECHNOLOGIES

·Artificial Intelligence
•Cybersecurity
•Platform for urban maintenance
• BIM (Building Information Modeling)
• Surveys with digital tools (laser scanners, drones)
• Smart Safety for the construction site
• Machine control systems on site
• Data Analytics
• Energy monitoring of buildings
• Environmental quality control of indoor space
• Augmented and virtual reality
• Internet of Things (IoT)
• Environmental monitoring
• Digital platform for risk management

Co-funded by
the European Union

DIHCUBE for PSOs

A Digital Innovation Hub for the **Italian construction industry**...

...to provide support PSOs in the field of **digital innovation**: including BIM, e-procurement and other enabling technologies

The European Commission recognises **the strategic value of PA** for the innovation of the entire productive sector.

at least **74** PSOs to be served over the three years of the project

Co-funded by the European Union

DIHCUBE for PSOs

The main objective is to raise awareness among PSOs in the use of innovative technologies and fulfillment of obligations under the new Public Contracts Code.

Dihcube training course in attendance.

Location : ANCE Brescia

Target : PSOs

Duration : 24 hours

Subject: Building Information Modeling

Participants: 25 PSOs

Co-funded by
the European Union

DIHCUBE for PSOs

MODULE	TITLE	DURATION	LEVEL
1	Introduction to BIM and the role of digitisation in the context of the Public Contracts Code	3 ore	**L1 - THE AWARENESS**
2	The skills and tasks of the Project Manager in procurement (RUP) in the digitisation of public contracts (basic digital skills).	3 ore	**L2 - THE ACTORS**
3	Bim professionals needed by public sector organization (roles, functions, competences) and the qualification of contracting authorities.	3 ore	
4	The Employer Information Requirements (E.I.R.) and the Bim Execution plan (BEP): relationship with other tender documents and their role in project verification procedures.	3 ore	**L3 - THE STAGES**
5	Formulation of the BIM offer and Bim Execution plan (BEP).	3 ore	
6	The competences and tasks of the Planning supervisor in the digitisation of public contracts (basic digital skills).	3 ore	
7	Model Checking : identification and management of geometric, disciplinary and multidisciplinary interferences on information models.	3 ore	**L4 - THE TOOLS**
8	Field BIM: construction management and construction site journal.	3 ore	

Co-funded by the European Union

Geographical coverage

The DIHCUBE Services will be available throughout the national territory. The partners were chosen not only for their expertise, but also to guarantee an adequate geographical distribution between North, Centre, South and Islands. **The territorial network of ANCE**, made up of **110 offices**, will be the first access point for stakeholders.

Co-funded by
the European Union

International collaboration : WG Construction EDIHs

//FAIR Finland

//Technopark Kielce DIH Poland

//DIGITALbuilt Portugal

//EDIH-SWH Süd Westfalen Germany

//CONNECT Belgium

// EDIH EBE Belgium

// AS DIH Spain

// EDICAS Bulgaria

Thematic Working Groups | European Digital Innovation Hubs Network (europa.eu)

Co-funded by the European Union

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Impulse

Thank you for your attention