INTERLINK

WP5 EVALUATION AND ASSESSMENT
D5.1 – Use-case plans and guidelines v1

INTERLINK

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Glossary

ENTRY	DEFINITION
INTERLINKERs	Common building blocks, provided as software tools or in the form of knowledge offered digitally, that represent interoperable, re-usable, EU-compliant, standardized functionality for the co-production of public services
Public Service	Services that are publicly available and are provided by the government or on behalf of the government's residence in the interest of its citizens. In INTERLINK we focus not only on the software services (i.e., the services delivered digitally) but also the services that rely on digital technologies.

ACRONYMS

ABBREVIATED	EXTENDED
CSC	Unified State and Municipal Customer Service Centres in Latvia
G2C	Government to Citizen
G2G	Government to Government
GA	Grant Agreement
KPI	Key Performance Indicator
MEF	Ministry of Economy and Finance - Italy
VARAM	Ministry of Environmental Protection and Regional Development - Latvia
ZGZ	Zaragoza, capital city of the Zaragoza province - Spain

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Executive summary

This deliverable "D5.1 – Use-case plans and guidelines v1" is responsible for preparing and planning the deployment, operation, and evaluation of pilots across three European PAs. It addresses objective O5.1 from "WP5 – Evaluation and assessment", which reads "*O5.1 – Prepare and plan the deployment, operation and evaluation of the involved PAs use-cases in a coordinated and consistent manner*". Consequently, this deliverable establishes the plan and approach for carrying out the project evaluation. Besides, it is closely linked with "D5.2 - Community Building And Preliminary Use-Cases Activities" which tackles WP5's "*O5.2 - Ensure a successful engagement and management of end-users, civil servant, citizens and private stakeholders in the use-cases*". Together, D5.1 and D5.2, set the basis for the actual operation, monitoring and evaluation of INTERLINK solution on the three use cases. The results of such evaluation will be reported in "D5.3. Use-case deployment and operation report v1" which will address the remaining two objectives of WP5, namely:

- *O5.3 – Operate and monitoring the INTERLINK platform during the six (3 use-case x 2 phases) validations*
- *05.4 – Evaluate the INTERLINK solution on the three use-cases, in terms of its impact on user community, civil servants and other stakeholders and in terms of the efficiency/effectiveness of the technical solutions*

Task 5.1. "**Coordination of the use-cases**" oversees the installation and operation of the INTERLINK platform in three different use-case sites with different operational settings, background, and user maturity levels. Pilots will be run in two iterations. 1st Pilot Iteration (Exploration) will span from M16 to M21 and aims to validate INTERLINK co-production approach innovation potential and adoption barriers and guide the choice of the mature and promising supporting technologies and tools. 2nd Pilot Iteration (Consolidation) spanning from M27 to M33 aims to validate the full INTERLINK co-production model and associated platform in real operational settings and to perform ad hoc validations for more advanced technologies and techniques. Hence, careful coordination of these different use-case sites, in its two iterations, is necessary to ensure a successful validation of the INTERLINK solution. Concretely, this deliverable describes the set up mechanisms to guarantee a successful operation of pilots' iteration 1, i.e. planning, deployment, operation, monitoring and evaluation. Besides, the support system for pilot sites is described, which will also serve to collect guidelines and best practices which will result in relevant documentation for the adoption of the INTERLINK platform outside the project.

Task 5.2. "**Use-case requirements, planning and KPI definition**" concentrates on the specification of the proof-of-concept experiments to be executed in the three PAs. The task is responsible for the specification of the e-services to be validated in each PA, for the instantiation of functional and non-functional requirements (from WP4), for privacy and security issues management (in collaboration with "T6.3 Data and privacy aspects of project activities") and evaluation.

As a result of the work in T5.2, this deliverable reports the specification of the use-case plans, including purpose and background, objectives and evaluation criteria, strategy, prerequisites, assumptions, risks, personnel and responsibilities, organization, site description, methodology, schedule, and test results collection. It also describes the associated trial evaluation plan and KPIs.

Two releases of deliverable D5.1 are planned, this is the one corresponding to pilots' iteration 1, starting in M16 and ending at M21. The core parts of this deliverable describe:

● the coordination process, overall planning and piloting activities methodology devised to manage the project piloting for iteration 1 in 3 European public administrations.
● the specification of the experimentation, including purpose and background, use-case objectives and evaluation criteria, use-case strategy, assumptions, risks, personnel and responsibilities.
● the workplan of activities for conducting the experimentation, including use-case plan organization, use-case site description, personnel involved, use-case methodology, services to be tested, potential users, schedule and test results collection.
● the definition of evaluation methodology and criteria (KPIs) for the evaluation of the INTERLINK platform, the associated supporting tools and the impact of the INTERLINK co-production model. The proposed multi-level evaluation methodology (see Figure 1) will consider the different stakeholders involved (governance, citizens, etc.), as well as the social, technical and organizational dimensions.

In essence, this deliverable together with its complementary deliverable "D5.2 Community building and preliminary use-cases activities", focused on the pilots' workplan activities targeted towards community building, setting the basis for the launch, execution, monitoring and evaluation of pilots' iteration I.
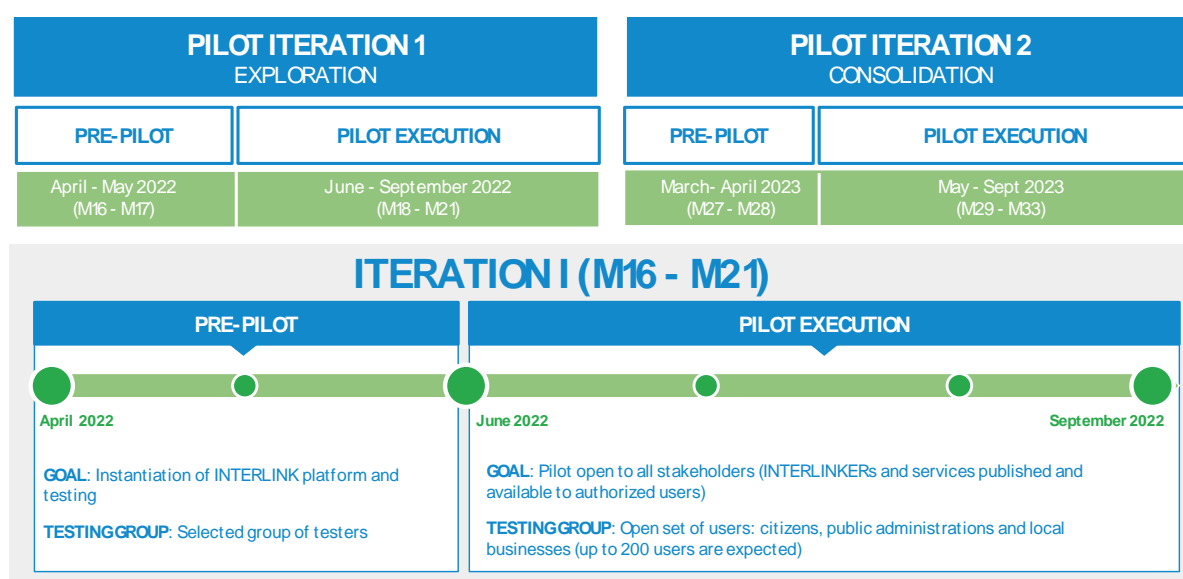
Figure 1. INTERLINK piloting framework

1 Coordination of the use cases

The INTERLINK platform needs to be installed and operated in three different use-case sites with different operational settings, background, user maturity levels. For this reason, careful coordination of these different use-case sites is necessary to ensure a successful validation of the INTERLINK solution. For example, technical problems in the INTERLINK components delivered in WP2-3 and integrated in WP4 which prevent a successful operation need to be

promptly detected, analysed, and reported. Similarly, success cases need to be promptly shared among sites.

Task 5.1 is responsible for the collection, management and sharing of technical and operational problems that will be solved either within WP3, WP4 or by WP5. This task will also offer the opportunity to collect guidelines and best practices which will result in relevant documentation for the adoption of the INTERLINK platform outside the project. This section reports the progress so far carried out within this task.
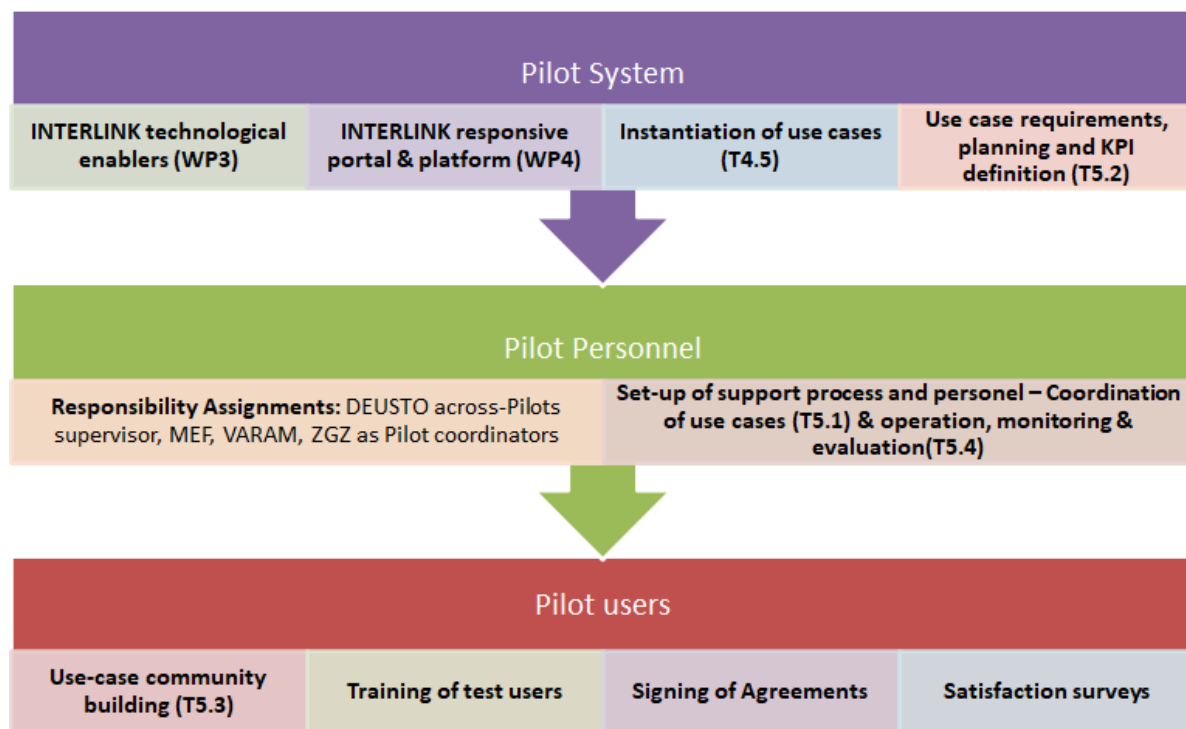
Figure 2. Relationship among tasks in work programme, partners and assets involved in project piloting

1.1. Pilots' coordination structure

Figure 2 shows the coordination structure devised for the planning, execution, monitoring and assessment of pilots. The top layer of the diagram indicates which WPs and tasks will realize the technical implementation needs for the piloting, plus the task T5.2 where the planning of the pilots will be made ready. Indeed, the following sections of this document cover the outcomes of T5.2: use case requirements, planning and KPIs definitions. The second layer from the top in Figure 3 indicates who will be responsible of the cross-pilots coordination (DEUSTO) and who will be responsible at each specific pilot site. The following subsections indicate the support process that will be prepared for INTERLINK (as outcome of T5.1) whilst D5.3, due according to the Grant Agreement in M20 (August 2022), will be responsible for reporting the results of deploying, operating and evaluating the pilots' use cases in iteration 1.

Figure 3 provides a more detailed view regarding responsibilities distributed among consortium partners during the piloting process. Notably, DEUSTO is the *coordinator of the*

cross-pilot coordination and overall trial monitoring. The support provided to piloting sites will be coordinated by TREE TK with the technical support of FBK and CNS, whilst co-production model process support and community building activities will be supported by Radboud University and VARAM, respectively, in collaboration with DEUSTO and FBK. *Pilot coordination organizations* are those where pilots will be deployed, namely MEF, VARAM and ZGZ, respectively. Technical partners and other consortium partners will also support pilot site coordinators in legal, governance and technical aspects.
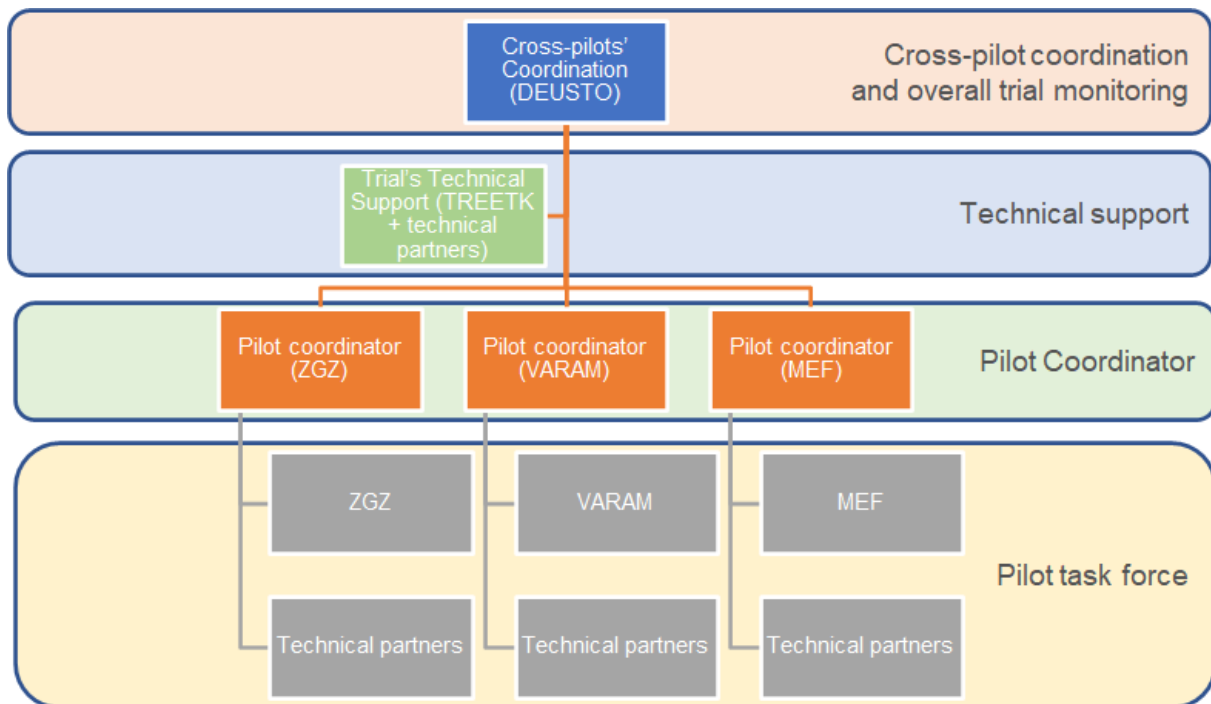
Figure 3. Responsibilities distribution during Pilot executions

1.2. Overall Pilots' iteration I planning

Pilots Iteration I is actually subdivided into two sub-phases (see Figure 4): a) *pre-pilot sub-phase* and b) *pilot execution sub-phase*. (Details on user groups involved in the various phases are included in section "4. Evaluation methodology for INTERLINK").

The first sub-phase (the pre-pilot sub-phase) will be used to make sure that the INTERLINK platform (collaborative environment, INTERLINK catalogue and INTERLINKERs) and all the co-produced public services and INTERLINKERs running on top of it, are fully tested and mostly bug-free. In this first sub-phase, a controlled and selected reduced group of *alpha testers* will report about their experience using the INTERLINK based solutions. Their feedback, gathered through different means, will be used for several purposes:

● To apply any necessary corrective actions to ensure a smooth execution of the first pilot phase.
● To make sure that all the co-production tools and artefacts to be tested are properly instrumented with execution logs and questionnaires so that the right details about them can be collected to be used then by WP5 in the pilot analysis.

Additionally, trial site specific and public service specific KPIs will be refined, and new ones will be defined during this first subphase. Importantly, besides the technical viability of the co-produced public services and collaborative environment being tested, it is paramount to ensure that ethical approvals of the project assessment plans at the different pilots' sites is obtained before the launch of the first sub-phase.

The second sub-phase (the pilot execution sub-phase) will correspond to the launching of the Pilots Iteration I itself. A wider open set of *beta testers*, i.e. civil servants and citizens associated to the different public administrations will access to the knowledge and software resources (INTERLINKERs and public services) published in beta testing mode on INTERLINK catalogue as well as the INTERLINK collaborative environment supplied in the external release of Pilots Iteration I.

Notice that although Pilots Iteration I start was planned to begin in M17 (May 2022), it has been decided to make it start a month earlier to ensure that there is a wider scope for alpha testing. Likewise, given that Pilots Iteration I is supposed to conclude in M20 (August 2022), summer period, it is proposed to extend it for yet another month until September 2022 to cope with the fact that organizing engagement and collaboration activities in the summer period is complicated. **This implies that we anticipate the submission of the results of the analysis of the pilots in D5.3 in September 2022 rather than in August 2022 as indicated in the GA, to allow for a more extensive collection and analysis of results**.
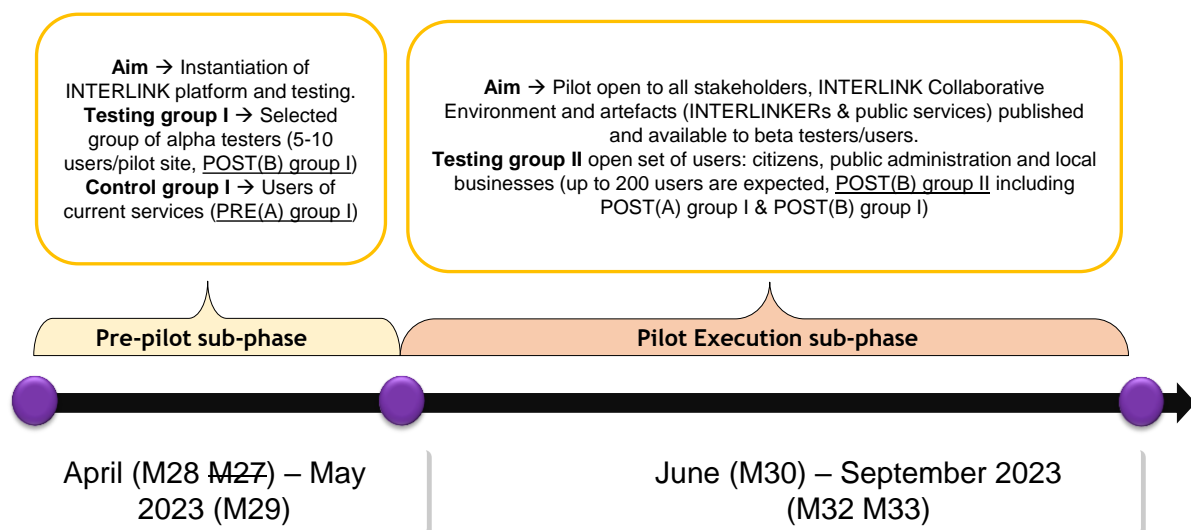
Figure 4. Pilots planning for iteration I

1.3. Methodology for Pilot Execution

This section describes the different steps in which the execution of pilots iteration 1's sub-phases will be divided. It also includes a generic planning for Pilots Iteration I comprising months M16 (April 2022) to M21 (September 2022). The two sub-phases each pilot will go through (see Figure 5) will be organized as follows (the steps included in those sub-phases are the same for Pilots Iteration I and II, although in Iteration II a "Lessons Learnt" step will be introduced).

- **Pre-pilot sub-phase (From April 2022 – M16 to May 2022 – M17)**. It consists of the following actions in the given logical order, although iterations among them might be possible.
  - *Internal release*: the collaborative environment and a set of enablers (knowledge and software INTERLINKERs) are made available in alpha mode on INTERLINK catalogue of public services and INTERLINKERs. In some pilots, co-produced public services which leverage the provided INTERLINKERs may need to be made available at the start of the pre-pilot sub-phase.
  - *Communication*: INTERLINK public administrations in collaboration with task forces members identify and select an internal group of potential alpha-testers (between 5 to 10 users per pilot site). For that purpose, the public administration may announce the INTERLINK powered collaborative environment, INTERLINKERs and possibly co-created public services, internally.
  - *Training*: supporting documentation about the INTERLINK components, *progressive web app compliant public services and collaborative environment* are made available to the alpha testers. The alpha testers groups should be convened in a training workshop where they will be invited to use the framework and access the collaborative environment and INTERLINK resources (knowledge and software INTERLINKER and/or empowered public services).
  - *Support*: the different support channels are established and presented to the alpha-testers during the training workshop. Technical issues should be reported to consortium members by the different technical mechanisms and support tools specified in section [1.4. Help Desk: problem resolving approach and support mechanism](#).
  - *Measuring & Monitoring*: Variables to be measured in pilot trials will be established. Monitoring of the early testers of the INTERLINK ecosystem is carried out; gathering of evaluation metrics starts. Some of the early testers will be staff from the public administrations or the INTERLINK consortium partners. Possible technical, procedimental or ethical deficiencies are identified and addressed by the INTERLINK support team during M16 and M17.
  - *External Release*: Once the support team solves the reported issues (expectingly technical mainly), updated versions (if required) of the framework components, INTERLINK collaborative environment and co-produced progressive public services and INTERLINKERs are updated in INTERLINK catalogue. Users from engaged public administrations are free to access all of these components in release mode.

In addition to alpha-testers, in this phase a cross-testing session involving INTERLINK consortium members from INTERLINK partners will be also launched by mid April taking advantage of the face-to-face meeting planned or, alternatively, through videoconference.

- **Pilot execution sub-phase (From June 2022 – M18 to September 2022 – M21).** It consists of the following actions which are iterated through the whole pilot execution:
  - *Communication*: an intensive dissemination is carried out across different channels to mark the kick-off of the pilot execution sub-phase. Targeted user groups for each trial are reminded that the INTERLINK collaborative environment, reusable INTERLINKERs and co-produced specific public services built for each pilot site are now officially rolled-out urging and incentivizing them to use the INTERLINK ecosystem, through engaging means, e.g. co-production parties, hackathons or rewards. Together with this training, several activities will also be launched in order to ease and promote the use of the ecosystem. Each public administration counts with 5,000€ to cover expenses such as posters, forms, leaflets, marketing materials and arrangement of workshops and public contests, including some minor prizes as incentives. The partners managing these amounts will be MEF, VARAM and ZGZ.
  - *Support*: technical, legal and co-production model support services will be maintained across the execution of the pilot.
  - *Execution*: INTERLINK framework components, namely, collaborative environment, INTERLINKERs and public services are redeployed, after tuning them as a result of the pre-pilot sub-phase, and are ready for massive access and execution. This activity ensures that the individual deployment per pilot site is kept operative on a 24x7 basis.
  - *Monitoring*: monitoring of the actual pilot users interacting with the INTERLINK ecosystem to co-produce new public services or consume and reuse the co-produced ones. The feedback retrieval during the pilot execution serves to sense the user perception of the services deployed and co-production approach.
  - *Evaluation*: actual data about the usage of the tools by the different users is gathered, aggregated, and analysed. Every month usage statistics and KPIs are generated, and feedback analysis carried out.
  - *Reaction*: Early conclusions are driven, and corrective actions taken in case the pilot is not progressing as expected, on a monthly basis. Based on the monthly evaluations some of the following actions are triggered: new communication actions, launch of contests to incentivize usage or modification of available INTERLINK resources to solve issues that may be impeding a bigger adoption.
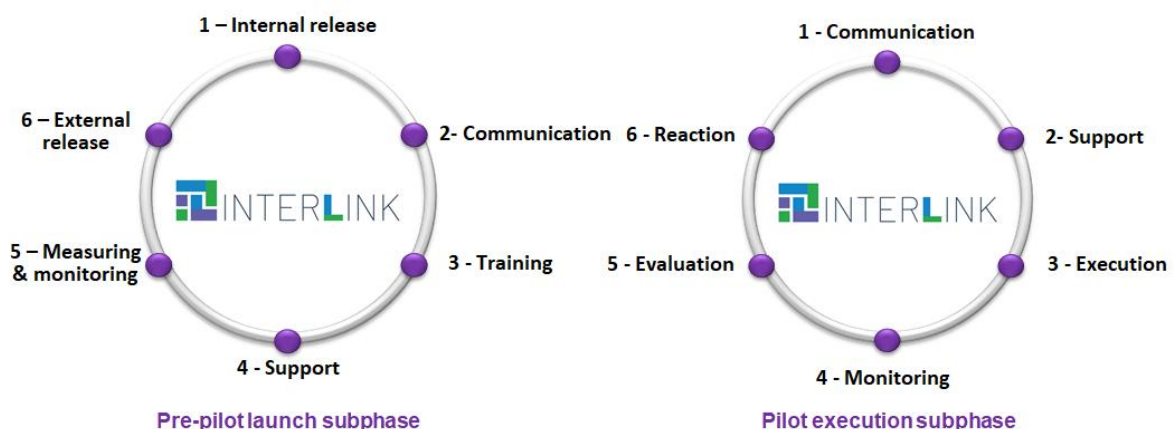
Figure 5. Activity types in Pilots Iteration I subphases

1.4. Help Desk: problem resolving approach and support mechanism

As described in 1.3. Methodology for Pilot Execution, piloting is divided in two iterations. Each iteration is, likewise, divided into two sub-phases, namely pre-piloting and piloting subphases, respectively. Particularly in pre-piloting, the first implementations of the INTERLINKERs and public services will be made available at each pilot site. Probably usability and functionality flaws will be identified at this stage that will need to be sorted out by partners working in WP3 and WP4. Hence, it is important to set up an issue management system which will enable technical or methodological aspects and doubts to be solved within the consortium.

During the pilot execution, potential problems on the technical and non-technical side, mainly coming from community or users, may emerge. Technical problems may be, on one hand, related to problems with the hardware e.g. deployment of INTERLINK platform and associated public services; and, on the other hand, related to INTERLINK collaborative environment and public services user experience flaws. Community related problems may result from missing critical mass of different stakeholders, limited number of communication activities, and missing community transparency. User groups acceptance and adoption related problems may mainly come from user-interface and functionality problems. Legal or methodological issues may also arise and be reported.

Contingency plans for both kinds of problems, i.e. technical and non-technical (mainly community building related), are tackled through the Help Desk defined in INTERLINK. Focusing on the potential issues expected, a clear support plan has been defined for the two pilot phases. In this plan, the methodology to be applied in each public administration and the technical tools available and offered by the INTERLINK platform to the end-users are explained in detail. As for the methodology to be followed, it has been broken down into two different support levels (see Figure 6):

- **1st Level of support (L1)**: INTERLINK public administrations (MEF, VARAM and ZARAGOZA) are the first point of contact between INTERLINK end-users, i.e. citizens, civil servants and local businesses, and the INTERLINK project consortium. Thereby, every public administration has to set up and disseminate an email address to be used by end-users for reporting issues or, complementarily, a web form through which to report issues. Another way of reporting issues is through the "*word of mouth*" method. During the training sessions and some other events, users will have the chance to directly communicate the problems found. In addition to the email address, some of the INTERLINK public administrations might have an internal system for issues tracking. Apart from these public administration specific email addresses and technical tools, the INTERLINK consortium will set up a range of tools to offer technical support to all end-users which will be accessible from the project website.

  A specific person (pilot coordinator) for each pilot city will be appointed as responsible for monitoring, solving and reporting these issues to the 2nd level in case of need. If possible, the pilot coordinator (either MEF, VARAM or ZGZ) and the cross-pilot coordinator (DEUSTO) may take corrective actions and/or direct these actions to the trial support team (2nd Level). The L1 team will collect incident details from users via

all the available sources of information (email, phone, web form, etc) and will properly log every incident into the incident management system (Redmine) which will be used both by L1 and L2. The L1 team will classify incidents by type and filter those that require attention from the L2 support team.

- **2nd Level of support (L2)**: Further technical problems and non-technical problems which cannot be addressed by the each Pilot Coordinator internally should be reported to the INTERLINK 2nd level of support: a technical team (pilots' support team) composed by a team of engineers, all of them members of the INTERLINK technical partners (FBK, DEUSTO, TREE TK, CNS), and a representative of pilot sites (VARAM) will be appointed. They are responsible for all public services and INTERLINK environment configuration issues in the infrastructure. All the identified issues will be reported and tracked in the internally set-up Redmine [1] issue tracking system where issues are individually evaluated, assigned and treated. Once these issues are solved, the final users will be reported through a response mail. In addition, common issues may be added to the FAQs.
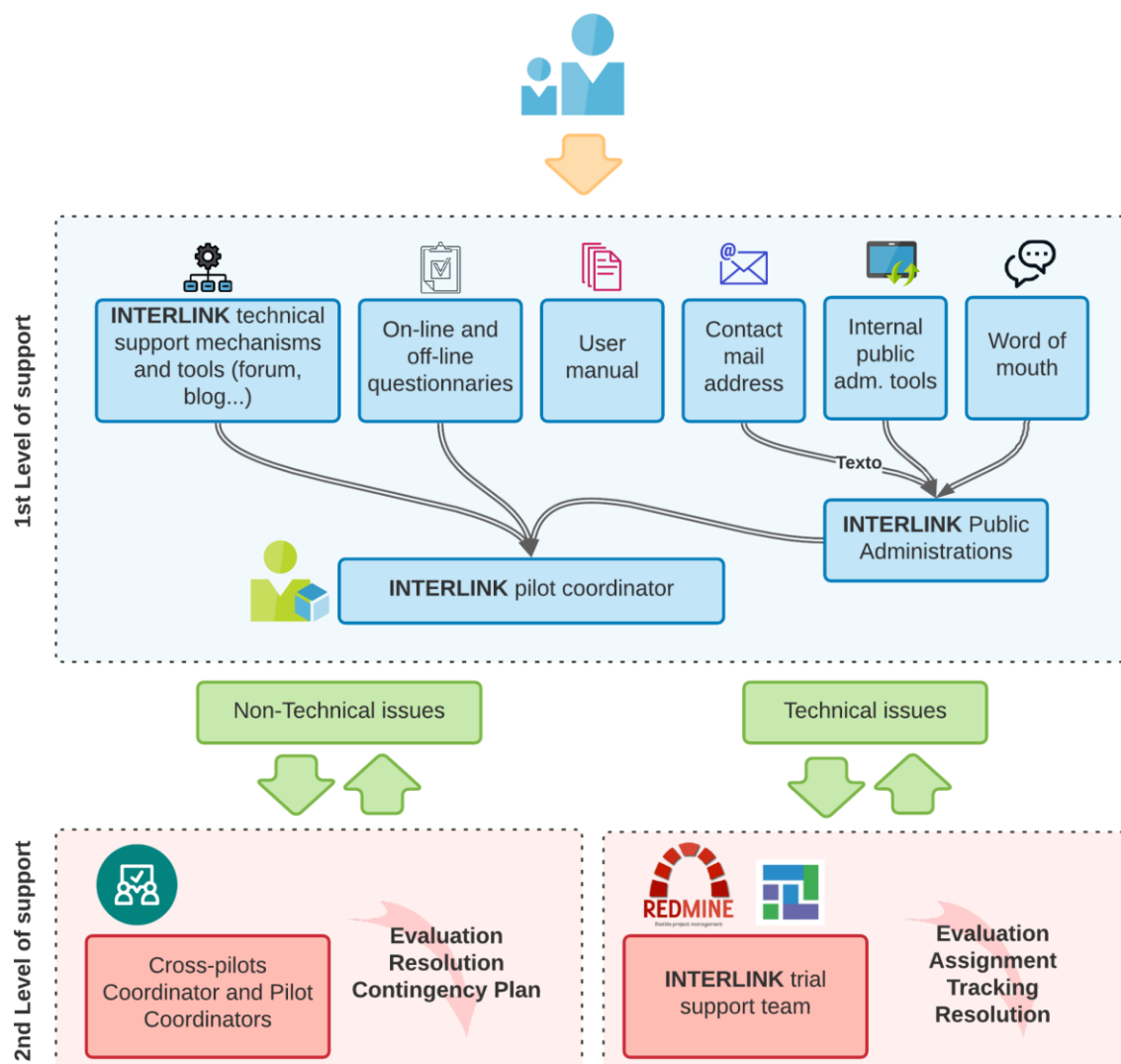
Figure 6. INTERLINK problems resolving approach

As for non-technical problems, whenever the pilot coordinator may not provide a corrective action to solve this problem then it should be reported to the INTERLINK 2nd level of support. In that case, a face-to-face meeting among the pilot coordinator and cross-pilot coordinator will be arranged with the aim of finding a solution to that issue. Support from those organizations tackling ethical, governance or community building activities will be requested if needed.

In parallel with the previous methodology, each Pilot Coordinator will continuously monitor within its pilot INTERLINK activities, public services, and framework components performance through (i) the INTERLINK platform generated logs and (ii) the continuous feedback through questionnaires and surveys gathered at the pilots' execution, to detect potential trial problems as soon as possible and beforehand. More concretely, the following common problem cases and appropriate actions are envisioned according to the described risks:

Table 1. Identified Pilot risks

Risk ID	Probability	Impact	Description	Corrective action
R1	Medium	High	Critical mass problem	Motivate INTERLINK usage through campaigns and incentives
R2	Medium	High	Pilot users only use the deployed co-produced services and not leverage the INTERLINK co-production model and supporting collaborative environment	Engagement activities should not be only focused on the public services promotion but also on showing the main features and benefits of the INTERLINK framework components
R3	Low	High	Low involvement of citizens and public administrations	Engagement plans should describe activities to motivate other stakeholders, e.g. citizens and public administrations and local businesses.
R4	Low	Medium	INTERLINK pilots do not successfully develop co-production projects with the support of INTERLINK	Document usage and provide examples of co-produced projects. Motivate INTERLINK framework usage through further engagement activities.

R5	Low	High	General SW failures	A pre-pilot phase has been planned for detecting and solving these kinds of failures. General support tools and procedures for the pilot phases are available.
R6	Low	High	Platform and Services usability	A pre-pilot phase has been planned for detecting and solving these kinds of failures
R7	Medium	Medium	Pilot phase during summer vacation might result in a scarce number of users because July and August is a typical vacation time.	Reinforce engagement activities targeting September and plan well in advance with the different stakeholders the schedule of events/sessions. Involve crucial stakeholders as early as possible.

1.5. Guidelines and best practices for co-production processes

A FAQ system will be generated with common foreseen questions for those making use of INTERLINK co-production process and methodology. Such FAQ will be populated because of the questions, from technical and non-technical nature, received by the support system. Guidelines and best practices on how to co-produce public services will also be produced.

In the next iteration of this deliverable (D5.4, M28) the lessons learned from co-producing, deploying, and evaluating public services in three public administrations will be reported.

For the time being, we have prepared a HOWTO presentation illustrating how to undertake a co-production process in INTERLINK. Such document will be made publicly available before pilots' iteration I is started. Figure 7 shows one of the screenshots included in the HOWTO document.
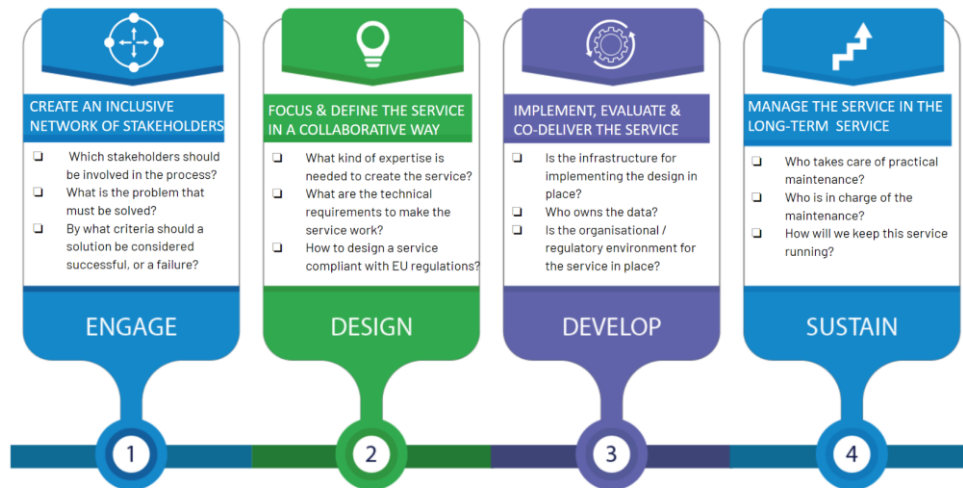
Figure 7. Snapshot of the INTERLINK co-production HOWTO

2 Specification of the Pilots' Experimentation

This section provides the specification of the proof-of-concept experiments to be executed in the three PAs, i.e. WHAT co-production experiments will be trialed and evaluated at each pilot. It details the e-services to be validated in each PA driven from the analysis of section 3 "Bottom-up requirements from use cases" and "Annex 3 - Preliminary version of co-production scenarios for the three project use cases" encountered in "D4.1- List and description of the socio-technical requirements". The results reported in the following subsections are the outcome of having carried out the following information gathering process (see Figure 8).
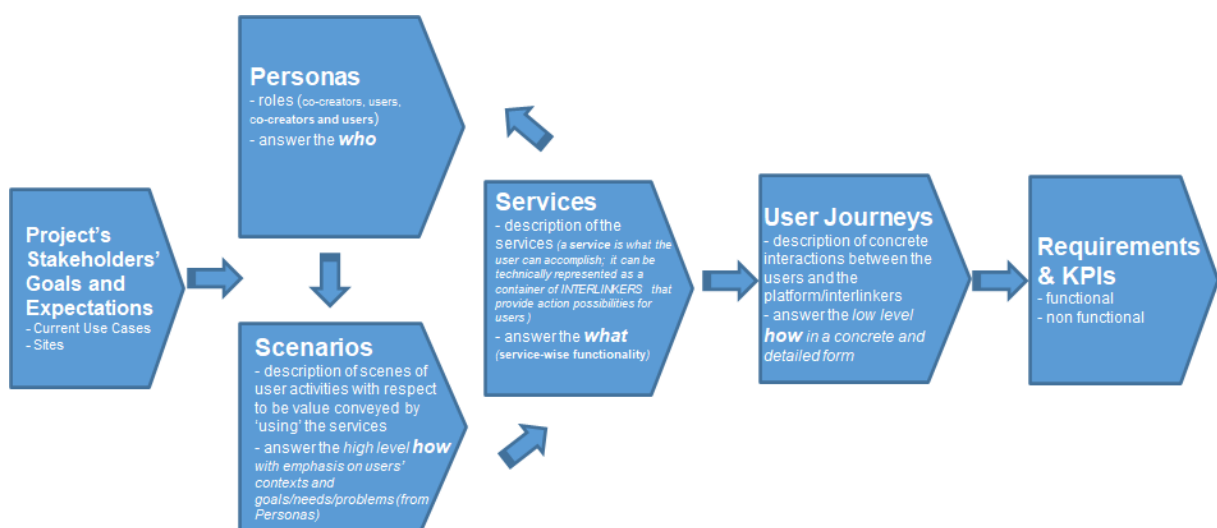
Figure 8. Use case requirements gathering process executed in T3.1 and T4.1

For each of the three pilot sites, the following subsections are included to describe:

● high level requirements of the use case, including goal, stakeholders and public services envisaged in each of the three use cases.
● description of personas in each use case. As described in D4.1 [2], user personas have been elaborated to represent specific platform's user base segments and to envision use cases scenarios for the identification of front-end requirements and INTERLINKERs.
● For brevity purposes, exhaustive descriptions of the personas have been moved to "Appendix A - Relevant personas for the INTERLINK use cases".
● relationship between personas mediated by INTERLINK enablers.
● envisaged stages of the co-production scenario following the INTERLINK co-production methodology (see D4.1.)
● specification of INTERLINKERs - both software and knowledge ones - needed at each pilot site for the evaluation to take place. Such INTERLINKERs will be exploited at each pilot site for managing the co-production process.

This section concludes detailing some aspects affecting cross-pilots' aspects.

2.1. MEF

The Ministry of Economy and Finance - Italy (Acronym : MEF) has a vast experience in the bottom-up collaborative approaches, and it is always looking for opportunities to further develop its expertise and remain at the forefront of innovation.

To this end, MEF decided to join INTERLINK by developing a mock-up of a Participatory Strategic Planning Module (called PSPM) which allows Public Bodies and their staff to actively participate in the definition of the MEF's Strategic Plan, as well as to have access to a repository of good practices on strategic planning approaches and methodologies.

2.1.1. High level requirements of MEF use case

Table 2. High-level requirements for the MEF use case

Goal	Public Bodies offer a heterogeneous and broad scenario that gives MEF the chance to improve its objectives achievement, aiming to accelerate the Italian digital transformation, by establishing synergies. A PSPM could be an opportunity for MEF and Public Bodies to join efforts and achieve results faster and more efficiently, as well as to strengthen transparency and legitimacy with stakeholders and reduce the time to market of services. Through INTERLINK, MEF will leverage the INTERLINK platform and its components (INTERLINKERs) to manage and facilitate the co-design and co-creation of the PSPM mock-up with the identified stakeholders. In order to create this PSPM mock-up, MEF will organize the use case into two phases as follows: (1) during the first iteration, MEF has the goal of collecting requirements and feedback from stakeholders in order to co-design a mock-up of the PSPM (Participatory Strategic Planning Module) open to Public Bodies to allow their participation in the definition of the MEF's Strategic Plan. According to the feedback and input received, the mock-up of the PSPM will be developed in order to also be used in the second iteration phase. (2) The second iteration is about refining the PSPM mock-up with further Public Bodies, however the details still need to be defined.
Stakeholders	The Stakeholders that are going to be involved in the first iteration of MEF's use case includes both in-house civil servants, MEF Directorates and other Public Bodies, in order to define the PSPM mock-up according to the real needs and requirements of different kind of stakeholders dealing with the strategic planning; specifically, MEF's use case is going to involve: • MEF Directorates • Other PAs Human Resources Department • DSII applications' operators and human resources • MEF Department Directors • MEF Data processors • MEF employees • Other PAs operators and managers

Service(s) that will be co-produced	The co-production team will co-design a Participatory Strategic Planning Module (PSPM) mock-up that will provide two main services:
	
	1. Support Public Bodies in collaboratively defining the Strategic Plan together with other interested stakeholders (in-house civil servants, IT operators, other Public Bodies and Directorates) and give them the opportunity to:
	    ● provide feedback and prioritise actions during the strategic planning phase.
	    ● propose actions on the basis of their needs and allow them to vote for what they believe to be the most relevant actions.
	    ● monitor the Strategic Plan advancements, once approved and consolidated.
	
	    The main output of this service is a list of input/feedback and proposals shared by the external stakeholders which will be analysed and consolidated as deemed relevant in the Strategic Plan.
	
	2. Open repository of good practices populated by MEF and made available to other Public Bodies, associations for visualization. This service will give the possibility to the MEF to share its good practices (strategic plans, strategic planning methodologies/approaches, former experiences and make them available to stakeholders for visualization.

High-level requirements	To co-design the PSPM mock-up, MEF will leverage the INTERLINK collaborative environment to engage stakeholders. During the first iteration phase of the use case, carried out under MEF's supervision, several Interlinkers will be used. The following INTERLINKERs have been already identified as necessary for the MEF pilot specific execution: ● *Practicepedia:* Open repository of Good Practices: this module will be used to improve Public Bodies' capacity with know-how. The metadata associated with the documents in this open repository will facilitate search and browsing of good practices on the strategic planning according to different search dimensions (e.g. application domain, creator of the good practice, ...) ● *Ideas Crowdsourcing:* INTERLINKER that allows users to discuss different topics and which will be used in the MEF first iteration to gather feedback on the PSPM functionalities to co-design it according to the stakeholders' needs. ● *eVoting* tool: this INTERLINKER would be useful to co-design the PSPM mock-up by guaranteeing stakeholders to vote and prioritise its functionalities. ● *Incentives and rewards:* they will be useful to sustain stakeholders' engagement in the long-term with rewards. Besides, the following INTERLINKERs, many of them knowledge INTERLINKERs, and usable, across other pilots, have been considered as highly relevant: ● *Tutorials:* INTERLINKERs useful to inform stakeholders during both the engagement and pilot execution phases about what INTERLINK and the INTERLINKERs are; tutorials also provide information about the

use cases' goals and co-design scope. During the engagement phase they will be useful to make stakeholders aware about the project purposes, while during the implementation phase, tutorials will be useful to guide them in the pilot activities.

- *Stakeholder mapping and recruitment:* it will be useful to MEF to map and engage stakeholders during the first phase of stakeholders' engagement.
- *Awareness creation:* to make stakeholders aware about the project and the use case, to capture their attention and hopefully engage them in the use case activities.
- *GDPR regulation and GDPR compliant forms:* to provide guidance on how to comply with GDPR and provide compliant forms to stakeholders.
- *Workplan scheduling*: this INTERLINKER is useful to schedule working plans, setting roles and responsibilities and to monitor the workplan actions.
- *Period reporting*: to track the use case progress and next steps.
- *Tools for workshops:* MEF use case is planning to organise workshop with stakeholders to discuss the PSPM functionalities and refine it accordingly. Tools to manage the process of input collection and decision making will be useful.
- *Tools for interviews, survey and task analysis:* these INTERLINKERs will be useful to collect information from stakeholders and help them to provide inputs.

2.1.2. Relationships between personas mediated by INTERLINK enablers

As reflected in "Appendix A - Relevant personas for the INTERLINK use cases", the Personas engaged in the MEF use case are:

- Luca- MEF-DAG Director
- Rossella- MEF-DSII Head of Unit
- Paolo: MEF IT Technical Officer
- Franco– MEF HR
- Arianna:– MEF employee
- Valeria– MEF Data processor
- Andrea– Other PA Director
- Elena– Other PA HR

Next, the diagram (see Figure 9) depicting the relationship between Personas and envisaged INTERLINKERs during the engagement and design phases of co-production is offered:
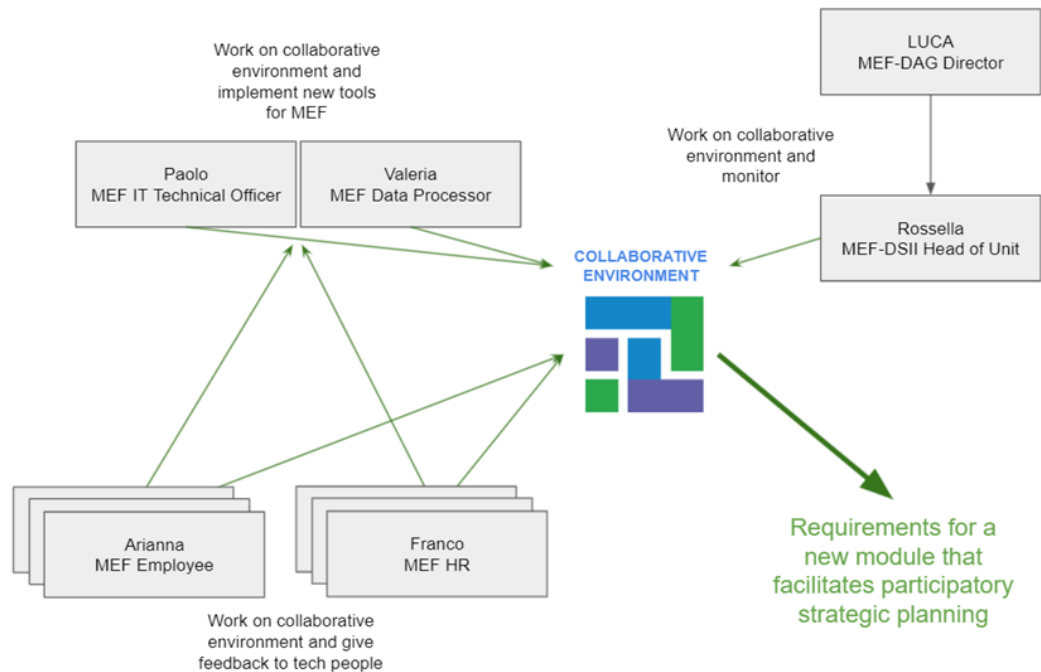
Figure 9. Relationship among Personas and INTERLINKERs in MEF's ENGAGEMENT and DESIGN stages

Next, the diagram (Figure 10) depicting the relationship between Personas and envisaged INTERLINKERs during the implementation phase of co-production is offered:
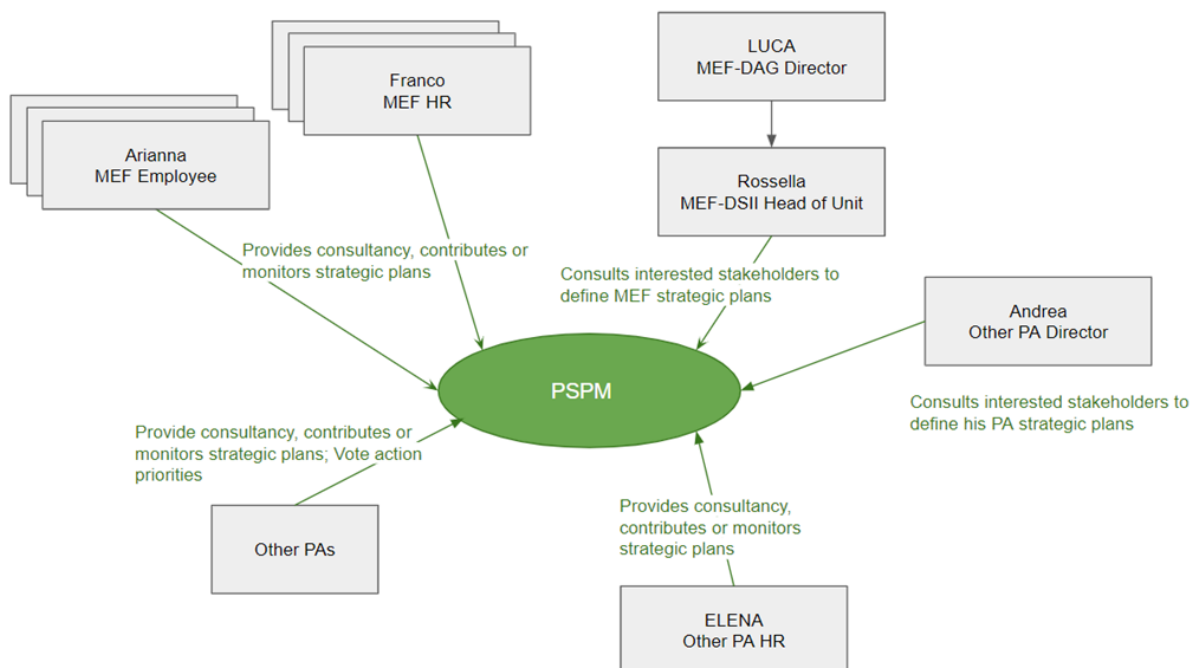
Figure 10. Relationship among Personas and INTERLINKERs in MEF's IMPLEMENTATION phase

2.1.3. Envisaged steps of co-production scenario

Table 3 illustrates how each co-production phase is planned to be carried out in the MEF use case, with the support of the collaborative environment tools and INTERLINKERs.

Table 3. Co-production process in the MEF use case.

	STEPS OF CO-PRODUCTION SCENARIO	SUPPORT PROVIDED BY INTERLINK PLATFORM
ENGAGEMENT	MEF launches a communication campaign to make stakeholders aware about the initiative and use case's goals to recruit participants to co-design the PSPM mock-up	Use of Awareness campaign INTERLINKER
	MEF gathers a network of interested stakeholders (MEF's staff and other Public Bodies). These correspond to potential future users of the PSPM	Tools and INTERLINKERs for stakeholder mapping and engagement

DESIGN	MEF is going to prepare and organize specific co-design activities on the INTERLINK platform and with the use of specific INTERLINKERs. ● For MEF Directorates and other PAs Human Resources Department stakeholders, MEF foresees the organization of interviews and the sharing of surveys to get feedback about the PSPM functionalities, the INTERLINK collaborative environment and its tools ○ For the rest of the stakeholders, namely, DSII applications' operators and human resources, MEF Department Directors, MEF Data processors, MEF employees and other PAs operators and managers, MEF will organize workshops (either online or in presence at the MEF/DSII premises according to the current covid-19 emergency. The goal is to stimulate a discussion with the stakeholders engaged to share different needs, expectations, and ideas in order to co-design the new module functionalities.	Service design tools for workshop, interviews and surveys; provision of guidelines for co-design; ideas crowdsourcing and e-voting INTERLINKERs
	MEF, at the end of the pilot 1st iteration and using the stakeholders' feedback, designs a PSPM mock-up defining its two functionalities: 1. Interface for Strategic Planning 2. Open Repository of Good Practices	Tools: INTERLINKERs made available to support co-production process
EVALUATION	At the end of the pilot 1st iteration, questionnaires, surveys and one-to-one interviews will be provided to ask stakeholders their feedback on the INTERLINK Platform and its INTERLINKERs, as well as on the PSPM functionalities which will be elaborated and assessed.	Quality of service monitoring to monitor and assess the quality of service co-delivered Templates

IMPLEMENTATION	A mock-up of the PSPM that supports participatory processes of consultation and transparency along the definition and implementation of strategic plans is produced following the requirements and functional specifications collected during co-design 1. Interface for Strategic Planning 2. Open Repository of Good Practices	Some building blocks already available in the INTERLINKER catalogue are possibly re-used to aid the implementation

2.1.4. INTERLINKERS demanded to execute the pilot

This section provides details about the main Interlinkers that will be demanded for the correct execution of the MEF use case:

1. **Stakeholder mapping and recruitment** – INTERLINKERsthat help in the engagement of stakeholders in terms of identifying, selecting and engaging them within the process of the MEF pilot.
2. **Ideas crowdsourcing** – an INTERLINKER that allows users to propose and discuss different topics and ideas that could be used to refine/enrich the PSPM mock-up according to the stakeholder needs and priorities. These ideas would then be the subject of an open voting mechanism, enabling the ideas to be categorized, grouped, and ranked to facilitate their evaluation.
3. **Practicepedia**-- an "Open repository of good practices", i.e. a repository which collects information that can be used to improve PAs' capacity with know-how. It will give the possibility to MEF to share its good practices (strategic plans, strategic planning methodologies/approaches, former experiences).
4. **eVoting tool**: an INTERLINKER that would be useful to co-design the PSPM mock-up by guaranteeing stakeholders to vote and prioritise its functionalities.
5. **Tutorials**: INTERLINKER useful to inform stakeholders during both the engagement and pilot execution phases about what INTERLINK and the INTERLINKERs are; tutorials also provide information about the use cases' goals and co-design scope. During the engagement phase they will be useful to make stakeholders aware about the project purposes, while during the implementation phase, tutorials will be useful to guide them in the pilot activities.
6. **Awareness creation:** to make stakeholders aware about the project and the use case, to capture their attention and hopefully engage them in the use case activities.
7. **GDPR regulation and GDPR compliant forms:** to provide guidance on how to comply with GDPR and provide compliant forms to stakeholders.
8. **Workplan scheduling:** this INTERLINKER is useful to schedule working plans, setting roles and responsibilities and to monitor the workplan actions.
9. **Period reporting:** to track the use case progress and next steps.

10. **Tools for workshops:** MEF use case is planning to organise workshop with stakeholders to discuss the PSPM functionalities and refine it accordingly. Tools to manage the process of input collection and decision making will be useful.
11. **Tools for interviews, survey and task analysis:** these INTERLINKERs will be useful to collect information from stakeholders and help them to provide inputs.

In Table 4, the INTERLINKERs listed above are specified according to the INTERLINKERs specification template described in D3.1 (Section 1.2.4.) [3]. Notice that the description of some INTERLINKERs, as for example "Stakeholders' mapping and recruitment" have been moved to 2.4. INTERLINK cross-pilot co-production-supporting INTERLINKERs, since they can be used in all the project's pilots.

Table 4. Ideas Crowdsourcing INTERLINKER

Property	Value
INTERLINKER NAME	**Ideas Crowdsourcing**
DESCRIPTION	INTERLINKER that allows users to make ideas explicit, discuss and prioritize / order them. For MEF, it will support the creation, sharing and development of ideas in the collaborative environment enabling open discussion among the engaged stakeholders and the MEF pilot case coordination team and task force. It is a generic pilot-agnostic INTERLINKER which could be used on its own or integrated within the collaborative environment.
RELEVANT PROBLEM PROFILES	ORG.PROBLEM.6.4 - Ideas crowdsourcing
STAKEHOLDERS	Members of a co-production team. In the case of MEF these would be: ● MEF Directorates ● Other PAs Human Resources Department ● DSII applications' operators and human resources ● MEF Department Directors ● MEF Data processors ● MEF employees ● Other PAs operators and managers
TYPE OF INTERLINKER	Enabling Service
NATURE OF INTERLINKER	Software
ASSOCIATED INTERLINKERS	● "Registration and Authentication" INTERLINKER ● "Loyalty, incentives and rewards" INTERLINKER
USAGE CONTEXT	● administrative: national (Latvia, Italy) and local level (Zaragoza) ● organizational: public and private users ● domain: any co-production domain - process: C2G, G2C, C+G

CONSTRAINTS AND LIMITATIONS	*(Specific requirements and properties constraining the usage and exploitation of the INTERLINKER)*
REGULATIONS AND STANDARDS	*(Legal and technical context, where the INTERLINKER operates, as a set of relevant, normative acts, policies, standards, and specification the INTERLINKER adheres to)*
IMPLEMENTATION PROPERTIES	- Open-Source software - Software-as-a-Service - UI-based tool and API (REST) - Operational environment: Web based - For the On-premise software, the characteristics for the deployment requirements, being hardware and software environment required - Documentation of the API as Open API 3.0 - API structure following formalized specification - Support for Internationalization - Conformance to the legal regulations and standards
CUSTOMIZATION PROPERTIES	Customization available to select languages
INTEGRATION PROPERTIES	- Authentication / authorization standards used - Interoperability standards

Table 5. Practicepedia INTERLINKER

Property	*Value*
INTERLINKER NAME	**Practicepedia**
DESCRIPTION	INTERLINKER that supports the register and the collaborative creation of good practices that can be useful for public service administrators, and other end-users of public services. It will give the possibility to MEF to share its good practices (strategic plans, strategic planning methodologies/approaches, former experiences) and make them available to end-users for visualization.
RELEVANT PROBLEM PROFILES	BUILD.PROBLEM.1 - Collaborative knowledge sharing on public processes and services (Servicepedia & Good-Practicepedia)

STAKEHOLDERS	- MEF Directorates - Other PAs Human Resources Department - DSII applications' operators and human resources - MEF Department Directors - MEF Data processors - MEF employees - Other PAs operators and managers
TYPE OF INTERLINKER	Enabling Service
NATURE OF INTERLINKER	Software
ASSOCIATED INTERLINKERS	"Registration and Authentication" INTERLINKER "Loyalty, incentives and rewards" INTERLINKER
USAGE CONTEXT	- administrative: national (Latvia, Italy) and local level (Zaragoza) - organizational: public and private users - domain: description of public services, description of good practices, description of available resources and services for an innovation lab - process: Citizen sourcing (C2G): government designs and delivers a service, but asks citizens for the voluntary commitment of resources to improve the service itself, such as their voluntary labour or their personal data
CONSTRAINTS AND LIMITATIONS	*(Specific requirements and properties constraining the usage and exploitation of the INTERLINKER)*
REGULATIONS AND STANDARDS	*(Legal and technical context, where the INTERLINKER operates, as a set of relevant, normative acts, policies, standards, and specification the INTERLINKER adheres to)*
IMPLEMENTATION PROPERTIES	- Open-Source software - Software-as-a-Service - UI-based tool and API (REST) - Operational environment: Web based - For the On-premise software, the characteristics for the deployment requirements, being hardware and software environment required - Documentation of the API as Open API 3.0 - API structure following formalized specification - Support for Internationalization - Conformance to the legal regulations and standards
CUSTOMIZATION PROPERTIES	Customization available to select languages

Property	Value
INTEGRATION PROPERTIES	● Authentication / authorization standards used ● Interoperability standards

Table 6. eVoting INTERLINKER

Property	Value
INTERLINKER NAME	**e-Voting Tool**
DESCRIPTION	INTERLINKER that allows users to vote on a topic or idea. This is a generic enabler that could be used in the different pilots. It is an INTERLINKER which could also be integrated within the INTERLINK collaborative environment.
RELEVANT PROBLEM PROFILES	ORG.PROBLEM.11 - Consensus building and agreement seeking
STAKEHOLDERS	Members of a co-production team. For the MEF use case, it would be useful to co-design the PSPM mock-up by guaranteeing stakeholders to vote and prioritise its functionalities. It would be used by: ● MEF Directorates ● Other PAs Human Resources Department ● DSII applications' operators and human resources ● MEF Department Directors ● MEF Data processors ● MEF employees ● Other PAs operators and managers
TYPE OF INTERLINKER	Enabling Service
NATURE OF INTERLINKER	Software
ASSOCIATED INTERLINKERS	● "Registration and Authentication" INTERLINKER ● "Loyalty, incentives and rewards" INTERLINKER
USAGE CONTEXT	● administrative: national (Latvia, Italy) and local level (Zaragoza) ● organizational: public and private users ● domain: any co-production domain ● process: C2G, G2C, C+G
CONSTRAINTS AND LIMITATIONS	*(Specific requirements and properties constraining the usage and exploitation of the INTERLINKER)*
REGULATIONS AND STANDARDS	*(Legal and technical context, where the INTERLINKER operates, as a set of relevant, normative acts, policies, standards, and specification the INTERLINKER adheres to)*

IMPLEMENTATION PROPERTIES	• Open-Source software • Software-as-a-Service • UI-based tool and API (REST) • Operational environment: Web based • For the On-premise software, the characteristics for the deployment requirements, being hardware and software environment required • Documentation of the API as Open API 3.0 • API structure following formalized specification • Support for Internationalization • Conformance to the legal regulations and standards
CUSTOMIZATION PROPERTIES	Customization available to select languages
INTEGRATION PROPERTIES	• Authentication / authorization standards used • Interoperability standards

The MEF pilot use case requires several **knowledge INTERLINKERs** which are pilot-agnostic. This explains why its description can be encountered in section 2.4. INTERLINK cross-pilot co-production-supporting INTERLINKERs

2.1.5. Public service co-produced in MEF pilot

MEF's pilot will not be a traditional Public Service in itself, as it will not be open to all citizens or actors. However, it will engage key stakeholders for MEF, in order to collect their expectations and feedback on the process of co-designing a PSPM mock-up. By the end of the first phase of co-design, MEF will assess the information collected and address the more suited inputs and requests in order to provide a PSPM mock-up.

2.2. Latvian use case (VARAM)

VARAM, the Ministry of Environmental Protection and Regional Development of the Republic of Latvia Latvian State Portal (https://latvija.lv/EN), which is a portal that provides easy access to services delivered by state and local government institutions. Its aim is to continuously update and enhance such portal so that the public services published are increasingly adopted.

2.2.1. High level requirements of Latvian use case

Table 7. High-level requirements for the Latvian Use Case

Goal	VARAM, has the goal to improve the provision of unified municipal services through the improvement of the service descriptions available on the Latvian State

	Portal (https://latvija.lv/EN). The ambition is to make these descriptions more useful and accessible, since many citizens still rely on physical consultation of services through CSC (Unified State and Municipal Customer Service Centres) and respective administrations of the municipalities of their residence.
Stakeholders	- VARAM: the Ministry of Environmental Protection and Regional Development of the Republic of Latvia - CSCs: Unified State and Municipal Customer Service Centres (CSCs) - VRAA: State Regional Development Agency - Local governments - Digital agents: they have the goal of transmitting information to the public in a readily and comprehensible manner, including advice on the safe use of the Internet, and assisting the use of digital services - Non-governmental organisations - Citizens
Service(s) that will be co-produced	Through INTERLINK, the co-production team will improve service descriptions available on the State Service portal. The improvement of these service descriptions are meant to facilitate citizens' access to public services available from the Latvian State Portal. The INTERLINK collaborative environment will be used by the network of stakeholders to define new richer service descriptions and new content will be created to better describe services, thus digitally supporting the improvement of an information public service.
High-level requirements	For the VARAM use case, a collaborative environment to engage stakeholders in the discussion and definition of new service descriptions should be deployed. Among the envisioned features are: discussion channels, feedback collection, documentation sharing, progress monitoring. A set of INTERLINKERs has been identified as key potential enablers: *Servicepedia*: INTERLINKER which allows the co-production team to annotate web documents with comments, questions, answers, terms which can be browsed, queried or even suggested to users when accessing different parts of a web document. The annotations can be voted, commented, extended by other users in a Wiki-like manner. *Incentives and rewards*: Sustain participants engagement in the long-term and reward participation. *Quality of Service surveys*: Survey to monitor and assess the quality of the co-delivered service. *Partnership enablers*: administrative and legal support, partnership tools to help stakeholders in identifying roles and responsibilities and guidelines to manage external agents participation in public services co-delivery.

2.2.1. Relationships between personas mediated by INTERLINK enablers

As reflected in "Appendix A - Relevant personas for the INTERLINK use cases", the Personas engaged in the VARAM use case are:

- Anna: VARAM representative, national government;

- Ilze: CSC (Unified State and Municipal Customer service centre) employee, local government;
- Katrina: librarian and Digital Agent, local government;
- Andris: client, citizen, salesperson;
- Ieva: client, retired citizen.

Next, the diagram (Figure 11) depicting the relationship between Personas and envisaged INTERLINKERs is offered:
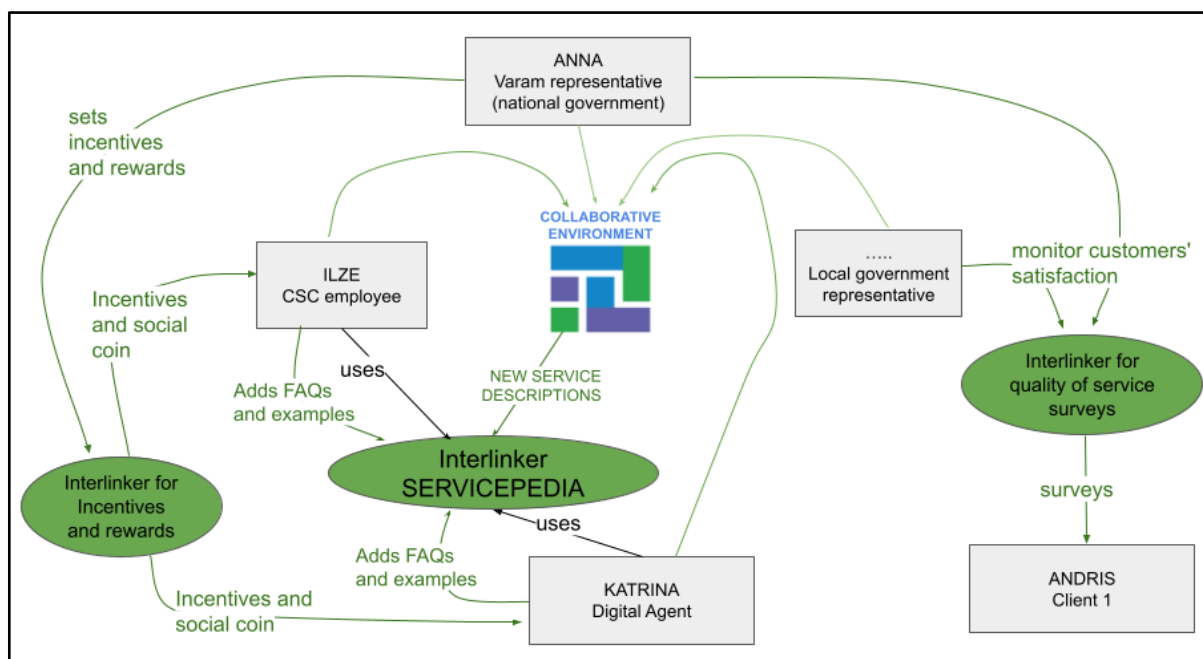
Figure 11. Relationship among Personas and INTERLINKERs in VARAM

2.2.2. Envisaged steps of co-production scenario

Table 8 illustrates how each co-production phase is planned to be carried out in the Ministry of Environmental Protection and Regional Development - Latvia use case, with the support of the collaborative environment tool.

Table 8. Co-production process in Latvian Use Case

PHASES	STEPS OF CO-PRODUCTION SCENARIO	SUPPORT PROVIDED BY INTERLINK PLATFORM
ENGAGEMENT	- VARAM starts the co-production initiative - Gathers the network of interested stakeholders (local PAs, representatives of CSC employees, representatives of Digital Agents) - They set the goals of the co-production project	Steps supported by the INTERLINKER collaborative environment and Stakeholders

	and its work plan ● They specify current issues with service descriptions and internal KB to give context to the problem to be solved	mapping INTERLINKERs
DESIGN	● They collaboratively agree on a template for high-quality service description, the template for FAQ structure and the type of examples	Steps supported by the INTERLINKER collaborative environment
	● They decide to pilot test a Servicepedia, one of the reusable INTERLINKERs available inside the INTERLINK platform	Selection of "Servicepedia" INTERLINKER available in the INTERLINKER catalogue
IMPLEMENTATION	● The Servicepedia component is prepared to be used in the VARAM use case context	INTERLINK technological components offer a configuration procedure for their reuse
	● Members of the stakeholders network need to be trained on the use of the Servicepedia	Steps supported by INTERLINK collaborative environment and knowledge enablers
	● National or local PAs select a set of services for which new descriptions are required ● CSCs and Digital Agents can give opinions on which are the candidate services ● A collaborative and iterative process of description preparation is initiated	Steps supported by the INTERLINK collaborative environment
	● When service descriptions are agreed upon, they are uploaded in the Servicepedia ● CSC employees and Digital Agents add new FAQs and new examples that emerge from their dialogue with citizens	Functionalities supported by the "Servicepedia" INTERLINKER
SUSTAINABILITY	● Incentives to encourage contributions to the Servicepedia are put in place for the sustainability of the process in the long-term ● Methods to reward contributors are defined to improve their engagement	Use of "Incentives and social coin" INTERLINKER enabler available in the INTERLINKER catalogue
	● Periodic quality checks are performed via quality-of-service surveys	Use of "Quality-of-service surveys" INTERLINKER available in the INTERLINKER catalogue

2.2.3. INTERLINKERS demanded to execute the pilot

This section provides details about the 3 main INTERLINKERs that will be demanded for the correct execution of the VARAM use case:

1. **Servicepedia** – this is a complex INTERLINKER which is divided into Description Augmenter sub-INTERLINKER and Collaborative Editor sub-INTERLINKER. As a matter of fact, it may also include another optional sub-INTERLINKER, named Service Publisher. In the scope of this iteration, only the first two will be made available.
2. **Quality of Service** – this INTERLINKER allows to perform periodic quality checks via quality-of-service surveys. Such surveys will help assess the quality of the co-delivered service. This INTERLINKER might be used in all pilots, it is indeed a generic one.
3. **Incentives and Social Coin** – INTERLINKER to manage incentives to encourage and reward contributions to the Servicepedia to ensure wider engagement and for the sustainability of the process in the long-term. This INTERLINKER can be considered as a partnership enabler fostering particularly the CO-DELIVERY phase of co-production. Again is a generic INTERLINKER which will be used in the other pilots. As a matter of fact and since this INTERLINKER is also demanded on other pilots, the description of this INTERLINKER has been moved to 2.4. INTERLINK cross-pilot co-production-supporting INTERLINKERs.

Table 9. Collaborative Descriptor INTERLINKER

Property	Value
NAME	**COLLABORATIVE DESCRIPTOR**
DESCRIPTION	INTERLINKER which supports the collaborative creation of effective service descriptions that can be useful (i) for the daily work of people who provide information about the services to the public and (ii) for citizens and other end-users of the services. The enabler can also be used to collaboratively create other types of descriptions related to public procedures and processes (good practices in government). It supports the definition of templates of good descriptions to be reused uniformly across a catalogue of similar services or good practices from the same Public Administration. It conforms to standards for service descriptions to guarantee a degree of cross-domain and cross-border interoperability between public service catalogues. It offers agile methods for searching and browsing through the available information that is facilitated by standard classifications of public services and processes. The INTERLINKER also monitors how information is accessed to derive data on quality and usefulness of the service. Although the Collaborative Descriptor has been primarily thought as a tool to enhance web-based service descriptions, it can be also used to collaboratively edit contents and track contributions from users.
RELEVANT PROBLEM PROFILES	BUILD.PROBLEM.1 - Collaborative knowledge sharing on public processes and services (Servicepedia & Good-Practicepedia)
STAKEHOLDERS	Employees of Community Service Centers (CSCs), Digital agents, citizens (for the VARAM use case scenario); employees of national and local Public Administrations (for the MEF use case scenario); employees of public innovation hubs, citizens (for the ZGZ

Property	Value
	use case scenario)
TYPE OF INTERLINKER	Enabling Service
NATURE OF INTERLINKER	Software
ASSOCIATED INTERLINKERS	● "Descriptions Augmenter" INTERLINKER ● "Registration and Authentication" INTERLINKER ● "Loyalty, incentives and rewards" INTERLINKER
USAGE CONTEXT	● administrative: national (Latvia, Italy) and local level (Zaragoza) ● organizational: public and private users ● domain: description of public services, description of good practices, description of available resources and services for an innovation lab ● process: Citizen sourcing (C2G): government designs and delivers a service, but asks citizens for the voluntary commitment of resources to improve the service itself, such as their voluntary labour or their personal data
CONSTRAINTS AND LIMITATIONS	*(Specific requirements and properties constraining the usage and exploitation of the INTERLINKER)*
REGULATIONS AND STANDARDS	*(Legal and technical context, where the INTERLINKER operates, as a set of relevant, normative acts, policies, standards, and specification the INTERLINKER adheres to)* ● Standard for classification of public services: the European Taxonomy for Public Services (https://joinup.ec.europa.eu/sites/default/files/news/2019-09/ISA2_European%20taxonomy%20for%20public%20services.pdf) ● Implementation based on Public Service Description Creator and CPSV-AP Data Validator documented at https://joinup.ec.europa.eu/collection/semantic-interoperability-community-semic/cpsv-ap-tools#Implementations
(for software) IMPLEMENTATION PROPERTIES	● Open Source software ● Software-as-a-Service ● UI-based tool and API (REST) ● Operational environment: Web based ● Documentation of the API as Open API 3.0 ● Support for Internationalization ● Conformance to the legal regulations and standards
(for software) CUSTOMIZATION PROPERTIES	Customization available to configure the service to specific PA portals Customization available to select languages

Next, the **Description Augmenter** is shown:

Table 10. Description Augmenter INTERLINKER

Property	*Value*
INTERLINKER NAME	**DESCRIPTION AUGMENTER**

DESCRIPTION	INTERLINKER which allows to annotate web documents with comments, questions, answers, terms which can be browsed, queried or even suggested to users when accessing to different parts of a web document. The annotations can be voted, commented, extended by other users in a Wiki-like manner.
RELEVANT PROBLEM PROFILES	BUILD.PROBLEM.1 - Collaborative knowledge sharing on public processes and services (Servicepedia & Good-Practicepedia)
STAKEHOLDERS	Employees of Community Service Centers (CSCs), Digital agents, citizens,
TYPE OF INTERLINKER	Enabling Service
NATURE OF INTERLINKER	Software
ASSOCIATED INTERLINKERS	"Collaborative Descriptor" INTERLINKER "Registration and Authentication" INTERLINKER "Loyalty, incentives and rewards" INTERLINKER
USAGE CONTEXT	- administrative: national (Latvia, Italy) and local level (Zaragoza) - organizational: public and private users - domain: description of public services, description of good practices, description of available resources and services for an innovation lab - process: Citizen sourcing (C2G): government designs and delivers a service, but asks citizens for the voluntary commitment of resources to improve the service itself, such as their voluntary labour or their personal data
CONSTRAINTS AND LIMITATIONS	*(Specific requirements and properties constraining the usage and exploitation of the INTERLINKER)*
REGULATIONS AND STANDARDS	*(Legal and technical context, where the INTERLINKER operates, as a set of relevant, normative acts, policies, standards, and specification the INTERLINKER adheres to)*
IMPLEMENTATION PROPERTIES	- Open Source software - Software-as-a-Service - UI-based tool and API (REST) - Operational environment: Web based - For the On-premise software, the characteristics for the deployment requirements, being hardware and software environment required - Documentation of the API as Open API 3.0 - Support for Internationalization - Conformance to the legal regulations and standards
CUSTOMIZATION PROPERTIES	Customization available to configure the service to specific PA portals Customization available to select languages

Next, the **Quality of Service** is shown:

Table 11. Quality of Service INTERLINKER

Property	Value
INTERLINKER NAME	**Quality of Service**
DESCRIPTION	INTERLINKER that allows periodic quality control through quality of service surveys. It supports the creation of brief questionnaires that can be useful for end users and technical teams to evaluate the quality of the resource provided. This INTERLINKER allows for the definition of new questionnaires, retrieve those questionnaires and collect their associated responses. In addition, it enables the reuse of questionnaires in the evaluation of similar services.
RELEVANT PROBLEM PROFILES	VAL.PROBLEM.1 - Define evaluation criteria VAL.PROBLEM.5 - Monitoring and ongoing evaluation of the service co-delivered
STAKEHOLDERS	Employees of Community Service Centers (CSCs), Digital agents (for the VARAM use case scenario); employees of national and local Public Administrations (for the MEF use case scenario); employees of public innovation hubs (for the ZGZ use case scenario).
TYPE OF INTERLINKER	Enabling Service
NATURE OF INTERLINKER	Software
ASSOCIATED INTERLINKERS	● "Registration and Authentication" INTERLINKER ● This INTELINKER may instrument any other INTERLINKER or public service from which feedback wants to be retrieved
USAGE CONTEXT	● administrative: national (Latvia, Italy) and local level (Zaragoza) ● organizational: public and private users
CONSTRAINTS AND LIMITATIONS	*(Specific requirements and properties constraining the usage and exploitation of the INTERLINKER)*
REGULATIONS AND STANDARDS	*(Legal and technical context, where the INTERLINKER operates, as a set of relevant, normative acts, policies, standards, and specification the INTERLINKER adheres to)*
IMPLEMENTATION PROPERTIES	● Open Source software ● Software-as-a-Service ● UI-based tool and API (REST) ● Operational environment: Web based ● For the On-premise software, the characteristics for the deployment requirements, being hardware and software environment required ● Documentation of the API as Open API 3.0 ● Support for Internationalization ● Conformance to the legal regulations and standards

CUSTOMIZATION PROPERTIES	Customization available to select languages Customization available to adequate the look and feel of other INTERLINKERs or public services within which is integrated.

2.3. ZARAGOZA

2.3.1. High level requirements of Zaragoza use case

The City of Zaragoza (ZGZ) and its Center for Art and Technology (eTOPIA_), aims at promoting collaborative city-making facilities and programs and at improving the process of Open Innovation in the city.

Table 12. High-level requirements for the Zaragoza Use Case

Goal	eTOPIA_ needs communication and co-creation tools so that the different stakeholders involved in the co-creation of new public services and initiatives (SMEs, startups, entrepreneurs, social collectives, citizens) can collaborate in particular in the co-development, co-maintenance and co-exploitation phases of the resulting new services.
Stakeholders	• Zaragoza (ZGZ) is the capital city of the Zaragoza province and of the autonomous community of Aragón • eTOPIA_: an innovative centre for art & technology that includes both a) an Open Urban Lab, where a quadruple helix approach for innovation around Smart City & Government takes place, and b) La Terminal to incubate new companies. • Citizens • City Hall • Academia • Business (SMEs, Industry) • Civic fabric (schools, neighborhood associations, etc.) • Artists-creators (visual, media, etc.)
Service(s) that will be co-produced	Different types of co-produced services are envisaged for the Zaragoza Use Case, as resulting from the collaborative co-creation of activities exploiting eTOPIA_ facilities. An example scenario is the co-production through INTERLINK of a new school programme on Artificial Intelligence that a secondary school will co-design and co-deliver through teachers and students' engagement and by exploiting the resources and facilities of the eTOPIA_ center (facilities, equipment, mentorship).
High-level requirements	For the Zaragoza use case, a module is required to support heterogenous stakeholders (e.g. citizens, eTOPIA_ staff, PAs, private companies) in collaboratively defining new services, activities and initiatives offered from eTOPIA_ and for customizing existing services for specific uses. Specific foreseen INTERLINKERs are: • *Resource management*: module for the reservation of places and resources assigned to each activity programmed in eTOPIA_. • *Activity booking*: module for booking activities and programs. Through this module external actors / eTOPIA_ audience can: a) Book activities; b) Pay

	activities; c) Propose changes to activities and d) Propose new ad hoc programs/activities/events. ● *Engagement tracker*: module to manage feedback received from visitors of eTOPIA_ plus analysis of attendance and registration rates. ● *Loyalty module*: module to reward participation of citizens in collaborative activities and long-term engagement.

2.3.2. Relationships between personas mediated by INTERLINK enablers

As reflected in "Appendix A - Relevant personas for the INTERLINK use cases", the Personas engaged in the ZARAGOZA use case are:

● Laura: eTOPIA_ cultural manager
● Anabel : eTOPIA_ facility manager
● Raúl : principal of a secondary school
● Julián engaged citizen, regular of eTOPIA_ activities

Next, the diagram (Figure 12) depicting relationships between personas mediated by the foreseen INTERLINK enablers during the engagement and design phases of the INTERLINK promoted co-production process are shown:
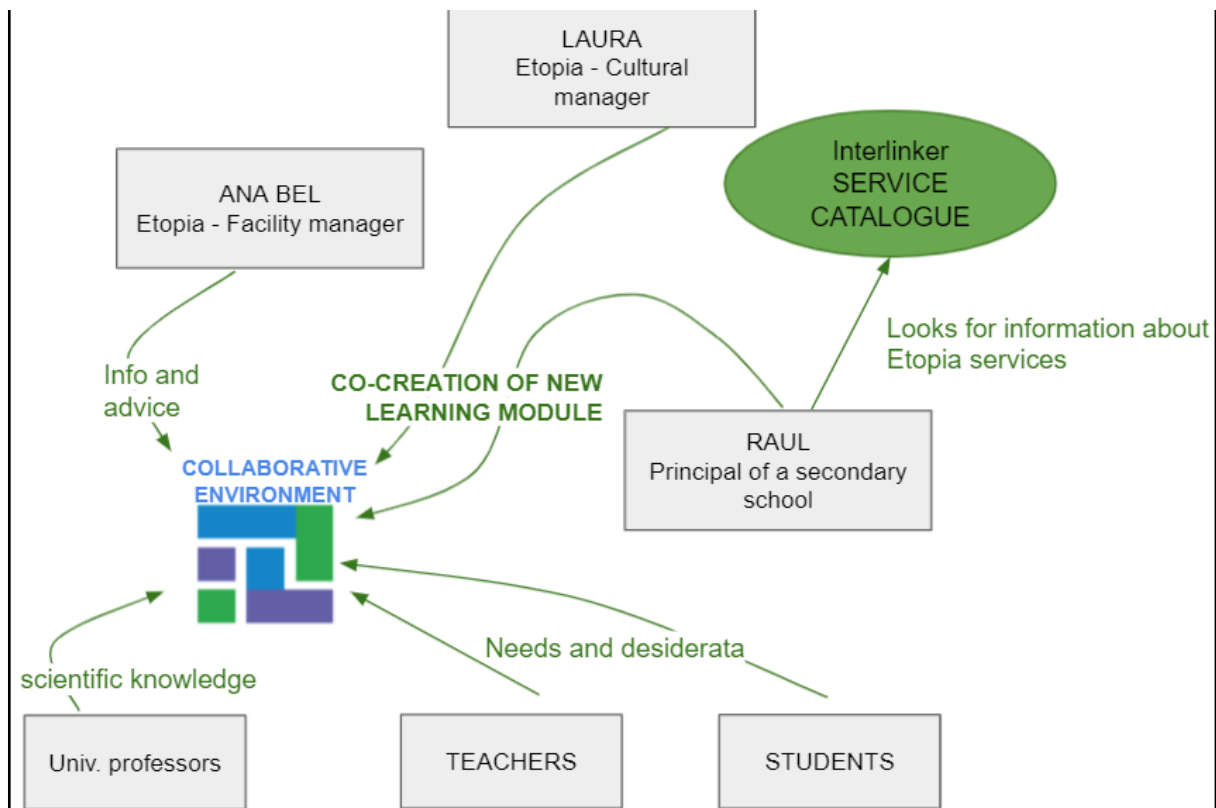
Figure 12. Relationship among Personas and INTERLINKERs in Zaragoza's ENGAGEMENT and DESIGN stages

Figure 13 shows the relationships between personas mediated by INTERLINK enablers during the implementation and sustainability phase:
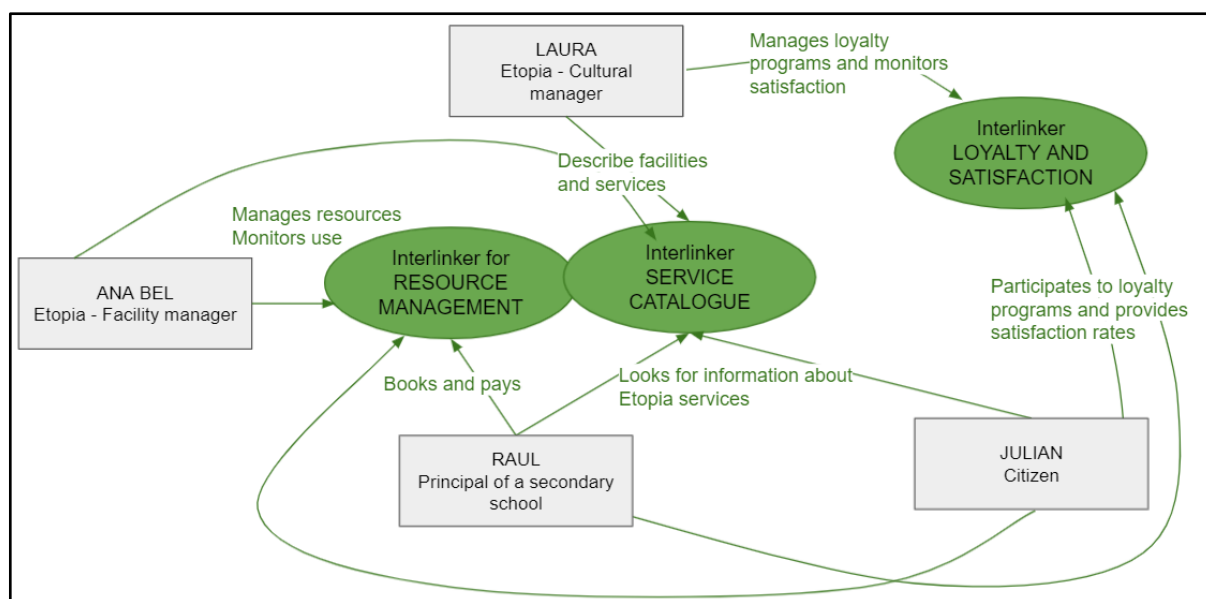
Figure 13. Relationship among Personas and INTERLINKERs in Zaragoza's IMPLEMENTATION and SUSTAIN stages

2.3.3. Envisaged steps of co-production scenario

Table 13 illustrates how each co-production phase is planned to be carried out in the ZARAGOZA use case, with the support of the collaborative environment tool.

This scenario is an example of how a co-production process might be structured when the process is launched by an actor external to eTOPIA_, in this case Raul, the principal of a school. Other scenarios have been envisaged for Zaragoza use case in which the process is launched by the eTOPIA_'s internal staff.

Table 13. Co-production process in Zaragoza Use Case

PHASES	STEPS OF CO-PRODUCTION SCENARIO	SUPPORT PROVIDED BY INTERLINK PLATFORM
ENGAGEMENT	● Raul aims at co-producing a new learning module for his school exploiting eTOPIA_'s facilities (e.g. Artificial Intelligence Lab) and launches a co-production process. ● The network of interested stakeholders become aware of the initiative and join the process (e.g. eTOPIA_ staff, teachers, mentors).	Steps supported by the INTERLINK collaborative environment INTERLINKERs for stakeholders' engagement.
	● Raul understands which is the eTOPIA_'s offer (e.g. mentorship program, equipements, etc).	INTERLINKER "Service catalogue" is used to understand eTOPIA_'s offer.
DESIGN	● The team follows a process with clear steps and tasks to discuss, ideate and launch the new learning module. ● The team collaboratively defines the new module: description of the initiative, content, resources needed, communication strategy, prices, etc. ● They set the goals of the co-production project and its workplan.	Steps supported by the INTERLINKER collaborative environment and by specific knowledge INTERLINKERs that support the team from ideas selection to ideas funding (e.g. template for ideas proposals, ideas collection and validation).
	● eTOPIA_'s facility manager and program manager identify the internal resources needed for the launch of new activities (e.g. define the spaces in which activities for schools will take place).	INTERLINKER for "resource management"
IMPLEMENTATION	● The learning module co-designed by the team is delivered to selected classes of students. eTOPIA_'s facilities are available for use and manage in order to support the delivery of the learning module (e.g. booking of equipment, spaces and other facilities).	INTERLINKER for "resource management" is used to manage internal resources (places, equipment). INTERLINKER for "activity booking" is used to book and pay for eTOPIA_'s offer.

SUSTAINABILITY	● The impact and the user satisfaction related to the new learning module and to the eTOPIA_'s facilities are monitored and evaluated. Internal eTOPIA_ staff follow up (and/or track) the audience, generate satisfaction surveys about the services and activities launched by eTOPIA_, and reward participants.	INTERLINKERs for "quality of service" monitoring and engagement tracking are used to assess the quality of service. The "loyalty module" is used to track, sustain, and reward participants' engagement in the long-term.
	● The new learning module is available for re-use by other schools and institutions. The offer is published on the eTOPIA_s' service catalogue.	The service catalogue is updated with a new offer.

2.3.4. INTERLINKERS demanded to execute the pilot

This section provides details about the 4 main INTERLINKERs that will be demanded for the correct execution of the ZARAGOZA use case:

1. **Resource management** -- INTERLINKER for the reservation of places and resources assigned to each activity programmed in eTOPIA_.
2. **Activity booking** -- INTERLINKER for booking activities and programs. Through this module external actors / eTOPIA audience can: a) Book activities; b) Pay activities; c) Propose changes to activities and d) Propose new ad hoc programs/activities/events.
3. **Engagement tracker module** - INTERLINKER to manage feedback received from visitors of eTOPIA plus analysis of attendance and registration rates. Closely linked to INTERLIKER specified for VARAM, named "Quality of Service Module".
4. **Loyalty module** -- INTERLINKER to reward participation of citizens in collaborative activities and long-term engagement. Closely linked to INTERLIKER specified for VARAM, named "Incentives and social coin module". This explains why its description can be located at 2.4. INTERLINK cross-pilot co-production-supporting INTERLINKERs.

Table 14. Resource Management INTERLINKER

Property	Value
INTERLINKER NAME	**Resource Management**
DESCRIPTION	INTERLINKER which allows to reserve places and resources assigned to each activity programmed in eTOPIA
RELEVANT PROBLEM PROFILES	BUILD.PROBLEM.10 Management of public resources

STAKEHOLDERS	Public administrators of eTOPIA, employees of public innovation hubs, citizens (ZGZ use case scenario)
TYPE OF INTERLINKER	Enabling Service
NATURE OF INTERLINKER	Software
ASSOCIATED INTERLINKERS	● "Registration and Authentication" INTERLINKER
USAGE CONTEXT	- local level (Zaragoza) - organizational: public and private users - domain: description of public resources, reservation of such resources - process: Citizen sourcing (C2G): government designs and delivers a service, but asks citizens for the voluntary commitment of resources to improve the service itself, such as their voluntary labour or their personal data
CONSTRAINTS AND LIMITATIONS	*(Specific requirements and properties constraining the usage and exploitation of the INTERLINKER)*
REGULATIONS AND STANDARDS	*(Legal and technical context, where the INTERLINKER operates, as a set of relevant, normative acts, policies, standards, and specification the INTERLINKER adheres to)*
IMPLEMENTATION PROPERTIES	● Open Source software ● Software-as-a-Service ● UI-based tool and API (REST) ● Operational environment: Web based ● For the On-premise software, the characteristics for the deployment requirements, being hardware and software environment required ● Documentation of the API as Open API 3.0 ● Support for Internationalization ● Conformance to the legal regulations and standards
CUSTOMIZATION PROPERTIES	Customization available to configure the service to specific PA portals (Wordpress environment of eTOPIA_) Customization available to select languages
INTEGRATION PROPERTIES	● Authentication / authorization standards used ● Interoperability standards ● Wordpress site of eTOPIA_

Table 15. Activity Booking INTERLINKER

Property	*Value*
INTERLINKER NAME	**Activity Booking**

DESCRIPTION	INTERLINKER for booking activities and programs. Through this module external actors / Etopia audience can: a) Book activities; b) Pay for activities; c) Propose changes to activities and d) Propose new ad hoc programs/activities/events
RELEVANT PROBLEM PROFILES	BUILD.PROBLEM.11. Activity booking and payment
STAKEHOLDERS	Public administrators of eTOPIA_, employees of public innovation hubs, citizens (ZGZ use case scenario)
TYPE OF INTERLINKER	Enabling Service
NATURE OF INTERLINKER	Software
ASSOCIATED INTERLINKERS	"Registration and Authentication" INTERLINKER "Loyalty, incentives and rewards" INTERLINKER
USAGE CONTEXT	- local level (Zaragoza) - organizational: public and private users - domain: booking and payment for activities - process: Citizen sourcing (C2G): government designs and delivers a service, but asks citizens for the voluntary commitment of resources to improve the service itself, such as their voluntary labour or their personal data
CONSTRAINTS AND LIMITATIONS	- Authentication / authorization standards used - Interoperability standards
REGULATIONS AND STANDARDS	*(Legal and technical context, where the INTERLINKER operates, as a set of relevant, normative acts, policies, standards, and specification the INTERLINKER adheres to)*
IMPLEMENTATION PROPERTIES	- Open Source software - Software-as-a-Service - UI-based tool and API (REST) - Operational environment: Web based - For the On-premise software, the characteristics for the deployment requirements, being hardware and software environment required - Documentation of the API as Open API 3.0 - Support for Internationalization - Conformance to the legal regulations and standards
CUSTOMIZATION PROPERTIES	Customization available to configure the service to specific PA portals Customization available to select languages
INTEGRATION PROPERTIES	- Authentication / authorization standards used - Interoperability standards - Wordpress site of eTOPIA_

2.3.5. Shared INTERLINKERs with other pilots

For the ZGZ pilot case the following two INTERLINKERs will be shared with the other pilots. The descriptions of this common INTERLINKERs can be encountered at 2.4. INTERLINK cross-pilot co-production-supporting INTERLINKERs.

1. **Engagement tracker module** - INTERLINKER to manage feedback received from visitors of eTOPIA_ plus analysis of attendance and registration rates. Closely linked to INTERLINKER specified for VARAM, named "Quality of Service". The combination of the statistics gathered from activity booking INTERLINKER with the customization of "Quality of Service" INTERLINKER to ZGZ purpose will provide the functionality of this envisaged INTERLINKER.
2. **Loyalty module** -- INTERLINKER to reward participation of citizens in collaborative activities and long-term engagement. Closely linked to INTERLINKER specified for VARAM, named "Incentives and social coin". As a matter of fact, the same INTERLINKER will be used. However, in Zaragoza case it is possible that integration with ZGZ Citizen Card might need to be carried out.

2.3.6. Public service co-created in Zaragoza pilot

In the case of Zaragoza, a new public service which orchestrates the INTERLINKERs identified in the previous section will be needed. The name of this public service is **"eTOPIA activity co-creation and management"**. This new public service will leverage, on one hand, the collaborative environment functionalities, whilst, on the other hand, will exploit the resource management, activity booking and tracking and loyalty module, to open the co-production of activities in the centre to the city.

Such a new public service will allow to define activities developed by eTOPIA_ internally and/co-developed with others. Activities will be programmed/proposed by eTOPIA_ or external actors (e.g. schools, companies,) defining:

- Description of the activity
- Content
- Resources needed
- Communication strategy
- Prices

The front-end of the public service will be integrated with the new website of eTOPIA_, based on Wordpress, clearly demonstrating how INTERLINKERs are orthogonal to public services and can be seamlessly integrated in already existing or newly created public services.

2.4. INTERLINK cross-pilot INTERLINKERs

The specification of above three pilots sheds light on the variety of co-production processes that INTERLINK is asked to support. Hence, the INTERLINK platform should be able to adapt to different co-production arrangements and provide guidance to users on the most appropriate way to approach and manage the process considering different aspects:

1. the *type of service* to be co-produced: since different types of services will be co-produced, INTERLINK should be able to provide guidance on the different resources and skills needed to co-produce the different services, considering, for instance that the design and deployment of an ICT-based service (such as in the case of MEF) requires different skills and resources with respect to co-produce a more traditional service (e.g. MEF vs ZGZ).

2. *Actors involved*: INTERLINK should be used by different users: National PAs (e.g. MEF and VARAM) as well as by citizens (e.g. ZGZ). This entails that the Interface should be flexible enough to be used by users that have previous experience in the co-production of services as well as by novice users with low familiarity with ICT and eGovernment concepts.

3. *Level of citizens participation and co-production stages in* which *they will be involved:* pilots differ also by the type of citizen engagement envisaged. Moreover, citizens are expected to contribute in different phases and with different goals.

A set of INTERLINKERs have been identified as being generic enough to be applicable to all pilot use cases. Consequently, next we detail those pilot-agnostic INTERLINKERs, starting with those of type KNOWLEDGE. Such INTERLINKERs cover diverse activities during the INTERLINK co-production process:

- Templates For Co-Production Team Communications
- Guidelines For Stakeholders Analysis
- Stakeholders Analysis Template
- Stakeholders Visual Map Canvas
- Tutorials For Co-Production Model and Supporting Tools
- Awareness Creation
- GDPR Regulations and GDPR Compliant Forms
- Workplan Scheduling
- Periodic Reporting
- Tools For Workshops Organization
- Tools For Interviews, Surveys and Task Analysis

Table 16. Stakeholder mapping and recruitment INTERLINKER

Property	Value
NAME	**Stakeholders' mapping and recruitment**

DESCRIPTION	It will support the MEF pilot coordination team and task force to identify, select and engage relevant actors within the process and plan their active involvement in the collaborative environment.
RELEVANT PROBLEM PROFILES	ORG.PROBLEM.5 – Stakeholders' engagement plan UND.PROBLEM.2 – Stakeholders' mapping
STAKEHOLDERS	- MEF Directorates - Other PAs Human Resources Department - DSII applications' operators and human resources - MEF Department Directors - MEF Data processors - MEF employees - Other PAs operators and managers
TYPE OF INTERLINKER	Enabling service
NATURE OF INTERLINKER	Knowledge
ASSOCIATED INTERLINKERS	- Guidelines For Stakeholders Analysis - Stakeholders Analysis Template - Stakeholders Visual Map Canvas
USAGE CONTEXT	- administrative: national (Latvia, Italy) and local level (Zaragoza) - organizational: public and private users - domain: any co-production domain - process: C2G, G2C, C+G
CONSTRAINTS AND LIMITATIONS	*(Specific requirements and properties constraining the usage and exploitation of the INTERLINKER)*
REGULATIONS AND STANDARDS	*(Legal and technical context, where the INTERLINKER operates, as a set of relevant, normative acts, policies, standards, and specification the INTERLINKER adheres to)*
FORM OF KNOWLEDGE	Digital visual template; printable version to support tangible interaction during focus groups
FORMAT	PPT

Next, the **Incentives and Social Coin** is shown:

Table 17. Incentives and Social Coin INTERLINKER

Property	Value
NAME	**Incentives and Social Coin**

DESCRIPTION	INTERLINKER to manage incentives to encourage and reward contributions (e.g. through the Servicepedia or other INTERLINKERs and public services) to ensure wider engagement and for the sustainability of the process in the long-term. It can be useful, for instance, for people who collaborate on the improvement of a description of a public service because it allows them to keep a measure of the effort, quality and quantity of their contributions. It also allows the definition of temporal campaigns aimed to increase the participation of experts and knowledgeable citizens, e.g. in the creation of correct descriptions of public services. Since it leverages the blockchain infrastructure, it can ensure the irrefutability, security and integrity of transactions.
RELEVANT PROBLEM PROFILES	ORG.PROBLEM.13 - Loyalty, incentives and rewards
STAKEHOLDERS	Employees of Community Service Centers (CSCs), Digital agents, citizens (for the VARAM use case scenario); employees of national and local Public Administrations (for the MEF use case scenario); employees of public innovation hubs, citizens (for the ZGZ use case scenario)
TYPE OF INTERLINKER	Enabling Service
NATURE OF INTERLINKER	Software
ASSOCIATED INTERLINKERS	● "Registration and Authentication" INTERLINKER
CONSTRAINTS AND LIMITATIONS	*(Specific requirements and properties constraining the usage and exploitation of the INTERLINKER)*
REGULATIONS AND STANDARDS	*(Legal and technical context, where the INTERLINKER operates, as a set of relevant, normative acts, policies, standards, and specification the INTERLINKER adheres to)*
(for software) IMPLEMENTATION PROPERTIES	● Open-Source software ● Software-as-a-Service ● UI-based tool and API (REST) ● Operational environment: Web based ● Documentation of the API as Open API 3.0 ● Support for Internationalization ● Conformance to the legal regulations and standards
(for software) CUSTOMIZATION PROPERTIES	Customization available to configure the service to specific PA portals Customization available to select languages

(for software) **INTEGRATION PROPERTIES**	*(Characterization of the tool with respect to its integration with other software and components:* ● *Authentication / authorization standards used;* ● *Interoperability standards;* ● *Reference data models in the EU context.)* ……...

Table 18. Templates for co-production team communications INTERLINKER

Property	Value
NAME	**Templates for co-production team communications INTERLINKER**
DESCRIPTION	This INTERLINKER provides practical templates and tips for preparing periodic communications within a co-production project, tailored for the different stages of project advancement: ● presentation of the co-production project (use case) ● invitation for onboarding stakeholders ● call for participation to a specific activity ● periodic communication of progress and results
RELEVANT PROBLEM PROFILES	ORG.PROBLEM.4 - Team communication for co-production
STAKEHOLDERS	PAs and Private organizations initiating a co-production process
TYPE OF INTERLINKER	Enabling Service
NATURE OF INTERLINKER	Knowledge INTERLINKER
ASSOCIATED INTERLINKERS	● Software tools for communications ● Templates for Communications to inform the public/citizens
USAGE CONTEXT	● administrative: any (international, national and local level) ● organizational: public and private users ● domain: any co-production process ● process: any
CONSTRAINTS AND LIMITATIONS	*(Specific requirements and properties constraining the usage and exploitation of the INTERLINKER)*
REGULATIONS AND STANDARDS	*(Legal and technical context, where the INTERLINKER operates, as a set of relevant, normative acts, policies, standards, and specification the INTERLINKER adheres to)*
FORM OF KNOWLEDGE	Digital document containing instructions and communication templates

FORMAT	Docx

Table 19. Guidelines for stakeholders analysis INTERLINKER

Property	Value
NAME	**Guideliens for stakeholders analysis**
DESCRIPTION	This INTERLINKER offers guidelines for managing the process of stakeholders mapping and analysis and for supporting the team in selecting relevant stakeholders, that is people directly or indirectly affected by the service or that can influence the service. Different types of stakeholders exist that have diverse motivations to participate, different skills and potential roles to play in the project: public authorities (public servants and politicians), citizens (potential end-users and experts), private businesses and non-profit organizations (SMEs, freelance, etc). Also different roles should be considered. The guidelines explain the importance of analyzing stakeholders motivations and potential incentives to participate: i) personal, ii) society, iii) financial, iv) governance, iv) research.
RELEVANT PROBLEM PROFILES	UND.PROBLEM.2 - Stakeholders mapping
STAKEHOLDERS	PAs and Private organizations initiating a co-production process
TYPE OF INTERLINKER	Enabling Service
NATURE OF INTERLINKER	Knowledge INTERLINKER
ASSOCIATED INTERLINKERS	● Stakeholders Analysis Template ● Stakeholders Visual Map Canvas
USAGE CONTEXT	● administrative: any (international, national and local level) ● organizational: public and private users ● domain: any co-production process ● process: any
CONSTRAINTS AND LIMITATIONS	*(Specific requirements and properties constraining the usage and exploitation of the INTERLINKER)*
REGULATIONS AND STANDARDS	*(Legal and technical context, where the INTERLINKER operates, as a set of relevant, normative acts, policies, standards, and specification the INTERLINKER adheres to)*
FORM OF KNOWLEDGE	The tool is in the form of a text containing instructions, tips and best practices
FORMAT	PDF

Table 20. Stakeholders analysis template INTERLINKER

Property	Value
NAME	**Stakeholders analysis template**
DESCRIPTION	This knowledge INTERLINKER provides a template document to identify and analyse the people, groups, and organizations that have a significant influence on the project direction and its success or who are significantly impacted by the project. The template helps the team in analysing stakeholders engagement according to different dimensions: 1. the desired or expected level of involvement 2. potential issues related to their engagement 3. motivations and barriers that can support you in finding the best strategy to engage them in the co-production process 4. expectations of the different stakeholders 5. skills and potential role within the co-production process 6. responsible person The template can be iteratively refined during different phases of the co-production process as the need to involve additional stakeholders emerge.
RELEVANT PROBLEM PROFILES	UND.PROBLEM.2 - Stakeholders mapping
STAKEHOLDERS	PAs and Private organizations initiating a co-production process
TYPE OF INTERLINKER	Enabling Service
NATURE OF INTERLINKER	Knowledge INTERLINKER
ASSOCIATED INTERLINKERS	● Guidelines for Stakeholders mapping ● Stakeholders Visual Map Canvas
USAGE CONTEXT	● administrative: any (international, national and local level) ● organizational: public and private users ● domain: any co-production process ● process: any
CONSTRAINTS AND LIMITATIONS	*(Specific requirements and properties constraining the usage and exploitation of the INTERLINKER)*
REGULATIONS AND STANDARDS	*(Legal and technical context, where the INTERLINKER operates, as a set of relevant, normative acts, policies, standards, and specification the INTERLINKER adheres to)*
FORM OF KNOWLEDGE	Digital document template
FORMAT	XLS, XLSX

Table 21. Stakeholders visual map canvas INTERLINKER

Property	Value
NAME	**Stakeholders visual map canvas**
DESCRIPTION	Mapping the stakeholders is crucial to have a clear view of which roles stakeholders can play in different stages of innovation, what could be their level of commitment and strategic importance. The stakeholders map (adapted from Silearning tools) is helpful for understanding the complexity of building relationships, realizing which connectors can be crucial for innovation development.
RELEVANT PROBLEM PROFILES	UND.PROBLEM.2 - Stakeholders mapping
STAKEHOLDERS	PAs and Private organizations initiating a co-production process
TYPE OF INTERLINKER	Enabling Service
NATURE OF INTERLINKER	Knowledge INTERLINKER
ASSOCIATED INTERLINKERS	● Guidelines for Stakeholders mapping ● Stakeholders analysis template
USAGE CONTEXT	● administrative: any (international, national and local level) ● organizational: public and private users ● domain: any co-production process ● process: any
CONSTRAINTS AND LIMITATIONS	*(Specific requirements and properties constraining the usage and exploitation of the INTERLINKER)*
REGULATIONS AND STANDARDS	*(Legal and technical context, where the INTERLINKER operates, as a set of relevant, normative acts, policies, standards, and specification the INTERLINKER adheres to)*
FORM OF KNOWLEDGE	Digital visual template; printable version to support tangible interaction during focus groups
FORMAT	PPT

Table 22. Tutorials for co-production model and supporting tools INTERLINKER

Property	Value
INTERLINKER NAME	**Tutorials for co-production model and supporting tools**

DESCRIPTION	INTERLINKER is useful to inform stakeholders during both the engagement and pilot execution phases about what INTERLINK and the INTERLINKERs are; tutorials also provide information about the use cases' goals and co-design scope. During the engagement phase they will be useful to make stakeholders aware about the project purposes, while during the implementation phase, tutorials will be useful to guide them in the pilot activities. Importantly they will cover how the co-production model of INTERLINK may be applied.
RELEVANT PROBLEM PROFILES	DEF.PROBLEM.1 - Guidelines for public service design
STAKEHOLDERS	Co-production team involved in co-production project. For example, for MEF use case, the network of stakeholders involved in the co-design of PSDM would be: ● MEF Directorates ● Other PAs Human Resources Department ● DSII applications' operators and human resources ● MEF Department Directors ● MEF Data processors ● MEF employees ● Other PAs operators and managers
TYPE OF INTERLINKER	Enabling Service
NATURE OF INTERLINKER	Knowledge INTERLINKER
ASSOCIATED INTERLINKERS	Awareness Creation
USAGE CONTEXT	● administrative: any (international, national and local level) ● organizational: public and private users ● domain: any co-production process ● process: any
CONSTRAINTS AND LIMITATIONS	*(Specific requirements and properties constraining the usage and exploitation of the INTERLINKER)*
REGULATIONS AND STANDARDS	*(Legal and technical context, where the INTERLINKER operates, as a set of relevant, normative acts, policies, standards, and specification the INTERLINKER adheres to)*
FORM OF KNOWLEDGE	Digital visual presentation
FORMAT	PPT or PDF

Table 23. Awareness Creation INTERLINKER

Property	Value
INTERLINKER NAME	**Awareness Creation**
DESCRIPTION	This INTERLINKER is meant to make stakeholders aware about the project and the use case, to capture their attention and hopefully engage them in the use case activities.
RELEVANT PROBLEM PROFILES	ORG.PROBLEM.10 - Inform the public
STAKEHOLDERS	Co-production team involved in co-production project. For example, for MEF use case would be for the co-design of PSPM: ● MEF Directorates ● Other PAs Human Resources Department ● DSII applications' operators and human resources ● MEF Department Directors ● MEF Data processors ● MEF employees ● Other PAs operators and managers
TYPE OF INTERLINKER	Enabling Service
NATURE OF INTERLINKER	Knowledge INTERLINKER
ASSOCIATED INTERLINKERS	
USAGE CONTEXT	● administrative: any (international, national and local level) ● organizational: public and private users ● domain: any co-production process ● process: any
CONSTRAINTS AND LIMITATIONS	*(Specific requirements and properties constraining the usage and exploitation of the INTERLINKER)*
REGULATIONS AND STANDARDS	*(Legal and technical context, where the INTERLINKER operates, as a set of relevant, normative acts, policies, standards, and specification the INTERLINKER adheres to)*

FORM OF KNOWLEDGE	Appealing dissemination materials in the form of leaflets, presentations and videos.
FORMAT	PDF, MP4

Table 24. GDPR Regulations and GDPR compliant forms

Property	Value
INTERLINKER NAME	**GDPR Regulations and GDPR compliant forms**
DESCRIPTION	INTERLINKER is useful to provide guidance on how to comply with GDPR and provide compliant forms to stakeholders.
RELEVANT PROBLEM PROFILES	ORG.PROBLEM.14 - Consent collection
STAKEHOLDERS	Co-production team involved in co-production project.
TYPE OF INTERLINKER	Enabling Service
NATURE OF INTERLINKER	Knowledge INTERLINKER
ASSOCIATED INTERLINKERS	
USAGE CONTEXT	- administrative: any (international, national and local level) - organizational: public and private users - domain: any co-production process - process: any
CONSTRAINTS AND LIMITATIONS	*(Specific requirements and properties constraining the usage and exploitation of the INTERLINKER)*
REGULATIONS AND STANDARDS	*(Legal and technical context, where the INTERLINKER operates, as a set of relevant, normative acts, policies, standards, and specification the INTERLINKER adheres to)*

FORM OF KNOWLEDGE	Printable version of information sheet and consent form.
FORMAT	PDF

Table 25. Workplan scheduling INTERLINKER

Property	Value
INTERLINKER NAME	**Workplan scheduling**
DESCRIPTION	This INTERLINKER is useful to schedule working plans, setting roles and responsibilities and to monitor the workplan actions. This Knowedge INTERLINKER should also be integrated in the collaborative environment, since wokplan planning is essential in every collaboration project.
RELEVANT PROBLEM PROFILES	ORG.PROBLEM.2 - Workplan and project management
STAKEHOLDERS	Co-production team involved in co-production project.
TYPE OF INTERLINKER	Enabling Service
NATURE OF INTERLINKER	Knowledge INTERLINKER
ASSOCIATED INTERLINKERS	Periodic Reporting
USAGE CONTEXT	● administrative: any (international, national and local level) ● organizational: public and private users ● domain: any co-production process ● process: any
CONSTRAINTS AND LIMITATIONS	*(Specific requirements and properties constraining the usage and exploitation of the INTERLINKER)*

REGULATIONS AND STANDARDS	*(Legal and technical context, where the INTERLINKER operates, as a set of relevant, normative acts, policies, standards, and specification the INTERLINKER adheres to)*
FORM OF KNOWLEDGE	Spreadsheet template where workplan can be defined and updated.
FORMAT	XLSX

Table 26. Tools for Workshops organization INTERLINKER

Property	Value
INTERLINKER NAME	**Tools for Workshops organization**
DESCRIPTION	All pilot sites have planned to organise workshops with stakeholders to discuss the functionalities or features of some of their newly co-produced artefacts and refine it accordingly. Tools to manage the process of input collection and decision making will be useful.
RELEVANT PROBLEM PROFILES	UND.PROBLEM.5 - Ideas crowdsourcing DEF.PROBLEM.3 - Organize a co-design workshop DEF.PROBLEM.5 - Define requirements and service specifications
STAKEHOLDERS	Co-production team involved in co-production project. For example, for MEF would be composed of: ● MEF Directorates ● Other PAs Human Resources Department ● DSII applications' operators and human resources ● MEF Department Directors ● MEF Data processors ● MEF employees ● Other PAs operators and managers
TYPE OF INTERLINKER	Enabling Service
NATURE OF INTERLINKER	Knowledge INTERLINKER

ASSOCIATED INTERLINKERS	Tools for Interviews, surveys and task analysis
USAGE CONTEXT	• administrative: any (international, national and local level) • organizational: public and private users • domain: any co-production process • process: any
CONSTRAINTS AND LIMITATIONS	*(Specific requirements and properties constraining the usage and exploitation of the INTERLINKER)*
REGULATIONS AND STANDARDS	*(Legal and technical context, where the INTERLINKER operates, as a set of relevant, normative acts, policies, standards, and specification the INTERLINKER adheres to)*
FORM OF KNOWLEDGE	Digital visual template; printable version to support tangible interaction with contents and guidelines to support workshop organizations
FORMAT	PPT, PDF

Table 27. Tools for interviews, surveys and task analysis INTERLINKERs

Property	Value
INTERLINKER NAME	**Tools for interviews, surveys and task analysis**
DESCRIPTION	These INTERLINKERs will be useful to collect information from stakeholders and help them to provide inputs.
RELEVANT PROBLEM PROFILES	UND.PROBLEM.3 - Data collection about users and their behavior (or user research) DEF.PROBLEM.5 - Define requirements and service specifications

STAKEHOLDERS	Co-production team involved in co-production project. For example, for MEF would be composed of: ● MEF Directorates ● Other PAs Human Resources Department ● DSII applications' operators and human resources ● MEF Department Directors ● MEF Data processors ● MEF employees ● Other PAs operators and managers
TYPE OF INTERLINKER	Enabling Service
NATURE OF INTERLINKER	Knowledge INTERLINKER
ASSOCIATED INTERLINKERS	"Registration and Authentication" INTERLINKER Tools for workshops organization
USAGE CONTEXT	● administrative: any (international, national and local level) ● organizational: public and private users ● domain: any co-production process ● process: any
CONSTRAINTS AND LIMITATIONS	*(Specific requirements and properties constraining the usage and exploitation of the INTERLINKER)*
REGULATIONS AND STANDARDS	*(Legal and technical context, where the INTERLINKER operates, as a set of relevant, normative acts, policies, standards, and specification the INTERLINKER adheres to)*
FORM OF KNOWLEDGE	Digital visual template; printable version to support tangible interaction during focus groups
FORMAT	PPT

The following cross-pilot INTERLINKERs have been identified which will be integrated within INTERLINK collaborative environment:

1. Discussion boards
2. Document sharing
3. Periodic reporting

Table 28. Discussion board INTERLINKER

Property	Value
INTERLINKER NAME	**Discussion board**
DESCRIPTION	INTERLINKER that allows users to discuss about different topics
RELEVANT PROBLEM PROFILES	ORG.PROBLEM.6.3 - Discussion board ORG.PROBLEM.4 - Team communication
STAKEHOLDERS	Members of a co-production team
TYPE OF INTERLINKER	Enabling Service
NATURE OF INTERLINKER	Software
ASSOCIATED INTERLINKERS	● "Registration and Authentication" INTERLINKER ● "Loyalty, incentives and rewards" INTERLINKER
USAGE CONTEXT	● administrative: national (Latvia, Italy) and local level (Zaragoza) ● organizational: public and private users ● domain: any co-production domain ● process: C2G, G2C, C+G
CONSTRAINTS AND LIMITATIONS	*(Specific requirements and properties constraining the usage and exploitation of the INTERLINKER)*
REGULATIONS AND STANDARDS	*(Legal and technical context, where the INTERLINKER operates, as a set of relevant, normative acts, policies, standards, and specification the INTERLINKER adheres to)*
IMPLEMENTATION PROPERTIES	● Open-Source software ● Software-as-a-Service ● UI-based tool and API (REST) ● Operational environment: Web based ● For the On-premise software, the characteristics for the deployment requirements, being hardware and software environment required ● Documentation of the API as Open API 3.0 ● API structure following formalized specification ● Support for Internationalization ● Conformance to the legal regulations and standards
CUSTOMIZATION PROPERTIES	Customization available to select languages

Property	Value
INTEGRATION PROPERTIES	● Authentication / authorization standards used ● Interoperability standards

Table 29. Document sharing INTERLINKER

Property	Value
INTERLINKER NAME	**Document sharing**
DESCRIPTION	INTERLINKER that allows sharing documents such as .docx .pptx .xlsx files
RELEVANT PROBLEM PROFILES	ORG.PROBLEM.6.1 - Document collaboration
STAKEHOLDERS	Members of a co-production team
TYPE OF INTERLINKER	Enabling Service
NATURE OF INTERLINKER	Software
ASSOCIATED INTERLINKERS	● "Registration and Authentication" INTERLINKER ● "Loyalty, incentives and rewards" INTERLINKER
USAGE CONTEXT	● administrative: national (Latvia, Italy) and local level (Zaragoza) ● organizational: public and private users ● domain: any co-production domain ● process: C2G, G2C, C+G
CONSTRAINTS AND LIMITATIONS	*(Specific requirements and properties constraining the usage and exploitation of the INTERLINKER)*
REGULATIONS AND STANDARDS	*(Legal and technical context, where the INTERLINKER operates, as a set of relevant, normative acts, policies, standards, and specification the INTERLINKER adheres to)*
IMPLEMENTATION PROPERTIES	● Open-Source software ● Software-as-a-Service ● UI-based tool and API (REST) ● Operational environment: Web based ● For the On-premise software, the characteristics for the deployment requirements, being hardware and software environment required ● Documentation of the API as Open API 3.0 ● API structure following formalized specification ● Support for Internationalization ● Conformance to the legal regulations and standards

CUSTOMIZATION PROPERTIES	Customization available to select languages
INTEGRATION PROPERTIES	● Authentication / authorization standards used ● Interoperability standards

Table 30. Periodic reporting INTERLINKER

Property	*Value*
INTERLINKER NAME	**Periodic reporting**
DESCRIPTION	To track the use case progress and next steps. This Knowledge INTERLINKER should also be integrated in the collaborative environment as a Software INTERLINKER, since progress tracking is essential in every collaboration project.
RELEVANT PROBLEM PROFILES	ORG.PROBLEM.2 - Workplan and project management
STAKEHOLDERS	Co-production team involved in co-production project.
TYPE OF INTERLINKER	Enabling Service
NATURE OF INTERLINKER	Knowledge INTERLINKER
ASSOCIATED INTERLINKERS	Workplan scheduling
USAGE CONTEXT	● administrative: any (international, national and local level) ● organizational: public and private users ● domain: any co-production process ● process: any
CONSTRAINTS AND LIMITATIONS	*(Specific requirements and properties constraining the usage and exploitation of the INTERLINKER)*
REGULATIONS AND STANDARDS	*(Legal and technical context, where the INTERLINKER operates, as a set of relevant, normative acts, policies, standards, and specification the INTERLINKER adheres to)*

FORM OF KNOWLEDGE	Spreadsheet template where progress can be reported. Document template where progress reports can be written. Repository where files can be stored.
FORMAT	XLSX, DOCX, file repository

3 Pilots' execution workplan for Iteration I

This section describes the workplan devised at the three pilot sites. It answers to the questions WHEN and HOW, i.e. by means of which activities scheduled and when, each pilot will be run in the period April 2022 (M16) to September 2022 (M21), i.e. Pilots Iteration I. Figure 1, has already shown the temporal planning for iteration I spanning from M16 (April 2022) until M21 (September 2022). Figure 14 reproduces such figure also depicting the timeline for Pilots Iteration II. By checking the figure, remember that Pilots Iteration I is sub-divided into 2 subphases, namely: a) *pre-pilot sub-phase* spanning from April 2022 (M16) to May 2022 (M17) and b) *pilot execution sub-phase* from June 2022 (M18) to September 2022 (M21). On the other hand, notice that pilots iteration II is planned between M27 (March 2023) and M33 (September 2023). Observe in Figure 14 that again, as performed for iteration I, it is envisaged that Pilots Iteration II will need to be expanded, encompassing one month extra in pilot execution sub-phase against what was stated in the Grant Agreement for Pilots Iteration II . Notice, as well, that Pilots Iteration II will last 1 additional month compared with Pilots Iteration I. Observe that "D5.4. Use-case plans and guidelines v2", due in M28 (April 2023), will describe the workplan for Pilots Iteration II, i.e. will be the next iteration of this deliverable.
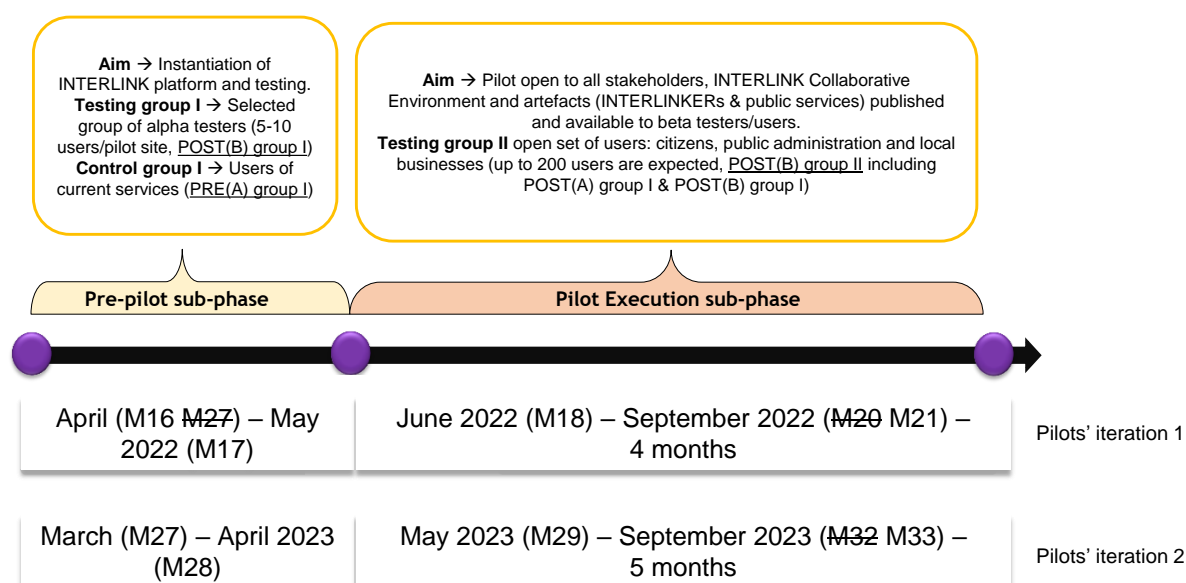
Figure 14. Gantt diagram of Pilots Iteration 1, correlated with Pilots Iteration 2 timeline

Notice that, prior to the start of the pilot iteration 1, each pilot coordinator, with the supervision and support of the cross-pilot coordinator, must ensure that the following set-up operations (check list) are accomplished, and the outcomes documented:

- Set up the INTERLINK framework platform, tools like the collaborative environment, software and knowledge INTERLINKERs and the co-produced public services, for the pilots where is the case, e.g. VARAM and Zaragoza, and add it to the testing documentation. Upload the resulting co-produced responsive public services and INTERLINKERs into INTERLINK catalogue.
- Alpha tester users' engagement and training.
- Internal pre-testing (face-to-face cross-testing session), including INTERLINK project's members and a set of alpha testers (5 to 10 people) from INTERLINK public administrations, of the INTERLINK ecosystem – the whole functionality required for the Pilots Iteration I.
- Pre-testing of logging functionality and tools to be used for collecting and gathering end-users' feedback.
- Pre-pilot sub-phase monitoring and evaluation. Possible technical deficiencies identified and addressed by INTERLINK members of the support team.
- Communication campaigns for engaging end-users and ensuring the participation of citizens and other local stakeholders is critical for successful evaluation of INTERLINK potential.
- Assure that trial support team has received appropriate training and has access to technical documentation. Also explain basic problem resolving procedures as described in 1.4. Help Desk: problem resolving approach and support mechanism.
- Showcase INTERLINK platform components, collaborative environment, INTERLINºKERs and, potentially, co-created public services to testing users through several workshops in each public administration, walk them through the tools in case that it is needed, and provide them with basic information about how problems can be resolved using the helpdesk. Also inform test users about the planned pilot duration and subsequent surveys.
- Inform test users about trial privacy procedures and policies. All test users will have to accept the INTERLINK terms of use before accessing the INTERLINK ecosystem tools and for those who will collaborate for assessing the ecosystem they will have to sign a consent form. In addition, anonymous information on customer feedback provided by the INTERLINK system could be utilized in research.

After checking that all previous steps have been appropriately met in each pilot site, then the pilot coordinator will inform the cross-pilot coordinator that such pilot is open to launch the field trial.

3.1. Pilots' execution workplan guideline and milestones

This section indicates the different activities that should be undertaken by pilots in the period M16 (April 2022) until M21 (September 2022). The activities are divided in two stages, those corresponding to the "*Pre-pilot launch subphase*" from M16 to M17 and those for the "*Post-pilot subphase*" from M18 to M21.

- **Pre-pilot launch subphase (M16, April 2022) – Milestone 1. Pre-pilot launch subphase (M16 - April 2022).** Communication actions are prepared and executed. Knowledge and software INTERLINKERs and responsive public services, if applicable, are uploaded into INTERLINK catalogue where they are made publicly available. Alpha testers are identified and informed. Technical Support is launched. Variables to measure acceptance are carefully specified per pilot site. Responsive public services-generated logs are adapted to pilot measuring needs as well as INTERLINK framework components logs
  - **Internal release**. Set up the INTERLINK framework components and the co-produced public services and add it to the testing documentation. Upload the resulting co-produced responsive public services and INTERLINKERs into INTERLINK catalogue. This activity should actually take place before or at the very beginning of M16, i.e. April 2022.
  - **Communication**. Several activities have to be carried out before M16 and during the whole pre-pilot launch sub-phase to enhance awareness of INTERLINK among its stakeholders.

    These communication activities foresee official communications by email/via internal media of communication to the identified stakeholders with:

    - Presentation of the INTERLINK project and its objectives.
    - Presentation of the Use Case and goals.
    - Introduction to the activities they're going to be involved in.
    - Explanation of the participation benefits.
    - Detailed program of the "next steps".
    - Link to the INTERLINK platform.

    These communication actions should take place BEFORE and DURING the pre-pilot execution. The goal is to ensure that a sufficient number of alpha testers are ready to receive training and then perform alpha testing in M17. Besides, diverse communication actions, channels and contents will be developed to prepare for external release of the INTERLINK platform at the end of M17, i.e. May 2022.

    Test users will be informed about trial privacy procedures and policies. All test users will have to accept the INTERLINK terms of use before accessing the INTERLINK ecosystem tools. Those users who will collaborate for assessing the ecosystem will also have to sign a consent form. In addition, anonymized information on customer feedback provided by the INTERLINK system will be made available to project partners for research purposes.

- **Pre-pilot launch subphase (M17, May 2022) – Milestone 2. Pre-pilot launch subphase (M17 - May 2022).** Training action to target alpha tester groups is executed. Alpha testers start using the tools available in the INTERLINK ecosystem. Measuring and corrective actions are undertaken to ensure a successful trial execution.
  - **Training**. A physical and/or an online workshop will be organized to illustrate what INTERLINK is about, how co-production can enhance e-government practices and how INTERLINK tools and powered public services can be leveraged by civil servants, companies and citizens. INTERLINK platform components, the collaborative environment and knowledge and technology enablers will be showcased to all alpha users through several workshops, walking them through the tools in case that it is

needed, and providing them with basic information about how problems can be resolved using the helpdesk. Test users will also be informed about the planned pilot duration and subsequent surveys.

- ○ **Support**. Technical, methodological and ethical support will be provided to alpha testers to guarantee the highest possible adoption and acceptance of INTERLINK. Support requests will be used to enhance documentation and create a FAQ to favour adoption of co-production and its tools by other users. It will be assured that the trial support team has received appropriate training and has access to technical documentation and that basic problem resolving procedures have been explained and are in place.
- ○ **Measuring & monitoring**. Alpha testers will be provided with guidelines regarding usage scenarios that they need to explore with INTERLINK tools. Internal pre-testing (face-to-face cross-testing session), including INTERLINK project members and a set of alpha testers (5 to 10 people) from each pilot, will be performed of the INTERLINK ecosystem – the whole functionality required for the Pilots Iteration I. During users' testing logs will be generated. Besides, after the testing they will be requested to fill in a questionnaire. Logs collected and questionnaires received will be analysed to verify whether the pilot data capture needs to ensure good validation are achieved. These activities will contribute to the pre-testing of the logging functionality and the tools to be used for collecting and gathering end-users´ feedback.
- ○ **External release**. All testing activities performed by alpha testers will be scheduled to be concluded by mid of M17 so that the second half of May 2022 is used to correct possible mistakes in INTERLINK platform and co-produced services. As a result, an external release of the INTERLINK platform, INTERLINKERs and other needed services will be produced.

- ● **Pilot execution sub-phase (M18-M21 - June-September 2022 – Milestone 3. Pilot execution subphase (M18-M21 - June-September 2022).** Intensive communication campaigns are addressed to target groups (beta testers) of the trials. Iteratively the communication, support, execution, monitoring, evaluation and reaction steps of the trial executions are undertaken. Monthly evaluations' measurements are undertaken and corrective actions taken in case there is a need, e.g. update of a given tool to address a common reported issue. Regularly and according to the engagement plan of D5.2 "Community building and preliminary use-cases activities" , communication actions are undertaken.
  - ○ **Communication**. Communication campaigns for engaging civil servants, end-users and ensuring the participation of citizens and other local stakeholders is critical for a successful evaluation of INTERLINK potential. Iterative communication activities will be arranged to ensure build up of the pilot's community.
  - ○ **Support**. Basic problem resolving procedures will be tackled as described in 1.4. Help Desk: problem resolving approach and support mechanism.
  - ○ **Execution**. Activities will be organized to encourage contribution from different civil servants and citizens. For instance, workshop with public servants, gamified sessions, contests or hackathons which might intensify the usage of the INTERLINK co-production model and assets.

- ○ **Monitoring**. Pilot owner progress analyses will be achieved in the pilot by reviewing associated quantitative and qualitative measures as specified in Evaluation methodology for INTERLINK.
- ○ **Evaluation**. Assessment of pilot objectives will be performed halfway and at the end of the piloting stage. The idea is to ensure that positive progress of the pilot evaluation is checked with time to react.
- ○ **Reaction**. If as result of the monitoring or intermediary evaluation issues are detected, the corresponding pilot owner in collaboration with the pilot task force will undertake further actions to ensure that eventually the pilot's objectives are met. For instance, the organization of additional workshops with civil servants to ensure further service description enhancement suggestions are received.

In the following Sections, the detailed execution workplan for each of the three pilots is presented.

3.2. MEF pilot execution workplan
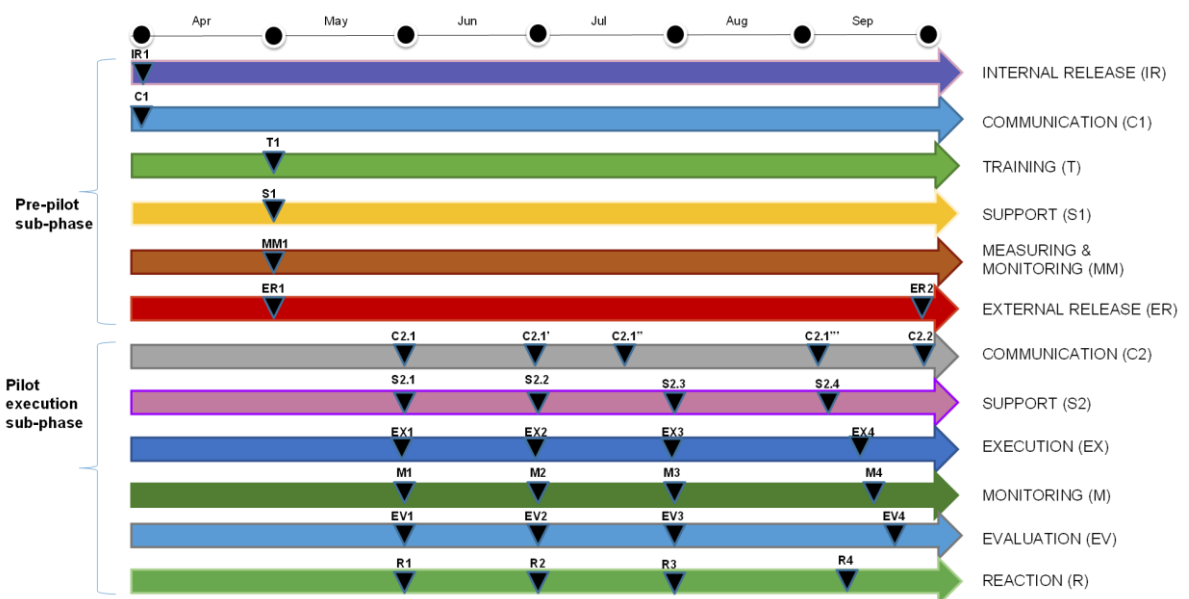
Figure 15. Gantt detailing workplan of MEF pilot from April to September 2022

Figure 15 shows the activities arranged by MEF for the two sub-phases of pilot iteration 1. Table 31 shows the different activities planned during the Pilots Iteration I's 6 months for the MEF use case. Notice that through the activities' ID the time when each activity is scheduled can be traced in the Gantt chart (Figure 15). Some specific details about MEF workplan worth mentioning per each of the scheduled milestones are:

- **Milestone 1 & Milestone 2 - Pre-pilot launch subphase** (From April 2022 – M16 to May 2022 – M17). A first communication campaign will be addressed to group A, which

is going to be composed of people from MEF-DSII which need to be made aware of the INTERLINK functions, testing the INTERLINK platform alpha version and its INTERLINKERs in order to give feedback on what works well and what needs additional work before the external release of the INTERLINK platform which is going to be used in the Pilot execution phase. A second round is addressed to civil servants such as MEF/DSII applications' operators and human resources, MEF Department Directors, MEF Data Processors, MEF employees, as well as other Public Bodies' operators and managers.

- **Milestone 3 - Pilot execution sub-phase** (From June 2022 – M18 to September 2022 – M21). MEF use case coordination team will organize two types of activities according to the stakeholder groups identified for its use case: 1) Public Bodies (MEF Directorates and other Public Bodies Human Resource Department) will be reached through direct interviews and surveys to get feedback about the PSPM functionalities in relation to the INTERLINK collaborative platform and the INTERLINKERs' functionalities and usefulness to this end; and 2) Civil servants will be involved in online or in presence workshops to discuss the PSPM functionalities, the usefulness of the INTERLINK Platform and its functionalities.

- **Milestone 4 – Post-Pilot execution sub-phase** (October 2022 – M22). MEF will release a final mock-up of the PSPM co-designed according to the requirements and functional specifications collected during the pilot execution phase. All feedback and input received on the Platform and INTERLINKERs functionalities, will be shared with the technical team and the project coordinator to improve them.

Table 31. MEF Pilots Iteration I workplan

ID	MS	Phase	When	Action	Description	Target
IR1	1	Pre-pilot launch subphase	M16	Internal release	First identification of the INTERLINK framework components that will be needed to co-produce a mock-up of the PSPM	

C1	1	Pre-pilot launch subphase	M16	Communication	MEF announces with two separate communication campaigns the start of the INTERLINK pilot informing its stakeholders (Public Bodies and Civil Servants) about the INTERLINK project and its objectives, the Use Case purpose and its goals, the activities they are going to be involved in, the participation benefits, rights, and rules and the "next steps".	All MEF stakeholders: - Public Bodies: - MEF Directorates -Other PAs Human Resource Department -Civil Servants -DSII applications' operators and human resources -MEF Department Directors -MEF Data processors -MEF employees -Other PAs operators and managers
T1	1	Pre-pilot launch subphase	M17	Training	MEF use case coordination team will send out video tutorials and in-detail documentation on INTERLINK platform, INTERLINKERs, its functionalities and co-design mechanisms and tools to make the stakeholders aware about the goal of the project, and specifically, about the co-design/co-production purpose and mechanisms.	All MEF stakeholders
S1	1	Pre-pilot launch subphase	M17	1st level of support	Stakeholders will be continuously supported by the MEF Team and by the technical support staff provided by the project, which still needs to be defined.	MEF use case coordination team and technical support team
MM1	1	Pre-pilot launch subphase	M17	Measuring & Monitoring	MEF use case coordination team together with the technical support team will again check the variables and KPIs to be measured with the pilot.	MEF use case coordination team and technical support team

ER1	1	Pre-pilot launch subphase	M17	External release	If technical issues are identified during the pre-pilot phase, adjustments will be made to the INTERLINK framework components needed to co-produce a mock-up of the PSPM	MEF use case coordination team and technical support team
C2.1	2	Pilot execution subphase	M18	Communication	MEF use case coordination team sends out the official communications to the two identified groups of stakeholders to inform them about INTERLINK, the collaborative environment and its Interlinkers, the project and use case purpose.	All MEF stakeholders
S2.1 S2.2 S2.3 S2.4	2	Pilot execution subphase	M18-M21	2nd level of support	Technical, legal and co-production model support services will be maintained across the execution of the pilot following MEF use case coordination team indication emerging from stakeholders' doubts, requests and questions.	Technical support team
EX1 EX2 EX3 EX4	2	Pilot execution subphase	M18-M21	Execution	Civil servants will be involved in online or in presence workshops to discuss the PSPM functionalities, the usefulness of the INTERLINK Platform and its functionalities.	DSII applications' operators and human resources MEF Department Directors MEF Data processors MEF employees Other PAs operators and managers
EX1 EX2 EX3 EX4	2	Pilot execution subphase	M18-M21	Execution	Public Bodies will be reached through direct interviews and surveys to get feedback about the PSPM functionalities in relation to the INTERLINK collaborative platform and the IINTERLINKERs' functionalities and usefulness to this end.	MEF Directorates Other PAs Human Resource Department

M1 M2 M3 M4	3	Pilot execution subphase	M18-M21	Monitoring		Throughout the pilot, MEF use case coordination team will carry out activities to monitor users' interaction with the INTERLINK platform, with the goal to guarantee the smooth implementation of the use case and collect feedback about the PSPM functionalities and the efficiency of the INTERLINK Platform and its INTERLINKERs.	MEF use case coordination team and technical support team
EV1 EV2 EV3 EV4	3	Pilot execution subphase	M18-M21	Evaluation		Based on the feedback, inputs, reactions received by the stakeholders, the MEF use case coordination team - supported by the technical team - will analyze and assess the data collected to draft a final evaluation report at the end of the 1st iteration	MEF use case coordination team and technical support team
R1 R2 R3 R4	3	Pilot execution subphase	M18-M21	Reaction		Based on the evaluation, if needed, corrective actions will be taken to improve the PSPM functionalities, the platform and its tools, so as to enhance the piloting experience and maximize outcomes of the 1st iteration in order for MEF to be able to gather enough feedbacks and inputs from the stakeholders to design a good mock-up of the PSPM at the end of the 1st iteration.	MEF use case coordination team and technical support team
	4	Post-pilot subphase	M22	Output		At the end of the pilot 1st iteration, MEF will produce a mock-up of the PSPM and, during the design and setting phase, all the stakeholders may be consulted again. Then, MEF will release a final mock-up of the PSPM co-designed according to the requirements and functional specifications collected during the pilot execution phase. All feedback and input received on the Platform and INTERLINKERs functionalities, will be shared with the technical team and the project coordinator to improve them.	MEF use case coordination team and technical support team

C2.2	4	Post-pilot subphase	M22	Communication	Official communication will be sent to the stakeholders involved in both the pre-pilot and pilot phases to make them aware about the final results achieved with the project.	MEF use case coordination team

3.3. VARAM pilot execution workplan

This section lists the different activities that will be undertaken by VARAM in the period from M16 (April 2022) until M21 (September 2022). The stakeholders that will participate in these activities in VARAM are:

- Representatives of national government
- Representatives of local government
- Representatives of Unified State and Municipal Customer service centers from local government
- Digital agents (librarians paid by the local government or other groups)
- Citizens (employed, retired, young people) and so on.

The generic observations issued in 3.1. Pilots execution workplan guideline and milestones are applied for the achievement of this pilot building plan. Its timeline is shown in Figure 16 whilst the detailed list of the planned community building activities is shown at Table 32.
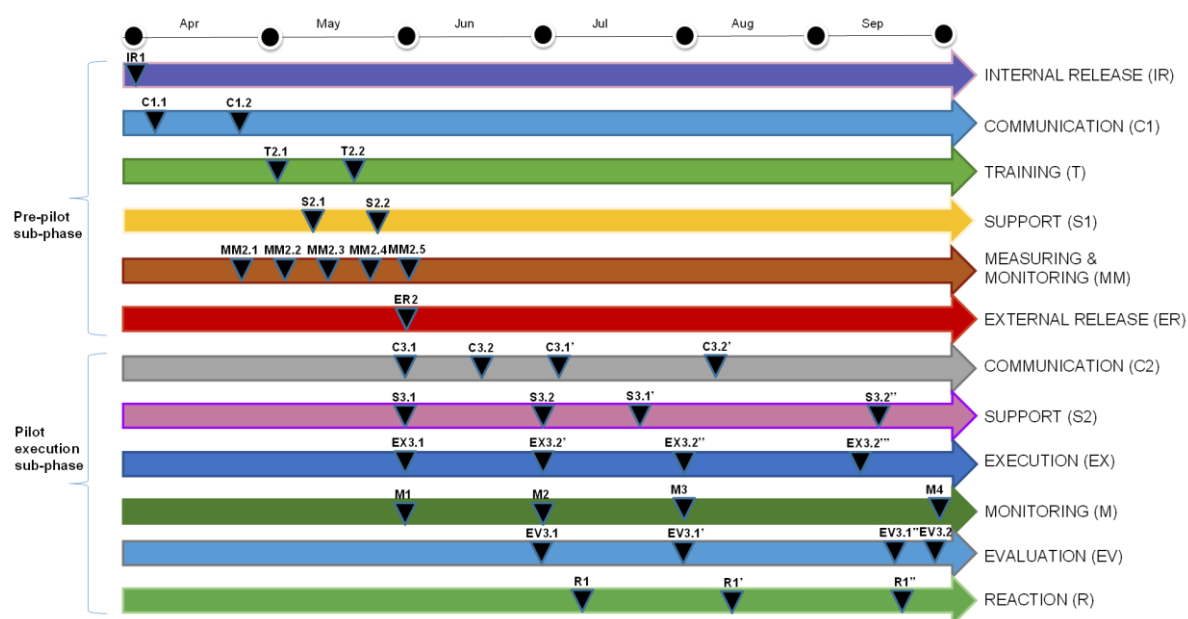
Figure 16. Gantt detailing workplan of VARAM pilot from April to September 2022

Table 32. VARAM Pilots Iteration I workplan

ID	MS	Phase	When	Action	Description	Target
IR1	1	Pre-pilot launch subphase	M16	Internal release	Deployment of the INTERLINK platform and co-produced INTERLINKERs and services in VARAM.	All VARAM stakeholders
C1.1	1	Pre-pilot launch subphase	M16	Communication	Announcement of INTERLINK pilot and purpose (press release, social media posts)	All VARAM stakeholders
C1.2	1	Pre-pilot launch subphase	M16	Communication	Workshop with potential alpha testers informing about purpose, privacy procedures and policies	Potential alpha testers
T2.1	2	Pre-pilot launch subphase	M17	Training	Training of pilot owner representatives about INTERLINK support system	Pilot coordinator and task force
T2.2	2	Pre-pilot launch subphase	M17	Training	Physical and/or online workshop about INTERLINK platform and VARAM public services	Alpha testers & civil servants

S2.1	2	Pre-pilot launch subphase	M17	Support	Address in a timely manner (within 2 business days) issues related to usage of INTERLINK assets	Pilot coordinator and task force
S2.2	2	Pre-pilot launch subphase	M17	Support	Populate FAQ and lessons learnt catalogue with common questions and support requests received in piloting	Pilot coordinator and task force
MM2.1	2	Pre-pilot launch subphase	M17	Measuring & Monitoring	Guidelines with usage scenario for VARAM case produced	Pilot coordinator and task force
MM2.2	2	Pre-pilot launch subphase	M17	Measuring & Monitoring	Cross-testing workshop	INTERLINK consortium partners
MM2.3	2	Pre-pilot launch subphase	M17	Measuring & Monitoring	Internal testing workshop	Alpha testers & VARAM
MM2.4	2	Pre-pilot launch subphase	M17	Measuring & Monitoring	Alpha questionnaire issued to gather feedback from alpha testers	Alpha testers & VARAM & consortium partners
MM2.5	2	Pre-pilot launch subphase	M17	Measuring & Monitoring	Verification pilot associated logs and questionnaires are correctly gathered	Pilot coordinator and task force

ER2	2	Pre-pilot launch subphase	M17	External release	External release of INTERLINK platform, INTERLINKERs and public services	
C3.1	3	Pilot execution subphase	M18	Communication	Announcement of pilot public start	National, local PAs, digital agents, citizens
C3.2	3	Pilot execution subphase	M18	Communication	Public training presentation for interested civil servants and citizens	National, local PAs, digital agents, citizens
S3.1	3	Pilot execution subphase	M18-M21	Support	Address in a timely manner (within 2 business days) issues related to usage of INTERLINK assets	Pilot coordinator and task force
S3.2	3	Pilot execution subphase	M18-M21	Support	Enhance pilot documentation, materials and FAQ	Pilot coordinator and task force
EX3.1	3	Pilot execution subphase	M19	Execution	Engaging material to prepare quiz/gamified description of challenge to be addressed by users online	National, local PAs, digital agents, citizens

EX3.2	3	Pilot execution subphase	M18-M21	Execution	Workshop with public servants to organize challenge / contest about improving concrete public services	National, local PAs, digital agents, citizens
EV3.1	3	Pilot execution subphase	M18-M21	Evaluation	Monthly review of progress of pilot: analysis of KPIs, logs and questionnaires	National, local PAs, digital agents, citizens
R3	3	Pilot execution subphase	M18-M21	Reaction	Monthly new actions will be taken to enhance the testing experience and maximize outcomes of the process	Pilot coordinator and task force & consortium
EV3.2	3	Pilot execution subphase	M21	Evaluation	Generation of final evaluation report	Pilot coordinator and task force

3.4. ZARAGOZA pilot execution workplan

This section details the plan of activities to be carried out in the Zaragoza pilot during the period from April to September 2022 (M16-M22).
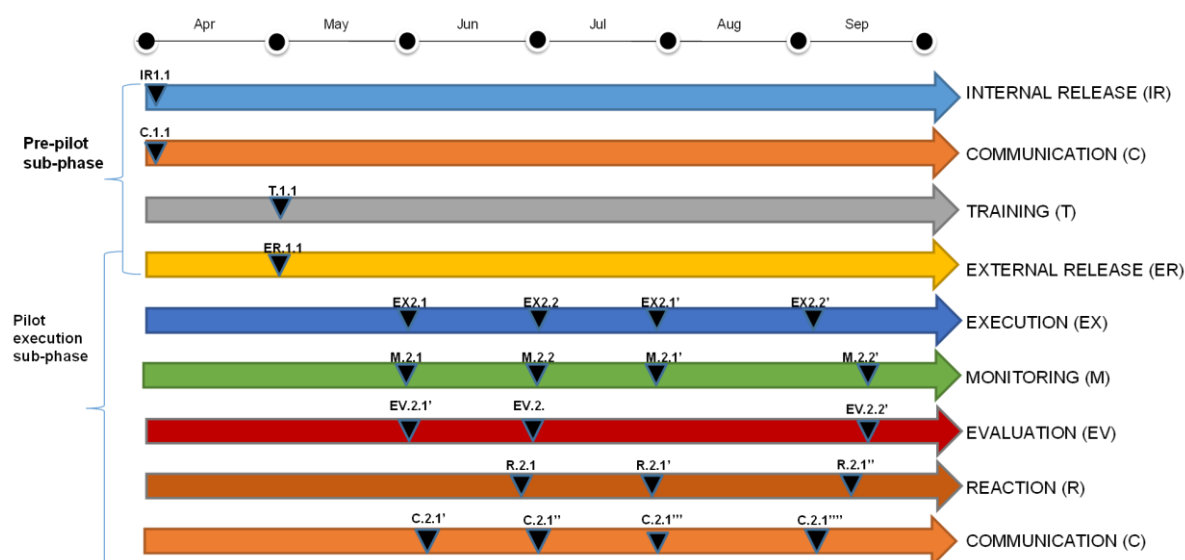
Figure 17. Gantt detailing workplan of ZARAGOZA pilot from April to September 2022

The activities are divided into two different parts, one for the "Pilot launch sub-phase" from April to May (M16 to M17) and the other for the "Post-pilot sub-phase" from June to September (M18 to M21). During this period there will be two milestones in the "Pre-pilot launch sub-phase" (MS1 and MS2) and a third one assigned to the "Post-pilot sub-phase" (MS3). Again, the guidelines for workplan planning issued in 3.1. Pilots execution workplan guideline and milestones are applied. Figure 17 depicts the timeline of ZGZ workplan whilst Table 33 fully details the concrete activities envisaged.

The stakeholders that will participate in the activities planned by Zaragoza are:

● Civil servants
● Zaragoza City Knowledge Foundation staff
● Academia (University)
● Incubators
● Citizens (digitally enhanced citizens and "regular" ones)

Table 33. ZARAGOZA Pilots Iteration I workplan

ID	MS	Phase	When	Action	Description	Target
IR1.1	1	Pre-pilot launch subphase	M16	Internal release	Deployment of INTERLINK platform and co-produced INTERLINKERs and services in ZGZ	Internal ZGZ stakeholders

C.1.1	1	Pre-pilot launch subphase	M16	Communication	Meeting with internal alpha users informing about purpose and roadmap of the project	Internal ZGZ stakeholders
T.1.1	2	Pre-pilot launch subphase	M17	Training	Training workshop by developers and technical staff with alpha testers. An initial set of users accounts will be created	Internal ZGZ stakeholders
ER1.1	2	Pre-pilot launch subphase	M17	External release	This phase ends with the release of the version that will be used in the next phase (beta testing). The role of alpha users here will be to validate that the release complies with the expected initial needs of beta testers	Internal ZGZ stakeholders
CX2.1	3	Pilot execution subphase	M18-M21	Communication	Dissemination across different channels to mark the kick-off of the Zaragoza pilot. It will namely be done through the newsletter and social media. Since in this first part of the project we are building internal tools, the dissemination will be mainly addressed to internal staff. In the second phase of the project, with these tools already fully operational, communication and dissemination activities will be opened to other stakeholders (business incubators, universities, entrepreneurs, citizens, etc).	Internal and external ZGZ stakeholders (alpha + beta tester)
EX2.1	3	Pilot execution subphase	M18-M21	Execution	During this activity beta users will interact with the platform	Internal and external ZGZ stakeholders (alpha + beta tester)
M2.1	2	Pilot execution subphase	M18-M21	Monitoring	Monitoring of beta users' interaction with INTERLINK platform through logs	Pilot coordinator and task force
EV2.1	2	Pilot execution subphase	M18-M21	Evaluation	Monthly review of progress of pilot: analysis of KPIs, logs and questionnaires	ZGZ engaged stakeholders
EV2.2	2	Pilot execution subphase	M21	Evaluation	Generation of final evaluation report	Pilot coordinator and task force
R2.1	2	Pilot execution subphase	M18-M21	Reaction	Monthly evaluation if corrective actions are needed based on the monthly evaluations. If needed, actions will be taken to enhance the testing experience and maximize outcomes of the process	Pilot coordinator and task force & consortium
ER2.1	2	Post-pilot subphase	M22	External release	Final mockup of Service Catalog, Activity Booking and Resource Manager	Pilot coordinator and task force

C2.1	2	Post-pilot subphase	M22	Communication	An official communication will be sent to the parties involved in both the pre-pilot and pilot phases to inform them of the new functionalities that will be the starting point for the development of the second part of the pilot that will aim at generating co-produced services.	Pilot coordinator and task force

4 Evaluation methodology for INTERLINK

The INTERLINK project consists of the co-design and co-delivery of digital and non-digital artifacts in the form of INTERLINKERs and Public Services. As such it falls within the design science research methodology (DSRM) genre, which focuses on the development of practical artifacts, rather than on the creation of a design theory [4]. The DSRM can be used to go from a proof-of-concept to a proof-of-use and a proof-of-value assessment [5] [6].

As can be seen in Figure 18, the DSRM process consists of a series of iterative steps for the creation, development, evaluation, and communication of practical artifacts. While the first three steps of the DSRM process – *Identify Problem & Motivate*, *Define Objectives of a Solution*, and *Design & Development* – involve mainly tasks from WP2, WP3, WP4, and WP6, and the last step – *Communication of results* – involves mainly tasks from WP7, the fourth and fifth steps – Demonstration and Evaluation – focus on the evaluation and assessment of the proposed artifact solutions developed within the INTERLINK project in order to provide proof-of-concept, proof-of-use, and proof-of-value. In addition, in the specific case of the INTERLINK project, there are two iterations of the DSRM process depicted in Figure 18 that correspond to the two pilot iterations in the three different sites (VARAM, MEF, and ZARAGOZA) where the use-cases will take place.
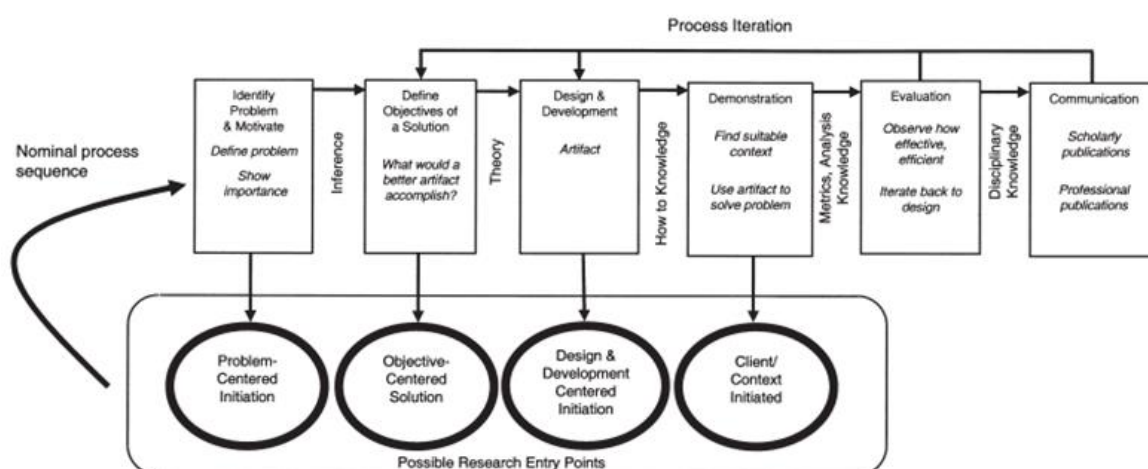
Figure 18. The DSRM Process Model by Peffers [4]

Finally, it is important to note that since the DSRM process covers all aspects of the project (WP1, WP2, WP3, WP4, WP5, WP6, and WP7), it necessarily involves synergies and dependencies between different WPs. Therefore, *Evaluation and Assessment (WP5) and its deliverables (D5.1 and D5.3)* interrelate with other WPs (as it can be seen in Figure 19[1]). This deliverable thus is complementary to i) the description of the socio-technical requirements in D4.1. "Socio-technical Requirements" [2] and, (ii) the functional specification of the set of INTERLINKERs in D3.1. "Identification and specification of INTERLINKERs" (M10) [3], and (iii) the INTERLINK reference architecture model and specification that will be documented in D4.2 "Reference architecture model and specification" (M12) [7].
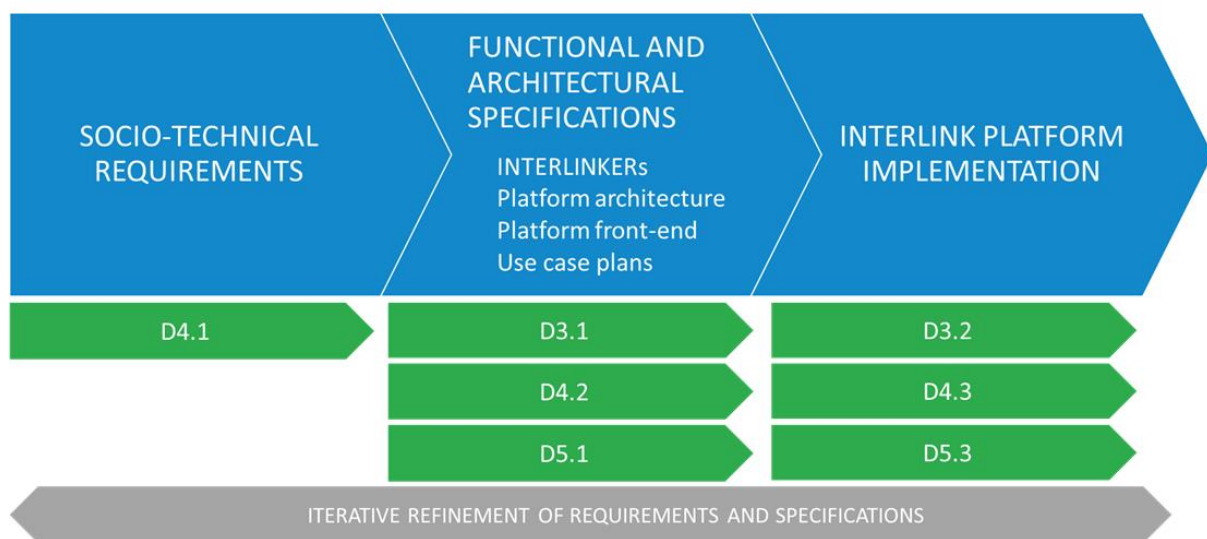
Figure 19. Cascade relationship between deliverables in WP3, WP4 and WP5

Use-case community building, described in D5.2 [8], Evaluation and Assessment activities (planned in this deliverable) will be carried during 2 pilot iterations (see Figure 20) to pursue several goals:

- *1st Pilot Iteration (Exploration):*
  o Validate INTERLINK co-production approach innovation potential and adoption barriers
  o Guide the choice of the mature and promising supporting technologies and tools

- *2nd Pilot Iteration (Consolidation):*
  o Validate the full INTERLINK co-production model and associated platform in real operational settings
  o Perform ad hoc validations for more advanced technologies and techniques

The 2 pilot iterations will take place in 3 different sites: MEF, VARAM and ZGZ, and thus, use-case community building and evaluation, assessment, and monitoring will have 2 dimensions:

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1 Figure 19 is also included in deliverable D4.1 List and description of the socio-technical requirements.

- *Local dimension*: engagement and evaluation activities performed within a specific city/region.
- *Global dimension*: common methodologies, best practices, overall monitoring, and evaluation strategies.
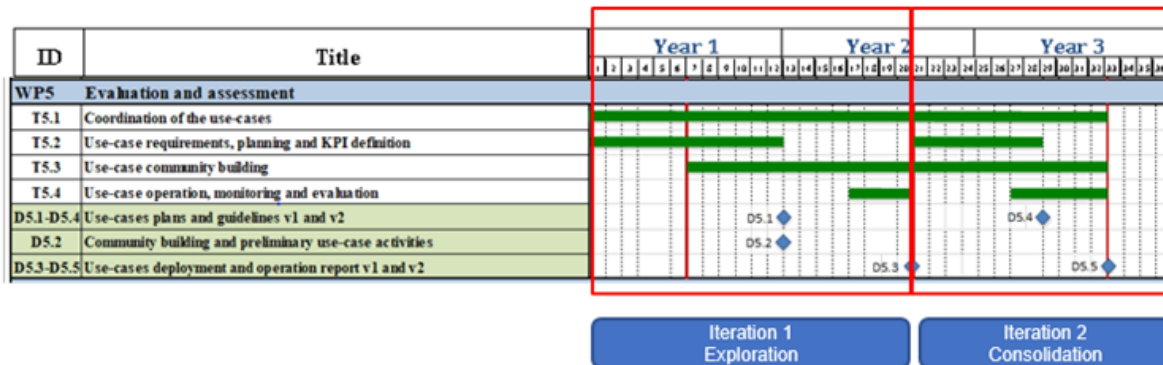
Figure 20. INTERLINK pilots' 2 iterations

One of the main goals of INTERLINK, is to customise, deploy, operate, and evaluate the INTERLINK solution on three real use-cases in three different EU countries. In order to provide proof-of-concept, proof-of-use, and proof-of-value several activities will be carried out for the Execution, Monitoring, Evaluation and Reaction of the two pilot iterations as was outlined in section 1.3. Methodology for Pilot Execution. Detailed planning of pilot workplan activities has been included in section 3.Pilots' execution workplan for Iteration I; a sub-section is dedicated to each pilot site.

4.1. Objectives

The evaluation process is articulated in following steps:

1. Defining the objectives for the evaluation
2. Planning the evaluation(s)
3. Conducting the pre-pilot sub-phase evaluations
4. Analysing the pre-pilot sub-phase results
5. Elaborating suggestions for improvement
6. Conducting the pilot phase evaluations
7. Analysing the evaluation results
8. Elaborating suggestions for improvement

The precise evaluation **global objectives** (common to all pilot sites) to demonstrate proof-of-concept, proof-of-use, and proof-of-value of the INTERLINK solution (as stated in the Proposal) are the following:

A. **INTERLINK USE and CO-PRODUCTION of SERVICES**. The number of INTERLINKERs in use, stakeholders involved with the INTERLINK solution during

the two Pilots, as well as the co-production of services enabled by INTERLINK, which correspond to the KPIs specified in the Proposal and their targets (see Figure 21)

Tools and measurements	Latvia	Spain	Italy
Number of Interlinkers used in an actual service	4	5	5
Number of citizens involved in service customization	200	250	100
Number of partnership enablers used within INTERLINK service instance	5	5	5
Number of citizens registered to INTERLINK platform	200	500	200
Number citizens involved in co-delivered services	50	100	-
Number of TSOs involved in co-delivered services	10	10	200
Number of private companies involved in co-delivered services	-	5	--
Number of new co-delivered services	2	2	--
Self-sustainable services (without public expenses)	1	1	-

Figure 21. KPIs and targets to achieve in Pilots according to the Proposal

B. **THE VALUE PROVIDED by INTERLINK**. The value improvements provided by the INTERLINK solution. More, specifically, the following hypotheses that were already included in the Proposal should be tested:

1. INTERLINK decreases the PA's administrative and management costs;
2. INTERLINK increases the number and quality of co-produced initiatives;
3. INTERLINK increases the participation of citizens and private entities in the customization and co-delivery of services.

C. **THE USERS' PERCEPTIONS of INTERLINK**. Users' perceptions of INTERLINK regarding acceptance, usability, and trust. Please note that these three aspects cover the evaluation of the transversional user requirements that can be found in section 4 of document "D4.1- List and description of the socio-technical requirements" [2]. More specifically, the following aspects that were not included in the original proposal should be evaluated:
1. The *acceptance* of INTERLINK by end-user stakeholders;
2. The *usability* (or user experience) of INTERLINK perceived by end-user stakeholders;
3. The *trust* of end-user stakeholders towards INTERLINK.

A full account of the KPIs corresponding to these global evaluation objectives is provided at 4.5.1. Pilot-wide and pilot-agnostic KPIs.

On the other hand, we also have **local evaluation objectives**, specific to the different pilot sites:

D. **PILOT SPECIFIC KPIs.** Custom made at each pilot site, which are listed in 4.5.2. Pilot-specific KPIs

4.2. Evaluation methodology

The objective is to explore differences in the process of service co-delivery between PRE-Without INTERLINK and POST-With INTERLINK. For that, a longitudinal field experiment with a PRE and POST INTERLINK evaluation is proposed. The object of the PRE (or "without INTERLINK") evaluation are public services delivered in each site via other means before INTERLINK was implemented and that are the same or similar as those enabled by INTERLINK. The object of the POST (or "with INTERLINK") evaluation are public services enabled by INTERLINK. This **PRE-POST field experiment** is akin to that of A/B testing found in the computer science literature [9], [10], with the pre-without INTERLINK being the A testing and the post-with INTERLINK evaluation being the B testing. However, a particularity of this experimental design is that it is longitudinal: the PRE-without INTERLINK evaluation takes place before the POST-with INTERLINK evaluation. That way, participants in the PRE-without INTERLINK phase can also take part in the POST-with INTERLINK phase if they interact with the INTERLINK solution. This is also a practical and pragmatic way to align the evaluation with the reality of each site. In addition and like A/B testing, this longitudinal experiment allows for determining the best option among two alternatives A (PRE-without INTERLINK) and B (POST-with INTERLINK) [11], [12], [13]. Finally, because in a field experiment the experimentation takes place in real settings, this evaluation design enhances the external validity (or generalizability) of the findings [14], [15].

The **specific characteristics of this PRE-POST longitudinal field experimental design** are as follows:
- It has **2 phases**:
  - PRE-without INTERLINK Phase
  - POST-with INTERLINK Phase
- The POST-with INTERLINK Phase encompasses the two pilot iterations or phases: Exploration (1) and Consolidation (2)
- The manipulation (or intervention) of the field experiment is the use of INTERLINK to co-produce public services. Put differently, the field experiment is designed to answer the following overall questions:
  - **Question 1) *What is the effect of INTERLINK on the quality of co-produced public services?*** → Does INTERLINK improve the co-design and co-delivery and the experiences of public services' stakeholders? This evaluation dimension requires measuring:
    - Effects on (A) co-production of public services, (B) value of public services (efficiency and productivity), and (C) end-user stakeholders' perceptions (quality assessment leading to acceptance and trust) by looking at: a) differences in the process between PRE-Without INTERLINK and POST-With INTERLINK and b) differences between end-user stakeholders participating in PRE-Without INTERLINK and in POST-With INTERLINK. The final aim is *to test whether INTERLINK performs better and thus improves the co-design and co-delivery of public services.*
    - Evolution of the effects of INTERLINK over time (A, B, C) by comparing "Pilot Iteration 1 - Exploration" with "Pilot Iteration 2 - Consolidation" to test whether there are improvements in effects over time and after the second development effort. The final aim is *to test whether INTERLINK`s performance in co-production of public services improves over time: in Pilot Iteration 2*

(Consolidation) as a result of the feedback obtained in Pilot Iteration 1 (Exploration) and the second development iteration.
- ○ **Question *2*) What is the effect of INTERLINK on trust and acceptance by end-users and stakeholders?** → *Do* end-*user stakeholders enjoy, accept, and trust INTERLINK?* These questions will be investigated in complementary ways:
  - By analysing the (C) end-users' data of the POST-With INTERLINK Phase
  - In addition, *acceptance improvement can be tested* by comparing (C) end-users' data of Pilot Iteration 1 (Exploration) and Pilot Iteration 2 (Consolidation)
  - Finally, some measures used to evaluate (C) end-user stakeholders' perceptions can also be used in the PRE-without INTERLINK Phase, and thus, comparisons can be carried out between the PRE-without INTERLINK Phase and the POST-with INTERLINK phase to *test whether end-user stakeholders' perceptions of public services improve with the INTERLINK solution.*
- The evaluation takes the same PRE-POST longitudinal design in all use-case sites; in addition, to account for the particularities of each use-case site and the Local dimension of the evaluation, some evaluation aspects (i.e., specific KPIs) might vary across use-cases.

For VARAM (Latvia) and ZGZ (Spain) since all end-user stakeholders will participate in Pilot iteration 1 and Pilot iteration 2 the evaluation design is depicted in Figure 22 and Figure 23:
- ○ PRE - WITHOUT INTERLINK:
  - As can be seen in Figure 22, It will take place before the two pilot iterations.
  - It will take place with eventual end-user stakeholders, called PRE (A) group I in Figure 22 and Figure 23, that are involved in the same or similar services delivered WITHOUT INTERLINK.
  - It is expected that the stakeholders in this group will also participate in the POST Evaluation as end-users of INTERLINK. If this is the case, we need to be able to identify and pair their PRE evaluation with their POST evaluation.
- ○ POST - WITH INTERLINK - Pilot Iterations 1 (Exploration) and 2 (Consolidation):
  - As can be seen in Figure 23, every end-user stakeholder that interacts with INTERLINK is part of the overall POST (B) Group that adds more participants as time goes on and INTERLINK gains users, including those participants that were part of the PRE (A) group I in Figure 22. In addition, as can be seen in Figure 23, the participants belonging to any POST (B) group should continue to be part of the overall POST (B) group at later phases of the two pilots. For example, in the pre-pilot of iteration 1, there will be a POST (B) group I, and that group should be part of a bigger POST (B) group II during pilot iteration 1. Likewise, POST (B) group III in the pre-pilot of iteration 2, should be part of POST (B) group IV during the pilot iteration 2, which will also include POST (B) groups I and II from pilot iteration 1.
  - It is also important to note that *baseline measurement* of variables of interest should take place *before* each phase for all involved stakeholders and that repeated measurement of variables should also take place *during and after* Pilot Iteration 1 and Pilot Iteration 2.
  - Qualitative evaluations will take place before, during and after each Pilot iteration in pre-evaluation, mid-evaluation, and post-evaluation sessions as indicated in Figure 23.

- Such design will allow for:
  - Unpaired PRE-without INTERLINK and POST-with INTERLINK comparisons, i.e. comparisons between PRE (A) and POST (B) during Pilot Iteration 1;
  - Paired without INTERLINK and with INTERLINK comparisons, i.e. comparisons between data from PRE (A) group I gathered at the PRE Phase and data from PRE(A) gathered at POST phase;
  - Paired with INTERLINK comparisons to see improvements of INTERLINK, i.e. comparisons between Pilot 1 and Pilot 2 among POST (B) group.
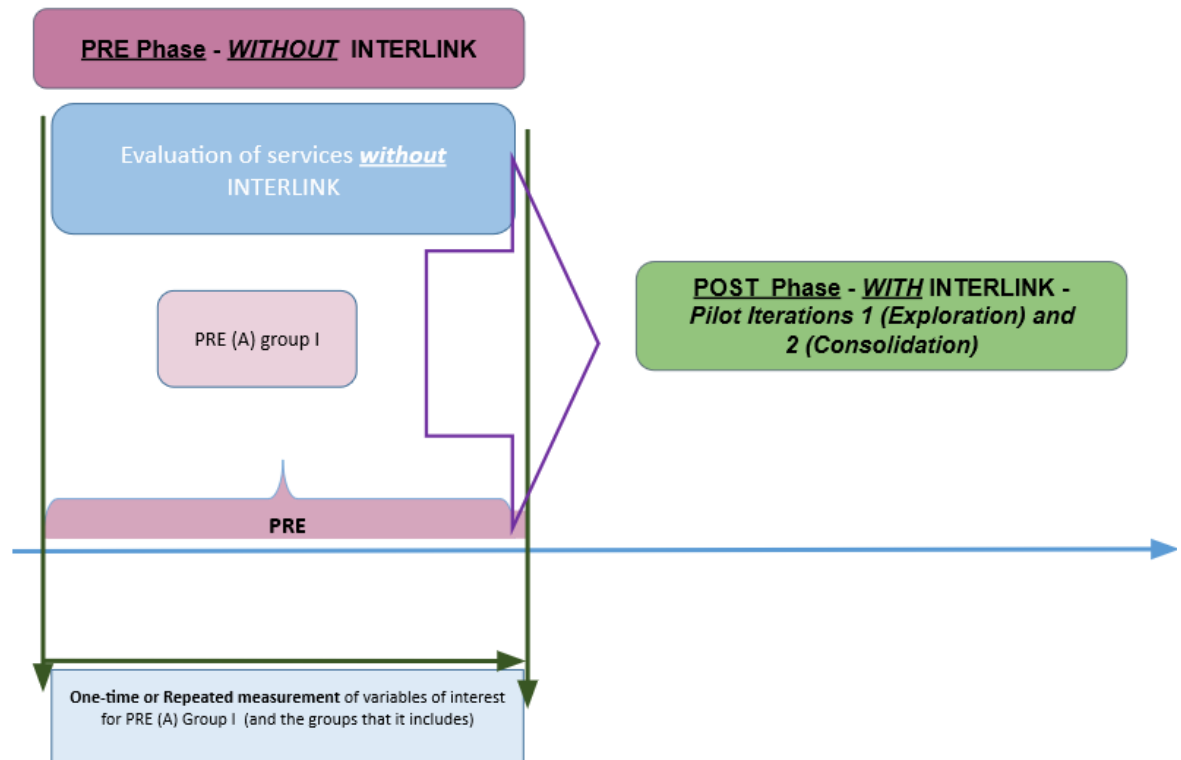
Figure 22. Evaluation Design for the PRE Phase (without INTERLINK) for VARAM and ZARAGOZA
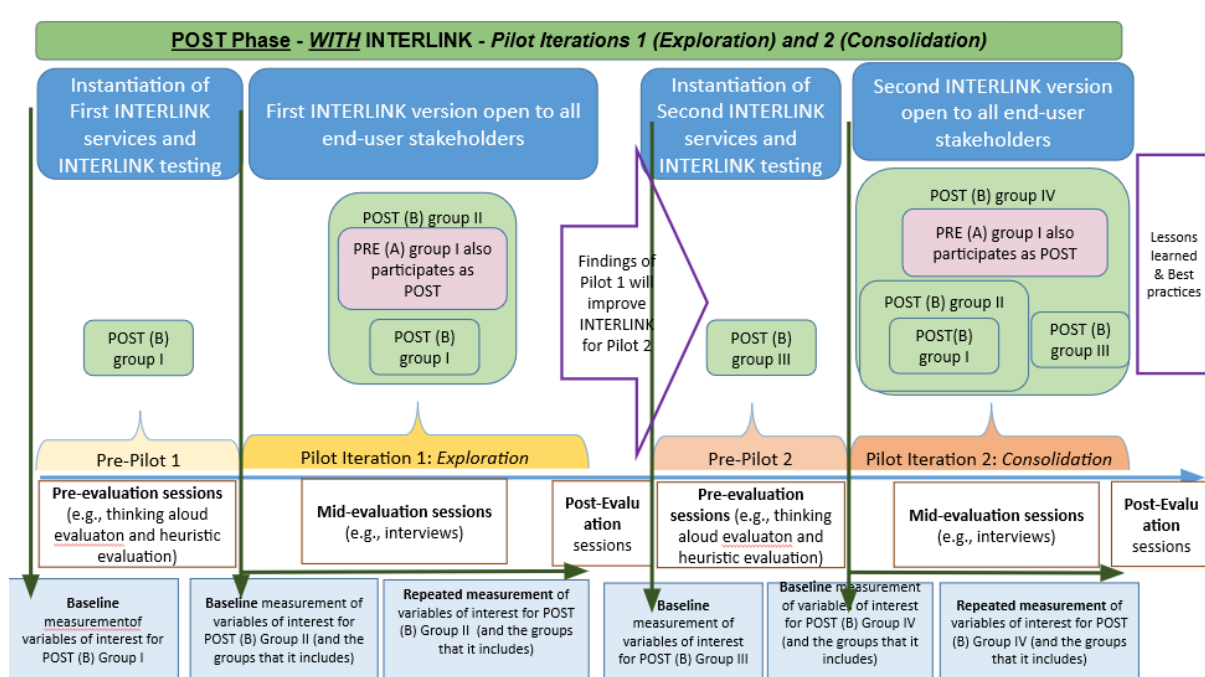
Figure 23. Evaluation Design for the POST Phase (WITH INTERLINK) for VARAM and ZARAGOZA

For MEF (Italy) the evaluation for MEF follows the same design as the ones for VARAM and ZARAGOZA depicted in Figure 22 and Figure 23. The only difference is that not all end-user stakeholders will participate in Pilot iteration 1, where only PAs (and not citizens nor non-profit organizations) will participate. However, for MEF in Pilot iteration 2 all end-user stakeholders will participate. Evaluations for the "PRE Phase - without INTERLINK" for stakeholders not participating in Pilot iteration 1 can take place in parallel to those of Pilot 1 (Exploration) of the POST Phase - with INTERLINK. In this case, the PRE (A) Group I will join the overall POST (B) Group during Pilot 2 (Consolidation).

It is also important to note that for all the sites, the different data gathered during Pilot Iteration 1 will serve to improve INTERLINK for Pilot Iteration 2. Finally, the data gathered during Pilot Iteration 2 will serve to draw lessons learned and best practices for the digital co-production of public services.

4.3. Evaluation dimensions and constructs

The essence of the organization, planning and execution of pilots in INTERLINK is to assess whether the co-production model and supporting tools and co-produced assets put forward by the project will enhance the quality, quantity and reuse of public services among European public administrations (PAs). We are particularly interested in determining the **degree of ADOPTION achieved by INTERLINK co-production** model, supporting tools and co-produced public services and INTERLINKERs.
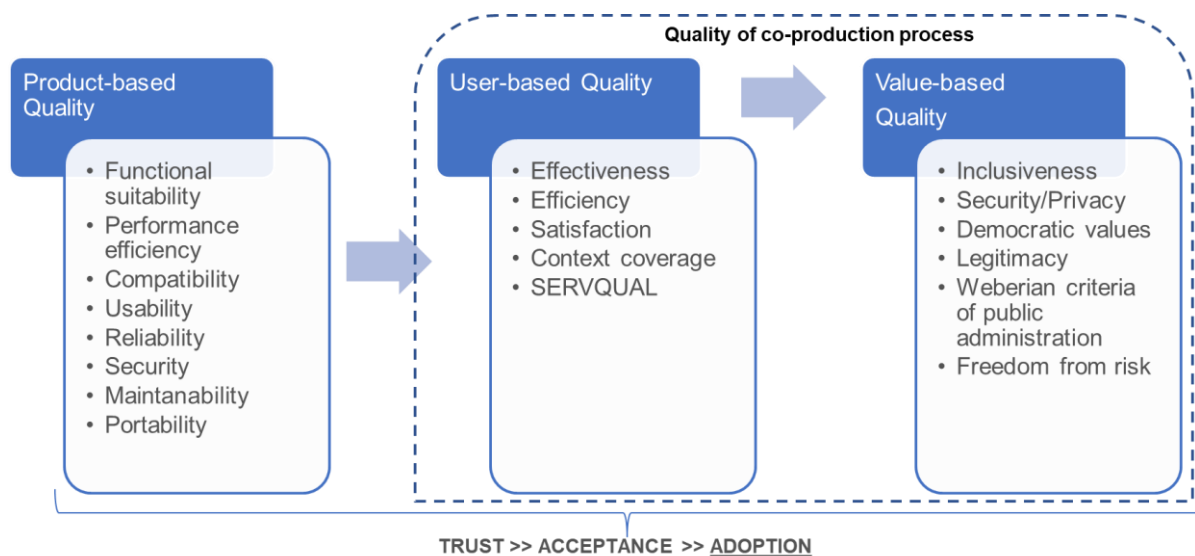
Figure 24. Relationship among tasks in work programme, partners and assets involved in project piloting

In INTERLINK, special attention during evaluation will, hence, be given to the ADOPTION, driven, on one hand, from Usability, User Experience and Effectiveness, and, on the other hand, from the TRUST and ACCEPTABILITY brought forward by our co-production solution. As described in the workplan, for each pilot in section 3. Pilots' execution workplan for phase I, special attention will be given to the **perceived usability** (user experience and effectiveness) of the INTERLINK environment; we will map and examine the most problematic usability issues of the alpha version of the INTERLINK platform and collect feedback to improve the user experience. On the other hand, we will **explore the trust** resulting from enabling and democratizing co-production processes. Finally, we will evaluate **users' acceptance** of the INTERLINK concept and pilot phase enablers and co-produced public services. However, to be able to measure and compare these evaluation constructs or dimensions we will carry out a longitudinal study where technical tests, logs and questionnaires customized to different stakeholders will be used to determine the **quality associated with the INTERLINK co-production model and artefacts**. Indeed, we believe that the highest possible quality assurance of the co-production process should drive towards a higher adoption rate of the INTERLINK co-production approach.

We **propose to measure quality through three dimensions**, as shown in Figure 24:

- **Product quality**: based on ISO/IEC 25010:2011 [16] quality model, it indicates the degree to which a particular service or product conforms to its specification. The quality model determines which quality characteristics will be taken into account when evaluating the properties of a computer system or software product. The quality of a system is the degree to which the system satisfies the stated and implied needs of its various stakeholders, and thus provides value. Those stakeholders' needs (functionality, performance, security, maintainability, etc.) are precisely what is represented in the quality model, which categorizes the product quality into characteristics and sub-characteristics. The product quality model defined in ISO/IEC 25010 [17] comprises the eight quality characteristics shown in Figure 25.

Figure 25. Product quality characteristics of ISO/IEC 25010

- **User-based quality**: based again on ISO/IEC 25010:2011 [16] quality model, it means that the attributes of a product meet the customer's requirements (in the public sector this is very important due to the need for public accountability). The "quality in use" model is composed of five characteristics as shown in Table 34 (some of which are further subdivided into sub characteristics) that relate to the outcome of interaction when a product is used in a particular context of use.
  - ○ **Effectiveness**: accuracy and completeness with which users achieve specified goals
  - ○ **Efficiency**: resources expended in relation to the accuracy and completeness with which users achieve goals
  - ○ **Satisfaction**: degree to which user needs are satisfied when a product or system is used in a specified context of use
  - ○ **Freedom from risk:** degree to which a product or system mitigates the potential risk to economic status, human life, health, or the environment
  - ○ **Context coverage:** degree to which a product or system can be used with effectiveness, efficiency, freedom from risk and satisfaction in both specified contexts of use and in contexts beyond those initially explicitly identified

This system model is applicable to the complete human-computer system, including both computer systems in use and software products in use. Note that Usability is defined as a subset of quality in use consisting of effectiveness, efficiency, and satisfaction. Usability can either be specified or measured as a product quality characteristic in terms of its sub-characteristics or specified or measured directly by measures that are a subset of quality in use. Besides, we have integrated quality in use from ISO/IEC 25010:2011 [16] with SERVQUAL[18], an approach for measuring customers' subjective assessment of service quality. Through a survey, as this example [19], you ask your customers to rate the **delivered service compared to their expectations**. Its questions cover what SERVQUAL claims are the five elements of service quality, termed by the acronym **RATER**. These five SERVQUAL dimensions are used to measure the gap between customers' expectations for excellence and their perception of the actual service delivered. The SERVQUAL instrument, when applied over time, can help you understand both customer expectations, perceptions of specific services, and areas of needed quality improvements:

- ○ **Reliability**. The ability to deliver the promised service in a consistent and accurate manner.
- ○ **Assurance**. The knowledge level and politeness of the public service stakeholders and to what extent they create trust and confidence.

- ○ **Tangibles**. The appearance of e.g. the building, website, equipment and employees.
- ○ **Empathy**. To what extent the employees care and give individual attention.
- ○ **Responsiveness**. How willing the employees are to offer a speedy service.
- **Value-based quality**: quality as services being in line with requirements of public services (e.g. legal treatment) and broader societal notions (e.g. democratic values). The following quality characteristics will be considered:
  - ○ **Democracy**: citizens' perception that e-government systems empower the public.
  - ○ **Inclusiveness** refers to citizens' perception that the e-government system increases the accessibility of public services and makes service delivery more egalitarian.
  - ○ **Autonomy**: The autonomy of consumers, e.g. to control the use of data might be a further important point in contrast to dependency and subordination (it is thus linked to enabling citizens)
  - ○ **Perceived privacy protection effect on customer satisfaction**: Perceived privacy protection is a critical element in evaluating online and offline services.
  - ○ Public service relevant Weberian principles:
    - ▪ Impartiality/Neutrality
    - ▪ Rule-boundedness
    - ▪ Scribability (existence of "files")
    - ▪ Professionalism

Table 34. Quality in use characteristics and sub characteristics, explained at [16]

Effectiveness
Efficiency
Satisfaction
Usefulness
Trust
Pleasure
Comfort
Freedom from risk
Economic risk mitigation
Health and safety risk mitigation
Environmental risk mitigation
Context coverage

Context completeness
Flexibility

Notice that our hypothesis is that **combining product-, user- and value-based quality allows a comprehensive account of the quality associated to the co-production process and the resulting e-government artefacts**. This may lead to higher trust on co-produced public services, which may enhance acceptance and, hence, ultimately, aid the adoption of co-production results among PA stakeholders. Notice that trust (in technology/government/e-government) is necessary for citizens to participate and at the same time, participation may lead to enhanced levels of trust (in e-government services).

Below, some more in detail definitions of some key constructs critical in INTERLINK evaluation, conventionally associated to technology acceptance, which in this project want to be mapped to **co-production adoption assessment**, are given:

- **User experience** [20] broadly refers to what the international standard of user-centred design of interactive services, ISO 9241-210, defines it as. By this definition, user experience consists of the user's emotions, perceptions, preferences, physical and psychological responses, behaviour, and responses that result before, during or after use.
- **Usability** [21], on the other hand, in this context refers to how effectively, efficiently, and comfortably the test users are able to find and use the services and contents on the site. Usability is defined as follows: "extent to which a system, product or service can be used by specified users to achieve specific goals with effectiveness, efficiency and satisfaction in a specified context of use" (ISO 9241/11, 1998).
- **Acceptability** [22] refers to the question on how users will accept and use new technological solutions. Several factors influence their decision about how and when they will use new e- services. In the INTERLINK project the concept of acceptability is explored from ethical, legal, economical, and transparency points of view.
- **Trust**. The user experience also relates to trust, which can be understood in different manners. Whilst trust is often used to refer to having a sense of confidence that a product or system will behave as intended, we use trust to refer to the general attitudes towards public bodies (e.g. perceptions of the local government) [23]. Hence, trust is the belief that a public body will contribute to people's wellbeing through their interaction or actions. In this case, by means of the provision of a co-production model, supporting tools for co-production and co-produced artefacts.
- **Acceptance** [24], whilst acceptability refers to one's perception of a system before use, acceptance is one's perception of the system after use.
- **Adoption** [25] is a multi-phase process starting with "deciding to adopt (selecting, purchasing or committing to use it) and then achieving persistent use".

4.4. Qualitative and quantitative measures for evaluation

Evaluation will be carried out by gathering *qualitative* and *quantitative* measurements, during the pilots' execution. A full account of suitable candidate qualitative and quantitative research methods to be applied in the INTERLINK evaluation is shown in Appendix B - Quantitative

and Qualitative research methods applicable in INTERLINK. Next, in a brief way we summarize the main methods that will be used during pilots' execution and evaluation.

Qualitative data will be gathered during pre-evaluation, mid-evaluation, and post-evaluation sessions:

- For Pre-evaluation sessions:
  - Thinking aloud evaluations with end-users (verbalization of users' interaction with INTERLINK) and Heuristic evaluations to gather the feedback of experts on public services (and their design), among other qualitative research techniques, will be applied.
  - Cross-testing sessions involving INTERLINK consortium members and a set of alpha testers (5 to 10 people) at each pilot, will be performed of the INTERLINK ecosystem to assess the whole functionality required for the Pilots Iteration I, pilot case by pilot case. Testers will be provided with an alpha questionnaire through which they will be able to report back any issues identified during scenario-based testing sessions.
- Mid-evaluation sessions and Post-Evaluation sessions:
  - Interviews with some end-users can take place around the following three aspects:
    - What did work well?
    - What did not work well?
    - Other suggestions for improvement of the INTERLINK co-production approach?
  - INTERLINK tools and services will be instrumented with short online questionnaires (in-app questionnaires) that will allow to get quick feedback from users about a given public service, INTERLINKER or functionality from the collaborative environment.

Quantitative data will be gathered through different KPIs and measures organized by objectives as shown in section 4.5. Pilot KPIs for quantitative and qualitative assesment. Such KPIs cover GLOBAL aspects common to all sites and LOCAL KPIs and Measures, associated to specific pilots:

- Surveys and questionnaires to explore USABILITY, TRUST and ACCEPTANCE, and, hence, deduce the ADOPTION of INTERLINK proposed co-production process and artefacts. Such surveys, often in the form of online questionnaires, will be targeted to different stakeholders (public administration, businesses, citizens and developers). Statistical analysis of the answers collected will be performed to be able to gain insights towards reflecting on the degree of adoption of INTERLINK co-production model and tools.
- Data logs will be collected both from the collaborative environment and INTERLINK powered public services to allow for the analysis of user interactions with those tools and services. Analysis of such logs should allow us to detect usability bottlenecks and issues with the co-produced tools and public services.
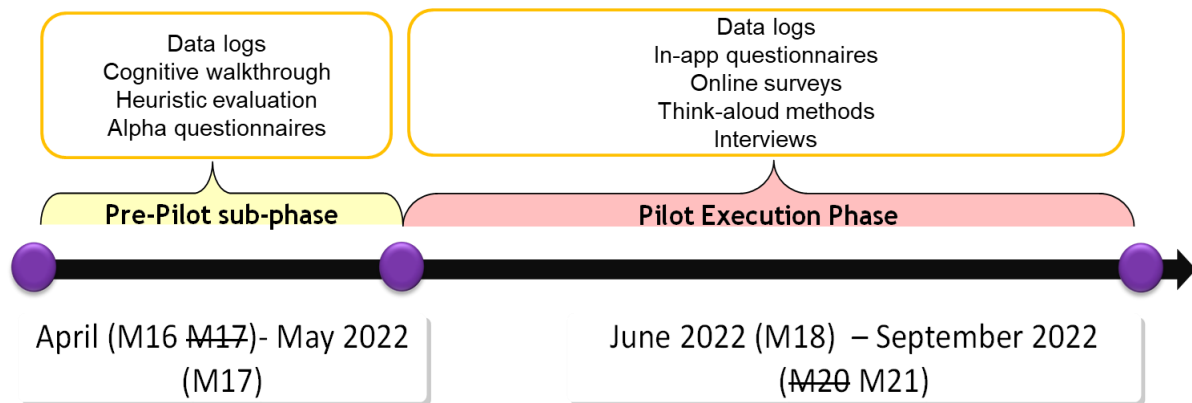
Figure 26. Qualitative and quantitative measurements in INTERLINK for Iteration 1

An online questionnaire to measure quality of the co-production process and its generated artefacts is under way and will be made available before Pilots Iteration I starts. Such questionnaire takes into account the guidelines of 4.3. Evaluation dimensions and constructs. It will help us to figure out the potential (degree of adoption) of our approach as a result of exploring the usability, user experience, trust and acceptability of the INTERLINK platform. Below, some sample evaluation questions are indicated. Our idea is to adopt standard questionnaires devised and validated by other researchers to measure usability (SUS) [26], acceptance (TAM) [27] or trust (in this case a brand new set of questions will be created based on the related research work). Such questionnaire will be devised to give answer to the following research questions:

1. **To gather information about usability and interaction of the platform**
   ○ How can the user perform the tasks, using the collaborative environment and available co-produced artefacts?
   ○ How does the user understand the principle of the resulting tools and artefacts?
   ○ Are there such qualities or functions in the collaborative environment, which are interpreted by the user differently from the designer's intention?
2. **To gather information about user experience**
   ○ What are the user's emotions, perceptions, preferences, physical and psychological responses, behaviour, and responses that result before, during or after use of the INTERLINK collaborative environment and co-produced artefacts?
3. **To gather the general acceptability of and trust on INTERLINK co-production model and platform**
   ○ How will users and stakeholders accept and use new technological solutions?
   ○ Do users trust that the proposed co-production model and supporting tools will enhance their interactions with government?
4. **To gather information about co-produced INTERLINKERs and public services adoption**
   ○ Do I consider that the INTERLINK co-production model and supporting tools and its resulting co-produced artefacts better fit the needs of demands of stakeholders and will, therefore, be more widely adopted?

Results about the adoption assessment of INTERLINK driven from the study of usability, trust, and acceptance, possible through the mentioned qualitative and quantitative research

methods, will be reported in "D5.3 Use-case deployment and operation report v1" due in M20 (August 2022).

4.5. Pilot KPIs for quantitative and qualitative assessment

This section details the global and local KPIs defined in the project to measure the achievement of the evaluation objectives set in 4.1. Objectives.

4.5.1. Pilot-wide and pilot-agnostic KPIs

Table 35 details the global, pilot-agnostic, KPIs devised to measure the following three categories of evaluation objectives:

A. INTERLINK Use and Co-Production of Services
B. The Value Provided by INTERLINK
C. The Users' Perceptions of INTERLINK

Table 35. INTERLINK GLOBAL KPIs

KPI table for iteration 1		Pilots			
		VARAM	ZGZ	MEF	Means (way of measuring)
A	Interlink Use and Co-production of Services				
A1	Number of INTERLINKERs used in an actual public service	>= 3	>= 3	>= 3	INTERLINK catalogue indexes public services and INTERLINKERs and returns INTERLINK-powered dependencies on INTERLINKERs
A2	Number of citizens involved in service customization	> 100	>=100	>= 1	Retrieve from collaborative environment number of teams and their members participating in co-production and the time invested by them, frequency of their contributions and so on

A3	Number of partnership enablers used within INTERLINK service instance	>=3	>=3	>= 1	INTERLINKERs are tagged when they are partnership enablers in the INTERLINK catalogue
A4	Number of citizens registered to INTERLINK platform	> 100	>=100	>= 1	Users of collaborative environment indicate in which role (civil servant, citizen) a user is co-producing something
A5	Number of citizens involved in co-delivered services	> 25	> 50	>= 1	Check projects whose co-production process is concluded and members that took part in co-production team
A6	Number of TSOs involved in co-delivered services	> 5	>=2	>= 1	When users register, they must indicate their role, if they are citizens, PA representatives, TSOs and so on. When taking part in a team if a user may have several roles, then they need to indicate the role under which they take part.
A7	Number of new co-delivered services	>= 1	>=3	>= 1	# co-produced services in the catalogue
A8	Number of active users (sessions) per co-produced service (cumulative value of summing up users in all co-delivered services per iteration)	> 100	> 100	> 100	Gather usage and participation logs in a co-production process, co-producing a service

A9	Number and Percentage of shared services between PAs and citizens that were co-produced through INTERLINK platform	> 1 and > 50%	> 1 and > 50%	> 1 and > 50%	# INTERLINKERS used in different co-produced services # public services that have cloned or derived from existing public services Analyse composition of co-production teams
A10	Number of private companies involved in co-delivered services		>= 3		Again count users under role company having taken part in finalized co-production process
A11	Number and Percentage of shared services between PAs and private companies that were co-produced through INTERLINK platform		>= 1 and > 25%		# INTERLINKERS used in different co-produced services # public services that have cloned or derived from existing public services Analyse composition of co-production teams
A12	Self-sustained services (without public expenses)	1	0		# Co-delivered public services with business model where maintenance and exploitation is carried out by stakeholders other than PAs
A13	Number and variety of INTERLINK business model (investor funding, crowdfunding, revenue sharing models…) applied to co-produced services	>= 2	>=2	>= 2	In sustainability phase of co-production model, co-produced artefacts must be associated a business model from a new taxonomy of innovative business models for co-creation

A14	Percentage of users who completed the in-app questionnaires and made improved suggestions	> 50%	N/A	> 50%	Gather results of INTERLINKER instrumented with in-app questionnaires
A15	Number of INTERLINKERs reused in more than one public service	>= 2	>= 2	>= 1	Dependencies among INTERLINKERs and public services are retrieved from INTERLINK catalogue
B	**THE VALUE PROVIDED BY INTERLINK**				
B1	Perception of reduction of administrative and management costs	> 20%	> 20%	> 20%	Survey. Qualitative analysis with previous case study data analysis
B2	Quantity of co-produced initiatives (baseline: number of previously co-produced public services)	> 30%	> 30%	> 30%	Number of co-produced public services and INTERLINKERs
B3	Quality of co-production initiatives				Feedback from end-users about the co-produced services quality based on a quality assessment questionnaire which measures usability, acceptance, trust and adoption. Such questionnaire will be adapted to the final co-produced public services at each pilot site.

B4	Increased participation of citizens and private-entities in customization of public services	> 50%	> 50%		Simple quantitative tools (such as attendance lists and meeting minutes) can be used to measure frequency and timing of encounters. Socio demographic questionnaires will be filled in by attendees to engagement sessions.
B5	Increased participation of citizens and private entities in co-delivery of public services	> 50%	> 50%	> 50%	Simple quantitative tools (such as attendance lists and meeting minutes) can be used to measure frequency and timing of encounters. Socio demographic questionnaires will be filled in by attendees to engagement sessions.
C	**The Users' Perceptions of INTERLINK - Quality**				
C1	Usability assessment of INTERLINK and co-produced artefacts (in a scale 1-5)	>= 4	>= 4	>= 4	Usability questionnaire based on SUS
C2	Trust assessment of INTERLINK and co-produced artefacts (in a scale 1-5)	>= 4	>= 4	>= 4	Newly defined questionnaire created by INTERLINK based on Trust analysis from SOTA
C3	Acceptance assessment of INTERLINK and co-produced artefacts (in a scale 1-5)	>= 4	>= 4	>= 4	Acceptance questionnaires based on TAM

| C4 | Satisfaction level of different stakeholders with INTERLINK tools and INTERLINK-powered public services | > 80% | > 80% | > 80% | Satisfaction questionnaire, distinguishing satisfaction level across different stakeholders |

4.5.2. Pilot-specific KPIs

Table 36 details the KPIs corresponding to evaluation objective category "D. Pilot Specific KPIs", which have been custom made to assess not only INTERLINK co-creation approach and tools, but also the specific INTERLINKERs and public services planned for each pilot and detailed in 2. Specification of the Pilots' Experimentation.

Table 36. INTERLINK LOCAL (pilot specific) KPIs

KPI table for iteration 1		Pilots			
		VARAM	ZGZ	MEF	Means (way of measuring)
D	**Pilot specific evaluations**				
D1	**VARAM**				
D1.1	Number of service descriptions improved through INTERLINK	>= 3			Count the number of service descriptions augmented though Description Augmenter component part of Servicepedia
D1.2	Perceived improvement in service descriptions thanks to INTERLINK from citizens perspective	>= 50%			Satisfaction survey completed by beta testers taking part in service description collaborative sessions aided by Collaborative Environment and Description Augmenter INTERLINKER

D1.3	Perceived improved productivity in collaboratively enhancing public service descriptions	>= 50%			Satisfaction survey
D1.4	Municipalities involved in INTERLINK pilot	> 3			# of local PAs who are involved in the pilot
D1.5	Digital agents involved in INTERLINK pilot (trained)	>10			# of digital agents taking part in co-production processes
D2	**ZARAGOZA**				
D2.1	Number of co-created activities in eTOPIA_ driven by PA		>=5		Count the co-created activities either through collaborative environment or through eTOPIA_ activity co-creation and management led by PA
D2.2	Number of co-created activities in eTOPIA_ driven by stakeholders		>=3		Count the co-created activities either through collaborative environment or through eTOPIA_ activity co-creation and management led by external to eTOPIA_ parties
D2.3	Number of co-creation activities launched with activity management module		>=5		Count the number of projects started
D2.4	Number of users per month accessing to activity booking module		>=50		Count the number of users making use of activity booking INTERLINKER
D2.5	Engagement growth		>=10%		Growth of citizen participation / attendance to eTOPIA_ activities

D2.6	Loyalty module usage		30		Number of citizens whose contributions have been audited and rewarded by loyalty module
D2.7	Open Innovation feasts supported by INTERLINK co-production process		>=2		Activities organized to promote usage of INTERLINK tools and services
D3	**MEF**				
D3.1	Number of Public Bodies involved in co-design of PSPM			>= 3	Indicator is self explanatory
D3.2	Number of civil servants involved in co-design of PSPM			>= 45	Indicator is self explanatory
D3.3	Number of INTERLINKERs used in the PSPM model			>= 5	Indicator is self explanatory
D3.4	Number of features contributed by external stakeholders to include into the PSPM model			>= 5	Indicator is self explanatory
D3.5	Increased representativeness of stakeholders during the co-testing phase			>=25%	Use existing process as benchmark, allocating a weight to each stakeholder group involved in the process to determine an increase of representativeness in relevant actors

| D3.6 | Perceived efficiency gains of the strategic planning process (value creation) thanks to INTERLINKERs | | | >35% | Conduct a survey after the co-design process to determine the stakeholders perception of the process improvement |

4.6. Operation and Management of Evaluation, Assessment, and Monitoring

The evaluation and management of the evaluation, assessment, and monitoring of INTERLINK is critical for the success of the project. DEUSTO will coordinate evaluation activities with the help of a site coordinator from each of the sites. It is important to note, however, that a primary activity that needs to be done in conjunction with use-case community building is the recruitment of participants for the evaluation purposes, so the active recruitment of participants will be coordinated by DEUSTO and VARAM but it will take place in each site since site coordinators are the ones who best know the end-user stakeholders of INTERLINK. In addition, input from the rest of participants will be needed. Figure 27 summarizes graphically how the management and operation of the evaluation, assessment, and monitoring will take place.
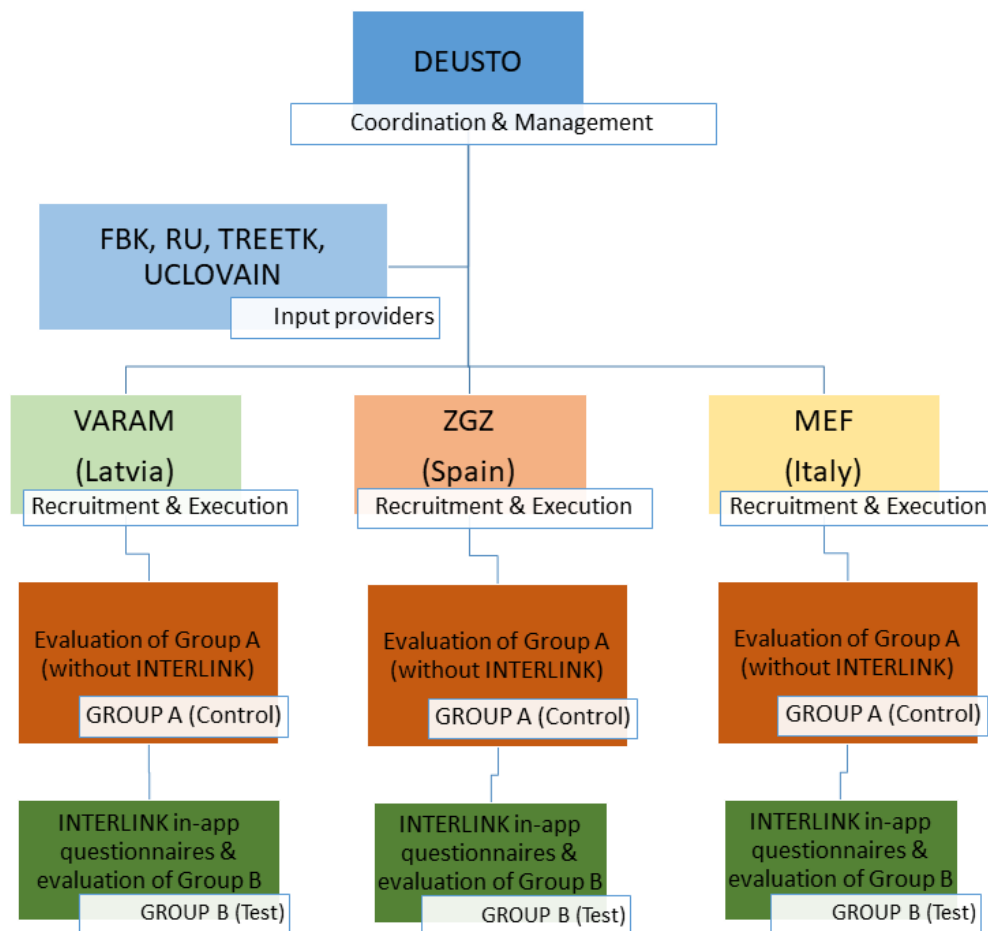
Figure 27. Operations & Management of Evaluation, Assessment, and Monitoring

5 Conclusion

This deliverable has provided the following contributions towards suitable planning of use cases' execution and evaluation:

- Definition of the coordination process, overall planning and piloting activities methodology devised to manage the project piloting in 3 European public administrations.
- Full specification of the experimentation envisaged at each pilot, including purpose and background, use-case objectives and evaluation criteria, use-case strategy, assumptions, risks, personnel, and responsibilities.
- Design of workplan of activities, for each pilot, to conduct the experimentation, including use-case plan organization, use-case site description, personnel involved, use-case methodology, services to be tested, potential users, schedule and test results collection.
- Rationale around the evaluation methodology and criteria (KPIs) for the evaluation of the INTERLINK platform, the associated supporting tools, and the impact of the INTERLINK co-production model. As a result, a multi-level evaluation methodology considering the different stakeholders involved (governance, citizens, etc.), as well as the social, technical, and organizational dimensions, has been produced.

This deliverable together with its complementary deliverable "D5.2 Community building and preliminary use-cases activities", focused on the pilots' workplan activities targeted towards community building, sets the basis for the launch, execution, monitoring and evaluation of pilots' iteration I. Their results will be reported in "D5.3. Use-case deployment and operation report v1".

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6 Appendix A - Relevant personas for the INTERLINK use cases

This appendix collects the description of Personas created by VARAM, ZGZ and MEF partners in the early stage of project development to depict prototypical stakeholders involved in the co-production scenarios of the three INTERLINK use cases. The template for Personas description is based on [28]–[32]

Table 37. Template for Personas description

FIELDS		DESCRIPTION
Persona identification	Persona ID	
	Name	
	Type of Stakeholder represented by the Persona	*Stakeholder: National/Regional/Local government, private/public enterprise, entrepreneur, citizen,…* *Co-Creator/ takes part in Co-Delivery (creation, exploitation, maintenance) and/or Final User (makes use of service)*
	Age	
	Education	*High school / professional college / university bachelor /master*
	Profession	
	Home life	
	Income Level	*From 0 to 10*
Digital Savviness & Awareness	Computer/Internet Savvy	*From 0 to 10*
	Mobile Savvy	*From 0 to 10*
	Social Media Engagement	*From 0 to 10*
	e-Governance Awareness	*From 0 to 10*
Problems/Needs & Goals	Activities/Tasks	*What are the activities/tasks that this person does that relate to INTERLINK? Are those activities/tasks something that s/he needs to do or something that s/he wants to do? How does this person currently perform such activities/tasks? Are there any digital services that s/he uses for performing the tasks?*

	Goals	*What are the goals of this person for engaging in the activities/tasks?*
	Problems/needs (including digital ones)	*What are the problems or needs that this person faces when trying to perform the above tasks? Are there any problems related to technological issues?*
	Relation to INTERLINK empowered Services	*What are the INTERLINK empowered Service(s)* that are related to this person's goals, tasks/activities, and needs?* **An INTERLINK empowered Service is a description of what a stakeholder can accomplish (through INTERLINK); it can be technically represented as a container of INTERLINKERs that provide purposeful action possibilities for stakeholders*

Our Goals for User	Goals with respect to INTERLINK Services	*Role of the stakeholder represented by the Persona with respect to service (a service is what the user can accomplish; it can be technically represented as a container of INTERLINKERs that provide action possibilities for users):*
		   ● *Co-Creator/Co-Delivery (creation, exploitation, maintenance) and user (makes use of)?*
		   ● *Co-Creator only?*
		   ● *User only?*

	Specific interest for INTERLINK Service? (Fit between Platform/Interlinkers and user's goals, activities/tasks, and needs/problems)	● *How could this person use each of the above identified Services:*
		   a) *to facilitate carrying out the above activities/tasks*
		   b) *to address the above problems/needs,*
		   c) *and to achieve the above goals?*
		● *Why would this person be interested in using each of the above identified Services?*

	Awareness of INTERLINK	*How could this person learn about INTERLINK?* *How could this person learn and be aware of the INTERLINK empowered Service(s) available to them?*

6.1. Personas for VARAM use case

Anna
VARAM representative, national government[2]

Ilze
CSC employee,
local government

Katrina
librarian and Digital Agent,
local government

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[2] Persona icons by Yu luck, KR, licensed as Creative Commons CCBY.

Andris
client,
citizen, salesperson

Ieva
client,
retired citizen

Figure 28. VARAM Personas

Table 38. VARAM_persona.2 – Anna

FEATURES		DESCRIPTION
Persona identification	Persona ID	VARAM_persona.2
	Name	Anna
	Type of Stakeholder	VARAM representative, national government Co-creator (co-designer).
	Age	40
	Education	Master
	Profession	Civil servant
	Home life	Married
	Income Level	7
Digital Savviness & Awareness	Computer/Internet Savvy	8
	Mobile Savvy	8
	Social Media Engagement	8
	e-Governance Awareness	9
Problems/Needs & Goals	Activities/Tasks	Provides guidelines to the delivery of services and consultations at Unified State and Municipal Customer Service Centres (CSCs). Explains and answers questions from CSC employees about the delivery of services. Communicates with CSC and local government representatives regarding topics related to service deliveries.

		Controls the statistics and quality of service delivery. Professional tasks. No digital services are used at the moment - communication through email exchange, official letters, phone calls, conference calls, meetings, training etc.
	Goals	Improve service delivery on a national level. Reduce the number of explanations through clear and understandable service descriptions. Improve CSCc customer satisfaction.
	Problems/needs (including digital ones)	Collaboration with different representatives could be more efficient and less time consuming. A lot of communication is done bilaterally (communication with representatives of specific CSC of municipalities). That could be improved. There is no tool to communicate effectively with different stakeholders at the same time.
	Relation to INTERLINK empowered Services	Guidelines, templates. Work space. Service customization. Communication tools.
Our Goals for User	Goals with respect to INTERLINK Services	Co-creator only
	Specific interest for INTERLINK Service?	● To customize existing services, potentially creating new ones. ● Improve co-creation process and communication with different representatives.
	Awareness of INTERLINK	VARAM is a partner of the INTERLINK project. She receives information directly from colleagues involved in the project.

Table 39. VARAM_persona.1 – Ilze

FEATURES		DESCRIPTION
Persona identification	Persona ID	VARAM_persona.1
	Name	Ilze
	Type of Stakeholder	CSC (Unified State and Municipal Customer service center) employee, local government Participates in the Co-delivery of public services
	Age	38
	Education	University bachelor

	Profession	Working for local administration. Combines different responsibilities: CSC, record keeping, secretary, HR.
	Home life	Married
	Income Level	6
Digital Savviness & Awareness	Computer/Internet Savvy	7
	Mobile Savvy	7
	Social Media Engagement	7
	e-Governance Awareness	8
Problems/Needs & Goals	Activities/Tasks	Provides local and state services consultations (in CSC on the spot, on phone, e-mail). Job responsibilities. Uses CSCs internal IT system and State Service portal latvija.lv
	Goals	Reduce the amount of work related for consultations, improve the quality of consultations.
	Problems/needs (including digital ones)	At larger CSCs with many customers there might be a lack of time and she cannot address customer's needs fully due to time restraints.
	Relation to INTERLINK empowered Services	Guidelines, templates. Work space. Service customization. Communication tools.
Our Goals for User	Goals with respect to INTERLINK Services	Co-creator/Co-delivery
	Specific interest for INTERLINK Service?	CSC employees could use INTERLINK services to delegate service delivery to digital agents or NGOs and improve communication with them.
	Awareness of INTERLINK	Information from VARAM. VARAM usually informs CSCs and local municipalities about requirements and guidelines related to service delivery and operation of CSCs.

Table 40. VARAM_persona.3 – Katrina

FEATURES		DESCRIPTION
Persona identification	Persona ID	VARAM_persona.3
	Name	Katrina
	Type of Stakeholder	Librarian. Local government. Co-creator (co-design, co-delivery).
	Age	56
	Education	University bachelor
	Profession	Librarian
	Home life	Divorced
	Income Level	6
Digital Savviness & Awareness	Computer/Internet Savvy	7
	Mobile Savvy	7
	Social Media Engagement	7
	e-Governance Awareness	7
Problems/Needs & Goals	Activities/Tasks	At the moment she consults the library's clients, if asked, about national digital tools and services. In the future, she might assist in applying for services online and consult more profoundly on public services, incl. e-services. She uses the state service portal latvija.lv, if necessary.
	Goals	Learn more about public services and digital tools to consult and assist clients better. Co-deliver consultations.
	Problems/needs (including digital ones)	No clear guidelines and technical assistance in co-delivering services.
	Relation to INTERLINK empowered Services	Guidelines, templates. Work space. Service customization. Communication tools.

Our Goals for User	Goals with respect to INTERLINK Services	Co-creator and co-delivery.
	Specific interest for INTERLINK Service?	She might use INTERLINK services to receive clear guidelines on how to deliver consultations, potentially in future – also services and communication with other stakeholders.
	Awareness of INTERLINK	From VARAM.

Table 41. VARAM_persona.4 – Andris

FEATURES		DESCRIPTION
Persona identification	Persona ID	VARAM_persona.4
	Name	Andris
	Type of Stakeholder	Client (Final user). Andris has never participated in co-creating a service and is not interested in it. But he is interested in receiving information and services that represent his needs and he might be motivated to provide his opinion if it can be done in an easy and fast manner. He will not engage in long-lasting activities that require lots of his time and attention, as he is very occupied.
	Age	37
	Education	Professional college
	Profession	Salesperson
	Home life	In relationship
	Income Level	7
Digital Savviness & Awareness	Computer/Internet Savvy	6
	Mobile Savvy	6
	Social Media Engagement	6
	e-Governance Awareness	4
Problems/Needs & Goals	Activities/Tasks	He wants to receive a consultation. Now, he calls the CSC. His main interest is to receive information about a service in a fast and efficient manner.
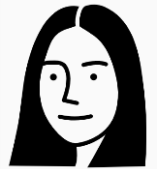
		He does not use any digital tools now but, if necessary, he can do that. He will not want to fill complicated forms. He wants it all to be easy to fill and understand.
	Goals	Goal is to receive a consultation about a public service. As a result, he wants to submit a sick leave and receive sickness benefits.
	Problems/needs (including digital ones)	He has no information on how to solve his life situation, e.g., he wants to submit documents to the State Social Insurance Agency.
	Relation to INTERLINK empowered Services	Andris will not use INTERLINK to apply or recieve a service but, if convinced, he can use the INTERLINK platform once or twice to leave his opinion about how services could be improved in his local community. He might use simple work space and communication boards but he would also like to receive feedback on his comments and see if they have made an impact on any service.
Our Goals for User	Goals with respect to INTERLINK Services	User only. At some point, he might be a co-creator but this is not the citizen's main goal or interest. He is mainly interested in receiving high quality information/service.
	Specific interest for INTERLINK Service?	Provide recommendations by telephone to a CSC employee. Point out problems in finding the service, errors in the application steps. To make the next application easier.
	Awareness of INTERLINK	From CSC or digital agent.

<p align="center">*Table 42. VARAM_persona.5 – Ieva*</p>

FEATURES		DESCRIPTION
Persona identification	Persona ID	VARAM_persona.5
	Name	Ieva
	Type of Stakeholder	Client (Final user) Ieva is retired. She has some free time, but she uses public services seldom and is not technically savvy. She can do simple tasks online, like, sending emails, finding public administration websites etc. but she can't fill complicated forms or use difficult platforms/websites.
	Age	64
	Education	High school
	Profession	Retired
	Home life	Widowed
	Income Level	5
Digital Savviness & Awareness	Computer/Internet Savvy	3
	Mobile Savvy	3
	Social Media Engagement	3
	e-Governance Awareness	2
Problems/Needs & Goals	Activities/Tasks	She wants to receive a consultation. Now, she calls to the CSC. She explicitly explains her life event and CSC devotes their time to understand Ieva's needs as best as possible. Main interest for Ieva - that the CSC employee understands her needs completely and provides thorough help step by step.
	Goals	Goal is to receive a consultation about a public service and step by step guidance on how to receive the public service.
	Problems/needs (including digital ones)	She has no information on how to solve her life situation, e.g., she wants to submit documents to the State Social Insurance Agency.
	Relation to INTERLINK empowered Services	

FEATURES		DESCRIPTION
Persona identification	Persona ID	VARAM_persona.5
	Name	Ieva
	Type of Stakeholder	Client (Final user) Ieva is retired. She has some free time, but she uses public services seldom and is not technically savvy. She can do simple tasks online, like, sending emails, finding public administration websites etc. but she can't fill complicated forms or use difficult platforms/websites.
	Age	64
	Education	High school
	Profession	Retired
	Home life	Widowed
	Income Level	5
Our Goals for User	Goals with respect to INTERLINK Services	User only. At some point, she might be a co-creator but this is not the citizen's main goal or interest. If co-creation requires access and use of complicated websites she will not participate. She is mainly interested in receiving high quality information/service but also expressing her opinion is important to her.
	Specific interest for INTERLINK Service?	
	Awareness of INTERLINK	From CSC or digital agent.

6.2. Personas for ZARAGOZA use case

Laura	Anabel eTOPIAmanager for logistics and	Raul Principal of a secondary school

eTOPIAprogram manager[3]	maintenance	
Julián committed citizen		

Figure 29. ZARAGOZA Personas

Table 43. ZGZ_persona.1 – Laura

FEATURES		DESCRIPTION
Persona identification	Persona ID	ZGZ_persona.1
	Name	Laura
	Type of Stakeholder	Inner-house user (Program manager) She is in charge of programming activities inside eTOPIA
	Age	40
	Education	University Bachelor
	Profession	Freelancer
	Home life	
	Income Level	5
Digital Savviness & Awareness	Computer/Internet Savvy	8
	Mobile Savvy	9
	Social Media Engagement	8
	e-Governance Awareness	4

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[3] Persona icons by Yu luck, KR, licensed as Creative Commons CCBY.

Problems/Needs & Goals	Activities/Tasks	Laura is one of eTOPIA's activity programmers. Her main concern is to map the needs of these activities with the availability of the center's resources.
	Goals	To have a tool that allows her to allocate the many resources available in the centre to those who need them to develop a project.
	Problems/needs (including digital ones)	Laura would love to be clear about what resources are available and on what dates ... only then is she able to plan the many activities the centre has.
	Relation to INTERLINK empowered Services	
Our Goals for User	Goals with respect to INTERLINK Services	
	Specific interest for INTERLINK Service?	
	Awareness of INTERLINK	

Table 44. ZGZ_persona.2 – Anabel

FEATURES		DESCRIPTION
Persona identification	Persona ID	ZGZ_persona.2
	Name	Anabel
	Type of Stakeholder	Inner-house user (logistics and maintenance) She is in charge of maintenance and logistics resources
	Age	50
	Education	Professional college
	Profession	Civil servant
	Home life	
	Income Level	7
Digital Savviness & Awareness	Computer/Internet Savvy	6

	Mobile Savvy	5
	Social Media Engagement	4
	e-Governance Awareness	4
Problems/Needs & Goals	Activities/Tasks	The main activity she does is validating resource allocation depending on its availability. Only when Ana Bel gives her approval in terms of resources available (the resources must not only be available but also they are in ideal conditions to use) for the different activities programmed by eTOPIA can these ones be carried out. If any resource is unavailable, it is mandatory either to reschedule the activity to another date that better fits or to sort out the cause it is hindering it (overlapping dates, falling in any resource, etc)
	Goals	She really wants / needs something that brings together real time demands over eTOPIAresources.
	Problems/needs (including digital ones)	The problem is: not having control over available resources and the demands on those resources. Rules need to be established about who can: ● ask for resources (anyone) ● reserve resources (some people) ● definitively allocate resources (just those authorised to as Ana Bel is)
	Relation to INTERLINK empowered Services	
Our Goals for User	Goals with respect to INTERLINK Services	
	Specific interest for INTERLINK Service?	
	Awareness of INTERLINK	

Table 45. ZGZ_persona.3 – Raul

FEATURES		DESCRIPTION
Persona identification	Persona ID	ZGZ_persona.3
	Name	Raúl
	Type of Stakeholder	He is the principal of the secondary school "IES Andalan" External user (can be anyone who wants to co-create a new service or program)

	Age	45
	Education	University Degree
	Profession	Teacher
	Home life	Happily married - 2 children
	Income Level	7
Digital Savviness & Awareness	Computer/Internet Savvy	7
	Mobile Savvy	7
	Social Media Engagement	5
	e-Governance Awareness	7
Problems/Needs & Goals	Activities/Tasks	Raul is totally engaged with education and innovation. He is actively looking for new programs to motivate the learning community (teachers and students) of his center.
	Goals	His goals are to position his center as an innovative and attractive place and also to improve the working atmosphere by innovation.
	Problems/needs (including digital ones)	When trying to innovate, he is offered by the public administration rather standard and rigid tools and services (tablet PCs, cloud learning services, etc). Furthermore, he does not receive staff support to adopt innovation. He needs to go beyond the standard offer, and mainly to actively participate in the co-design of this offer to match the learning needs and strategy of his educational center. Finally, he needs mentorship and somebody that can accompany his staff in the adoption of these innovations. Example: Raúl wants to set up an Artificial Intelligence lab. He thinks it would be brilliant for his center and to motivate his students, but this is not part of the standard offer supported by public administration. So he leans on eTOPIA_a to use the facilities for this purpose and also receives an expert in teaching Artificial Intelligence that guides his high school on the process and adapts it to their particular needs.
	Relation to INTERLINK empowered Services	Raúl would need a clear understanding of: ● what eTOPIA_ has to offer ● how to access to programs and resources ● how to co-create or reconfigure these services to give birth to new, customized ones. The analogy with a shop might be useful here: Raúl needs to see the showcase, he needs to see and access the door, and he needs to know how his community can create new items to be showcased in the future to other customers.

Our Goals for User	Goals with respect to INTERLINK Services	Raul would be involved in co-creating the new services for his school and to make students and teachers aware about the development of the new program. - co-creator - co-delivery
	Specific interest for INTERLINK Service?	● Being aware of the initiatives, programmes, opportunities that the eTOPIA_ offers ● Understand what are the procedures that he has to follow to apply for accessing resources ● To monitor the impact of the new program in his center
	Awareness of INTERLINK	

Table 46. ZGZ_persona.4 – Julián

FEATURES		DESCRIPTION
Persona identification	Persona ID	ZGZ_persona.4
	Name	Julián
	Type of Stakeholder	Committed Citizen Julian is a citizen who believes in citizen involvement to improve the experience of living in the city. He believes that we can all contribute by participating in the different initiatives proposed by the public administration. As he lives close to eTOPIA_, he regularly comes to participate in the many activities that are programmed there. He enjoys joining the courses, programmes, workshops etc. to learn new things and also to share his own knowledge with others participants.
	Age	55
	Education	Mid-level education
	Profession	Blue-collar worker
	Home life	Single
	Income Level	6
Digital Savviness & Awareness	Computer/Internet Savvy	4
	Mobile Savvy	4
	Social Media Engagement	4

	e-Governance Awareness	4
Problems/Needs & Goals	Activities/Tasks	Julian wants to participate in the activities offered by eTOPIA_ but he is not sure how to access the wide range of activities offered by the centre. He would like to know quickly and easily which activities are programmed, on what dates, what requirements are needed to access them, what forms he has to fill in (if necessary), to know in advance the price and the available discounts, etc. Sometimes Julian goes to eTOPIA_ with his friend Conchita, a woman with impaired mobility who uses a wheelchair. Sometimes it is not easy to access places and he would like to know in advance if the centre has taken into account access barriers for people like Conchita.
	Goals	Julian wants to sign up for eTOPIA_ activities and he wants to do it quickly and easily (even if he's not a genius with his computer nor his mobile phone). He is fed up with missing events that he would love to attend.
	Problems/needs (including digital ones)	Julian thinks that his level of engagement in activities could be acknowledged or rewarded somehow (on the other hand, he knows for a fact that eTOPIA_'s curators are sympathetic with this possibility although unfortunately nothing has been done so far).
	Relation to INTERLINK empowered Services	Julian would need a clear understanding of: ● what eTOPIA_ has to offer ● how to access to all programs and resources Julian also needs to feel that his engagement is rewarded.
Our Goals for User	Goals with respect to INTERLINK Services	Julian could easily sign up for the center's activities because there would be an updated catalog of workshops, programs, courses, etc. with the procedures, dates, access requirements and fees perfectly defined. If there eventually was a reward system to reward his enthusiasm for participating in the center's activities it certainly would be great because he would be able to use the points obtained to access more activities.
	Specific interest for INTERLINK Service?	● Being aware of the initiatives, programmes, opportunities that eTOPIA_ offers and being able to join them easily.
	Awareness of INTERLINK	

6.3. Personas for MEF use case

Figure 30. MEF Personas

Table 47. MEF_persona.1 - Luca Felice

FEATURES		DESCRIPTION
Persona identification	Persona ID	MEF_persona.1
	Name	Luca Felice

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[4] Persona icons by Yu luck, KR, licensed as Creative Commons CCBY.

	Type of Stakeholder	DAG Director (Co-creator, co-designer and user) Luca Felice as Director of the DAG (Department of General Administration and Services) within the Ministry of Economy and Finance (MEF) expressed the need to create further collaboration opportunities with other Public Bodies, especially in terms of strategic planning. In this regard, Luca considered that one of DAG's internal Directorates, the DSII, could be the right Office to co-design a Participatory Strategic Planning Module mock-up able to address these needs.
	Age	60
	Education	Master's degree in Public Affairs
	Profession	DAG Director
	Home life	
	Income Level	9
Digital Savviness & Awareness	Computer/Internet Savvy	7
	Mobile Savvy	7
	Social Media Engagement	6
	e-Governance Awareness	10
Problems/Needs & Goals	Activities/Tasks	Luca Felice is responsible at the DAG for the development of IT strategies and policies that other MEF directorates shall implement. In this sense it provides strategic guidance to the MEF DSII.
	Goals	● The current mission and goals that Luca Felice pursues on DAG's behalf are: ○ Policy definition and strategic planning of public sector personnel services, ○ Implementation of the "openness innovation" principle within his Public Body and the services it provides, by involving all affected stakeholders.

	Problems/needs (including digital ones)	• The problems/needs that Luca Felice would like to address are: ○ The current approach is mainly Government to Government (G2G) with limited inclusion of external stakeholders in the decision making process. ○ Limited availability of tools enabling continuous collaboration among Public Bodies when defining strategic plans; currently plans are mainly done in silos by only taking into account political guidelines. ○ Limited sharing of good practices and approaches in participatory strategic planning between Public Bodies.
	Relation to INTERLINK empowered Services	• GDRIVE: The **co-design of a mock-up to engage stakeholders in a Participatory Strategic Planning design and thinking process** ○ Luca would find in the INTERLINK services an opportunity to co-design a new Participatory Strategic Planning mock-up enabling him to create synergies with other Public Bodies and to facilitate stakeholders' engagement.
Our Goals for User	Goals with respect to INTERLINK Services	Luca Felice, through the DSII involvement, will be able to design a digital tool/mock-up to strengthen the collaboration between MEF and other Public Bodies when setting strategic plans. Luca Felice will also be able to use the output once ready to further his goal of having MEF collaborating with other Public Bodies. A dissemination campaign is essential to make all actors aware of the initiative.
	Specific interest for INTERLINK Service?	Luca Felice, as DAG Director, could benefit from the services mentioned above and facilitate the collaboration among Public Bodies in the strategic planning process. Thanks to Interlinkers, Public Bodies will be also able to share good practices and create increased synergies and cooperation among other public administrations.
	Awareness of INTERLINK	Luca is responsible for the launch of the INTERLINK through in-house awareness campaigns launched by MEF.

Table 48. MEF_persona.2 - Rossella Bianchi

FEATURES		DESCRIPTION
Persona identification	Persona ID	MEF_persona.2
	Name	Rossella Bianchi

	Type of Stakeholder	**Central Public Body Head of Unit**; (Co-creator, co-designer and User.) Rossella Bianchi, as Head of the Unit within the Directorate of Information Systems and Innovation (DSII) of the Italian Ministry of Economy and Finance (MEF), covers both the role of co-creator/co-designer in the co-design of a Participatory Strategic Planning Module together with other Public Bodies, and of user benefiting directly from the service.
	Age	48
	Education	Master in Public Administration Affairs
	Profession	Head of Unit
	Home life	
	Income Level	9
Digital Savviness & Awareness	Computer/Internet Savvy	7
	Mobile Savvy	8
	Social Media Engagement	7
	e-Governance Awareness	8

Problems/Needs & Goals	Activities/Tasks	Considering the priorities at national level of "**openness**" **towards other Public Bodies** and the **need to create new tools to consult external stakeholders when designing strategic plans**, as declined by the DAG Director Luca Felice, Rossella Bianchi rely on INTERLINK to co-design a **Participatory Strategic Planning Module** that facilitates the collaboration among Public Bodies, and which guarantees the involvement of external stakeholders. The main challenge, and need at the same time, is **to design a new PSPM mock-up which is useful for MEF and also for other Public Bodies**. The result is a co-designed Participatory Strategic Planning Module mock-up which embeds the needs and requirements of MEF and other Public Bodies, and for this reason useful to all.
	Goals	The goals are: • To create synergies with other Public Bodies for a Participatory strategic planning design; • Test the tools for the consultations of external stakeholders when thinking of strategic plan; • Test tools useful for both MEF and other Public Bodies; • Test the tools for the sharing of good practices, experiences, governance models.
	Problems/needs (including digital ones)	• Each Public Body has its in-house strategic planning design approach which could be in contrast with the one proposed by MEF. The merge could be challenging. • A strong awareness campaign is needed to ensure a wider dissemination of this new service co-designed by MEF towards external stakeholders.

	Relation to INTERLINK empowered Services	GDRIVE: The **co-design of a mock-up to engage stakeholders in a Participatory Strategic Planning design and thinking process which involves Public Bodies and foresees consultations from external stakeholders**
		The new mock-up of Strategic Planning Module co-designed by MEF and another Public Body will contribute in the **definition of common strategies and plans tailored to the needs of the public sector**.
		With this, MEF will provide Public Bodies with **useful tools** based on common guidelines, good practices and standardized processes, able to be adopted by other Public Bodies.
		The entire process will **strengthen collaboration among Public Bodies** and a **greater involvement of external stakeholders** in the definition of strategic plans.
		So, the mock-up will also ensure a greater involvement of other public bodies in the decision making process.
Our Goals for User	Goals with respect to INTERLINK Services	Thanks to the new Participatory Strategic Planning Module mock-up Rossella Bianchi will **strengthen the collaboration between the Ministry and other Public Bodies,** answering to one of the highest priorities at national level. In this way, Rossella could be closer to the other Public Bodies' and external stakeholders' needs and define ad hoc strategies, ensuring a quick achievement of results.
		With the sharing of good practices among Public Bodies Rossella will be also able **to know working methods and experiences of other entities**, to be adopted in other different contexts. At the same time, this sharing of experiences and good practices will **strengthen collaboration between her central Institution and others**.
		Finally, thanks to this new approach, Rossella and the Ministry could be **closer to the external stakeholders' needs** and define ad hoc strategies. In this regard, Rossella expects a **greater trust of them toward Public Bodies**.
	Specific interest for INTERLINK Service?	Rossella will underline the benefits of designing a mock-up of the Participatory Strategic Planning Module towards other Public Bodies and external stakeholders. A participatory strategic planning design embedding the needs of the public sector as a whole could help Rossella and the Ministry to define ad hoc strategies with a better definition of priorities, less loss of time and a rationalization of the expenditures.

FEATURES	DESCRIPTION	
	Awareness of INTERLINK	Rossella is already aware of INTERLINK, her goal is to make other Public Bodies and external stakeholders aware of the new Participatory Strategic Planning Module mock-up and its benefits.

FEATURES	DESCRIPTION	
Persona identification	Persona ID	MEF_persona.3
	Name	Paolo Grande
	Type of Stakeholder	**MEF IT Technical Officer** (Co-creator, co-designer and User.) Paolo Grande will take part in the co-design process. As he will be the person in charge of the PSPM mock-up production.
	Age	
	Education	Master's degree in Computer Engineering
	Profession	Computer Engineer
	Home life	
	Income Level	8
Digital Savviness & Awareness	Computer/Internet Savvy	10
	Mobile Savvy	10
	Social Media Engagement	9
	e-Governance Awareness	8

Problems/Needs & Goals	Activities/Tasks	Paolo Grande is an IT technician of the Italian Ministry of Economy and Finance (MEF). As such, he normally takes part and oversees the following activities: • Running regular checks on network and data security. • Identifying and acting on opportunities to improve and update software and systems. • Developing and implementing IT policy and good practice guides for the PA he works for.
	Goals	Paolo Grande operational goals are aligned to MEF institutional goals. The MEF provides IT softwares and systems to its own division and to all other Italian Public Bodies. Therefore Paolo's main activities are twofold: • He works as an internal software developer providing IT services to its own organisation. • Also, he participates as a point of contact in the technical development of IT solutions for a wide range of other Italian Public Bodies.
	Problems/needs (including digital ones)	Paolo Grande, as MEF IT manager encounters the following difficulties: • Software and technical integration of the new module within the MEF software systems. • Possible misalignment with the integration of the new module with the the requirements of the software systems used by other Public Bodies
	Relation to INTERLINK empowered Services	GDRIVE: The **co-design of a mock-up to engage stakeholders in a strategic planning process** Paolo will be responsible for the production of the Interlink service connected to the development of the PSPM mock-up. Paolo Grande's goal at the end of INTERLINK will be to co-design a new Participatory Strategic Planning Module mock-up based on the needs of the Public Sector and which could be integrated by the MEF itself, as well as by other Public Bodies, using the feedback gathered during the INTERLINK collaborative environment
Our Goals for User	Goals with respect to INTERLINK Services	The specific goals of Paolo Grande with respect to the INTERLINK services are the: • Design of PSPM mock-up which could be adopted by MEF and other Public Bodies that matches their needs. • Integration of the PSPM mock-up within the already existing IT Strategic Planning module.

FEATURES		DESCRIPTION
	Specific interest for INTERLINK Service?	Thanks to the intervention of an IT technician/expert, the new PSPM mock-up will be designed ad hoc according to the technical needs of MEF and of another Public Body; in this way, it will be possible to easily adopt.
	Awareness of INTERLINK	Paolo is part of the INTERLINK development.

Table 50. MEF_persona.4 - Valeria Bruni

FEATURES		DESCRIPTION
Persona identification	Persona ID	MEF_persona.4
	Name	Valeria Bruni
	Type of Stakeholder	**MEF Data Processor** (final user)
	Age	
	Education	Master's degree in Information Systems
	Profession	Manager
	Home life	
	Income Level	7
Digital Savviness & Awareness	Computer/Internet Savvy	9
	Mobile Savvy	9
	Social Media Engagement	8
	e-Governance Awareness	8

Problems/Needs & Goals	Activities/Tasks	Valeria expects to have an involvement in the co-design phase of MEF's strategic plans.
	Goals	The goals are: • Increase the participation of employees in the design of national strategic plans, through direct consultations. • Be aware of the Public Bodies' initiatives.
	Problems/needs (including digital ones)	The main identified problems are: • Lack of tools for the engagement of stakeholders • Lack of information about the services provided by Public Bodies (lack of awareness campaigns).
	Relation to INTERLINK empowered Services	GDRIVE: The **co-design of a mock-up to engage stakeholders in a strategic planning process** Thanks to INTERLINK and the awareness campaigns launched by MEF, Valeria would be able to know the MEF initiatives and actively participate thanks to open consultations in the Strategic Planning definition.
Our Goals for User	Goals with respect to INTERLINK Services	Valeria plays the role of final user and, thanks to INTERLINK and the services provided, she will be able to know the latest initiatives launched by MEF and have a say in them.
	Specific interest for INTERLINK Service?	The INTERLINK co-design process will allow Valeria to participate in the designing of the new PSPM mock-up, therefore it will be possible to easily adopt it and knowing its long-term goals Valeria will be motivated to co-design it and finally use it.
	Awareness of INTERLINK	Valeria will learn about INTERLINK through awareness campaigns launched by MEF and the other Public Bodies using the new Strategic Planning Module.

Table 51. MEF_persona.5 - Franco Grossi

FEATURES		DESCRIPTION
Persona identification	Persona ID	MEF_persona.5
	Name	Franco Grossi
	Type of Stakeholder	**MEF HR** (Co-designer and User)
	Age	51

	Education	Master's in People & Organization
	Profession	HR Director
	Home life	
	Income Level	8
Digital Savviness & Awareness	Computer/Internet Savvy	6
	Mobile Savvy	6
	Social Media Engagement	6
	e-Governance Awareness	7
Problems/Needs & Goals	Activities/Tasks	Franco Grossi, being MEF HR will be involved in online or in presence workshops to discuss the PSPM functionalities, the usefulness of the Interlink Platform and its functionalities so he will be able to give feedback on the PSPM mock-up co-design process.
	Goals	The goal is to find a solution (a software, processes, guidelines…) that could help Franco in: • Participate in the co-design of MEF's PSPM mock-up • Facilitate **stakeholders' engagement** in order to develop ad hoc HR strategies; • Sharing a digital repository where other Public Bodies HR department can find existing **standardized guidelines and good practices**. • Strengthen the collaboration and synergies among Public Bodies.
	Problems/needs (including digital ones)	The main identified problems are: • Lack of tools for the engagement of employees • Lack of information about the services provided by other Public Bodies (lack of synergy and awareness campaigns).
	Relation to INTERLINK empowered Services	GDRIVE: He would enjoy participating in **the co-design of a Participatory Strategic Planning Module mock-up**. In fact, thanks to MEF's use case, Franco would be able to take part in the design of strategic plans benefitting from direct consultations of stakeholders. The new mock-up will also guarantee Franco to strengthen synergies with other Public Bodies through homogeneous and **participatory planning** with the same criteria and requirements.

Our Goals for User	Goals with respect to INTERLINK Services	• **Participate in MEF's PSPM mock-up co-design:** Franco could exploit the co-design of a PSPM mock-up and give his input during its creations so he will better understand its benefits. • **Involvement and awareness of PAs service:** Franco will be aware of the new services thanks to the MEF awareness campaigns. • **Final results evaluation service:** A specified INTERLINK service will let him evaluate the obtained final results.
	Specific interest for INTERLINK Service?	• To co-design a Participatory Strategic Plan mock-up together with other relevant stakeholders; • To make the governance of the Public Bodies more transparent; • To exploit synergies with other Public Bodies.
	Awareness of INTERLINK	Franco will learn about INTERLINK through Awareness Campaigns launched by MEF.

Table 52. MEF_persona.6 - Andrea Cento

FEATURES		DESCRIPTION
Persona identification	Persona ID	MEF_persona.6
	Name	Andrea Cento
	Type of Stakeholder	**Other PA Director** (co-designer and User). Andrea Cento, Director of another PA, will take part in the co-design process.
	Age	54
	Education	Master's in management and Policy in Public Administration
	Profession	Other Public Body Director
	Home life	
	Income Level	8

Digital Savviness & Awareness	Computer/Internet Savvy	7
	Mobile Savvy	8
	Social Media Engagement	7
	e-Governance Awareness	9
Problems/Needs & Goals	Activities/Tasks	Andrea Cento, being the Director of a Public Body, will give feedback on the PSPM mock-up co-design through interviews, surveys and questionnaires in relation to the Interlink collaborative platform and the Interlinkers' functionalities and usefulness. He would like for the PSPM mock-up to ensure that the functionalities fit with his Public Body's needs, especially the Open Repository of Good Practices and governance guidelines.
	Goals	The goals for Andrea are: • To help MEF in the design of the mock-up of the Participatory strategic planning module; • To test tools useful for both MEF, his Public Body and other Public Bodies; • Test the tools for the sharing of good practices, experiences, governance models and have a digital repository where to find existing **standardized guidelines and good practices** shared by MEF and among other Public Bodies. • To strengthen the collaboration and synergies among Public Bodies.
	Problems/needs (including digital ones)	Andrea identifies a lack of cooperation among Public Bodies and a lack of shared guidelines, considering that each Public Body works today independently. So, his need is: 1) to find a way to continuously cooperate and dialogue with MEF and other Public Bodies ensuring a quicker achievement of results; 2) to have access to **good practices** and examples of already existing agreements, governance models to take into account in developing new strategies.

	Relation to INTERLINK empowered Services	He would enjoy collaborating with MEF and other Public Bodies in the co-design of the mock of a Participatory Strategic Planning Module which involves an Open Repository. Considering that the collaborative platform would also guarantee the sharing of **standardized guidelines and good practices among Public Bodies,** Andrea would be able to check already existing experiences and define the best way to set an eventual strategy for the Public Body he works in. The new PSPM mock-up that he would help co-designing would also guarantee Andrea to strengthen synergies with other Public Bodies through homogeneous and **participatory planning** with the same criteria and requirements.
Our Goals for User	Goals with respect to INTERLINK Services	The specific goals of Andrea Cento with respect to the INTERLINK services are the: • Design of PSPM mock-up which could be adopted by MEF and other Public Bodies that matches their needs. • Access to Open Repository of good practices.
	Specific interest for INTERLINK Service?	• To design a Participatory Strategic Plan together with other relevant stakeholders; • To make the governance of the Public Bodies more transparent; • To exploit synergies with other Public Bodies.
	Awareness of INTERLINK	Andrea will learn about INTERLINK through Awareness Campaigns launched by MEF.

Table 53. MEF_persona.7- Arianna Giallini

FEATURES		DESCRIPTION
Persona identification	Persona ID	MEF_persona.7
	Name	Arianna Giallini
	Type of Stakeholder	**MEF Employee** (User)
	Age	35
	Education	Master's in Economics
	Profession	Employee

	Home life	
	Income Level	5
Digital Savviness & Awareness	Computer/Internet Savvy	8
	Mobile Savvy	8
	Social Media Engagement	8
	e-Governance Awareness	8
Problems/Needs & Goals	Activities/Tasks	Arianna is a MEF employee and would like to have an involvement in the design phase of MEF's strategic plans and to be aware of MEF's and other Public Bodies initiatives. Arianna will also be involved in the pilot from the beginning. In fact, she will be part of the PRE (A) group I and will be actively participating since the pre-pilot phase with other colleagues. Arianna will work on the INTERLINK platform, test its Interlinkers and evaluate the functionalities and the different tools in their beta version.
	Goals	The goals are: • (Pre-pilot phase) To test the INTERLINK platform beta version and work with its tools before the pilot starts • Evaluate the INTERLINK platform and its tools and functionalities and give advice on how to fix small problems before the pilot execution begins • Work with the INTERLINKERS and understand how the different tools might be used in the PSPM mock-up • Actively participate in the design of national strategic plans, through direct consultations and initiatives. • Be aware of the MEF and other Public Bodies' next steps and objectives.
	Problems/needs (including digital ones)	The main identified problems are: • Lack of tools for the engagement of employees • Lack of information about the services provided by other Public Bodies (lack of synergy and awareness campaigns).
	Relation to INTERLINK empowered Services	GDRIVE: The **co-design of a mock-up to engage stakeholders in a strategic planning process** Thanks to INTERLINK and the awareness campaigns launched by MEF, Arianna would be able to help out in co-designing the MEF initiatives and actively participate thanks to open consultations in the Strategic Planning definition.
Our Goals for User	Goals with respect to INTERLINK Services	Arianna plays the role of final user and, thanks to INTERLINK and the services provided, she will be able to know the latest initiatives launched by her organization and have a say in them.

	Specific interest for INTERLINK Service?	• To participate in MEF's strategic planning • To be aware of latest initiatives from MEF and other Public Bodies
	Awareness of INTERLINK	Arianna will learn about INTERLINK through awareness campaigns launched by MEF.

Table 54. MEF_persona.8- Elena Grandi

FEATURES		DESCRIPTION
Persona identification	Persona ID	MEF_persona.8
	Name	Elena Grandi
	Type of Stakeholder	**Other PA HR** (User)
	Age	42
	Education	Master's in People & Organization
	Profession	HR Director
	Home life	
	Income Level	8
Digital Savviness & Awareness	Computer/Internet Savvy	7
	Mobile Savvy	7
	Social Media Engagement	7
	e-Governance Awareness	8
Problems/Needs & Goals	Activities/Tasks	Elena Grandi, being the HR of a Public Body will give feedback on the PSPM mock-up co-design through surveys and questionnaires in relation to the Interlink collaborative platform and the Interlinkers' functionalities and usefulness. She would like for the PSPM mock-up

		to ensure that the functionalities fit with her Public Body, especially the Open Repository of Good Practices and governance guidelines.
	Goals	The goal is to find a solution (a software, processes, guidelines…) that could help Elena in: • Participate in the co-design of MEF's PSPM mock-up • Facilitate **stakeholders' engagement** in order to develop ad hoc strategies; • Having a digital repository where to find existing **standardized guidelines and good practices** shared among other Public Bodies. • Strengthen the collaboration and synergies among Public Bodies.
	Problems/needs (including digital ones)	Currently, there are no existing processes to manage stakeholders' relations and synergies with other Public Bodies. Elena identifies a lack of shared guidelines, considering that each Public Body works today independently. So, her need is to find a way to continuously communicate with other Public Bodies and to share with other Public Bodies and HR departments examples of already existing agreements, governance models to take into account in developing new strategies.
	Relation to INTERLINK empowered Services	She would enjoy **the co-design of a Participatory Strategic Planning Module mock-up**. In fact, thanks to MEF's use case, Elena would be able to take part in the design of strategic plans benefitting from direct consultations of stakeholders. The new mock-up will also guarantee Elena to strengthen synergies with other Public Bodies through homogeneous and **participatory planning** with the same criteria and requirements.
Our Goals for User	Goals with respect to INTERLINK Services	• **Participate in MEF's PSPM mock-up co-design:** Elena could exploit the co-design of a PSPM mock-up together with MEF, which would meet her needs. • **Involvement and awareness of PAs service:** Elena will be aware of the new services thanks to the MEF awareness campaigns. • **Final results evaluation service:** A specified INTERLINK service will let her evaluate the obtained final results.
	Specific interest for INTERLINK Service?	• To co-design a Participatory Strategic Plan mock-up together with other relevant stakeholders; • To address her PAs needs; • To make the governance of the Public Bodies more transparent; • To exploit synergies with other Public Bodies.
	Awareness of INTERLINK	Elena will learn about INTERLINK through Awareness Campaigns launched by MEF.

7 Appendix B - Candidate APIs for INTERLINKERs of Pilots Iteration I

The following tables include the corresponding APIs to the software INTERLINKERs envisaged at each pilot site.

7.1. Ideas Crowdsourcing INTERLINKER

Table 55. Candidate API for Ideas Crowdsourcing INTERLINKER

Logical grouping	Functionality	Description
USER TASK: collaboratively create ideas		
IDEA GENERATION	Asset refers to a board that contains all the ideas created by users that can be upvoted or downvoted to prioritize them.	
	create asset	Create an ideas crowdsourcing board
	list assets	Retrieve all boards
	get asset	Get information about a given board
	modify asset	Editing of an existing board metadata
	delete asset	Delete a board
	create idea	Create a idea for a discussion board
	delete idea	Delete existing idea of a discussion board
	modify idea	Editing existing idea of a discussion board
	vote idea	Rate idea
	unvote idea	Delete rate of idea
USER TASK: Monitoring of quality of information service		
MONITORING	statistics	Compute statistics on assets

OF ACCESS		
MISCELLANEA		
USER RIGHTS MANAGEMENT	manage user roles	Different users may be granted different read/write rights on the discussion
CUSTOMISABLE GRAPHICAL INTERFACE	multilinguality	The service needs to be reusable across PAs that belong to different countries in Europe Within the same country, PAs may offer information in different languages

7.2. Practicepedia INTERLINKER

Table 56. Candidate API for Practicepedia INTERLINKER

Logical grouping	Functionality	Description
USER TASK: co-create information best practices used to build public services		
DOCUMENT of BEST PRACTICES (DBP)	create best practice project	Create a document of best practices (DBP).
	list DBP projects	Retrieve all DBP projects.
	get DBP	Get information about a given project.
	modify DBP	Editing of an existing project metadata.
	delete DBP	Delete a project.
	add reference document	Add documents (doc, pdf, etc) to a project.
	remove reference document	Delete a reference document of a project.
	add template	Allow to upload a template of the best practice document.
	create template	Allow to create a new template.
	edit template	Allow to edit a new or modify an existing BPD template.

	clone a template	Allow cloning of an existing published template to reuse structure and knowledge.
	remove a template	Remove the template of the document.
	register BPD	Allow to fill information of the BPD based on the template.
	modify BPD	Allow to modify the BPD.
	publish a BPD	Makes the document available for reuse.
USER TASK: Monitoring the interest / best contributions		
MONITORING OF ACCESS	statistics	Compute statistics on assets
MISCELLANEA		
USER RIGHTS MANAGEMENT	manage user roles	Different users may be granted different read/write rights to be able to make contributions.
CUSTOMISABLE GRAPHICAL INTERFACE	multilinguality	The service needs to be reusable across PAs that belong to different countries in Europe Within the same country, PAs may offer information in different languages

7.3. eVoting INTERLINKER

Table 57. Candidate API for eVoting INTERLINKER

Logical grouping	Functionality	Description
USER TASK: co-decide on existing information sources		
DESISION MAKING (eVoting)		A vote refers to a formal indication of a choice between two or more candidates or courses of action.
	create poll	Declare the topic that needs to be voted
	get poll	Get information about a given poll
	modify poll	Editing of an existing poll
	delete poll	Delete a poll

	add voting option	Add voting option for a poll
	remove vote option	Delete specific voting option
	set voting as finished	Declare that the voting has finished to disable the possibility of creating new votes
	add vote	Add vote for a voting after a voting option selection
	delete vote	Delete vote for a voting
	list votes for a voting	Retrieve all the votes made by users for a voting
USER TASK: Monitoring of quality of information service		
MONITORING OF ACCESS	statistics	Compute statistics on votes
MISCELLANEA		
USER RIGHTS MANAGEMENT	manage user roles	Different users may be granted different read/write rights on the votings
CUSTOMISABLE GRAPHICAL INTERFACE	multilinguality	The service needs to be reusable across PAs that belong to different countries in Europe Within the same country, PAs may offer information in different languages

7.4. Collaborative Descriptor INTERLINKER

Table 58. Candidate API for Collaborative Descriptor INTERLINKER

Logical grouping	Functionality	Description
USER TASK: Ensure quality descriptions; Structure information according to standard classifications and data models		
CATALOGUE OF DOCUMENT TEMPLATES		Templates allow to create uniform sets of documents with similar structure and type of content. Document templates may be for example: ● Template for public service descriptions ● Template for describing a best practice of a PA process ● Template for describing a service offered by an innovation hub as Etopia ● Templates for describing Examples and Frequently Asked Questions Possible implementation of templates:

		● simple version: templates are document skeletons with empty parts (or placeholder material). To create an instance document it is sufficient to create a copy of the template and fill in the empty parts. The same functionalities available for documents apply to templates (e.g. the collaborative editing) – the creation of the document is less constrained ● more formal version: each template has an associated data model, which lists the required fields and predefined graphic rendering rules. The editing of a new document requires selecting the data model and filling in a form with fields from the data model. This option requires editing support for the data model of the template and for a constrained filling in of the template to create a document. Automatic checks can be implemented to verify the completion of the information included in the documents.
	create template	Create a new document template from scratch. Assign it a unique identifier
	clone template	Clone an existing document template, assign it a new unique identifier
	read template	Retrieve a template from the catalogue and show its contents
	modify template	Editing of an existing template (e.g. for customization)
	delete template	Delete a template
	list templates	Support the browsing of the catalogue of template documents by ordering of templates according to different criteria, e.g. - by popularity - by date of creation
	filter templates	Support the filtering of templates e.g. - by creator - by service domain - by type of document (service description vs. good practice description vs. facility description)
	search templates	Support the searching of templates - by text / keywords
	manage comments on a template	Create / Read / Modify / Delete comment on a template
	template history	Keep track of changes on a template to allow to recover previous versions
	template verification	Check that the template complies with EU standards for public service descriptions
	template voting	Let the authoring team to vote on whether the template / parts of the template are of good quality
	template approving	Mark a template as approved by the collaborative team that worked on it

	access rights on templates	Manage subsets of document templates which are owned and managed (edited, deleted) by a specific PA / private entity
	publish a template / group of templates as public	Make a template / group of templates accessible and reusable by the other users of the INTERLINK platform

USER TASK: Co-creation and co-delivery of information of public utility		
CATALOGUE OF DOCUMENTS		Documents may be for example: ● Public service descriptions ● Descriptions of best practices of a PA process ● Descriptions of services offered by an innovation hub as Etopia
	select a template and create document	Select a template from the template catalogue to start editing a new document. Assign it a unique identifier
	clone document	Clone an existing document, assign it a new unique identifier (the new document inherits the same template used to create the original document)
	read document	Retrieve a document from the catalogue and show its contents
	modify document	Editing of an existing document
	delete document	Delete a document
	list documents	Support the browsing of the catalogue of documents by ordering according to different criteria, e.g. - by popularity of access - by date of creation
	filter documents	Support the filtering of documents e.g. - by creator - by service domain - by type of document (service description vs. good practice description vs. facility description) - by exploiting standard classification criteria for service descriptions
	search documents	Support the searching of documents - by text / keywords
	manage comments on a document	Create / Read / Modify / Delete comment on a document
	document history	Keep track of changes on a document to allow to recover previous versions
	document voting	Let the authoring team to vote on whether the document / parts of the document are of good quality
	document approving	Mark a document as approved by the collaborative team that worked on it

	link documents	Insert links to related documents (e.g. to examples or frequently asked questions)
	access rights on documents	Manage subsets of documents which are owned and managed (edited, deleted) by a specific PA / private entity
	publish a document / group of document as public	Make a document / group of documents accessible and reusable by the other users of the INTERLINK platform
	(advanced) upgrade to new template	Update an existing document to an updated version of the template data model (e.g. when a new required descriptive field is introduced in the template)
	(advanced) document quality check	Check which documents have incomplete descriptive fields (automatic quality check of information contained in the service/process descriptions)
USER TASK: Monitoring of quality of information service		
MONITORING OF ACCESS	statistics	Compute statistics on documents / templates / annotations editing, search, access
	repository quality check	Automatic quality check on the catalogue of service descriptions
MISCELLANEA		
USER RIGHTS MANAGEMENT	manage user roles	Different stakeholders may be granted different read/write rights on the documents / templates / annotations Different stakeholders may be granted different comment/vote rights on the documents / templates
CUSTOMISABLE GRAPHICAL INTERFACE	corporate image	Different organizations may wish to expose to the public a catalogue of service descriptions or good practices with a clear PA corporate image
	multilinguality	The service needs to be reusable across PAs that belong to different countries in Europe Within the same country, PAs may offer information in different languages

7.5. Description Augmenter INTERLINKER

Table 59. Candidate API for Description Augmenter INTERLINKER

Logical grouping	Functionality	Description
USER TASK: co-create information that augments and better explains existing information sources		

DOCUMENT AUGMENTATION (annotations)		Document augmentation refers to the possibility of showing overlaid additional information (annotations) in certain parts of a document. Annotations may consist, for example, of simplified descriptions offered in plain language, terms explanation, examples, frequently asked questions. Annotations are helpful whenever this type of information is not directly included in the main document or in linked documents.
	define annotable element	Declare that one element in a document is annotable (e.g., form, field, paragraph, word, phrase)
	create an annotation	Create a new annotation item and assign a unique identifier Annotations can follow templates. In this case the creation of an annotation corresponds to 1) selecting an appropriate template from the template catalogue, 2) create an empty annotation item with that structure
	link annotation to annotable element	Define the annotable element / list of annotable elements an annotation is related to.
	read annotation	Retrieve the content of a annotation from the catalogue
	show annotation in context	Show the content of an annotation in overlay to an annotable element of a document
	link annotation as reply	link an annotation to another as a "reply"
	modify annotation	Editing of an existing annotation
	delete annotation	Delete an annotation
	list related annotations	Retrieve all the annotations that are linked in a "reply" dependency chain

	list annotations	Support the browsing of annotations by ordering them according to different criteria, e.g.
		  - by popularity
		  - by date of creation

	filter annotations	Support the filtering of annotations e.g.
		  - by creator
		  - by role of the user
		  - by type of information

	search annotations	Support the searching of annotations - by text / keywords
	(advanced) recommend annotations	Automatically compute which annotations should be shown for a certain user
	submit annotation	In case the annotation is created by user roles with certain access rights (e.g. citizens) the annotation is not published immediately (e.g. when a citizen posts a question)

	send annotation notification	In case an annotation is submitted by user roles with certain access rights (e.g. citizens), the owner of the associated document is notified
	annotation approving	Mark an annotation as approved by the collaborative team that created the original document to be shown on the document
	access rights on annotations	Manage subsets of document annotations which are owned and managed (edited, deleted) by a specific PA / private entity
USER TASK: Monitoring of quality of information service		
MONITORING OF ACCESS	statistics	Compute statistics on documents / templates / annotations editing, search, access
	repository quality check	Automatic quality check on the catalogue of service descriptions
MISCELLANEA		
USER RIGHTS MANAGEMENT	manage user roles	Different stakeholders may be granted different read/write rights on the documents / templates / annotations Different stakeholders may be granted different comment/vote rights on the documents / templates
CUSTOMISABLE GRAPHICAL INTERFACE	corporate image	Different organizations may wish to expose to the public a catalogue of service descriptions or good practices with a clear PA corporate image
	multilinguality	The service needs to be reusable across PAs that belong to different countries in Europe Within the same country, PAs may offer information in different languages

7.6. Quality of Service INTERLINKER

Table 60. Candidate API for Quality of Service INTERLINKER

Logical grouping	Functionality	Description
USER TASK: Evaluate the quality of a service.		
Questionnaires	create a questionnaire	Create a new questionnaire and assign a unique identifier.
	modify a questionnaire	Editing of an existing questionnaire.
	delete a questionnaire	Delete a questionnaire.

	publish a questionnaire	A questionnaire is only modifiable when it has a status of not published. Once the questionnaire has been published it is only possible to clone it.
	clone a questionnaire	Clone an existing questionnaire, assign it a new unique identifier (the new questionnaire inherits the same questions used to create the original questionnaire).
	filter questionnaires	Support the filtering of questionnaires e.g. - by creator - by topic of the questionnaire
	search questionnaires	Support searching of questionnaires - by text / keywords
Questions	create a question	Create a new question and assign a unique identifier.
	modify a question	Modify the information of an existing question.
	delete a question	Delete a question.
	add questions to a questionnaire	Add a question to a questionnaire.
	remove a question of a questionnaire	Delete a question from the questionnaire.
	search a question	Support the searching of questions - by text / keywords - type of answer
AnswerChoices	create an choice	Create a new possible choice.
	modify an choice	Edit a choice.
	delete an choice	Delete a choice.
	add choices to a question	Each question must have one or a set of possible answers (choices).
	remove a choice of a question	Remove an choicefrom a question.
Responses	register responses to a question.	Registers the actual responses by users.
	get response	Show the response of a particular question.
	list responses	List all the responses of a questionnaire.

USER TASK: Monitoring the quality of a service

MONITORING OF ACCESS	statistics	Compute statistics on questionnaire / questions / answers and access.
MISCELLANEA		
USER RIGHTS MANAGEMENT	manage user roles	Different stakeholders may be granted different read/write/publish rights on the questionnaire. The different stakeholders may or may not have permission to fill out a questionnaire.
CUSTOMISABLE GRAPHICAL INTERFACE	multilinguality	The service needs to be reusable across PAs that belong to different countries in Europe Within the same country, PAs may offer information in different languages

7.7. Incentives and Social Coin INTERLINKER

Table 61. Candidate API for Incentives and Social Coin INTERLINKER

Logical grouping	Functionality	Description
USER TASK: Promote user participation in co-production activities using incentives and rewards.		
Campaign	create a campaign	Create a new campaign and assign a unique identifier.
	modify a campaign	Editing of an existing campaign.
	delete a campaign	Delete a campaign.
	clone a campaign	Clone an existing campaign, assign it a new unique identifier (the new campaign inherits the same actions used to create the original campaign).
	publish a campaign	Make it temporarily available for the community.
Actions	create an action	Create a new action, each action is associated with a number of points as a reward for performing it.
	modify an action	Edit the data that an action has.
	delete an action	Delete an action.
	add action to a campaign	Add possible actions that are part of a campaign.
	remove an action of a campaign	Remove an action from the campaign.

	register a user action	Register the execution of an action by a user. Sometimes a user can perform actions that are not automatically validated and, hence, acknowledged.
Credit (Points)	add credit to a user account	Social credit is added to an account when a user has performed an action that is within a current open campaign.
	check the credit balance	Consult the total social credit obtained by a user.
	consume an amount of credit	Consume an amount of social credit earned by exchanging credit for a prize (services, products, vouchers, etc).
Interest group	create an interest group	Defines the group of people selected to participate in a campaign.
Participants	add a participant	Add a user or group of users to a group of interest.
	remove a participant	Removes a user or group of users from a group of interest.
Sponsors	create a sponsor	Create a new sponsor, this person or company allows the realization of a campaign by offering the credit balance that is consumed in exchange for users' registration of actions. .
	modify a sponsor	Edit the information related to a particular sponsor.
	delete a sponsor	Delete a sponsor.
	add sponsor to a campaign	Add sponsors to a specific campaign.
Prizes	create prizes	Create a new prize, which is offered by a sponsor and is part of a campaign.
	modify prizes	Edit the information related to a particular prize.
	remove prizes of a campaign	Remove prizes of a specific campaign.
	add prizes to a campaign	Add prizes to a specific campaign.
Manager	create a manager	Assign control of a campaign to one or more users.
	modify manager	Edit the information related to a manager.
	add manager to a campaign	Add a manager to a specific campaign.
	remove manager from a campaign	Remove a manager from a campaign.

USER TASK: Monitor the performance of a campaign

MONITORING OF ACCESS	statistics	Compute statistics on campaign / prizes / credit earned.
MISCELLANEA		
USER RIGHTS MANAGEMEN T	manage user roles	Different stakeholders may be granted different read/write/publish rights on the campaign.
CUSTOMISABL E GRAPHICAL INTERFACE	multilinguality	The service needs to be reusable across PAs that belong to different countries in Europe Within the same country, PAs may offer information in different languages

7.8. Resource Management INTERLINKER

Table 62. Candidate API for Resource Management INTERLINKER

Logical grouping	Functionality	Description
USER TASK: resource management		
RESOURCE MANAGEMEN T	Resource management refers to the possibility of reserving resources that may consist, for example, of places or other physical assets.	
	list resources	List all resources with capabilities of filtering
	create a resource	Create a new resource and assign a unique identifier and a type (place / other type of resource)
	get specific resource	Get specific resource
	update resource	Editing of an existing resource
	delete resource	Delete a resource
	list related resources	Retrieve all the resources that share the same tags
	list reservations	Get reservations for a resource with capabilities of filtering
	create a reservation	Create a new reservation and assign a unique identifier and link to a resource
	get specific reservation	Get specific reservation
	update reservation	Editing of an existing reservation

	delete reservation	Delete a reservation
	list attendances	Get attendances for a reservation with capabilities of filtering
	create an attendance	Create a new attendance and assign a unique identifier and link to a reservation
	get specific attendance	Get specific attendance
	update attendance	Editing of an existing attendance
	delete attendance	Delete an attendance
USER TASK: Monitoring of quality of information service		
MONITORING OF ACCESS	statistics	Compute statistics on resources editing, search, access
MISCELLANEA		
USER RIGHTS MANAGEMEN T	manage user roles	Different stakeholders may be granted different reservation/attendance rights on resources
CUSTOMISAB LE GRAPHICAL INTERFACE	corporate image	Different organizations may wish to expose to the public a catalogue of resources with a clear PA corporate image
	multilinguality	The service needs to be reusable across PAs that belong to different countries in Europe Within the same country, PAs may offer information in different languages

7.9. Activity Booking INTERLINKER

Table 63. Candidate API for Activity Booking INTERLINKER

Logical grouping	Functionality	Description
USER TASK: activity booking		
ACTIVITY BOOKING	list activities	List all activities, filtered by query in URL (tags)
	create an activity	Create a new activity and assign a unique identifier and a type
	get specific	Get an activity by id

	activity	
	update activity	Editing of an existing activity
	delete activity	Delete an activity
	list related activities	Retrieve all the activities that share the same tags
	list proposals	Get proposals, filtered by query in URL (resource id)
	create a proposal	Create a new activity proposal and assign a unique identifier and link to an activity
	get specific proposal	Get an activity proposal by id
	update proposal	Editing of an existing activity proposal
	delete proposal	Delete an activity proposal
	list bookings	Get bookings, filtered by query in URL (activity id)
	create an booking	Create a new booking and assign a unique identifier and link to an activity
	get specific booking	Get a booking by id
	update booking	Editing of an existing booking
	pay booking	Set booking as paid
	delete booking	Delete a booking
USER TASK: Monitoring of quality of information service		
MONITORING OF ACCESS	statistics	Compute statistics on activity and booking editing, search, access
MISCELLANEA		
USER RIGHTS MANAGEMENT	manage user roles	Different stakeholders may be granted different activity/booking rights on resources
CUSTOMISABLE GRAPHICAL	corporate image	Different organizations may wish to expose to the public a clear PA corporate image

INTERFACE		
	multilinguality	The service needs to be reusable across PAs that belong to different countries in Europe Within the same country, PAs may offer information in different languages

7.10. Discussion Board INTERLINKER

Table 64. Candidate API for Discussion Board INTERLIKER

Logical grouping	Functionality	Description
USER TASK: collaboratively discuss ideas		
DISCUSS TOPICS WITH OTHERS	Asset refers to a discussion board made up of different channels, where users can discuss different aspects	
	create asset	Create a discussion board
	list assets	Retrieve all discussion boards
	get asset	Get information about a given discussion board
	modify asset	Editing of an existing discussion board metadata
	delete asset	Delete a discussion board
	create channel	Create a channel for a discussion board
	delete channel	Delete existing channel of a discussion board
	modify channel	Editing existing channel of a discussion board
	send message	Send a message to a specific channel inside discussion board
	delete message	Delete specific message
USER TASK: Monitoring of quality of information service		
MONITORING OF ACCESS	statistics	Compute statistics on assets
MISCELLANEA		

USER RIGHTS MANAGEMENT	manage user roles	Different users may be granted different read/write rights on the discussion
CUSTOMISABLE GRAPHICAL INTERFACE	multilinguality	The service needs to be reusable across PAs that belong to different countries in Europe Within the same country, PAs may offer information in different languages

7.11. Document sharing INTERLINKER

Table 65. Candidate API for Document sharing INTERLIKER

Logical grouping	Functionality	Description
USER TASK: share documents with a co-production team		
DOCUMENT AUGMENTATION (annotations)		Asset refers to a document editable with Google Drive tools, such as pdfs, docx, pptx and xlsx, among others.
	create asset	Create an asset of a certain type (text document, presentation or spreadsheet) or from an existing template
	list assets	Retrieve all assets with filtering capabilities
	get asset	Get information about a given asset
	modify asset	Editing of an existing asset metadata
	delete asset	Delete an asset
USER TASK: Monitoring of quality of information service		
MONITORING OF ACCESS	statistics	Compute statistics on assets
MISCELLANEA		
USER RIGHTS MANAGEMENT	manage user roles	Different users may be granted different read/write rights on the votings
CUSTOMISABLE GRAPHICAL	multilinguality	The service needs to be reusable across PAs that belong to different countries in Europe Within the same country, PAs may offer information in different languages

INTERFACE		

8 Appendix C - Quantitative and Qualitative research methods applicable in INTERLINK

Quantitative research methods are used first to get general information about the different aspects of the evaluation. Then the evaluation data will be enriched by utilising qualitative research methods. Table 66 presents the quantitative and qualitative methods suggested to be applied in INTERLINK evaluation.

Table 66. Qualitative and quantitative research methods in the evaluation

Quantitative research methods	Qualitative research methods
Data log	Cognitive walkthrough
Quality of service short questionnaire	Heuristic evaluation
Online in-depth questionnaire	Think-aloud method
	Semi-structured interview

8.1. Pre-pilot subphase evaluation

Expert evaluation cognitive walkthrough and heuristic evaluation may be done before the actual usability testing. The aim is to find the most critical usability issues before the actual pilot. Also, a limited number of users might also answer an alpha questionnaire where they will be able to report their experience when first exposed to the INTERLINK co-production model and artefacts.

Cognitive Walkthrough

As the first method of usability evaluation, we may use a walkthrough of typical user tasks, which is an applied version of the so-called *cognitive walkthrough*. This method is used in our evaluation before a heuristic evaluation because the key benefit of this method is that it can be used to evaluate the learnability of the system, in other words how easy the system is to use in the beginning. We will apply the methods so that experts will go through typical user tasks independently, registering the phases and possible usability problems. As part of the analysis, we will have a meeting in order to go through the results and try to come up with appropriate repair proposals.

Special attention will be paid to the following issues in performing the tasks:

- Does the user have the correct goal?
- Is he/she able to find the correct function in the system?
- Does he/she connect the function to his/her goal?

● If the correct function has been performed, does the user get enough feedback on the progress of the task?

Table 67. Guidelines on how to use the Cognitive walkthrough method

	Guideline to use the Cognitive Walkthrough method
1	Preparing a Preliminary report (background information, such as user descriptions from the client, and a list of typical user tasks)
2	Assembling the group
3	Going through the tasks independently
4	Recording the observations independently and evaluating the severity of the problems
5	Summarizing problems and drawing up a development proposal in a team

Heuristic Evaluation

Different evaluation methods are used to bring out different usability problems. Heuristic evaluation usually uncovers common usability problems such as terms unfamiliar to the users, inconsistencies, problems in the order of the functions, etc. In a heuristic evaluation parts of the service's user interface are checked with various usability principles (heuristics). For the INTERLINK purposes, Jakob Nielsen's 10 heuristics [33] may be used (see Table 68). The actual usability test will be done with the **Think-Aloud** method. Approximately 5-8 users from each target group will be involved. This is a typical number of participants used in usability testing and a large proportion of usability problems are discovered with this number.

Table 68. Jakob Nielsen's 10 heuristics

	List of Jacob Nielsen's Heuristics
1	Use simple and natural dialogue
2	Use the users' own language
3	Minimize the user's memory load
4	Make the user interface thoroughly consistent
5	Give the user feedback for functions

6	Give a clear exit from different modes and functions
7	Give the user the possibility to use shortcuts
8	Give clear error messages in error situations
9	Avoid error situations
10	Give sufficient and clear help and documentation

8.2. Pilot execution subphase evaluation

Questionnaires, surveys and questionnaires may be conducted in order to collect information from a large number of participants.

Table 69. Why to use survey method [34]

Why to use this method?	Challenges
● Easy to analyse ● Large sample at relatively low cost ● Simple to manage ● Familiar format ● Quick to complete	● Avoid complex questions ● Avoid leading questions ● Avoid jargon ● Avoid bias ● Have standard procedure ● Ask one information at a time ● Be as simple as possible ● Adjust the style of the questions to the target audience

Table 70. Guidelines to how to use the Questionnaire method [35]

Guidelines to use the Questionnaire method	
1	Define topics for research
2	Define the participants
3	Prepare the questions

4	Use closed questions with multiple predefined choices or open questions to allow respondents to respond in their own words.
5	Two common closed formats are: the Likert 7-point format: strongly agree, agree, undecided, disagree, strongly disagree. Or 4 point forced choice format: Strongly agree, agree, disagree, strongly disagree.
6	Present the questionnaire
7	Refine the questionnaire
8	Questions should flow logically

Semi-structured interview

A semi-structured interview is a qualitative method of inquiry that combines a pre-determined set of open questions that prompt discussion. A semi-structured interview provides for the interviewer the opportunity to explore particular themes or responses further. Thus, it does not limit respondents to a set of predetermined answers (unlike e.g. a structured questionnaire).

Semi-structured interviews can be used to understand how interventions work and how they could be improved. It also allows respondents to discuss and raise issues that you may not have considered.

Table 71. Why to use survey semi-structured interview method [36]

Why to use this method?	Challenges
● Quick to complete ● Provides valuable information from the point of view context of participants' (and stakeholders') experience ● Use of pre-determined questions provides uniformity	● It can be time consuming to collect and analyse data ● Requires some level of training or practice in order to prevent interviewer suggesting answers

Table 72. Guidelines to how to use the Semi-structured interview method [37]

Guidelines to use the Semi-structured interview method	
Prepare for the interview	Make sure that you are clear as to what information you want to obtain. It is important that you are clear as to who you want to speak to, how you will collect the information (recording, notes etc)
Inform the respondent about the reason for your questions	It is important, and ethically important, to be open and transparent with the interviewee as to why you are wishing to speak to them, and how the information will be used. If recording the interview, it is important that you gain consent. Depending on your organisation's policies, you may need to obtain written consent.
Recording answers	Recording answers can be done through taking notes, audio-recording, or both. One of the constraints to audio-recording is whether the respondent will feel at ease answering questions. Taking notes is generally seen as less threatening, and it also keeps the interviewer involved in the process. Taking notes allows the interviewer to highlight key points to probe further, and also may make the production of the final notes and its evaluation quicker as there is no need to wade through large files of transcripts. If an audio-recording is used, it is important to make sure that it will work, and that transcription software is available.
Develop a rapport with the respondent	Obtaining meaningful information from a respondent will be easier if they are comfortable opening up to the interviewer. This can be done by asking non-probing questions such as how they are going, commenting on their garden and asking them if they spend much time gardening etc.
Ask questions that lead to detailed answers	It is important that you phrase questions in a way that gets respondents to provide detailed answers, rather than simple 'Yes' or 'No' answers. Examples of questions include: ● How did you get to find out about this project? ● What is your involvement in this project? What are the strengths and weaknesses of the project? ● How has the project changed the way you live? ● How do you use the new information (or skills) in your day-to-day life? ● What type of assistance would you like to live more sustainably? ● What hurdles remain to you being able to take action? ● How would other people benefit from this project? ● What other types of projects should be implemented to build on this one? It is good to have a set of questions at hand, but the interviewer needs to also be prepared to expand or probe on the pre-determined questions as the need arises. This is the essence of qualitative interviews.
When to end an interview	Deciding when to end an interview may depend on a number of factors. For example, the interviewer may feel that they have exhausted their questions, and that they are no longer getting new information, or if the respondent seems tired or has other commitments to attend to. A good practice is for the interviewer to summarise the key points that they feel the respondent has provided, as this provides the respondent with a final chance to expand or clarify any points. It is important to finally thank the respondent for their time, and provide them with the interviewer's contact details. Depending on circumstances, it may also be worth letting the respondent know how they can obtain the final evaluation report, as this will provide them with a sense of ownership of the material that they have shared.

Structured Think-aloud

As a usability testing method, we use the structured think-aloud method, in which test users, one by one, perform tasks all the while saying what they are doing. The user's intentions and the formation of a mental model of how the service works is discovered as the user describes what he or she is doing and why. The method requires talkative users who are willing to express themselves. However, this criterion must not lead to the selection of test users who are too similar to each other. We also need a good, supportive instructor, who is relaxed and present, yet does not influence the progress of the test. The tests are recorded. We will reserve and spend approx. 60 minutes altogether per user. If the test situation lasts longer and the test user does not show any signs of fatigue, the test will be carried out to the end.

We may go through the tests with 5-8 users per user group. The participants should be chosen from among people who have not familiarised themselves with INTERLINK before.

The usability requirements of the collaborative environment or the co-produced artefacts are general but clear. From the point of view of testing, the users must first understand how to approach the given task in the collaborative environment or with a given co-produced public service or INTERLINKER. Then, they must be interested in searching for the answer on the tool/artefact, they must find the area connected to the task on the tool/artefact, and they must be able to complete the task. These processes must be clear to the user.

We should list the functions that will be tested. We will include different functions from different levels. In the test tasks, we will not use terms straight from the service's user interface because test users will inevitably follow the terms/concepts of their test tasks, their goals regardless of whether they lead in the right or wrong direction. During the test, we will be able find out for example:

- The time that it took to complete a task/tasks
- How many tasks were completed in a given time period?
- How many mistakes were there?
- How long did it take to recover from mistakes?
- The number of usability errors the users made
- How many times did the user express negative attitudes or frustration?
- How many times did the user know how to complete a certain task directly?
- How many times did the user fumble?
- How many times did the user get lost?
- How many times did the user need a clue from the instructor or was properly in need of assistance?
- How many tasks were not completed correctly?

If one user has problems with a function of a service, it does not necessarily mean there will be a recommendation to fix that function. It is quite right to set the limit to a minimum of two users. Thus, if two users struggle at the same point in the same task, there is a problem with the user interface. We can register individual problem areas in the test and calculate the number of users who made errors in them. Only those areas in which two or more test people have had issues are recommended to be fixed.

We will conduct an interview regarding the development of the user experience at the end of the usability testing. The purpose of the interview is to find out key elements to improve the user experience and to collect user data on which development proposals can be based.

Notice that a possible way to undertaking a "structured Think-aloud" method is using the check list outlined in the Heuristic Evaluation method.