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D6.2 – Use-case Planning & Evaluation v2

Executive Summary:	This report describes objectives, strategy and planning of the validation of the SIMPATICO project results in the three use-case sites of Trento, Galicia and Sheffield. This second version of the deliverable focuses in particular on the second – and final – iteration of the validation, which will take place during the third year of project execution.
WP:	WP6 – Use-case management
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Statement of originality

This deliverable contains original unpublished work except where clearly indicated otherwise. Acknowledgement of previously published material and of the work of others has been made through appropriate citation, quotation or both.

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Glossary

AEM	Adobe Experience Manage
CDV	Citizen Data Vault
CeMIT	Centros para la Modernización y la Inclusión Tecnológica
CPD	Collaborative Procedure Design
DB	DataBase
DOC	Diario Oficial de Galicia
DOM	Document Object Model
EIF	European Interoperability Framework
ES	Spain
EU	European Union
GDPR	General Data Protection Regulation
GL	Galicia
ICT	Information and Communications Technology
ID	Identity
IEC	International Electrotechnical Commission
IGE	Instituto Galego de Estatistica
ISO	International Organization for Standardization
IT	Italy
KPI	Key Performance Indicator
MAST	Multi Agency Support Team
Obj	(Use case) Objective
PA	Public Administration
PDF	Portable Document Format
PM	Project Manager
Q&A	Question and Answer
QAE	Question Answering Engine
QAP	Quality Assurance Procedure

QCP	Quality Control Procedure
R&D	Research and Development
RO	Research Objective
REST	REpresentational State Transfer
SCC	Sheffield City Council
SHEF	Sheffield
SIM	SIMPATICO Project
TAE	Text Adaptation Engine
TBD	To Be Defined
TN	Trento
TR	Technical Report
UK	United Kingdom
UX	User Experience
VDT	Video Display Terminal
WAE	Workflow Adaptation Engine
WP	Work Package
XML	eXtensible Markup Language

Executive summary

This document is the deliverable **"D6.2 – Use-case Planning & Evaluation v2"** of the European project "SIMPATICO - SIMplifying the interaction with Public Administration Through Information technology for Citizens and cOmpanies" (hereinafter also referred to as **"SIMPATICO"**, project reference: 692819).

SIMPATICO addresses a strategic challenge towards the innovation and modernization of the public sector: the need to offer a more efficient and more effective experience to companies and citizens in their daily interaction with Public Administration (PA) by providing a personalized delivery of e-services based on advanced cognitive system technologies and by promoting an active engagement of people for the continuous improvement of the interaction with these services. In order to make the project objectives measurable and to validate its achievement, SIMPATICO proposes **three use-cases within the three PAs: the city of Trento, the region of Galicia and the city of Sheffield.** This enables the project to test different approaches to improve public e-services, in different areas of PA, and in countries characterized by different languages and by different attitudes of citizens towards the PA. In addition, two different iterations of this validation are foreseen, following the two research and development phases in the project plan.

The first part of the deliverable describes the **overall objectives and planning of the validation**, covering both the temporal dimension (i.e., the different phases and the two iterations foreseen in the project plan) and the spatial dimension (i.e., the engagement of three different project sites). It will also then describe the common methodology that will be adopted for use-case management by the three PAs.

The second part of the deliverable **focuses on the second iteration of the validation**, discussing its objectives, success criteria and overall. It also provides a **detailed specification and planning of the experiments to be carried during the second iteration in each of the three project sites**.

This deliverable is issued together with **"D6.4 – Citizens & stakeholders engagement & community building plan v2"**. For this reason, this deliverable will not focus on aspects related to user engagement and community building, though these aspects are fundamental for the successful execution of the validation.

1 Introduction

This deliverable presents the outcomes of SIMPATICO project task T6.2 "Use-case requirements, planning and KPI definition" in the scope of WP6 "Use-case management". In this phase of the project execution, this task has worked to the specification of the experiments that the SIMPATICO project will perform in three different use cases that will be executed in two EU cities – Trento (IT) and Sheffield (UK) – and one EU region – Galicia (ES). More precisely, the project is now preparing to launch a second iteration of the experiments in the three use cases, with the aim of providing a final evaluation of the project results.

To better understand the aim and scope of the project use-cases, we provide in this introductory chapter a short description of the SIMPATICO project (Section 1.1) and of the validation strategy that we intend to adopt (Section 1.2). We conclude the chapter with a description of the structure of the rest of this deliverable.

1.1 SIMPATICO project

SIMPATICO's goal is **to improve the experience of citizens and companies in their daily interactions with the public administration** by providing a personalized delivery of **e-services** based on advanced **cognitive system technologies** and by promoting an active engagement of people for the continuous improvement of the interaction with these services. The SIMPATICO approach is realized through a platform that can be deployed on top of an existing PA system and allows for **a personalized service delivery** without having to change or replace its internal systems: a process often too expensive for a public administration, especially considering the cuts in resources imposed by the current economic situation.

The goal of SIMPATICO is accomplished through a solution based on the **interplay of language processing, machine learning and the wisdom of the crowd** (represented by citizens, business organizations and civil servants) **to change for the better the way citizens interact with the PA. SIMPATICO adapts the interaction process** to the characteristics of each user; **simplifies** text and documents to make them understandable; **enables feedback for the users** on problems and difficulties in the interaction; **engages civil servants, citizens and professionals** so as to make use of their knowledge and integrate it in the system (Figure 1).
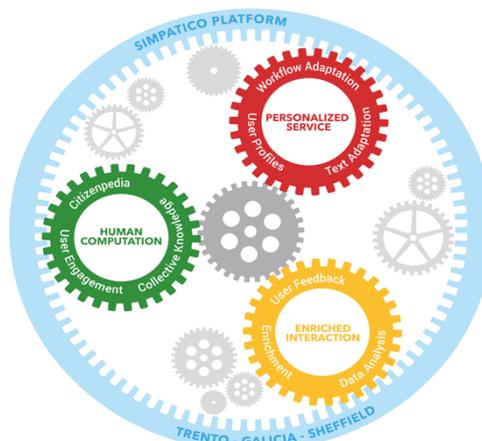
Figure 1 - SIMPATICO concept as a glance

The project aims can be broken down into the following **smaller research objectives (ROs)**.

RO1. Adapt the interaction process with respect to the profile of each citizen and company (PA service consumer), in order **to make it clear, understandable and easy to follow**.

- A **text adaptation** framework, based on a **rich text information layer** and on machine learning algorithms capable of **inducing general text adaptation operations** from **few examples, and of customizing these adaptations to the user profiles.**
- **A workflow adaptation engine** that takes user characteristics and tailor the interaction according to the user's profile and needs.
- A feedback and annotation mechanism that **gives users the possibility to visualize, rate, comment, annotate, document the interaction process** (e.g., underlying the most difficult steps), so as to provide valuable feedback to the PA, further refine the adaptation process and enrich the interaction.

RO2. Exploit the wisdom of the crowd to enhance the entire e-service interaction process.

- An **advanced web-based social question answering engine (Citizenpedia)** where citizens, companies and civil servants **discuss and suggest potential solutions and interpretation for the most problematic procedures and concepts.**
- A **collective knowledge** database on e-services used to simplify these services and improve their understanding.
- An **award mechanism** that **engages users and incentivizes them to collaborate** by giving them **reputation** (a valuable asset for professionals and organizations) and **privileges** (for the government of Citizenpedia – a new public domain resource) according to their contributions.

RO3. Deliver the SIMPATICO Platform, an open software system that can interoperate with PA legacy systems.

- A platform that **combines consolidated e-government methodologies with innovative cognitive technologies** (language processing, machine learning) at different level of maturity, enabling their experimentation in more or less controlled operational settings.
- An interoperability platform that enables an **agile integration of SIMPATICO's solution with** PA legacy systems and that allows the exploitation of data and services from these systems with the SIMPATICO adaptation and personalization engines.

RO4. Evaluate and assess the impact of the SIMPATICO solution.

- Customise, deploy, operate and evaluate the SIMPATICO solution on **three use-cases in two EU cities** – Trento (IT) and Sheffield (UK) – **and one EU region** – Galicia (ES).
- **Assess the impact** of the proposed solution in terms of **increase in competitiveness, efficiency of interaction and quality of experience.**

The focus of this deliverable is in particular on the RO4, covering both the description of the plan to customize, integrate, deploy and operate the SIMPATICO solution in the three project sites, and the definition of the objectives and KPIs for the evaluation and assessment of the SIMPATICO effectiveness and impact.

1.2 Validation strategy

The thesis that we want to validate in SIMPATICO is: "*by integrating language processing, machine learning and human computation we can deliver personalized services that are much more understandable, efficient and effective, thus increasing business competitiveness and citizen inclusion*".

To validate this hypothesis we need to measure the following expected outcomes: i) **increase in efficiency and effectiveness** of public e-services; ii) **better inclusion** of endangered collectives of citizens; iii) **decrease of the administrative burden** for companies and professional to facilitate economic development.

In addition, we want to evaluate the implemented approach by: iv) **measuring the engagement** of civil servants, citizens, professionals and other stakeholders and v) **validating the SIMPATICO Platform** both for its innovative value and for its usability and quality of experience.

In order to make the project objectives measurable and to validate the project's achievement, SIMPATICO proposes **three use-cases within the three Public Administrations of the Consortium: the city of Trento, the region of Galicia and the city of Sheffield.** This will enable us to investigate different aspects of the problem of improving public e-services (e.g. inclusion increase in case of poor language skills, reduction of bureaucracy burden in case of companies and so on), in different areas of PA (e.g. housing, schools, etc.), and in countries characterized by different languages and by different attitudes of citizens towards the PA. The **stakeholders** (PAs) engaged in the three use-cases have been selected for their experience and interest in e-services, as well as for the different socio-cultural backgrounds of the three regions. In this way, we will have the opportunity to validate the effectiveness of the project results in contexts, which differ on the number and heterogeneity of citizens and their social and cultural background.

In addition to **quantitative evaluation**, where we will measure achievements of KPIs alongside different dimensions representing efficiency and effectiveness of public e-services (e.g. time to complete a procedure, number of mistakes in filling a form, etc.), we will devote a significant effort to a **qualitative evaluation** (through surveys, interviews, etc.) measuring the barriers and obstacle preventing the adoption of the SIMPATICO solution and investigating the best strategy to overcome them. We will investigate the impact of the adoption of the technology both from the citizen point of view and from the civil servant point of view, using contextual enquiry methodologies, i.e. following these users in their daily use of the SIMPATICO system.

1.3   Structure of the deliverable

The rest of the deliverable is organized as follows.

Chapter 2 describes the overall objectives and planning of the use-cases, covering both the temporal dimension (i.e., the different phases and the two iterations foreseen in the project plan) and the spatial dimension (i.e., the engagement of three different project sites) of the use-case management. It also describes the common, cross-site methodology that will be adopted for use-case management, covering in particular operation monitoring and issue management.

From **Chapter 3**, the content of the deliverable will focus on the second iteration of the experiments foreseen in SIMPATICO plan: the chapter presents the specific technical environments, plans, success criteria, risks and KPIs that have been defined for the first iteration. The next three chapters provide a detailed planning of the experiments to be carried out during the second iteration in the three project sites: Trento (**Chapter 4**), Galicia (**Chapter 5**), and Sheffield (**Chapter 6**).

Chapter 7 completes the deliverable with some concluding remarks.

This deliverable is issued together with "D6.4 – Citizens & stakeholders engagement & community building plan v2". For this reason, this deliverable will not focus on aspects related to user

engagement and community building, although these aspects are fundamental for the successful execution of the validation.

2 Use-case objectives, overall planning and management

This chapter defines the overall objectives of the SIMPATICO use-cases, the overall planning of the related activities and the methodology adopted for use-case management.

We remark that the methodology adopted by SIMPATICO for user engagement and community building is not discussed here, as it is the focus of deliverable "D6.4 – Citizens & stakeholders engagement & community building plan v2", which is issued in parallel with this document.

In particular, Section 2.1 will analyse the temporal dimension, i.e., it will describe the objectives and activities regarding the use-cases in the different phases of the SIMPATICO project. Then, Section 2.2 will analyse the spatial dimension (i.e., the fact that three different sites, in 3 EU countries, are hosting the SIMPATICO use-cases) and how the project team has been structured to effectively deal with this aspect. Finally, Section 2.3 focuses on use-case monitoring and issue management.

2.1 Use-case timing

Use-cases have played a central role in the definition of SIMPATICO overall plan. Indeed, the SIMPATICO project is implemented according to an iterative strategy, pivoting on two consecutive use-cases validation activities ending at months M20 and M32, respectively. These two main phases are preceded by an "Inception" phase that aims at providing a basis for the next activities, and are followed by a "Transition" phase, aiming at consolidate the project results and to make them exploitable beyond the end of the project: see Figure 2 from the Description of Action.
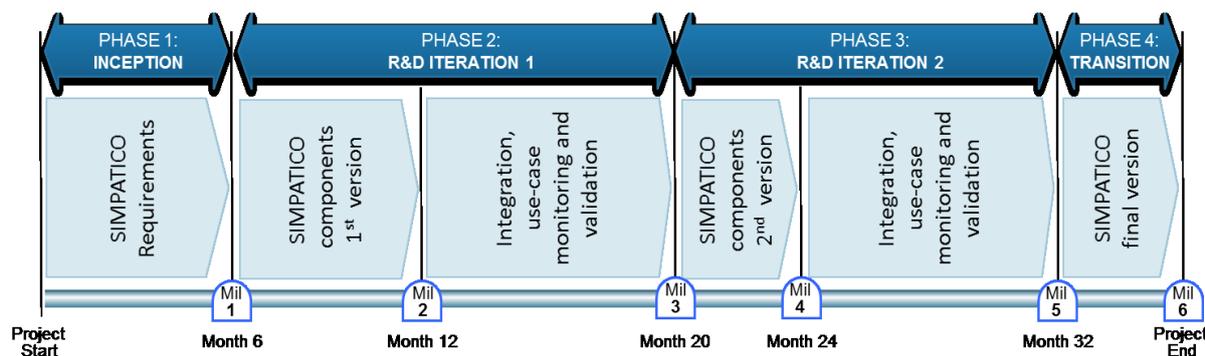
Figure 2 - SIMPATICO project phases

The decision of having two validation phases serves different purposes. First, this iterative approach allows achieving a correct balance between emerging technologies and robust and mature platform components. Second, it allows a strong mutual feedback between scientific advances and use-case validation. Third, it allows including in the project the new approaches and solutions to e-service delivery that are emerging during the execution of SIMPATICO, both at the local level (the PAs participating to the project are working to renew their e-service solutions) and at the national / EU level.

In the following, we describe the objectives and activities concerning the use-cases during the four phases of the project.

● **Phase 1: Inception** (Months 1-6). It will provide a basis for the execution of the use-cases, defining **common methodologies for the execution of the use-cases** and ensuring to collect all

necessary information on the objectives, requirements, stakeholders, and operational settings of the three project sites. The content of this deliverable describes the outcome of this phase.

- **Phase 2: 1st R&D iteration** (Months 7-20). The overall goal of this phase is to **explore and validate the innovative technologies** of the SIMPATICO solution and test their use in e-services, the **barriers** preventing their wider adoption and their **acceptance** by citizens and companies. This iteration will address a limited number of processes and involve a controlled set of users. To do this, a portfolio of initial methods and tools (ready at M12) will be used for a first experimental version of the SIMPATICO solution that will be validated by M20. As an outcome of this phase, we will identify **which of the innovative methods and tools tested** within the use-cases **are more mature** and which still need more research work to be used effectively within a PA service.

- **Phase 3: 2nd R&D iteration** (Months 21-32). The overall goal of this phase is a **complete system used in real operational environment**. A consolidated version of the SIMPATICO methods and tools will be delivered (at M24), and a second use-case evaluation will take place until M32. This second iteration of the use-case validation is going to consolidate the results obtained in iteration 1 and will allow us to fully test **both the research and innovation aspects** of the SIMPATICO solution:

  o The **innovation aspects** of SIMPATICO will be validated through extensive use-cases with many procedures and **open to the general public**. These use-cases will be carried out using a version of the SIMPATICO system that will include only the most robust and mature technologies validated in iteration 1.

  o The **research aspects** of SIMPATICO will be investigated within use-cases with the same scope as in iteration 1. These use-cases will use a version of the SIMPATICO system featuring the most advanced technologies and we will test their performance in terms of effectiveness and robustness.

- **Phase 4**: **Transition** (Months 32-36). The goal of this last phase is to **consolidate the project results** and to make them **exploitable beyond the end of the project**, possibly by generalising SIMPATICO to other topics and PAs.

2.1.1 Use-case dimensions

The management of the use-cases in SIMPATICO has to occur along two dimensions: there is a **local dimension**, covering the site-specific activities performed within a specific city or region, and there is a **global dimension**, covering cross-site, project-wide aspects such as sharing common methodologies and best practices, and organizing an overall monitoring and evaluation strategy.

In order to take both dimensions into account, and to manage the 3 different use-cases for the local dimension, a suitable organization of the project team has been designed, as represented in Figure 3.

First, for each of the three project sites, a **task force** is defined, consisting of three partners: two technical partners (one company and one from research/academy) and one Public Administration. One of the technical partners plays the role of task force leader, coordinates all the activities at the site, and manages the relations with the other sites.

Second, a **cross-site task force** is defined, in order to manage the global dimension of the use-cases. This task force is led by FBK, includes the three leading partners of the three site task forces (FBK, SPA, and DEUSTO), and sees the participation of three additional partners: ENG and BENG in order to

ensure a smooth coordination with the technical developments of the project, and HIB that brings competences on user and stakeholder engagement and community management. Each partner participating to this task force has dedicated the part of its project effort for use-case management to cross-site activities.
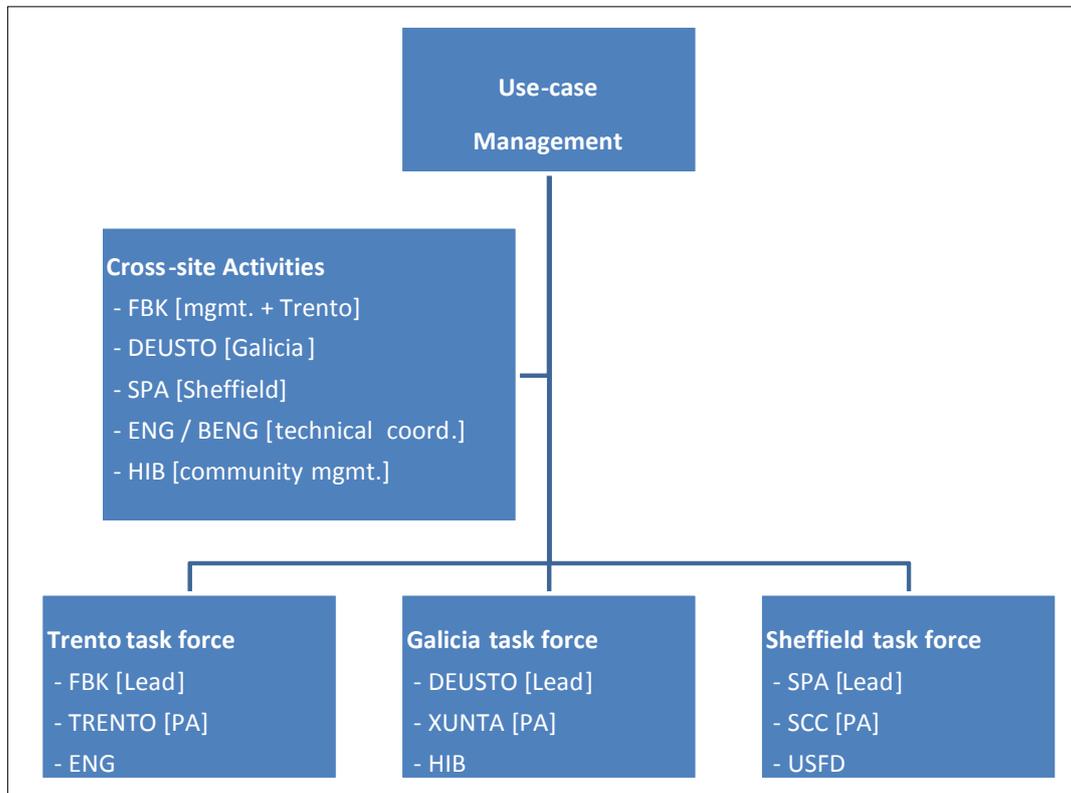
Figure 3 - Team organization for use-case management

2.2 Use-case monitoring and issue management

This section provides an overview of the project activities relating to **(1) use-case monitoring** and **(2) issue management**.

1) The main goal of **use-case monitoring** carried out in **WP6 "Use-case management" (T6.4 "Use-case operation and monitoring")** is to ensure a seamless operation of the city-specific systems deployed in WP5 "Integration and environment setup" (T5.3 "Use-case deployment and connection with legacy systems"). To this extent, the task will monitor the trial operation and promptly detect and analyse problems or missing features that prevent a successful execution, and report them to the appropriate project WP. These activities will be triggered by PA-specific problems, but their management will ensure project-level coordination for those aspects that have cross-site relevance **(T6.1 "Coordination of the use-cases")**. This task will also collect all the required data and information on the execution of the systems in the three use-cases, in order to ensure the evaluation performed in task **T6.5 "Use-case evaluation"**. The task T6.4 "Use-case operation and monitoring") will finally be responsible for collecting operational best practices and know-how from the different PA experiments, and make them available to the other PA.

2) **Issue management** is the **process of identifying and resolving issues**. Project issues must be **identified, managed and resolved**. Issue management plays an important role in maintaining

project stability and efficiency throughout the project lifecycle. It addresses **obstacles that can hinder project success** and/or **block the project team from achieving its goals**. These obstacles can include such factors as differences of opinion, situations to be investigated, emerging or unanticipated responsibilities. The purpose of issue management is to identify and document these issues and to resolve them by reviewing and carefully considering all relevant information.

We remark that the above-mentioned processes are strictly linked to the **project quality management** (see "D1.1 Project Management Plan"), i.e., the process of defining the strategy and methods the project will deploy to ensure the project's deliverables are of acceptable quality before they are delivered. Quality management addresses all the issues related to **quality assurance** and **quality control**.

- *Quality Assurance Procedure (QAP):* the execution of processes and procedures to ensure the achievement of quality and that the project satisfies the needs for which it was undertaken;
- *Quality Control Procedure (QCP)*: it is aimed at verifying and assessing the project achievements/products; it is concerned with the operational activities and techniques that are used to fulfil the requirements of quality. Inspection and product testing are examples of quality control tools.

The project quality processes defined in the following subsections have been defined in accordance to the project quality management defined in "D1.1 Project Management Plan".

2.2.1 Local management and monitoring at project sites

In Section 2.2, a local dimension and a global dimension have been identified for SIMPATICO use-cases. These two dimensions correspond also to different approaches for use-case monitoring and issue management.

Since each use-case has specific aspects (e.g., on deployment and integration, user engagement, distribution of effort and responsibilities among partners), local task forces at each pilot site have the responsibility of defining site-specific management and monitoring processes. This includes most appropriate communication channels, progress monitoring and issue management procedures.

The following sub-sections define the common procedures that have been defined for the global, project-level dimension of use-case management, and that are in the responsibility of the cross-site task force. Of course, since global success of the project depends on the local achievements at the pilot sites, project level use-case management has also to perform a high-level monitoring of progress and achievements at the different pilot sites, as detailed in the next sub-sections. For what concerns cross-site communication concerning use-case management, the project has agreed to adopt three complementary communication channels, involving all members of the cross-site task force:

- a slack[1] channel for instant messaging;
- a dedicated mail alias for communications that are not adequately delivered through slack;
- the project technical telcos that take place regularly – usually every 2 weeks – and that will have a dedicated part for use-case management.

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[1] https://slack.com/

2.2.2 Use-case monitoring

The **use-case monitoring** is connected with the **project quality management**. The quality management process defines **quality objectives**, **working methods**, **processes review**, **templates** and **responsibilities** that are applied on the project. In particular, it is aimed to:

- make sure that all standards and planning documents are available;
- make sure that standards appropriately address the criticality of the project;
- make sure that all team staff are familiar with the relevant planning documents and the associated rules and standards;
- verify that the outputs are delivered on time;
- ensure compliance with all relevant standards;
- follow the Quality Management process described in the SIMPATICO Project Management Plan (D1.1).

Quality assurance is the monitoring of specific project results, such as those related to use-cases, in order to determine: (a) whether the team is performing to relevant quality standards and (b) the identification of actions required to correct unsatisfactory performance. These quality assurance activities consist of process quality reviews followed by recommendations and possible corrective action plans.

The Work Plan of the SIMPATICO project describes the milestones and the acceptance criteria for each phase of the project; this high level planning has been refined and detailed plans have been defined for use-case execution – these plans are reported in following chapters of this document.

Moreover KPIs are specified, both at the project level, and for the different use-cases; associated tools used for measuring these KPIs have been defined to allow the evaluation of the different uses-cases and of the project as a whole, ensuring incremental and sustainable validation activities. Also in this case, KPIs and measurement tools are further discussed in the following chapters.

Assessing adherence to the use-case plans and KPIs provides the method for evaluating both the project and its products. In order to perform this assessment, three on-line documents have been created, covering the most relevant aspects of use-case execution:

- a document covering the different aspects and steps of software delivery and platform integration at the pilot sites;
- a document covering KPIs, both at the site level and at the project level;
- a document covering the main milestones in the use-case plans.

These documents are maintained regularly updated by site task forces for what concerns the local progresses, and by the cross-site task force for what concerns project-level progresses. These documents are analysed and discussed regularly, during the project technical telcos; dedicated discussions and meetings will also be defined in an on-demand base.

2.2.3 Issue Management

Issue management is the process of **identifying and resolving issues** (e.g., problems, gaps, inconsistencies, or conflicts). Even if in the context of this deliverable the interest is for issues that are relevant for the management of the use-cases, the approach that is followed in WP6 for issue management is the same that is adopted for the whole SIMPATICO project and that is illustrated in Deliverable "D1.1 Project Management Plan". We refer to that deliverable for the principles and guidelines for issue management, and we report here only the two most relevant operational aspects

of issue management in the context of use case management: (a) **the use of the issue log tool** within the SIMPATICO project management; (b) **the management of software-related issues**.

a) Issue log

Issues need to be **recorded when they happen**. Issue management is under **the responsibility of the Project Manager (PM)**, who must effectively use various tools and methodologies to manage the project. In particular, an **issue log** is exploited by SIMPATICO in this context; it contains **a list of ongoing and closed issues of the project**, namely a tool for reporting and communicating what is happening with the project. This makes sure that issues are indeed **raised**, and then **investigated** and **resolved** as quickly as possible and effectively. Without a defined process, PM risks ignoring issues, or not taking them seriously enough.

The **SIMPATICO issue log** include the following information:

- **Issue type:** define the categories of issues that the Consortium is likely to encounter. This helps the PM tracks issues and assigns the right people to resolve them.
- **Identifier:** issue reference number.
- **Timing:** indicate when the issue was identified.
- **Description:** provide details about what happened, and the potential impact. If the issue remains unresolved, the PM shall identify which parts of the project will be affected.
- **Priority:** assign a priority rating to the issue:
  - ✓ **High priority:** a critical issue that will have a high impact on project success, and has the potential to stop the project/WPs/tasks completely.
  - ✓ **Medium priority:** an issue that will have a noticeable impact, but will not stop the project/WPs/tasks from proceeding.
  - ✓ **Low priority:** an issue that does not affect activities on the critical path, and probably will not have much impact if it is resolved at some point.
- **Assignment/owner**: determine who is responsible for resolving the issue. This person may or may not actually implement a solution. However, he or she is responsible for tracking it, and ensuring that it is dealt with according to its priority.
- **Target resolution date:** determine the deadline for resolving the issue.

Issues can be reported, usually by site task forces through any of the communication channels described at the end of Section 2.2.3. The PM has the responsibility of reporting the issue in the issue log and of managing it. The issue log is analysed and discussed regularly during the project technical telcos, in order to ensure its update and the prompt management and resolution of the open issues.

b) Management of software-related issues

The **management of software-related issues** within the project is powered by the adoption of the **GitHub issue tracker**[2]. GitHub is exploited by SIMPATICO as the source code repository for the different project software components. GitHub's issue tracking feature meets the need for an agile instrument that, being simple though fully-featured, allows for an effective and integrated management of software issues, with a limited adoption overhead.

GitHub's issue tracker can also be used in a very simple and agile way **to document software-related issues arising during the execution of SIMPATICO use-cases**. This is achieved through the definition of three GitHub projects, one for each project site: any software-related issue arising in one of the sites is to be reported and managed as a GitHub issue associated to the site project.

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[2] https://github.com/

The creation of a new issue requires a very **minimal set of compulsory fields**:
- tracker (bug, feature, support);
- subject (a short description);
- status (new, in progress, resolved, feedback, resolved, rejected);
- priority (low, normal, high, urgent, immediate).

Then, it is possible to be as detailed as desired in the **specification or modification of the issue** specifying a lot of other attributes, for **monitoring and managing bugs very thoroughly**. Such attributes are:
- assignee (any project participant subscribed);
- category (platform components, app, site, and more);
- parent task (issue linked to the current one);
- start date (insertion date);
- due date (deadline);
- estimated time (effort in hours needed to resolve it);
- percentage done (progress indicator);
- attachments (files to clarify the issue or the solution);
- watchers (list of people following the evolution of the issue).

Single issues can be **visualized with all their details**, and can then be **cooperatively modified** by all people allowed, in order to let the status of the issue progress, to discuss it and to supply information for its resolution. **Predefined reports**, which summarize the situation of open and closed issues along different dimensions (e.g., tracker, priority, assignee, author and category), are available.

3 Specification of phase 2 experiments

This chapter focuses on the second iteration of the evaluation performed by SIMPATICO (Phase 2 Experiments), and provides a project-level, cross-site description of the experiments – site-specific descriptions of the experiments and of the evaluation will be provided in the following 3 chapters. More specifically, this chapter starts from a description of the SIMPATICO platform as will be released for Phase 2 (Section 3.1) and the objectives and success criteria for Phase 2 (Section 3.2). The chapter proposes then an overall planning of the activities to guide the definition of the site-specific plans (Section 3.3), project-level assumptions and risks (Section 3.4) and KPIs (Section 3.5).

3.1 SIMPATICO platform and tools

The SIMPATICO platform is built in order to enhance the user experience in using the Public Services provided by PAs. The platform is made up of several components that interact each other, on the one hand to make easier the experience of the citizen with the e-service, on the other hand to help the civil servant to improve the provided services, also according to data on service usage collected and analysed with the support of the platform.
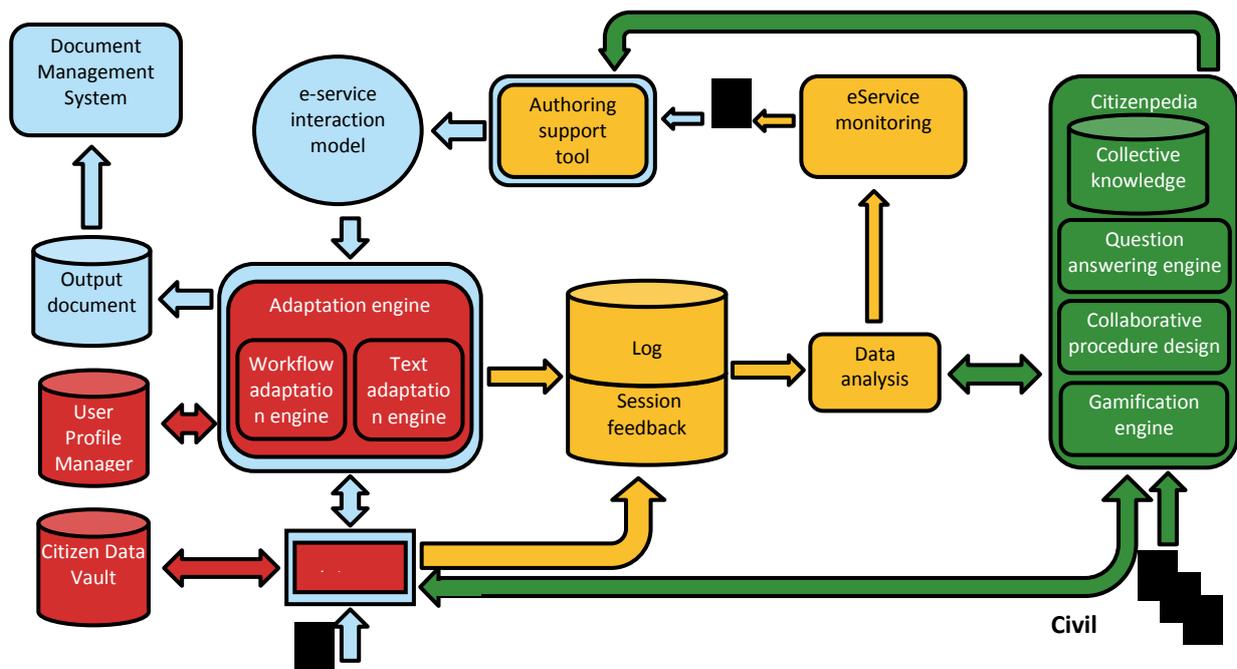
Figure 4 - SIMPATICO conceptual architecture – Phase 2

Below a brief description of the components belonging to the SIMPATICO platform depicted in the previous Figure 5. For more information please refer to "D5.2 SIMPATICO platform requirements and architecture v2".

The Interactive Front-End is the first access point to the e-services that allows the citizens to request for an easier interaction, thanks to several SIMPATICO tools: text adaptation to the user profile, simplified and personalized interaction workflow, pre-filled web forms with user personal data. In particular, the Citizen Data Vault allows storing personal data, so that citizens can provide a given information only once, and this information is automatically reused when necessary. The text simplification requested by citizen when something in the text is not actually clear is in charge of Text

Adaptation Engine. The latter suggests some changes in the text (e.g. lexical, syntactic or semantic simplification) and extension (e.g. translation, synonymous, terms explanation). The simplification of the interaction flow (e.g. hiding a specific web page section to a specific user) is in charge to the Workflow Adaptation Engine. All these changes are made following the User Profile that contains several information of the users and more related to the interaction with the system. All the data and user actions (e.g., how long a service has been used, how long a user spent to fill in a form, etc.) caught by Interactive Front-End are sent to and stored in the Log component. Session Feedback complements logs with explicit user feedback on the different SIMPATICO tools exploited in the interaction.

Data Analysis component is in charge to analyse the data and send to the eService Monitoring component, which enables civil servants to understand the usability of e-services and the performance of the whole system from the collected data on the user interactions. By exploiting this information, civil servants can improve the usability of e-services thanks to the Authoring Support Tool: for instance, they can detect texts that are hard to interpret by users and can simplify them in the e-service.

The Citizenpedia is the other access point where the citizens, professionals and civil servants can cooperate to improve the e-services and solve some questions and doubts. Citizenpedia is composed by four different modules that provide different functionalities: Question Answering Engine (QAE), where citizens can send questions to other citizens, professionals or civil servant to solve some doubt to complete an administrative procedure; Collaborative Procedure Designer (CPD), a tool where citizens can understand the workflow of an administrative procedure and cooperate with civil servants to improve it; Servicepedia, a visualization component which fully describes a given administrative procedure, including its compounding e-services and all the user-generated information produced to guide their usage, i.e. this component brings together the information collected in the CPD and QAE; Gamification Engine, a mechanism to increase the participation and engagement of the Citizenpedia users.

All of these components are supposed to be tested during the second iteration of SIMPATICO validation, either integrated in the SIMPATICO platform to be experimented in (near) real usage operational setting, or through specific "in-lab" experiments.

3.2 Objectives and success criteria for Phase 2 experiments

In the following, we define project-level objectives and associated success criteria for the second phase experiments of SIMPATICO. These objectives and success criteria are derived from Research Objective "RO4. Evaluate and assess the impact of the SIMPATICO solution", and take into account the specific goals of phase 2, namely:

- test the innovation potential of the project by testing a full version of the SIMPATICO Platform involving a consistent number of users and services, in a (near) real operational setting; this version of the SIMPATICO Platform shall include the most scientifically mature and robust tools developed by the project;

- perform a controlled evaluation (not necessarily with real users) of the SIMPATICO Platform including the most scientifically advanced technologies, even if not mature for adoption in a real operational setting.

The project-level objectives described in this section are refined into use-case specific objectives in the following chapters (see Sections 4.1.2, 5.1.2, and 6.1.2).

Obj-SIM-1. To customize, deploy and operate the SIMPATICO solution on three use-cases in the three project sites – Trento (IT), Sheffield (UK), and Galicia (ES).

This objective covers all the technical activities that are necessary to customize and deploy the SIMPATICO tools in the specific operational settings of the three project sites, and to ensure its successful operation during the execution of the first phase experiments. The customization and deployment is achieved both by developing the SIMPATICO tools in order to facilitate their integration in different operational settings and by developing specific integrations for each of the three project sites.

This objective also includes the preparation of the three e-services that will be used in the three project sites, so that they can be used in combination with the SIMPATICO solution (e.g., instrumentation of the e-services, or adaptation of the e-services to the SIMPATICO context).

Success criterion: successful integration of the SIMPATICO solution and tools within the PA e-service portal and with the test e-services.

Obj-SIM-2. To plan, prepare and execute experiments in the three project sites suitable to allow the evaluation of the SIMPATICO solution

This objective covers all activities that are necessary to ensure that enough information is collected during the execution of the experiments in the three project sites, in order to allow for an evaluation of the SIMPATICO techniques and approach. This requires ensuring that the collected information is quantitatively sufficient to ensure a significant evaluation (e.g., enough participants to the experiments, sufficient duration of the experiments, and so on). It also requires that the collected information cover all the different aspects of the SIMPATICO solution that is planned to be evaluated during the second phase of the project.

In order to ensure the achievement of this objective, several actions are put in place:
- First, a project-level and site-level planning of the experiments is undertaken – this deliverable constitute a first outcome of this activity.
- Second, a list of techniques and tools to be validated is defined, and specific KPIs in terms of collected information are associated to each of them (see Section 3.5).
- Third, use-case-level KPIs are defined, which contribute to the project-level KPIs (see Sections 4.2.4, 5.2.4, 6.2.4).
- Finally, experiment plans and KPIs are monitored throughout all the preparation and execution of the experiment, in order to detect and react to any obstacle that may prevent a successful evaluation.

Success criteria: specific aspects to be evaluated, and experiments to evaluate them, are identified, and associated KPIs are defined; sufficient information is collected during the experiments to satisfy the KPIs and to allow for an evaluation of the identified aspects of the SIMPATICO solution.

Obj-SIM-3. To evaluate the SIMPATICO techniques and tools in terms of their effectiveness and maturity.

This objective is about the integration and analysis of the information collected during the execution of the experiments in the three project sites, in order to evaluate the SIMPATICO techniques and tools. In particular, for each technique and tool, the analysis will cover (1) its quality (e.g., its robustness and its usability), in order to assess its maturity for adoption in a near-operational environment, and (2) its effectiveness to achieve the objectives of SIMPATICO (e.g., its effectiveness in simplifying the interaction of the users, or in reducing the errors in the submitted forms).

Obstacles will also be identified that affect the quality and/or the effectiveness of the technique or tool.

This objective shall cover both the tools that are more robust and scientifically mature and the tools that are more scientifically advanced – even if not mature enough to be tested in a real operational setting. Experiments need to be defined to suitably cover the whole range of techniques and tools.

Success criterion: availability of the analysis of quality and effectiveness of each SIMPATICO technique and tool.

Obj-SIM-4. To evaluate the impact of the SIMPATICO approach in terms of usage of e-services, of satisfaction of the users and of more efficiency for the public administration.

The evaluation of the impact of the SIMPATICO approach is the main objective for this second (and final) iteration of the experimentation – this indeed captures Research Objective "RO4. Evaluate and assess the impact of the SIMPATICO solution".

This objective shall focus in particular on the most scientifically mature and robust techniques and tools developed by the SIMPATICO project, and evaluate them in a (near) real operational setting, by involving a consistent number of users and services.

Success criteria: achievement of the impacts and KPIs defined for the SIMPATICO approach.

3.3 Overall planning

In the overall planning of the SIMPATICO project, the second phase evaluation is part of R&D Iteration 2, which starts at Month 21 and ends at Month 32, when Milestone 5 (Second integration and validation of use-cases) is reached. The overall planning presented in this section covers the whole period from Month 21 until Month 32.

Preparation phase [M21-M24]. The objective of this phase is to plan and prepare the following phases of the second iteration of experiments. During this phase, the task forces at the three pilot sites analyse the outcomes of the first iteration, the operational environments – including technical setting and social and regulatory aspects – and identify available e-services that can be used as a basis of the experiment. Based on this information, the integration and deployment strategy for the each pilot site is defined, the approach and strategy for the evaluation is designed, and the e-services to be exploited in the experiments are selected. A detailed planning of the evaluation phase is also performed, both at the site level and at the project level.

Implementation phase [M25-M26]. The objective of this phase is to set up all the components of SIMPATICO solution, according to the plan defined in the preparation phase, so that the evaluation phase can be successfully executed. The implementation phase covers all aspects of the set-up (technical set-up, community building, management aspects and so on). More precisely, this phase covers:

a) the integration of the SIMPATICO tools and techniques with the operational environment of each of the project sites;
b) the set-up of the e-services selected in the preparation phase for the 3 project sites, in order to allow users to exploit the SIMPATICO tools and techniques in combination with these services;
c) the population of the suitable sections of the Citizenpedia with information relevant for the specific testing procedures and their associated e-services in the 3 project sites;

d) the preparation of communication and engagement campaigns for stakeholders and end-users.

Pre-evaluation phase [M26]. The objective of this phase, that is expected to happen in parallel to the conclusion of the implementation phase, is to validate that the set-up is in a convenient status and that the evaluation phase can actually start. The approach that is followed is to run a small "in-lab" experiment at each project site; more precisely, the SIMPATICO solutions in conjunction with the selected e-services for each project site are used by a small panel that is representative of the user community at the site.

Evaluation phase [M27-M32]. During this phase, users will have the possibility to interact with the SIMPATICO solutions in conjunction with the selected e-services, (i) in a production environment (or in an environment that simulates production) in order to validate the SIMPATICO approach as a whole (Objective Obj-SIM-4), and (ii) with specific experiments in order to evaluate all techniques and tools developed in the project (Objective Obj-SIM-3). Data are collected during the whole duration of the experiments, target KPIs are regularly measured and analysed against these data, and corrective actions are put in place whenever necessary. Documentation and reporting of the outcomes of the experiments is also part of this phase.

An important remark is that the temporal organization of the four phases described above only describes the general organization of the activities. Indeed, we foresee a more dynamic management of the different activities corresponding to the implementation, pre-evaluation and evaluation phases. An important lesson learned during the first iteration of the evaluation is that it is important to foresee the possibility to improve the techniques and tools in parallel with the evaluation, both to allow for experimenting the largest set of techniques – also the ones that are not ready at the end of the implementation phase at M26, and to allow for improvement loops during the evaluation. Hence, the implementation phase will continue also during the evaluation phase, and quick rounds of pre-evaluation (i.e., "in-lab" experiments) will be performed to incrementally transfer new tools in the platform used for the evaluation.

3.4 Project-level assumptions and risks

The definition of the use-cases are based on some fundamental assumptions that have been made, in particular on the Municipality e-service solution and on the possibility to integrate the SIMPATICO solution within this e-service solution. The list of these assumptions is summarized in the following table.

Table 1 - Assumptions

Assumption	Comment
The municipalities "e-service portal" will deliver in time to allow the integration with SIMPATICO solution and instruments	In some scenario a development is required in the Municipality e-service portal. In those cases the development plan is compatible with the integration plan of SIMPATICO and offers an adequate time margin to address integration problems. Municipalities have the responsibility to monitor the progress of the e-service development and to report any problem that could invalidate this assumption.
The test e-services selected	The test e-services have been selected taking into account their

for validation will be ready and open for applications during the period of validation of the SIMPATICO use-case (M27-M32).	delivery date according to the integration plan of SIMPATICO plan. The test e-services are expected to be ready compatible with the periods when these e-services will be open for applications, and when users are expected to apply to these services. Municipalities have the responsibility to monitor both the delivery of these services and any obstacle that can make it impossible, complex or not effective to exploit these services during the period of execution of the SIMPATICO use case. The local SIMPATICO integration leader has the responsibility to monitor any change in the planning of the SIMPATICO project that may affect the period of execution of the use case – and hence the possibility to exploit the selected e-services.
Adequate support is provided by any external service provider in order to permit the integration of SIMPATICO with the e-services.	In some scenario part of the test e-services development is outsourced to an external service provider. In those cases the external providers are informed of the SIMPATICO project, and of the requirement of the Municipality to integrate SIMPATICO instruments within the e-service portal. Municipalities have the responsibility to ensure that an adequate support is provided by the external service providers.

The violation of any of these assumptions will produce severe drawbacks on the use-cases: for this reason, specific attention has been dedicated in the validation of these assumptions, and specific emphasis will be dedicated to their monitoring.

Closely linked to the above assumptions, a list of the risks, with probability, impact and remedial actions, is summarized in Table 2.

Table 2 - Risks

Description of possible risk	WPs involved	Remedial Actions
Scientific and technological risks		
SIMPATICO tools and techniques are not delivered in time for the integration in the three use-cases.	WP2-5	(Risk Probability: **Low**, Risk Impact: **Major**) A strict plan and detailed checkpoints are in place preventing this situation to occur. Project Management techniques are in place to monitor the situation and to rise signals in case of plan misalignments. Technical and Plenary meetings have been set up also to prevent major impact situation to show up.
Mistakes, problems in the collection of data for SIMPATICO technical validation and for measuring the progress indicators during the use-cases.	WP5-6	(Risk Probability: **Low**, Risk Impact: **Significant**) The principal indicators have already been defined in this proposal, and the Consortium agrees on their measurability. In case it will not be possible to measure them, new indicators will be defined by the PC.

Operational risks		
Lack of commitment and resistance to change by the PA users.	WP6	(Risk Probability: **Medium**, Risk Impact: **Major**) Reluctance of PA users (either civil servants or policies designers) and the resulting lack of belief sometimes is one of the strongest obstacles when a change in the governance model is proposed. Within the project, special activities will be carried out to demonstrate the advantages of the SIMPATICO solution and thus gain an authentic commitment from the Public Administration adopters. Specific incentive models, developed within T4.5, will be also put in place to ensure engagement of civil servants.
Delays in use-case implementation due to PA partners delay with the digitalization process of their public services.	WP6	(Risk Probability: **Medium**, Risk Impact: **Significant**) In the Task 6.2 Planning, Community Building and Evaluation KPIs Definition, the planning for the implementation of the use-cases will be defined. The Task will also identify early triggers of delays and strategies to prevent them. In case there are some delays, a re-schedule of the WP6 tasks and resources will be performed in order to speed up the tasks in line with the project milestones and deadlines.
Difficultly in integrating the SIMPATICO platform with the legacy systems in the PA.	WP5	(Risk Probability: **Medium**, Risk Impact: **Significant**) Integration with legacy systems, and in general interoperability issues, is a key concern of the project, to which dedicated resources are allocated (tasks T5.2 and T5.3). Even if this integration turns out to be unfeasible, the architecture of the SIMPATICO platform still ensures a satisfactory level of adoption of the proposed approach, by building on top of legacy e-service systems, as discussed in task T3.2 (see SIMPATICO-adapted approach).
External risks		
Changes in local regulatory framework that could delay or even prevent the use-case execution.	WP1-7	(Risk Probability: **Low**, Risk Impact: **Major**) When dealing with e-government in public administration, changes in local regulations and policies are always a risk to be considered. A special task will be devoted to identify the regulatory constraints in the involved use-case countries. Moreover, each use-case PA partner will be continuously supported by a technical partner responsible, among other thing, for monitoring and controlling of environmental factors that could impact the setup and operation of the use-cases.
Citizens' concern for privacy and security of e-services increase due to an unforeseen raise in cybercrimes (or cyber	WP1-7	(Risk Probability: **Low**, Risk Impact: **Significant**) SIMPATICO solution already is aware that citizen lack of trust in e-services is a barrier preventing the achievement of project impacts. If during the project lifetime this effect increases due to external factor we will devote more effort to the

terrorist acts) in EU.		analysis and information about the objective online security levels and, more importantly, will devote more effort in devising new incentives models and engagement strategies.
Management risks		
Partner activities are not aligned and do not meet relevant objectives for project validation and use-case execution.	WP1-7	(Risk Probability: **Very low**, Risk Impact: **Major**) Task 1.2 Scientific and Technical Coordination assure an adequate progress of the technical tasks to be carried out by each partners in order to reach the planned objectives. Technical, Plenary, and PMB meetings are scheduled with a high frequency, in order to ensure that activities are streamlined and, in case of deviations, correcting measures can be timely taken.
Scenario driven risks		
PA system are not ready (out of time) for SIMPATICO integration.	WP5-6	(Risk Probability: **Medium**, Risk Impact: **Major**) Involve the external system provider in the SIMPATICO technical local team.
PA e-services are not ready (out of time) for SIMPATICO integration.	WP6	(Risk Probability: **Medium**, Risk Impact: **Major**) Involve the external provider in the SIMPATICO local technical team.
The scenarios and/or the e-services used in the experimentation fail to provide usable data or/and evidences (e.g. duration of experiments is too short).	WP5-6	(Risk Probability: **Medium**, Risk Impact: **Major**) Prepare the use of and extra e-service to exploit and test the missing SIMPATICO function.

3.5 Project-level KPIs

The project requires measuring the following expected outcomes:
1) **increase in efficiency and effectiveness** of public e-services;
2) **better inclusion** of endangered collectives of citizens;
3) **decrease of the administrative burden** for companies and professional to facilitate economic development.

In addition, we want to evaluate the implemented approach by:
i) **measuring the engagement** of civil servants, citizens, professionals and other stakeholders and
ii) **validating the SIMPATICO Platform** both for its innovative value and for its usability and quality of experience.

In Table 3 we highlight a preliminary set of indicators, which will be used to validate our uses-cases of different and increased complexity, ensuring incremental and sustainable validation activities. The three selected use-cases provide opportunity for validating the effectiveness of the project results in different operational contexts. There are indeed important differences in the technological

ecosystems, with Trento and Sheffield having just started the process of digitalization of their services to citizens and businesses (this process will actually happen in alignment and integration with the SIMPATICO activities), and Galicia having a mature and consolidated e-service delivery infrastructure (thus allowing to test the deployment of SIMPATICO on top of an already operating system). The contexts also differ for the point of view of the number and heterogeneity of end-users and for the variety and maturity of e-services.

Table 3 - Most relevant KPIs

Category	KPI
Number of engaged stakeholders for each type	Civil servants
	Business owners
	Citizens
	Disadvantaged users (migrants, elderlies…)
Internal efficiency of PA processes	Percentage of time saved by civil servants in interactions with users (answering requests for clarifications, etc.)
	Reduction of average duration of the administrative process
Internal effectiveness of PA processes	Reduction in interactions rejected because of mistakes by users in filling the forms
	Reduction in request for integration of information sent to users
Reduction of administrative burden	Reduction in time spent completing a procedure or filling a form
Inclusion	Increase in percentage of disadvantaged users that can complete the e-service autonomously
	Decrease in average number of requests for help from users for each procedure
SIMPATICO Platform	Number of procedures supported by SIMPATICO
	Number of accesses to platform during experimentation
	Number of platform users

Considering the context, it is important to define the formula used to compute KPI values, taking into account different levels of maturity for the experiment scenarios. For this reason, in the following table the calculation of the value for some KPIs is possible only if the comparison is done with a baseline (current system) that is already based on e-services (rather than on paper-based interaction).

Table 4 - Calculation of KPI values

KPI	Value
Civil servants	Number of Civil Servants involved in the scenario experimentation
Business owners	Number of Business owners involved in the scenario experimentation

Citizens	Number of Citizens owners involved in the scenario experimentation
Disadvantaged users	Number of Disadvantaged (migrants, elderlies, people with disabilities …) users involved in the scenario experimentation
Percentage of time saved by civil servants in interactions with users (answering requests for clarifications, etc.)	1 - [Average time spent answering the user online requests using the simplified online interaction (with SIMPATICO tools)] / [Average time spent answering the user online requests using the standard (offline or online) interaction]
Reduction of average duration of the administrative process	1 - [Average duration of the administrative process using the simplified online interaction (with SIMPATICO tools)] / [Average duration of the administrative process using the standard (offline or online) interaction]
Reduction in interactions rejected because of mistakes by users in filling the forms	1 - [Average number of interactions rejected because of mistakes by users in filling the forms using the simplified online interaction (with SIMPATICO tools)] / [Average number of interactions rejected because of mistakes by users in filling the forms using the standard online interaction] *Note: only possible if the baseline is based on e-services.*
Reduction in request for integration of information sent to users	1 - [Average number of requests for integration of information sent to users using the simplified online interaction (with SIMPATICO tools)] / [Average number of requests for integration of information requests sent to the user to complete the online forms using the standard (offline or online) interaction]
Reduction in time spent completing a procedure or filling a form	1 - [Average time spent completing a procedure or filling a form using the simplified online interaction (with SIMPATICO tools)] / [Average time spent completing a procedure or filling a form using the standard (offline or online) interaction]
Increase in percentage of disadvantaged users that can complete the e-service autonomously	1 - [Average number of disadvantaged users that can complete the e-service autonomously using the simplified online interaction (with SIMPATICO tools)] / [Average number of disadvantaged users that can complete the e-service autonomously using the standard online interaction] *Note: only possible if the baseline is based on e-services.*
Decrease in average number of requests for help from users for each procedure	1 - [Average number of requests for help from users for each procedure using the simplified online interaction (with SIMPATICO tools)] / [Average number of requests for help from users for each procedure using the standard online interaction] *Note: only possible if the baseline is based on e-services.*
Number of procedures supported by SIMPATICO	Number of procedures supported by SIMPATICO

Number of accesses to platform during experimentation	Number of accesses to platform during experimentation
Number of platform users	Number of platform users

4 Trento Use-case – Phase 2

4.1 Specification of the Trento use-case

4.1.1 Context and status after phase 1

Trento is a medium Italian city (circa 116.000 people) characterized by a modern service sector, a high quality of life, as well as by a quite consolidated innovation eco-system including a well-known University, Fondazione Bruno Kessler, several other research centres and many innovative companies and start-ups. Trento is working towards transforming itself into a Smart City and is already among the top smart-cities in Italy. In particular, the digitalization of all interactions between the PA and its citizens is a priority for Trento, and the city is currently working on a strategic project in this area.

Trento has already done much to improve interactions with its citizens. The city website is an important reference for citizens and contains all relevant information on the city services. Each procedure has its web page with:

- A description of the procedure;
- Links to the PDF version of all relevant laws and regulations (national and local);
- A step-by-step description of the interaction, with waiting times, costs, and documentation needed;
- Links to the application documents: all documents are fillable PDF documents.

Also, the Municipality of Trento already supports submitting applications through certified e-mail, by sending the filled application documents and a scan of identity document and signature.

As part of its "smart city" strategy, Trento realized a new e-service portal: it serves as a "one-stop shop" or unique access point that offers integrated and facilitated access to all the various services. With this new portal, it is possible for citizens and businesses to authenticate using smart service cards or one-time password devices, and to complete the interaction online.

Trento main goals for the "e-service portal" project of the Municipality are:

1) To improve the relations with citizens and businesses:
   a. enhancing the interactivity of the available services;
   b. providing specific help in the interaction according to user profile.
2) To simplify the "machine":
   a. in order to improve the level of services offered and make them both more efficient and less "expensive".

To implement this strategy, the first step has been to install and set up a system based on a standardized model for online service delivery. For this step, the Municipality of Trento has adopted "Sportello Online", an end-to-end solution provided by company GLOBO srl, specifically targeting the digitalization of modules for service provision by public administrations. Within this solution, the digital module is a composition of sections of organic information (e.g., birth data section, residence data section, real estate registry data section). The logic of the interaction with an information section is explicitly mapped by the module designer. The integrations with legacy systems are handled via a centralized REST web service, which routes the proper service request to the right data source service. Finally, the solution supports module hierarchy, which guarantees the definition of a well-organized digital module library.

The first phase of the "e-service portal" project aimed at the digitalization of the procedures within three different domains:

- Childcare services: enrolment to day nursery service;
- Private Building: landscape permit and mandatory opinions on the architectural quality of the interventions;
- Environment Quality: acoustic derogation for temporary activities (regarding building, musical entertainment at public premises or events).

The services in the three different domains described are available since October 2017. Together, they cover needs of different stakeholders, ranging from citizen to professionals, and offer an important test-bed for the whole "e-service portal" project.

In the course of the first phase of the project the "Sportello Online" solution has been empowered with the SIMPATICO tools. The first evaluation phase of the project has been based on the Enrolment to day nursery and on the Acoustic derogation for temporary activities e-services. The SIMPATICO evaluation results demonstrated the improvement in the usability of the delivered e-services. The good results convinced Trento municipality in enabling SIMPATICO's technologies for all the services deployed within "Sportello Online" which will be provided to both citizens and professionals.

The municipality of Trento is now in the process of defining a plan to digitalize all the services provided to both citizens and professionals. The approach is to complete the digitalization of all the services in a specific domain area (that is, category of services delivered to citizens and professionals) and then move to the services of the next domain area. Completing the services in a specific are will prevent the citizens and the professionals in using services delivered in different ways to handle their needs. This will help the final user in consolidating an interaction model which then will be applied form domain area to domain area and will result in promoting a cultural change. The services digitalization plan will be ready by the end of March 2018.

For phase two the SIMPATICO evaluation will be based on:

- Landscape permit and mandatory opinions on the architectural quality of the interventions e-service
- At least other 10 services identified from the most used and the one that could benefit of the integration of the SIMPATICO tools.

4.1.2 Specific purpose and strategy of the use-case

As already mentioned in the previous section, an important target in the smart city strategy of the Municipality is to increase the number and usage of interactive online services. The ultimate goal is to realize a new e-service portal that acts as unique access point that offers integrated and facilitated access to all of the various services offered by the Municipality and that assists citizens and enterprises in finding answers to their own needs. To achieve this goal the first preliminary step has been to install and set up a system based on a standardized model for online service delivery.

Within the phase one this situation offered the opportunity to the Trento use-case to experiment the integration of the SIMPATICO solution with the city e-service portal, and to assess their capability to provide easier and faster interaction to the users of the portal.

The main **specific purpose** of the first experiment phase in Trento was to **validate the integration between the Trento e-service portal and SIMPATICO solution**. In this regard, it is important to stress that this validation evaluated both (1) the openness and flexibility of the SIMPATICO solution, in particular the possibility to integrate with an existing solution for e-service delivery, specifically the

"Sportello Online" solution, and (2) the easier user interaction and higher user satisfaction in using the e-services improved by SIMPATICO solution.

In addition to this specific purpose, the Trento use-case contributed to the project level objective of the first phase, namely to **evaluate the maturity, effectiveness and usability** of the different SIMPATICO solutions, techniques and components.

More specifically, this included: (1) to measure the improvement in the usage of the selected testing e-services thanks to the adoption of the SIMPATICO solutions; and (2) to evaluate the potential social activation generated by the SIMPATICO approach in terms of community participation (e.g., number of comments, change requests, documentation improvements produced by the user community during the experimentation phase).

Finally, the Trento use-case is still interested in measuring the **improvement in the efficiency of the (organizational) "machine"** that is in charge of managing service requests by citizens and businesses. This means to compare the civil servant average working time required to acquire a complete and correct service module before and after the introduction of the e-service portal, as well as with and without the SIMPATICO tools.

For what concerns the **strategy** that has been adopted for the Trento use-case, it has already been mentioned that the intention is to **validate SIMPATICO solutions in integration with the Municipality e-service portal**. Since "Sportello Online" is provided by an external service provider not directly involved in the SIMPATICO project, the integration has to be as nonintrusive as possible: the integration of SIMPATICO tools and techniques must **exploit the integration models supported by "Sportello Online"**. These include:

1) The possibility to inject JavaScript in the different digital modules;
2) To invoke REST web services to handle interaction with legacy systems.

The initial assumption was that the injection of JavaScript in the digital module could be possible only if it does not interfere with the module interaction logic. This means that the injected JavaScript can operate on the DOM modifying only the static elements of the document (in particular, the labels and text descriptions), but cannot operate in the fields that the user shall fill.

For what concerns the integration with the local IT systems, we deployed the CDV component within border of the information system of the Comune di Trento, while the others SIMPATICO tools have been deployed on the project cloud infrastructure. This was mainly due to the constraints bound to the fact the CDV contains user personal data. This solution prevents voluntary or accidental access to the personal data and simplifies the integration security and authentication issues between "Sportello Online" and CDV.

"Sportello Online" also supports operations on the fields, e.g., pre-filling their values, via explicit external calls. These calls are handled via a unique REST web service, which is responsible of routing the proper request to the proper external services and data source and to compose the reply. The web service request and response must implement a specific simple grammar: the request message is formatted in XML and contains an array of key-value couple (request params); the response message is formatted in XML and contains an array of key-value couple (relations) or a set of key-value couples (record).

From the experimentation and tests made in phase one, it was clear that the change of the dynamic element (the field the user has to fill) is safe because it does not interfere with the business logic included in the module. Basing on this, in order to enable the pre-filling of some fields with the CDV

data, the integration model chosen (and confirmed for phase two) is the one based on JavaScript injection.

Also, during the first phase experiment, the testing e-services have been chosen among those developed during the first phase of the portal delivery - specifically those related to the Enrolment to day nursery service and to the Permit on acoustic derogation for temporary activities. These e-services have been used to validate all the different features and components of the SIMPATICO solution.

During the evaluation phase the e-services have been used by real citizens and professionals with real needs in a real environment. In order to mitigate e-services failures a pre-evaluation phase has been included into the plan involving a panel representing the Trento Community. The e-services has been tested in a sandbox which was an exact replica of the production environment. The same strategy will be adopted for the second evaluation phase.

Anyway in the first evaluation phase some issues have been raised:

- Little usage of the text adaptation,
- Little usage of Query & Answer engine,
- Little usage of the Citizen Data Vault,
- Community Building to be empowered.

Two main reasons caused the little usage of the text adaptation. Firstly because of the easy and clear language used in the e-service modules. Secondly there was a generalized lack of usability of this tool. In phase two, in order to address these issues, the text adaptation tool will be applied to each service description pages where the features could have a higher impact. On the other side, in terms of usability, the text simplification and adaptation techniques should become more transparent and implicit in order to assure a seamless integration within "Sportello Online".

The little usage of Query & Answer (Q&A) is mainly due to the fact that the evaluation took place in a controlled environment where the Civil Servants helped the citizen in fulfilling the e-service. The use of the e-services in a free environment without the help of any municipality operator would eventually strength the use of Q&A. On the other hand the usability is an issue that must be better addressed. In particular a better integration strategy must be identified in order to prevent final users being redirected to an external page to interact with the specific content and functions provided by the tool.

During first phase, the Citizen Data Vault has been integrated using the SIMPATICO standard architecture. Also for this tool, some usability issues have been experimented during the evaluation, more precisely the explicit need to activate the CDV prevented the final user in taking advantage from it.

As far as the community involvement requires a strong improvement, the strategy put in place in phase one must be revised. One aspect the evaluation clearly raised is that in a real environment users don't like to be bothered with activities which don't belong to the e-service fulfilment process. For this reason in the second phase the community involvement will be based on two different actions:

1) Communication actions focused more in pushing the overall digitalization process than the specific SIMPATICO tools;

2) Co-design actions addressing the usability issues through the organization of panels composed with citizens and professionals interested in participating in the municipality digitalization and service improvement activities.

Concerning the Workflow Adaptation Engine, in the first phase it has been mainly used for providing step-by-step interaction and contextual help to citizens and professionals. The opportunity for the second phase is to adapt the user interaction both to the data the system will gain automatically and on each user's capabilities stored in the User Profile.

Finally, Trento is interested in closing the loop with the backend through the deployment of an improved version both of the e-service dashboard and of the text authoring tool. These features are considered by the Civil Servants a real opportunity to provide improved and simplified services to final users.

4.1.3 Use-case objectives and success criteria

The objectives of the experiments directly derive from the purposes of the use-case discussed in the previous section. They are described in the following paragraphs, together with their success criteria.

Obj-TN-1. To digitalize the selected services within the e-service portal of the Municipality of Trento and make them compliant with SIMPATICO.

The e-services will be selected among the most used by citizens and professionals. The selected services will have to be compatible with the SIMPATICO tools and solution, or will have to be adapted to ensure this compatibility.

Success criterion: the selected test e-services shall be available on the Municipality portal in a form that is compliant with SIMPATICO at the beginning of the evaluation phase.

Obj-TN-2. To integrate and validate the SIMPATICO simplification techniques with the test e-services of Obj-TN-1.

The goal is to integrate the SIMPATICO tools within the e-service portal of the Municipality and to enact the application of the simplification techniques enabled by these tools for the user interaction with the test e-services identified and digitalized in Obj-TN-1.

This objective serves to validate the integration between the e-service portal and SIMPATICO solution. Also, this objective aims at ensuring that the level of usage of the test e-services by citizens and businesses is sufficient to allow for validating the integrated techniques and at measuring their effectiveness and maturity.

Specifically, this objective covers:

1) The integration and validation of the text simplification techniques on the test e-services;
2) The integration and validation of the text workflow adaptation techniques on the test e-services;
3) The integration and validation of the capability, offered by the CDV, to exploit information already provided by the service users in previous interactions following the "only once" principle and the coexistence of multiple personal data sources.

Success criteria: successful integration of the identified SIMPATICO simplification techniques within the Municipality e-service portal and with the test e-services by the beginning of the evaluation phase; sufficient information collected during the experiment to allow the validation of the SIMPATICO simplification techniques and the evaluation of their effectiveness and maturity.

Obj-TN-3. To evaluate the improvements of the adoption of SIMPATICO solutions to the usability of the e-services and to the efficiency of the offices of the Municipality.

The aim is to validate that effectiveness of SIMPATICO in the simplification of the user interaction. More precisely, this effectiveness is measured in terms of:

1) increase in the usability of the e-service platform by citizens and businesses thanks to the personalization, adaptation and improvement of the interactions with the e-services;
2) increment of the number of the requests sent directly online without interacting with civil servants;
3) improvement of the organization efficiency for the Municipality (e.g., number of presented requests per civil servant dedicated to support the users).

Success criteria: the number of applications presented on-line is sufficient to evaluate the effectiveness of SIMPATICO according to the identified measures; an increase in the applications presented on-line, in the satisfaction of the users, and in the efficiency of the municipality is measured.

Obj-TN-4. To involve Trento community (civil servants, citizens and professionals) in the documentation of the e-services through Citizenpedia.

The goal is to demonstrate the possibility to engage the community in the e-service documentation task implemented through Citizenpedia and to demonstrate that the more of the community involvement in the e-service design and documentation, the better the final e-services will be accepted and used (evidences of the community participation).

Success criteria: evidence is collected that the community can be engaged to contribute to Citizenpedia (e.g., by measuring the number of interactions, comments and suggestion generated by the Trento civil servants, citizens and professional through Citizenpedia).

Obj-TN-5. To assure the continuity of the SIMPATICO solution beyond the project lifetime.

The municipality of Trento intends to use SIMPATICO solution in a long term perspective. The goal is to assure the sustainability to the SIMPATICO tools.

Success criteria: having a business provider supporting the SIMPATICO tools evolution and maintenance

4.1.4 Assumptions and risks

The definition of the Trento use-case is based on some fundamental assumptions that have been made, in particular on the evolution of the "e-service portal" project of the Municipality and on the possibility to integrate the SIMPATICO solution within this e-service portal. The list of these assumptions is summarized in the following table.

Table 5 : Trento use-case assumptions

Assumption	Comment
The "Sportello Online" project will deliver in time to allow the integration with SIMPATICO solution and instruments	TRENTO is moving from "Sportello Online" (e-service portal) version 2 to "Sportello Online" version 3.
	The "Sportello Online" project is currently proceeding according to the plan, which foresees a release by the end of March 2018. This release date is compatible with the integration plan of SIMPATICO

	and offers an adequate time margin to address integration problems.
	<u>TRENTO</u> has the responsibility to monitor the progress of the "Sportello Online" project and to report any problem that could invalidate this assumption.
The e-services selected for validation will be ready and open for applications during the period of execution of the SIMPATICO use-case (M26-M32).	The e-services will be selected taking into account their delivery date according to the municipality digitalization plan. The planned period of execution of the SIMPATICO use-case is compatible with the periods when these e-services will be open for applications, and when users are expected to apply to these services.
	<u>TRENTO</u> has the responsibility to monitor both the delivery of these services and any obstacle that can make it impossible, complex or not effective to exploit these services during the period of execution of the SIMPATICO use case. <u>FBK</u> has the responsibility to monitor any change in the planning of the SIMPATICO project that may affect the period of execution of the use case – and hence the possibility to exploit the selected e-services.
Adequate support is provided by GLOBO srl in order to permit the integration of SIMPATICO with the Trento e-service portal.	GLOBO srl is informed of the SIMPATICO project, and of the requirement of the Municipality of Trento to integrate SIMPATICO instruments within the e-service portal. GLOBO srl is contractually committed (as provider of the solution for the e-service portal) to dedicate a fair effort to support this integration. After an analysis of the integration scenarios, this effort is considered adequate.
	<u>TRENTO</u> has the responsibility to ensure that an adequate support is provided by GLOBO srl.

The violation of any of these assumptions will produce catastrophic effects on the Trento use-case: for this reason, specific attention has been dedicated in the validation of these assumptions, and specific emphasis will be dedicated to their monitoring.

In addition to the risk that any of these assumptions is violated, other use-case risks have been identified and are reported in the following table, with probability, impact and remedial actions.

Table 6 : Trento use-case risks

Description of possible risk	Risk probability	Risk impact	Remedial actions
SIMPATICO tools and techniques are not delivered in time for the integration.	Low	Major	A strict plan and many checkpoints are in place preventing this situation to occur.
			Project Management techniques are in place to monitor the situation and to rise signals in case of plan misalignments.
			Technical and Plenary meetings have been set up also to prevent major impact situation to show up.
			ENG and FBK have the responsibility to monitor the progress of SIMPATICO's tools

			and techniques development plan and to report to TRENTO any problems that could affects the delivery deadline.
The integration mechanisms validated in phase one for "Sportello Online" version 2 (JavaScript injection and invocation of external REST web services) are not adequate for the integration with new version of the e-service portal.	Low	Major	A pre-evaluation of the new version of "Sportello Online" integration capabilities has been made. Integration test will be take place starting from the beginning of March 2018, in order to better assess the probability and extent of this risk. Comune di Trento will assure GLOBO srl involved in the local SIMPATICO technical team. In case of malfunctioning in the integration with the new version (v3) of the Sportello, we'll keep the older one (v2) in production environment
The selected e-services are not complex enough to experiment and evaluate all the relevant SIMPATICO project techniques and tools.	Low	Significant	Extra e-services will be identified to validate the specific missing SIMPATICO project techniques and tools.
Difficulty of the local community (civil servants, citizens and professionals) involvement.	High	Significant	To promote a powerful communication campaign giving tangible advantages to the SIMPATICO community participants.
Misalignment between the e-service portal development and SIMPATICO platform tools	High	Significant	The two phases approach used in Use Case development and the time frame planned for the development of e-services mitigates the risk. The e-service portal and the required e-services will be ready by the end of March. The test environment will be in place at least one month before. In the meanwhile a preliminary validation can be performed using the e-services deployed for phase one. This prevents system misalignment due for the deployment immaturity of the solution. Moreover the configuration of a sandbox environment with a suitable integration test plan, in collaboration with municipality

			service provider, contributes to mitigate potential operative risk of test e-services with SIMPATICO tools.
Deployment misalignment between the Trento e-service portal and SIMPATICO platform tools. The deployment requirements (i.e. operative environments, network configuration, hardware performance, etc) of e-service portal and SIMPATICO Platform could provide potential misalignment or incompatibility.	Low	Significant	The use of a sandbox environment in the first phase of use case development and the strong collaboration among all the departments involved in the two projects should assure the meet of deployment requirements and consequently mitigate the risk.

4.1.5 Stakeholders and roles

The following table reports the stakeholders which involvement is foreseen for the Trento use-case; specific roles are identified for each of these stakeholders.

Table 7 - Trento use-case stakeholders and roles

Stakeholder (and type)	Role	Note
Trento Municipality (project partner)	Responsible of: - alignment with municipality strategy for e-service portal - selection of the e-services - engagement of users and stakeholders - use-case operation - use-case evaluation - management of the relations with GLOBO srl	
Fondazione Bruno Kessler (project partner)	Responsible of: - use-case planning and management - use-case requirements / project validation requirements matchmaking	
Engineering	Engaged as :	ENG will contribute in the integration of

(project partner)	- support for the technical integration of SIMPATICO Platform with the Trento systems - technical support on SIMPATICO platform during the operation of the Trento use-case	SIMPATICO Platform and related tools with TRENTO e-service Portal. Moreover, ENG will give technical support to FBK and the other stakeholders involved during the operation phase of Trento Use Case in order to identify potential technical issues and to have them sorted out, when needed, by reporting them to the responsible of the specific SIMPATICO component.
GLOBO srl (third party)	Engaged as: - technology provider of the "e-service portal" solution adopted by Trento.	GLOBO srl is engaged in the use-case as it has to offer technical support for the integration of SIMPATICO with the Trento e-service portal. It is not expected any software development by GLOBO srl.
Citizens (end users)	Engaged as: - users of the test e-services - users and contributors of Citizenpedia	Specific categories of citizens are identified for the different test e-services.
Professionals (end users)	Engaged as: - users of the test e-services - users and contributors of Citizenpedia	Specific categories of professionals are identified for the different test e-services. Specifically, professionals potentially interested in contributing to Citizenpedia for professional reasons will be engaged.
Civil servants (end users)	Engaged as: - users and contributors of Citizenpedia	The engagement of civil servants is not limited to the employees of the Municipality of Trento.

4.2 Use-case planning

This section describes the plan that has been defined by the Trento task force to ensure a successful execution of the second phase of the Trento use case.

4.2.1 Use-case methodology and plan

Trento aims to integrate and experiment SIMPATICO techniques and tools within the production environment provided by the Trento e-service portal, and to validate them on at least 10 services made available on the portal in addition to the two ones already deployed during the first phase of the project: the enrolment to day nursery service modules and on the acoustic derogation for temporary activities.

The second phase plan follows the schedule defined for the first phase, so the use-cases experimentation will be structured in a pre-evaluation phase and an evaluation phase. Within the **pre-evaluation phase,** the services part of the experimentation will be presented, used and evaluated by a representative panel of the Trento community. After the acknowledgement of the

representative panel, the services enriched with the SIMPATICO extensions will be made available to all users, and the evaluation phase will start.

During the **evaluation phase**, the opportunity to participate to the evaluation will be offered to all users accessing the selected test services through the Trento e-service portal (opt-in approach). The users agreeing to participate will have to accept the terms and conditions of the SIMPATICO project. After that, the users will be able to exploit the techniques offered by SIMPATICO for what concerns: text simplification, workflow adaptation, usage of the CDV, usage of Citizenpedia. The evaluation of the techniques will take place both implicitly, e.g., through the collection of information on the interaction of the user, and explicitly, e.g., by submitting questionnaires to the users at the end of the service interaction.

In parallel to the user evaluation phase, a **community evaluation phase** will be launched to assess the possibility to engage the community of Trento in the documentation of the e-services through Citizenpedia. This phase will exploit the engagement of the representative panel done during the pre-evaluation phase, exploiting them as an initial core of people contributing to Citizenpedia. This "core" community will then be extended through suitable user engagement activities, as described in Section 4.2.3.

As far as the strategy in which the Trento use-case is organized during the first experiment, we foresee different phases, aligned with the overall phases define in Section 3.3, but with some differences, in particular with respect to the validation phases, in order to take into account specific constraints of the Trento use-case.

1) **Preparation phase [M21-M24]:** Identify the new e-services to be integrated with SIMPATICO.
2) **Implementation and integration phase [M24-M25]:** where we set up all the components of the final solution, which means:
   a) to digitalize the module in the city e-service portal (or revise the existing digitalized module if already available);
   b) to integrate the text and workflow simplification and interaction enrichment techniques made available by SIMPATICO within the selected testing e-services, thus integrating the SIMPATICO solutions within the Trento e-service portal;
   c) to populate suitable sections of the Citizenpedia with information relevant for the specific selected e-services;
   d) to prepare communication and engagement campaigns for stakeholders and end-users.
3) **Pre-evaluation phase [M26-M27]:** where we active a small experiment of the concrete use of the SIMPATICO solutions in conjunction with the selected e-services within a panel representative of the Trento community.
4) **Evaluation phase [M27-M32]**: where we activate an experimentation of the concrete use of the SIMPATICO solutions in conjunction with the selected e-services in a production environment.
5) **Community evaluation phase [M26-M32]**: where the community of Trento is engaged in the documentation of the e-services through Citizenpedia.

4.2.2 Test services

In the second phase the evaluation will be based on the e-services already deployed within the "Sportello Online" and on a set of at least 10 services selected by the end of March form the municipality digitalization plan. The following tables describe the e-services already available on the "Sportello Online". The other services will be chosen among all the services provided by the Municipality, basing on the average annual usage, in order to reach a big audience and achieve

significant numbers (users, Citizenpedia contributions, feedback, etc.) during the experimentation phase. Since the complete set of the selected services will be ready by the end of March 2018 their detailed description will be put in the evaluation deliverable.

In this context we can anticipate that they will cover different needs of citizens and professionals, such as services to individuals, housing, mobility and so on.

Table 8 - Enrolment to day nursery service

e-Service	Enrolment to day nursery service
Target	Citizen
Description	The day nursery service aims at offering day nursery for 0-3 year olds; the day-long care is based in a centre and the education and care programs are created around the developmental needs, interests and experience of each child. In the project context, we are going to handle the enrolment process.
Process and user interaction	The enrolment process can be resumed in the following major steps: 1) the citizen (usually a parent) compiles the enrolment to day nursery service request module before a specific deadline; 2) the council collects all the module requests and within 30 days after the deadline, based on the defined rules, the council produces a list of the children entitled for the service; 3) the citizen (usually a parent) within 10 day from the list publication must compiles the acceptance module. The service enrolment request must be presented from 1st of September to 30th of April.

Table 9 - Permit on acoustic derogation for temporary activities

e-Service	Permit on acoustic derogation for temporary activities
Target	Citizen, professional, association
Description	The service aims at managing the acoustic derogation for temporary activities permit. The service has different specialization, in the project context we will handle temporary acoustic derogation for building.
Process and user interaction	As far as the user requesting the permit, the process is common for the different specialization of the service and it can be resumed in two major steps: 1) the requester compiles the request for acoustic derogation for temporary activities permit 2) the council evaluates the request and basing on internal rules releases the acoustic derogation permit. The timespan between steps 1) and 2) is about 30 days.

Table 10 - Landscape permit and mandatory opinions on the architectural quality of the interventions

e-Service	Landscape permit and mandatory opinions on the architectural quality of the interventions;
Target	Citizen, professional
Description	The service aims at managing the requests for landscape permit and mandatory opinions on the architectural quality of the interventions.
Process and user interaction	The process consists of two main steps: 1) the requester compiles the request for landscape permit/mandatory opinion on the architectural quality of the interventions 2) the council evaluates the request and basing on internal rules releases the permit. The timespan between steps 1) and 2) is about 60 days.

The SIMPATICO features will be exploited to all the services which will be deployed on the "Sportello Online" according to Table 9.

Table 11 - Service to SIMPATICO feature application mapping for Trento

Target	Features	Description
Citizen Professional	Interactive Front End	Through the Interactive Front End the user will access to all the provided SIMPATICO components and tools. Vertical deployment of IFE is require in order to better address usability issues both in the service description pages and in the forms.
	Text Adaptation Engine	Within the service description pages (procedure and e-services) complex words and phrases are highlighted. When a user clicks on one highlighted phrase or word, a pop-up within a simplified version of it is shown according to the user profile.
	Workflow Adaptation Engine	Parts of the digital module are shown/hidden on the basis of an optimized compilation process. When the user chooses an option that change the workflow (with the rules of the "Sportello Online" solution), the parts of the module that are no longer to be compiled (because e.g. disabled) will be hidden, while the parts of the module that will return fillable will be shown again. In addition to this, the next section to compile will be highlighted.
	Workflow Adaptation Engine	Parts of the digital module are shown/hidden on the basis of an optimized compilation process based on the data collected by the available data sources (CDV, form, external data sources).
	Workflow Adaptation Engine	The interaction with the digital module are adapted in order to ask the user missing information on the basis of a query/answer approach. The information gained typically are used in order to collect information from an external data source.

	Citizen Data Vault	All the useful information filled in the module (such as the information on the degrees of relationship of persons) are stored in the CDV and made available for future usage. If any information requested in the module is already present in the CDV, it will retrieved and used to pre-fill the module. This pre filled information from the CDV will be highlighted in a different way to the information retrieved from the administration DBs (such as the Citizen Register) that provide authoritative information. In order to improve the usability the pre-fill of the fields should be done implicitly. In addition CDV must manage the data's end-of-life following the new GDPR guidelines
	Citizen Data Vault – Dashboard for users	A dashboard presenting all the data stored in the CDV should be made accessible for users, where they could visualize all their collected data, with a reference to the source where those data have been retrieved from.
	Servicepedia	From the Servicepedia's homepage it must be possible to visualize and access to each specific service.
	Citizenpedia Q&A	Within a service description pages (procedure, e-services) the complete set of questions and answers is presented to the final user. Q&A must introduce versioning, in particular questions and answers must be linked with the specific version of the service pages. The final user can add a question asking for clarification.
	Citizenpedia Q&A	Within each specific e-service form, each interaction block reports the specific set of questions and answers are presented to the final user. Q&A must introduce versioning, in particular questions and answers must be linked with the specific block of the specific version of each specific e-service form. The final user can add a question asking for clarification.
	Citizenpedia Step-by-step guide	Within each specific e-service form, each interaction block reports the specific text of the step-by-step guide, which requires the introduction of versioning. So each text of the guide must be linked with the specific block of the specific version of each specific e-service form.
	Citizenpedia CPD	From the service procedure description page users must have the administrative procedures' diagrams shown and could comment on the interaction elements in the case they do not fully understand the steps to take in order to receive the service. CPD must introduce versioning, in particular questions and answers must be linked with the specific version of the model.
	Session Feedback	Session Feedback must integrate questions related both to the SIMPATICO tools and e-service usability. The e-service usability questions are specific for each service.

Civil Servant	E-service Monitor (Dashboard)	Civil servants must receive reports about the usage of the front-end, in particular the reports have to collect information about each service, e-services and e-service forms.
		The service corresponds to the entire administrative procedure. The procedure is organized in steps which can be implemented through an e-service. Each e-service can be structured in one or more forms.
		The Dashboard must introduce the versioning, for each version of the service, e-services and e-service forms it must report at least:
		About the procedure
		• #users for each step of the procedure managed through an e-service;
		• #questions about each step of the procedure;
		• #answers about each step of the procedure;
		• #users who use Q&A tool;
		• #text simplification requests.
		About each e-service
		• #users starting the e-service;
		• #users completing the e-service;
		• Average completion time of the e-service
		• #questions about the e-service;
		• #answers about the e-service;
		• #users who use Q&A tool;
		• #text simplification requests.
		About each e-service form
		• #users starting the e-service form;
		• #users completing the e-service form;
		• Average completion time of the e-service form
		• #questions about the e-service form;
		• #answers about the e-service form;
		• #users who use Q&A tool within the e-service form;
		• #user who use WAE.
		About each block of the e-service form
		• Average completion time of the block
		• #questions about the block;
		• #answers about the block;
		• #users who use Q&A tool within the block;
		In addition we aim to have those requirements both in an aggregate vision and distinguishing them by version.
		Finally the Dashboard must report the number of the completed session feedback and the obtained results.
		The project defined KPIs both at the project level and pilots' level. By the time of the evaluation the Dashboard should (when possible) automatically calculate and report

	the project and pilot KPIs.	
	Authoring Tool	Within the service description pages (procedure and e-service description) the Civil Servant can access to the Authoring Tool which will give him a measure of the text complexity of the texts.
	Citizenpedia (CPD)	The civil servant will be able to graphically design administrative procedures. The service corresponds to the entire administrative procedure. The procedure is organized in steps which can be implemented through an e-service. Each e-service can be structured in one or more forms. So each administrative procedure will have to clearly state the interactions between the citizen requesting a service and the PA offering that service. Interactions may be in the form of on-line form filling, paper form to be filled and sent to the PA by ordinary email, telephone conversation, face-to-face meeting.

4.2.3 Personnel and user engagement

In order to promote the community activation in the use of the scenario e-services a communication plan has been defined. The second phase communication plan is structured in three main periods where a specific set of communication actions will be activated.

Pre-execution communication and engagement period [M21-M25]: the communication actions will focus on promoting the interest on the online services and on involving the local community in the council innovation strategy, projects and experimentations. The goal will be achieved by organizing and participating to specific events where the council innovation strategy, projects and experimentations are explained. Within this phase a public call to find citizens and professionals engagement in the e-service pre-evaluation and evaluation will be open.

Pre-evaluation communication and engagement period [M25-M27]: the communication actions will focus on involving a porting of the local community in the evaluation of the e-services implemented in the scenario. The goal will be achieved by organizing and involving panels of people representative of the community (citizens, civil servants and professionals).

Evaluation communication and engagement period [M27-M32]: the communication actions will focus on promoting the use of the online services and on involving the local community in the use of the participation mechanism and tools developed within the SIMPATICO and one-stop-shop projects. A specific program including a gamification strategy to reward the citizens and professionals participating at the e-service and Citizenpedia contribution will be launched and communicated.

The detailed communication plan is described in D6.4.

4.2.4 Use-case KPIs and evaluation

For the 2nd phase of the Trento use-case, five different objectives with specific success criteria have been identified (see Section 4.1.3). Within the following table, a matching between Objective, Success Criteria and KPI is reported. After that we will define scenario- and service-specific KPIs both for the pre-evaluation phase and for the evaluation phase.

Table 12 - Trento KPIs description

Objective	Success Criteria	KPI
Obj-TN-1. To digitalize the selected test services within the e-service portal of the Municipality of Trento and make them compliant with SIMPATICO.	The selected test e-services shall be available on the Municipality portal in a form that is compliant with SIMPATICO at the beginning of the evaluation phase.	Number of procedures supported by Sportello Telematico available on the beginning of the experimentation.
Obj-TN-2. To integrate and validate the SIMPATICO simplification techniques with the test e-services of Obj-TN-1.	Successful integration of the identified SIMPATICO solution and tools within the Municipality e-service portal and with the test e-services.	Number of procedures supported by SIMPATICO.
Obj-TN-3. To evaluate the improvements of the adoption of SIMPATICO solutions to the usability of the e-services and to the efficiency of the offices of the Municipality.	The number of applications presented on-line is sufficient to evaluate the effectiveness of SIMPATICO according to the identified measures.	Number of accesses to platform during experimentation.
		Number of platform users.
	An increase in the applications presented on-line, in the satisfaction of the users, and in the efficiency of the municipality is measured.	Percentage of time saved by civil servants in interactions with users (answering requests for clarifications, etc.).
		Reduction of average duration of the administrative process for accepting and validating application. *NOTE: The overall process is a composition of two sub-processes: citizen application sub-process; service activation and delivery sub-process. The improvement is concentrated in the citizen application sub-process.*
		Reduction in request for integration of information sent to users.
		Reduction in time spent completing a procedure or filling a form.

Obj-TN-4. To involve Trento community (civil servants, citizens and professionals) in the documentation of the e-services through Citizenpedia.	Evidence is collected that the community can be engaged to contribute to Citizenpedia (e.g., by measuring the number of interactions, comments and suggestion generated by the Trento civil servants, citizens and professional through Citizenpedia).	Number of engaged civil servants.
		Number of engaged business owners.
		Number of engaged citizens.
		Disadvantaged users (migrants, elderlies…).
Obj-TN-5. To assure the continuity of the SIMPATICO solution beyond the project lifetime.	Having a business provider supporting the SIMPATICO tools evolution and maintenance	Having a defined exploitation strategy, plan and results.

The following tables summarize the general and services specific **KPI defined within the pre-evaluation and evaluation phase.**

Table 13 : Trento general KPIs

Category	KPI	Minimum Value
SIMPATICO Platform	Number of procedures supported by SIMPATICO	13 (2 of the first phase, 1 already running, 10 to be selected)
	Number of accesses to platform during experimentation	85
	Number of platform unique users	50

Since the set of e-services to be developed will be ready by the end of March we decided to define aggregated KPIs considering the experience of the first phase.

Table 14 - Trento scenario specific KPIs for pre-evaluation and evaluation phases

Category	KPI	Pre-eval. value	Eval. value
Number of engaged stakeholders for each type	Civil servants	10	15
	Citizens	3	50
	Professionals	2	20
	Disadvantaged users (migrants, elderlies…)	1	10

Internal efficiency of PA processes	Percentage of time saved by civil servants in interactions with users (answering requests for clarifications, etc.) calculated as: *1 - [Average time spent answering the user online requests using the simplified online interaction (with SIMPATICO tools)] / [Average time spent answering the user online requests using the standard offline interaction]*	10%	20%
	Reduction of average duration of the administrative process for accepting and validating application calculated as: *1 - [Average duration of the administrative process* for accepting and validating application *using the simplified online interaction (with SIMPATICO tools)] / [Average duration of the administrative process* for accepting and validating application *using the standard offline interaction]*	5%	10%
Internal effectiveness of PA processes	Reduction in request for integration of information sent to users calculated as: *1 - [Average number in request for integration of information sent to users using the simplified online interaction (with SIMPATICO tools)] / [Average number for integration of information requests sent to the user to complete the online forms using the standard offline interaction]*	5%	10%
Reduction of administrative burden	Reduction in time spent completing a procedure or filling a form calculated as: *1- [Average time spent completing a procedure or filling a form using the simplified online interaction (with SIMPATICO tools)] / [Average time spent completing a procedure or filling a form using the standard offline interaction]*	15%	40%

4.2.5 Test results collection

In order to support the evaluation of the objectives and of the KPIs of the Trento use-case, data need to be collected before and during the evaluation phase. Most of the data that are necessary for measuring the usage of the SIMPATICO solutions and tools are available in the logging components of the SIMPATICO platform – in particular in the Log and User Profile components. The evaluation of the KPIs also requires data that are not in the platform, as they concern aspects of the experiments that are in the domain of the administration (e.g., duration of the process triggered by the submission of a module); these data are also not present as "raw data" in the information system of the Municipality of Trento, and need to be specifically monitored and computed by the administration, hence setting up specific procedures. Finally, the collection of data for the evaluation of the quantitative KPIs (e.g., Average duration of the administrative process using the standard offline interaction) will be done also through the administration of questionnaires that then need to be evaluated and analysed.

A point of attention is the collection of the baseline data. If the services that are used as comparison terms are based on paper modules, then all baseline data need to be computed by the

administration. If the services used as comparison terms are based on on-line solution, then the baseline data can be obtained from the logging and analytic system of the on-line solution.

In the case of the Trento use-case, the baseline refers to the traditional paper-based procedures. The data on the duration of the processes are reported annually in the "Monitoraggio dei termini di conclusione dei procedimenti amministrativi", a document produced by the Trento and available in the section "Amministrazione-trasparente" of the municipality web site[3]. No data are available on the interaction phase with the users, so these will be obtained based on the experience of the civil servants: for this reason, specific interviews will be carried out with the civil servants that have offered support to the users. In addition to this, during the execution of the experiments, the Municipality of Trento will ask the civil servants to track in a precise way the data on the back-end management of the services.

In the case of some KPIs and for some specific e-services, the data for performing the associated measures are not available, and cannot be recovered: it will hence not be possible to evaluate these KPIs during the 2nd phase of the Trento use-case.

The following tables define where and how to collect the data required to calculate the KPI for all the e-services.

Table 15 - KPI data collection

KPI	Value
Percentage of time saved by civil servants in interactions with users (answering requests for clarifications, etc.)	*[Average time spent answering the user online requests using the standard offline interaction]* variable value will be defined interviewing the civil servants. *[Average time spent answering the user online requests using the simplified online interaction (with SIMPATICO tools)]* variable value will be calculated based on the information collected via the SIMPATICO Log module.
Reduction of average duration of the administrative process	*[Average duration of the administrative process using the standard offline interaction]* variable value will be taken from the office annual management report. *[Average duration of the administrative process using the simplified online interaction (with SIMPATICO tools)]* variable value will be calculated based on the report the Civil Servant will keep during the experimentation.
Reduction in request for integration of information sent to users	*[Average number of requests for integration of information requests sent to the user to complete the online forms using the standard offline interaction]* variable value will be defined interviewing the civil servants. *[Average number of requests for integration of information sent to users using the simplified online interaction (with SIMPATICO tools)]* variable value will be calculated based on the information collected via the SIMPATICO Log module.
Reduction in time spent	*[Average time spent completing a procedure or filling a form using the*

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3   http://www.comune.trento.it/Comune/Organizzazione-comunale/Amministrazione-trasparente/Attivita-e-procedimenti/Monitoraggio-tempi-procedimentali

	standard offline interaction] variable value will be defined interviewing the civil servants.
completing a procedure or filling a form	*[Average time spent completing a procedure or filling a form using the simplified online interaction (with SIMPATICO tools)]* value will be calculated based on the information collected via the SIMPATICO Log module.

4.2.6 Schedule

The following table collects all the scheduled activities concerning the Trento use-case.

Table 16 - Trento use-case activity schedule

Activity	From	To	Description
Preparation phase			
Scenario specification	11/2017 [M21]	02/2018 [M24]	To acquire all relevant documents and regulations, as well as all relevant information on the available e-services that will be used as a basis of the experiment, and analyse them.
Definition of the rewarding program	02/2018 [M24]	03/2018 [M25]	Definition of the scenario social game and rewarding program.
Implementation and integration phase			
Participation to the IEEE Smart City Week	02/2018 [M24]	04/2018 [M26]	During the event: - the council innovation strategy will be presented to the local community; - the one-stop-shop project will be presented to the community; - the SIMPATICO project and first phase results will be presented to the community; - the possibility to register for being part of an experimentation panel of people will be promoted within the community.
Integration of the new Citizenpedia	02/2018 [M24]	05/2018 [M27]	Integration of the new Citizenpedia and implementation of the social game defined in the rewarding program.
Community panels planning and organization	02/2018 [M24]	04/2018 [M26]	To plan and organize the call for panels in change of the pre-evaluation and evaluation
E-service modules digitalization	01/2018 [M23]	06/2018 [M28]	To digitalize the module selected for second phase. The resulted e-services will complaint with SIMPATICO constraints.
"Sportello Online" integration capabilities tests	02/2018 [M24]	05/2018 [M27]	To activate different tests in order to evaluate the "Sportello Online" version 3 integration capabilities.
Sportello Telematico	02/2018	06/2018	To integrate the SIMPATICO solutions within the

and SIMPATICO techniques and tools integration	[M24]	[M28]	new version of Trento e-service portal.
Update of the e-service pre-evaluation sandbox	03/2018 [M25]	05/2018 [M27]	To update the sandbox that will be used by the community panels in the pre-evaluation phase. The system sandbox will integrate real e-services with real version of the SIMPATICO tools and techniques.
Citizenpedia population	03/2018 [M25]	05/2018 [M27]	To populate suitable sections of the Citizenpedia with information relevant for the selected e-services.
Pre-Evaluation phase			
Scenario execution phase	05/2018 [M27]	06/2018 [M28]	To active a small experiment of the concrete use of the SIMPATICO solutions for the e-services within panels representative of the Trento community.
Users evaluation phase			
Involvement of the community	05/2018 [M27]	10/2018 [M32]	To execute a communication campaign targeting the citizen and professionals in order to present and explain Trento scenarios, e-services and SIMPATICO participation tools.
Scenario execution and evaluation phase	06/2018 [M28]	10/2018 [M32]	To activate the evaluation of the concrete use of the SIMPATICO solutions in conjunction with the selected e-services in a production environment. The scenario evaluation will measure improvement of the e-services before and after the integration of SIMPATICO techniques and tools. The evaluation will be based on log data and questionnaires.
Community evaluation phase			
Community involvement in Citizenpedia population	04/2018 [M26]	10/2018 [M32]	Start the documentation of the e-services on Citizenpedia involving pre-evaluation panel and Trento community.
Activate the rewarding program	06/2018 [M28]	10/2018 [M32]	The defined social game and rewarding program is activated.

5 Galicia Use-case – Phase 2

5.1 Specification of the Galicia use-case

5.1.1 Context and background

Galicia is an autonomous community of Spain and historic nationality under Spanish law. It has a population of 2,717,749 inhabitants and has a total area of 29,574.4 km^2 (2016).
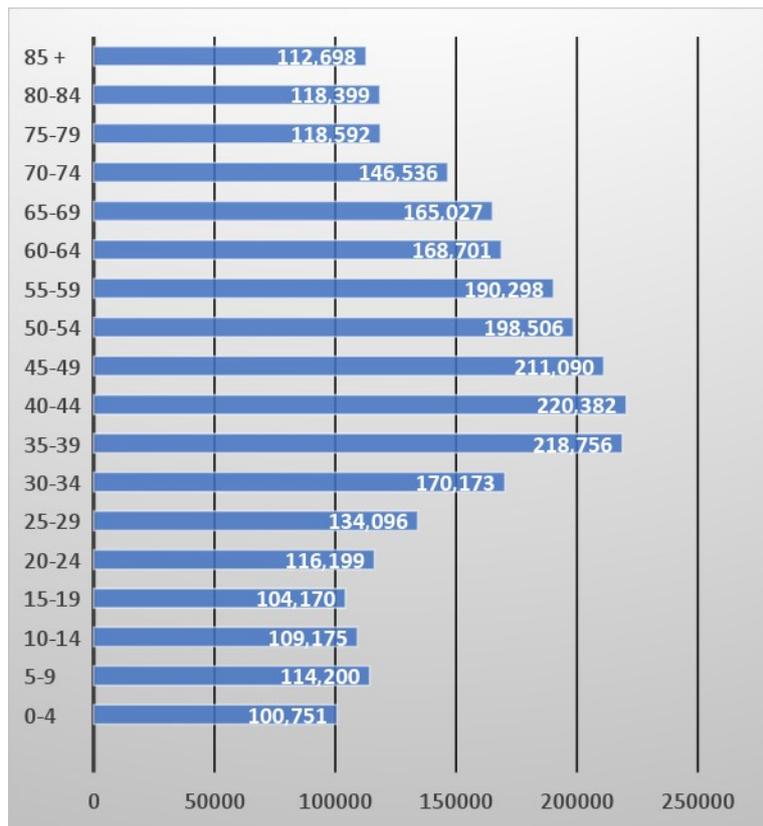
Figure 6 - Number of citizens per age group

According to data provided by IGE (Instituto Galego de Estatistica[4]), the number of Galician elderly inhabitants (see Figure 6) is alarmingly increasing. Furthermore, the socioeconomic indicators for Galicia show a number of particular needs that make it suited for e-services improvement. A sparse distribution of the population, especially in the rural parts of the region. In that regions people often migrate to the richer coastal areas and other Spanish regions. This has resulted in large rural areas with low population density, where the access to public services is harder. Consequently, there is a big gap in the usage of e-services in Galicia in the segment of population older than 55.

The main aim of Xunta is to reduce this gap and increase the usage of the Xunta's e-services in the previously mentioned segment of population.

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[4] http://www.ige.eu/

In this field, Xunta has worked during the last years to promote the planning and joint usage of equipment, programs and innovative social services, including e-services, at the Spanish-Portuguese level, to early detection of future dependency needs and the promotion of active and healthy ageing. Also it is currently working to mitigate the consequences of the demographic change and the provision of social services.

Xunta has a digital platform called "Sede Electrónica"[5] (digital site of Xunta) and made up by an e-service ecosystem. Through this platform citizens can present several applications.

Usually, the main lifecycle of these applications is structured into five main steps:

1) Dissemination and publication of the procedure in DOG (Diario Oficial de Galicia)[6].
2) At the same time, the e-service related to the opened procedure is published
3) Citizens fill application forms and all the corresponding information to apply to the procedure. They can use e-services or they can present all the information through the traditional method: going to the corresponding administration building.
4) A citizen can present an appeal when the application is not satisfied and he/she is not agree.
5) The appeal is studied and resolved.

Even though the final result of both traditional and digital methods is the same (a set of filled forms), Sede Electrónica is not commonly used as a main method.

Aligned with this issue, Xunta recently adopted a new strategy called Digital Inclusion of Galicia in 2020 on 21 April 2016[7]. It addresses the challenge of promoting a new model of digital inclusion, with integrated actions for promoting new technologies and teaching their usage, paying special attention to those groups (i.e. elderly) traditionally at risk of digital exclusion. This Plan is divided into three main strategic axes: (1) digital literacy, (2) training and (3) social, participatory and digital innovation. And a transverse axis where SIMPATICO is located: structural support.

The alignment between SIMPATICO and the main strategic axes is focused on: (1) increasing the learnability and ease of use of e-services and software platforms to enhance digital literacy and training through the interface simplification (SIMPATICO interactive front-end) and (2) on the social side, promote participatory and digital innovation through the human computation framework (SIMPATICO Citizenpedia).

Nowadays, the number of electronic submissions is considerably smaller than the ones made physically. Consequently, Galicia wants to increase the electronic ones in short term.

Due to the low usage of e-services by elderly people, training and literacy tasks should be performed. Thus, replicated e-services will be deployed and several literacy and testing tasks will be done inside Xunta's locations, such as the provided by the CeMIT network[8], which make available training activities in the field of digital literacy and entrepreneurship.

Within this solution, this controlled environment will enable us to achieve two main purposes: (1) literacy and dissemination and (2) the SIMPATICO solution validation in terms of usability focused on groups which have the highest difficulties. Due to the usage of such a training environment, the submitted requests will not be further processed by the administration.

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[5] https://sede.xunta.es/portada

[6] http://www.xunta.gal/diario-oficial-galicia

[7] http://faitedixital.xunta.gal/sites/default/files/documentos/Plan_Inclusion_Dixital_Galicia.pdf

[8] https://cemit.xunta.gal

To make easier the achievement of the mentioned aims, several steps should be followed.

First, e-services are selected, studied and replicated in order to provide a more controlled environment to obtain explicit and detailed information about usability issues, feedback and improvement points.

The main target audience will be the **elderlies**, and two e-services were selected during the first piloting phase:

- BS607A: Grants for the attendance to **wellness** and spas program;
- BS613B: Individual grants for **personal autonomy** and complimentary personal assistance for disabled people.

During the second piloting phase an additional e-service will be instrumented with SIMPATICO. The target group for this service are people with disabilities of all ages.

- BS611A: Assessment of the degree of disability.

At the same time, the selection and creation of a testing community made by multiple elderly groups and people with disabilities will be performed.

The replicated services in the active ageing and disabled support domains described above will be ready by the Pre-evaluation Phase, scheduled for M26-M27, i.e. April-May 2018, to offer an important test-bed for the execution of the defined strategy. Notably, the two already-y deployed services during 1st phase of pilots, namely BS607A and BS613B, will be revisited to accommodate the new functionalities made available through the SIMPATICO toolset.

5.1.2 Specific purpose and strategy of the use-case

According to the previously mentioned Digital Inclusion of Galicia in 2020 strategy, the main goal of Xunta is to reduce the gap and increase the usage of the Xunta's e-services. It will be achieved promoting a new model of digital inclusion, with actions for promoting new technologies and teaching their usage, paying special attention to the groups traditionally at risk of digital exclusion: elderlies.

If the technology gap between the young and the elderlies decreased in the future, it would be easier to produce products for wider audiences. However, elderlies do not have knowledge related to the usage and benefits of the technology. Especially in rural areas, located far from the public administration resources.

Consequently, the **specific purpose** of the first experiment phase has been, and now in the second phase will be, to **analyse and validate the technological acceptance of elderly groups and people with disabilities using the selected Xunta e-services and SIMPATICO solution**. This analysis and validation will assess both (1) discretionary usage and satisfaction to measure the acceptance and (2) the effectiveness and efficiency of the e-service usage improved by SIMPATICO. This approach enables to provide not only quantitative information (what) but also, qualitative one (why).

This means to compare the citizens usability metrics based on the main usability standards (i.e. ISO/IEC TR 9126-4:2004[9], ISO 9241-11[10]) before and after performing the main strategic axes, as well as using e-services with and without the SIMPATICO tools. These e-services in a controlled

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[9] ISO/IEC TR 9126-4:2004(en) Software engineering — Product quality — Part 4: Quality in use metrics

[10] ISO 9241-11:1998 - Ergonomic requirements for office work with visual display terminals (VDTs) -- Part 11: Guidance on usability

environment will be used to validate how elderly people behave and accept the SIMPATICO solution and its features.

5.1.3 Use-case objectives and success criteria

The objectives of the experiments devised for the first and second phase of the Galicia use-case directly derive from the alignment between SIMPATICO and the Digital Inclusion of Galicia in 2020 strategy of the use-case discussed in the previous section. They are described in the following paragraphs, together with their success criteria.

Obj-GL-1. To define, select and create a significant testing community which matches the use case criteria.

The goal is to define elderly and disabled people groups in order to compare and detect the ones experiences most difficulties in terms of usage. They will provide the most detailed feedback and metrics performing the procedures. The selected citizens will be classified by demographic and technological level criteria.

Success criteria: a significant testing community shall be selected and created.

Obj-GL-2. To replicate and deploy the selected test e-services.

The test e-services will be selected and replicated from the ones already available in the Xunta digital platform. The e-services selected are the previously mentioned: BS607A, BS613B and BS611A.

Success criteria: the selected test e-services shall be available on a replicated portal at the beginning of the Evaluation phase of 2nd phase, i.e. M27.

Obj-GL-3. To integrate and validate the SIMPATICO simplification techniques with the replicated e-services of Obj-GL-2.

The goal is to integrate the SIMPATICO tools within the replicated e-services and perform the literacy, dissemination and testing tasks. These tasks enable us to analyse the acceptance and the effectiveness and efficiency of their usage.

Success criteria: (1) successful integration of the SIMPATICO simplification techniques within the replicated services and with the test e-services by the beginning of the evaluation phase; (2) enough information collected during the experiment to calculate the corresponding metrics to describe the acceptance, effectiveness and efficiency to validate SIMPATICO.

Obj-GL-4. To involve Galician elderly and people with disabilities community and Xunta civil servants for the frequent use of Citizenpedia.

Complementing the Trento use case, it aims to demonstrate the possibility to engage the elderly and people with disabilities community in the e-service documentation task implemented through Citizenpedia.

Success criteria: evidence is collected that the community is engaged and use frequently the Citizenpedia (e.g., by measuring the number of interactions, comments and successful queries made through Citizenpedia).

5.1.4 Assumptions and risks

This use-case is based on some fundamental assumptions that have been made during the use case definition. The list of these assumptions is summarized in the following table.

Table 17 - Galicia use-case assumptions

Assumption	Comment
The replicated e-services will be delivered in time to allow the integration and the experimentation with SIMPATICO platform	The selection and the study of the corresponding e-services is currently proceeding according to the plan. DEUSTO has the responsibility to monitor the progress of the selection and replication of the selected e-services and to report any problem that could invalidate this assumption.
The number of selected citizens will be significant and sufficient to perform the experimentation with SIMPATICO platform	This selection is currently proceeding according to the plan. It will depend on the location of the selected environments. Consequently, it is going to be strongly linked with the following assumption. GALICIA has the responsibility to monitor the selection and to report any problem that could invalidate this assumption.
The environments to perform all the experiments in terms of locations, additional resources and staff will be ready and available.	The environments to perform all the experiments in terms of locations, additional resources and staff will be ready and available. Environment selection is currently proceeding according to the plan and taking into account the size, availability and additional resources. GALICIA has the responsibility to monitor the selection and to report any problem that could invalidate this assumption.
The replicated e-services will be ready and open for applications during the period of execution of the SIMPATICO use-case (M27-M32, Evaluation phase of 2nd round).	The planned period of execution of this use-case is compatible with the periods of delivery. All the possible technical errors and integration issues will be solved. GALICIA has the responsibility to monitor the correct performance of the tests with users during the period of execution of the SIMPATICO use case. HIB has the responsibility to monitor any change in the planning of the SIMPATICO project that may affect the period of execution of the use case.

In addition to the risk that any of these assumptions is violated, other use-case risks have been identified and are reported in the following table, with probability, impact and remedial actions.

Table 18 - Galicia use-case risks

Description of possible risk	Risk probability	Risk impact	Remedial actions
The achievement of a significant amount of citizens for each group.	Low	Significant	Keeping special attention on the creation of this community of testers to detect this risk in early stages. If a deviation is detected, several resources should be invested on more dissemination and engagement tasks. The experience during first phase indicates that a good engagement with user associations is a suitable mechanism to ensure a good degree of participation in the piloting.
The decrease of	High	Significant	This risk is directly related to the previous one.

the size of testing community during the use case execution.			Having a significant amount of citizens, detecting these kind of decreases in early stages will be crucial. If this situation is detected, several resources should be invested on more dissemination and engagement tasks. Furthermore, more institutions related to Xunta (e.g. Universidad Senior) will be involved to engage more citizens. Again the key will be to keep organizations involved well informed and establish a sensible planning that adjusts to their agendas, as occurred in first phase of pilots.
Difficulty of the community involvement of civil servants.	Low	Significant	To promote a powerful communication campaign and benefits of adapting SIMPATICO to their work in terms of workload and tasks to perform. Xunta is a partner of the project and will provide civil servant representatives aware of the services trialled.
The selected e-services are too complex for elderlies to experiment and evaluate all the relevant SIMPATICO project techniques and tools.	Medium	Significant	Additional training, literacy and dissemination campaigns will be created and a simpler e-service will be identified and replicated. Usability and inclusiveness improvements have been put in place as result of the evaluation that took place in the first pilots' phase.
Simplified versions for the e-service's text in Galician language are not provided, or not adequate enough.	Medium	Significant	More effort will be put by the task force in change of developing the Text Adaptation Engine (TAE) component. The GALICIA team will provide the TAE task force with more Galician texts to be used as training sets, and will invest more time in the testing of the TAE tool for Galician. It was agreed that text adaptation will be carried out only in Spanish. The elderly people and people with disabilities taking part in the pilots are used to carry out administrative processes also in Spanish.

5.1.5 Stakeholders and roles

The following table reports the stakeholders which involvement is foreseen for the Galicia use-case; specific roles are identified for each of these stakeholders.

Table 19 - Galicia use-case stakeholders and roles

Stakeholder (and type)	Role	Note
GALICIA (project partner)	Responsible of: - alignment with Xunta's strategy - selection of the test e-services - engagement of users and stakeholders - use-case operation - use-case evaluation	The internal staff involved by Xunta includes: a) Manager b) Specialist for integrations c) Specialist for elderly and active ageing strategies
DEUSTO (project partner)	Responsible of: - use-case planning and management - use-case requirements / project validation requirements matchmaking - replication of the selected e-services and integration of them with SIMPATICO - technical support during the operation of the use-case	They are responsible of the replication of the "Wellness and spas program" and "Assessment of the degree of disability" e-services.
HIB (project partner)	Responsible of: - replication of the selected e-services and integration of them with SIMPATICO - technical support during the operation of the use-case	They are responsible of the replication of the "Individual grants for personal autonomy and complimentary personal assistance for disabled people" e-service.
Citizens (end users)	Engaged as: - users of the test e-services - users and contributors of Citizenpedia	Specific categories of citizens are identified for the different test e-services.
Civil servants (end users)	Engaged as: - contributors of Citizenpedia	Social workers of Galician municipalities help citizens, especially elderlies and people with disabilities, to perform procedures related to Xunta.

5.2   Use-case planning

5.2.1 Use-case methodology and plan

Being aware of the difficulties related to elderlies in Galicia and its region, the number of submissions made by e-services is very low compared to the ones made by the traditional method.

The main aim of this use case is to **measure** how SIMPATICO techniques and tools are **useful and accepted** by **the Galician elderly community**, promoting and helping the **literacy and dissemination of the usage of digital methods**.

In order to achieve this aim three of the existing e-services are replicated and made available in a controlled environment. Using the Xunta´s resources in terms of campaigns, several literacy and

testing tasks will be done inside Xunta's venues, as well as training activities in the field of digital literacy, completely aligned with the aim of this use case.

Inside the **pre-evaluation phase [M26-M27]** (April-May 2018), the selection and engagement of the most representative groups of the Galician elderly community will be performed. The selected e-services will be replicated and integrated with SIMPATICO. This platform will also be presented, used and evaluated by the selected groups. The main results of this pre- evaluation will be to gather several metrics about the comparison between the replicated e-services enhanced with the second released version of SIMPATICO (made available with MS4 – Second release of SIMPATICO components, due in February 2018), and the non-enhanced ones.

Having performed this first phase of evaluation, the collected feedback and lessons learned will be used to enhance the quality and the effectiveness of SIMPATICO and to enable the correct performance of the evaluation phase.

Within the **evaluation phase [M27-M32]** a significant increase of the resources focused on the engagement (i.e. workshops, campaigns…) are going to take place in order to increase the interest and benefits of using the SIMPATICO platform. In this case, the result of using the replicated e-services will be the corresponding filled forms. Offering this method and offering this way as an option to fill all the corresponding forms, the increase of the number of potential users will be measured. Consequently, during this phase, the opportunity to participate to the evaluation will be offered to all users, especially in tasks related to the Citizenpedia population. A specific campaign during the beginning of this phase will be carried out in order to populate appropriately with relevant questions and answers the Citizenpedia.

The evaluation of the usage of the SIMPATICO platform will take place using several techniques. Logging analysis has been proven as an efficient and effective method to investigate websites usability. The collection of information on the interaction of the user and his discretionary usage will be performed. Furthermore and to complement quantitative data, surveys are a good way to collect quantitative data for user opinions about an application or website.

As far as the strategy in which the Xunta use-case is organized during the second phase experiment, we foresaw different phases, aligned with the overall phases defined in Section 3.3.

1) **Environment set up phase and awareness campaigns [M25-M27]:** all the components, as well as the testing community creation to test the solution are set up:
   a) *select* the venues, characteristics and sizes of the groups which made the testing community.
   b) *replicate* the selected e-services and test the similarity between them and their analogous ones.
   c) *integrate* the text and workflow simplification and interaction enrichment techniques made available by SIMPATICO within the replicated e-services, particularly with the new e-service selected.
   d) *gather* potential sources and populate suitable sections of the Citizenpedia with information relevant for the specific selected testing e-services. Carry out Citizenpedia population action to ensure that it is populated with high quality and useful questions and answers relevant to the services being trialled.
   e) *prepare* communication and engagement campaigns to enhance the social, participatory and digital innovation through SIMPATICO of the potential testing community.
2) **Pre-evaluation verification phase [M26-M27]:** New functionalities of SIMPATICO driven from MS4 – Second release of SIMPATICO components will be activated, e.g. WAE support in all e-

services, integration with the new Servicepedia component, adoption of the Gamification approach in SIMPATICO tools, update of new text adaptation engine. It is clear that a verification of the new deployment of SIMPATICO in the 3 selected e-services will be needed to ensure that the actual evaluation runs smoothly.

3) **Users evaluation phase [M27-M32]**: An experimentation of the concrete usage of the SIMPATICO solutions is activated, in conjunction with the selected e-services in a replicated environment.

5.2.2 Test services

The preliminary selected e-services are described in the following tables:

Table 20 - Wellness and spas program

e-Service	Wellness and spas program
Target	Citizen
Description	The service manages the requests of stays in Spas/wellness centres within the Galician community. This program is for people older than 60, or people older than 55 who are retired with some disability or widowhood benefit.
Process and user interaction	Two ways of submitting the request are exposed: physical delivery or digital submission. In the latter case, the system requires the use of an electronic ID card. Public administration should get in touch with the requester in a period of 20 calendar days.

Table 21 - Individual grants for personal autonomy and complimentary personal assistance for disabled people

e-Service	Individual grants for personal autonomy and complimentary personal assistance for disabled people
Target	Citizens
Description	The service manages the requests of grants for personal autonomy, i.e. promotion services for disabled and elderly people to live as autonomous as possible. The Xunta offers to evaluate and grant the services that the solicitant asks for, such as items to ease their daily living or transportation aids
Process and user interaction	Two ways of submitting the request are exposed: physical delivery or digital submission. In the latter case, the system requires the use of an electronic ID card. Public administration should get in touch with the requester in a period of 20 calendar days.

Table 22 - Assessment of the degree of disability

e-Service	Assessment of the degree of disability
Target	Citizens
Description	The service manages the evaluation of the degree of disability of the citizens

			completing this service.
			People presenting a certain degree of disability can request the assessment from the Xunta side.
Process and user interaction			Two ways of submitting the request are exposed: physical delivery or digital submission. In the latter case, the system requires the use of an electronic ID card.
			Public administration should get in touch with the requester in a period of 20 calendar days.

The selected service modules have different characteristics which gives the possibility to apply and to validate specific techniques and tools provided by SIMPATICO project according to Table 20 for pilot phase II.

Table 23 - Service to SIMPATICO feature application mapping for Galicia use-case in 2nd phase of pilots

E-Service	Target	Features	Description
Wellness and spas program	Citizens	Text Adaptation Engine	Complex words and phrases are highlighted. When a user clicks on one highlighted phrase or word, a pop-up within a simplified version of it is shown according to the user profile.
		Workflow Adaptation Engine	Near the most difficult fields to fill a symbol/icon will be present. Clicking on it, a text will appear explaining what it is asked to insert for that specific field according to the citizen profile Furthermore, fields and sections of forms are shown/hidden on the basis of an optimized compilation process defined according to the user profile.
		Citizen Data Vault	The information filled in the module is stored in the CDV and available for future usage. Furthermore, this previously-filled information is used to automatically fill form fields in other forms which demand same inputs.
		Question and Answer	The citizen can select a part of the form and provided documents inside the e-service and ask for clarification to the user community or contribute with answer to questions there available to help others streamlining the take-up of e-services. The citizen will interact a more usable and gamified QAE which should enhance the acceptance of this component and the contributions from citizens and civil servants.
		Servicepedia	Citizens have access at all time to the Public Procedure view which explains the different steps a procedure may consist of. Normally, most procedures comprise

			the completion of an e-service as a key step, which can be further divided into several forms, blocks within and fields nested within the blocks. The objective is that citizens with the help of the Servicepedia and the other two components assembling the Citizenpedia, namely QAE and CPD have a full understanding of the procedure they interact with and can also have access to support to complete them in the form of comments, questions and answers which have been contributed associated to the different procedure steps. Enhancements applied to IFE features (top menu bar of e-services), usability within Citizenpedia and the adoption of gamification should be assessed here.
	Civil Servants	Question and Answer	The civil servant can provide clarification and responses of the digital e-service to the user community.
		Servicepedia	The documentation of the e-service is modeled by the civil servant. Citizenpedia is divided into CPD, QAE and Servicepedia. Civil Servants review and enhance a given procedure and its underlying e-service descriptions in order to facilitate their consumption.
		eService Monitor (formerly known as Dashboard)	The civil servant can receive reports about the use of a given e-service. They can understand in what part of the e-service the user is experiencing more problems. Information about the questions issued by users, comments received, requests for simplification performed, average e-service consumption time and so on, are shown to the civil servant to reflect on the e-service performance, usability and acceptability. This feedback can help civil servants to understand how to enhance the e-service and suit it to the real consumers' needs.
Individual grants for personal autonomy and complimentary personal assistance for disabled people	Citizens	Text Adaptation Engine	Complex words and phrases are highlighted. When a user clicks on one highlighted phrase or word, a pop-up within a simplified version of it is shown according to the user profile.
		Workflow Adaptation Engine	Near the most difficult fields to fill a symbol/icon will be present. Clicking on it, a text will appear explaining what it is asked to insert for that specific field according to the citizen profile Furthermore, fields and sections of forms are shown/hidden on the basis of an optimized compilation process defined according to the user profile.

		Citizen Data Vault	The information filled in the module is stored in the CDV and available for future usage. Furthermore, this previously-filled information is used to automatically fill form fields in other forms which demand same inputs.
		Question and Answer	The citizen can select a part of the form and provided documents inside the e-service and ask for clarification to the user community or contribute with answer to questions there available to help others streamlining the take-up of e-services. The citizen will interact a more usable and gamified QAE which should enhance the acceptance of this component and the contributions from citizens and civil servants.
		Servicepedia	Citizens have access at all time to the Public Procedure view which explains the different steps a procedure may consist of. Normally, most procedures comprise the completion of an e-service as a key step, which can be further divided into several forms, blocks within and fields nested within the blocks. The objective is that citizens with the help of the Servicepedia and the other two components assembling the Citizenpedia, namely QAE and CPD have a full understanding of the procedure they interact with and can also have access to support to complete them in the form of comments, questions and answers which have been contributed associated to the different procedure steps. Enhancements applied to IFE features (top menu bar of e-services), usability within Citizenpedia and the adoption of gamification should be assessed here.
	Civil Servants	Question and Answer	The civil servant can provide clarification and responses of the digital e-service to the user community.
		Servicepedia	The documentation of the e-service is modelled by the civil servant. Citizenpedia is divided into CPD, QAE and Servicepedia. Civil Servants review and enhance a given procedure and its underlying e-service descriptions in order to facilitate their consumption.
		eService Monitor (formerly known as Dashboard)	The civil servant can receive reports about the use of a given e-service. They can understand in what part of the e-service the user is experiencing more problems. Information about the questions issued by users, comments received, requests for simplification performed, average e-service consumption time and so on, are shown to the civil servant to reflect on the

			e-service performance, usability and acceptability. This feedback can help civil servants to understand how to enhance the e-service and suit it to the real consumers' needs.
Assessment of degree of disability	Citizens	Text Adaptation Engine	Complex words and phrases are highlighted. When a user clicks on one highlighted phrase or word, a pop-up within a simplified version of it is shown according to the user profile.
		Workflow Adaptation Engine	Near the most difficult fields to fill a symbol/icon will be present. Clicking on it, a text will appear explaining what it is asked to insert for that specific field according to the citizen profile Furthermore, fields and sections of forms are shown/hidden on the basis of an optimized compilation process defined according to the user profile.
		Citizen Data Vault	The information filled in the module is stored in the CDV and available for future usage. Furthermore, this previously-filled information is used to automatically fill form fields in other forms which demand same inputs.
		Question and Answer	The citizen can select a part of the form and provided documents inside the e-service and ask for clarification to the user community or contribute with answer to questions there available to help others streamlining the take-up of e-services. The citizen will interact a more usable and gamified QAE which should enhance the acceptance of this component and the contributions from citizens and civil servants.
		Servicepedia	Citizens have access at all time to the Public Procedure view which explains the different steps a procedure may consist of. Normally, most procedures comprise the completion of an e-service as a key step, which can be further divided into several forms, blocks within and fields nested within the blocks. The objective is that citizens with the help of the Servicepedia and the other two components assembling the Citizenpedia, namely QAE and CPD have a full understanding of the procedure they interact with and can also have access to support to complete them in the form of comments, questions and answers which have been contributed associated to the different procedure steps. Enhancements applied to IFE features (top menu bar of e-services), usability within Citizenpedia and the

			adoption of gamification should be assessed here.
	Civil Servants	Question and Answer	The civil servant can provide clarification and responses of the digital e-service to the user community.
		Servicepedia	The documentation of the e-service is modelled by the civil servant. Citizenpedia is divided into CPD, QAE and Servicepedia. Civil Servants review and enhance a given procedure and its underlying e-service descriptions in order to facilitate their consumption.
		eService Monitor (formerly known as Dashboard)	The civil servant can receive reports about the use of a given e-service. They can understand in what part of the e-service the user is experiencing more problems. Information about the questions issued by users, comments received, requests for simplification performed, average e-service consumption time and so on, are shown to the civil servant to reflect on the e-service performance, usability and acceptability. This feedback can help civil servants to understand how to enhance the e-service and suit it to the real consumers' needs.

5.2.3 Personnel and user engagement

In order to promote the use of SIMPATICO in the Galicia use case, we describe in this section the plan for personnel and user engagement for the 2nd phase of piloting. This plan is structured in three phases, which match with the periods described in the previous section for 2nd phase piloting.

Environment set up period and awareness campaigns [M25-M26]: The first two months will be used for the environment setup integrating the latest features of SIMPATICO. Besides, a new service will be instrumented with SIMPATICO features. The two existing ones will be adapted and enhanced.

Besides, communication actions will be launched focused on promoting the interest on the replicated e-services, and to involve the local community in the council innovation strategy, projects and experimentations. The councils will try to reach citizens/professionals and civil servants through the organization of specific events and the communication through electronic ways. Again, user engagement will be undertaken by user associations' mediation, as in the pilot phase I. Within this phase a public call to find citizens and professionals' engagement in the e-service pre-evaluation and evaluation will be open. An initial user collective for the actions in this period will be the participant of the already conducted Citizenpedia surveys. Citizenpedia population will also take place in this phase. Such population will be incentivized by the celebration of specific session where civil servants and representatives of the user associations participating in the pilots will collaborate to give place to high quality entries relevant to the services instrumented. Thus Citizenpedia will contain a wide range of relevant questions and answers before the actual evaluation of the e-services takes place.

Pre-evaluation verification phase [M26-M27]: the communication actions will focus on involving a porting of the local community in the evaluation of the e-services implemented in the scenario. The goal is achieved organizing and involving a panel of people representative of the community (citizens, civil servants and professionals). Such panel will validate the good preparation of the enhanced first

phase two e-services and the newly enhanced one through SIMPATICO features. This will serve to ensure that e-service replicas and evaluation methodology are suitably prepared to run the actual evaluation flawlessly.

Users' evaluation period [M28-M32]: the communication actions will focus on promoting the use of the online services and on involving the local community in the use of the participation mechanism and tools developed within the SIMPATICO projects. Several testing and dissemination actions will be taken along with Amtega, the Galician office for the promotion of new technologies. Presentations, videos and dissemination material will be distributed among users participating in the evaluations sessions arranged by Xunta.

The actions for the communication plan are described in the following table.

Table 24 - Communication and engagement activities for Galicia in the 2nd phase

Period	Action	Description
Environment set up and awareness campaign phase	Initial engagement of civil servants.	Connection and interviews with civil servants that will promote the use of SIMPATICO.
	Find citizens and professionals for their initial engagement.	Open a call to find citizens and professionals that might be willing to follow the evolution of SIMPATICO.
	Elderly meeting	Xunta sees feasible to organize a dissemination activity of the project in one of the events oriented to elders and/or people with disabilities they organize.
	Population feast of Citizenpedia	A physical event where civil servants and citizens will get together to populate the QAE with a wide range of useful and helpful contents, to facilitate future consumers of the e-services to have a better and easier experience whilst interacting with e-services.
Pre-evaluation verification phase	Definition of the scenario social game and rewarding program	Involving the panel in the definition of the scenario social game and rewarding program.
	Verification of the new functionalities in the 3 e-services	Organize a workshop where all the functionalities are validated by civil servants and end users.
Users evaluation phase	E-service evaluation questionnaire	To send a questionnaire targeting the e-services evaluation to all the people who have used the services during the experimentation phase.
	Activate the rewarding program	Enable and promote the gamification techniques within SIMPATICO to increase the number of users.
	Involvement of Amtega	Expecting a more mature status of the project, the Amtega should be involved. Amtega is the Galician office for ICT promotion, and at this phase, it would cooperate with his resources of the CEMIT network.

		They should assess the progress achieved by the project and the impact that might bring to the IT systems that they manage.

5.2.4 Use case evaluation and KPIs

According to the objectives with specific success criteria identified for the 1st and 2nd phases of the Galicia use-case, a matching between Objective, Success Criteria and KPI is reported.

Table 25 - Galicia KPIs description

Objective	Success Criteria	KPI
Obj-GL-1. To define, select and create a significant group of users that match the use case criteria.	A significant testing community shall be selected and created	Number of engaged civil servants
		Number of engaged citizens, in particular, disadvantaged users: elderlies
Obj-GL-2. To replicate and deploy the selected test e-services.	The selected test e-services shall be available on a replicated portal at the beginning of the evaluation phase	Number of e-services instrumented by SIMPATICO available for testing on the beginning of the experimentation
Obj-GL-3. To integrate and validate the SIMPATICO simplification techniques with the replicated e-services of Obj-GL-2.	Successful integration of the SIMPATICO simplification techniques within the replicated services and with the test e-services by the beginning of the evaluation phase	Number of accesses for each tested e-service from the beginning of the experimentation
		Number of accesses to platform during experimentation
		Number of platform users (citizens, civil servants)
	Enough information collected during the experiment to calculate the corresponding metrics to describe the acceptance, effectiveness and efficiency to validate SIMPATICO	Reduction in interactions rejected because of mistakes by users in filling the forms
		Reduction in request for integration of information sent to users
		Reduction in time spent completing a procedure or filling a form
Obj-GL-4. To involve Galician elderly community and Xunta civil servants in the documentation of the e-services through Citizenpedia.	Evidence is collected that the community can be engaged to contribute to Citizenpedia (e.g., by measuring the number of interactions, comments and suggestion generated by the Xunta civil servants, citizens and professional	Number of engaged civil servants
		Number of engaged citizens, in particular, disadvantaged users: elderlies
		Number of contributed entries into Citizenpedia issued by citizens and civil servants

	through Citizenpedia).	

The following tables summarize the generic and services specific **KPI defined within the pre-evaluation and evaluation phase.**

Table 26 - Galicia general KPIs for 2nd phase pilots

Category	KPI	Value
SIMPATICO Platform	Number of procedures supported by SIMPATICO	3
	Number of accesses to platform during experimentation	300
	Number of platform users	270 (elderly or people with dissabilities) + 18 (civil servants)
	Increment in Citizenpedia entries to support e-service consumption	> 40

Table 27 - Galicia scenario specific KPIs for pre-evaluation and evaluation phases of 2nd pilot phase

Service	Category	KPI	Pre-eval. value	Eval. value
Wellness and spas program	Number of engaged stakeholders for each type	Civil servants	2	6
		Number of engaged citizens, in particular, disadvantaged users: elderlies	10	90
	Reduction of administrative burden	Reduction in time spent completing a procedure or filling a form calculated as: *1 - [Average time spent completing a procedure or filling a form using the simplified online interaction (with SIMPATICO tools)] / [Average time spent completing a procedure or filling a form using the standard offline interaction]*	50%	50%
	Inclusion	Increase in percentage of disadvantaged users that can complete the e-service autonomously calculated as: *1 - [Number of autonomously completed e-services using the simplified online interaction (with SIMPATICO tools)] / [Number of autonomously completed e-services using the standard offline interaction]*	25%	25%

		Decrease in average number of requests for help from users for each procedure calculated as: *[Number of completed e-services using the standard offline interaction and asking for help] - [Number of completed e-services using the simplified online interaction (with SIMPATICO tools) and asking for help]*	2	2
Individual grants for personal autonomy and complimentary personal assistance for disabled people	Number of engaged stakeholders for each type	Civil servants	2	6
		Number of engaged citizens, in particular, disadvantaged users: elderlies	10	90
	Reduction of administrative burden Inclusion	Reduction in time spent completing a procedure or filling a form calculated as: *1 - [Average time spent completing a procedure or filling a form using the simplified online interaction (with SIMPATICO tools)] / [Average time spent completing a procedure or filling a form using the standard offline interaction]*	50%	50%
	Inclusion	Increase in percentage of disadvantaged users that can complete the e-service autonomously calculated as: *1 – [Number of autonomously completed e-services using the simplified online interaction (with SIMPATICO tools]) / [Number of autonomously completed e-services using the standard offline interaction]*	25%	25%
		Decrease in average number of requests for help from users for each procedure calculated as: *[Number of completed e-services using the standard offline interaction and asking for help] -[Number of completed e-services using the simplified online interaction (with SIMPATICO tools) and asking for help]*	2	2

Assessment of the degree of disability	Number of engaged stakeholders for each type	Civil servants	2	6
		Number of engaged citizens, in particular, disadvantaged users: elderlies	10	90
	Reduction of administrative burden Inclusion	Reduction in time spent completing a procedure or filling a form calculated as: *1 - [Average time spent completing a procedure or filling a form using the simplified online interaction (with SIMPATICO tools)] / [Average time spent completing a procedure or filling a form using the standard offline interaction]*	50%	50%
	Inclusion	Increase in percentage of disadvantaged users that can complete the e-service autonomously calculated as: *1 – [Number of autonomously completed e-services using the simplified online interaction (with SIMPATICO tools]) / [Number of autonomously completed e-services using the standard offline interaction]*	25%	25%
		Decrease in average number of requests for help from users for each procedure calculated as: *[Number of completed e-services using the standard offline interaction and asking for help] -[Number of completed e-services using the simplified online interaction (with SIMPATICO tools) and asking for help]*	2	2

5.2.5 Test results collection

The evaluation of the objectives and the measurement of the KPIs of the Galicia use-case demand a collection not only during the evaluation phase but also during the pre-evaluation one. Most of the data that are necessary for measuring the usage of the SIMPATICO solutions and tools are available in the logging components of the SIMPATICO platform. However, the KPIs measurement also requires data that are not in the platform, as they concern aspects of the experiments that are in the domain of the administration and need to be specifically monitored and computed by the administration.

There will be two ways to collect the metrics required to compute the KPIs. On one hand, metrics coming from application on paper-based traditional services will be computed by the administration. On the other hand, metrics coming from on-line e-services could be obtained from the logging and analytic system of the SIMPATICO solution.

As well as in the Trento use case, the e-services in Galicia have their paper-based traditional procedure. Many Galician citizens use the paper-based approach in both services and they are managed by civil servants. Thus, during the evaluation phase we will conduct several interviews with civil servant in order to gather the metrics required to compute the KPIs. The nature of these interviews will be defined during the evaluation phase, as we will be likely to adopt the less intrusive way for the civil servants.

The following tables define where and how to collect the data required to calculate the KPI for the specific e-service.

Table 28 - KPI data collection for the three e-services tested in Galicia

KPI	Value
Percentage of time saved by civil servants in interactions with users (answering requests for clarifications, etc.)	*[Average time spent answering the user online requests using the standard offline interaction]* variable value will be defined interviewing the civil servants.
	[Average time spent answering the user online requests using the simplified online interaction (with SIMPATICO tools)] variable value will be calculated based on the information collected via the SIMPATICO Log module.
Reduction of average duration of the administrative process	*[Average duration of the administrative process using the standard offline interaction]* variable value will be taken interviewing the civil servants.
	[Average duration of the administrative process using the simplified online interaction (with SIMPATICO tools)] variable value will be calculated based on the report of civil servants involved into the experiments.
Reduction in time spent completing a procedure or filling a form	*[Average time spent completing a procedure or filling a form using the standard offline interaction]* variable value will be defined interviewing the civil servants.
	[Average time spent completing a procedure or filling a form using the simplified online interaction (with SIMPATICO tools)] value will be calculated based on the information collected via the SIMPATICO Log module.
Increase in percentage of disadvantaged users that can complete the e-service autonomously	*[Number of autonomously completed e-services using the standard offline interaction]* value will be obtained from the report of civil servants involved into the experiments.
	[Number of autonomously completed e-services using the simplified online interaction (with SIMPATICO tools)] the information collected via the SIMPATICO Log module.
Decrease in average	*[Number of completed e-services using the standard offline*

number of requests for help from users for each procedure.	*interaction and asking for help]* value will be obtained from the report of civil servants involved into the experiments.
	[Number of completed e-services using the simplified online interaction (with SIMPATICO tools) and asking for help] value will be obtained from the report of civil servants involved into the experiments.
Increment of support entries in Citizenpedia to aid e-service consumption	*[Increment in Citizenpedia entries to support e-service consumption]* will be obtained by querying the database of the Citizenpedia, regarding this e-service.

5.2.6 Schedule

The following table collects all the scheduled activities concerning the Galicia use-case.

Table 29 - Galicia use-case activity schedule in pilot phase II

Activity	From	To	Description
Environment set up phase and awareness campaign			
Engagement call organization and execution	03/2018 [M25]	04/2018 [M26]	To plan and organize the call for find citizens and professionals for evaluation engagement
Testing community creation	03/2018 [M25]	04/2018 [M26]	To define and set up all testing groups which conforms the community to test the solution
Selected e-services replication and deployment	03/2018 [M25]	04/2018 [M26]	To enhance and deploy the "Wellness and spas program" service.
	03/2018 [M25]	04/2018 [M26]	To enhance and deploy the "Individual grants for personal autonomy and complimentary personal assistance for disabled people" service
	03/2018 [M25]	04/2018 [M26]	To replicate and deploy the "Assessment of degree of disability" service
SIMPATICO techniques and tools integration	04/2018 [M26]	04/2018 [M26]	To integrate the SIMPATICO solutions within the replicated e-services
Elderly meeting (*III Conferencia Internacional de Proyectos Educativos para Seniors*)	05/2018 [M25]	05/2018 [M26]	Xunta will organize a dissemination action in one the public events organized in May targeting elderly people or people with disabilities, or citizens, accesing to e-services.
Citizenpedia population	04/2018 [M26]	05/2018 [M27]	To populate suitable sections of the Citizenpedia with information relevant for the "Wellness and spas program" e-service.
	04/2018	05/2018	To populate suitable sections of the Citizenpedia with

	[M26]	[M27]	information relevant for the "Individual grants for personal autonomy and complimentary personal assistance for disabled people" e-service.
	04/2018 [M26]	05/2018 [M27]	To populate suitable sections of the Citizenpedia with information relevant for the "Assessment of the Degree of Disability" e-service.
	05/2018 [M27]	05/2018 [M27]	Citizenpedia population feast with citizens and civil servants to ensure high quality contents are provided for the three tested services.
Pre-Evaluation verification phase			
E-service pre-evaluation	05/2018 [M27]	05/2018 [M27]	To prepare the E-service pre-evaluation questionnaire
Definition of the rewarding program	05/2018 [M27]	05/2018 [M27]	Definition of the scenario social game and rewarding program.
Involvement of Amtega	05/2018 [M27]	05/2018 [M27]	Expecting a more mature status of the project, the Amtega would be involved. Amtega is the Galician office for ICT promotion, and at this phase, it would cooperate with his resources of the CeMIT network.
Users evaluation phase			
Involvement of the professional association	06/2018 [M28]	09/2018 [M31]	To organize an event with the professional associations in order to explain the scenario, the e-services and the SIMPATICO participation tools.
Involvement of the citizen	06/2018 [M28]	09/2018 [M31]	To activate a communication campaign targeting the citizens in order to explain the scenario, the e-services and the SIMPATICO participation tools

6 Sheffield Use-case – Phase 2

6.1   Specification of the Sheffield use-case

6.1.1 Context and background

Sheffield is England's third largest metropolitan authority (circa 551,800 people). The city grew rapidly during the industrial revolution and is nowadays characterised by a combination of modern industry (particularly in metallurgy and steelmaking) and services, including two major universities that together host approximately 60,000 students. As common in many other places in the UK, there has been an increase in the level of international migration to Sheffield. Sheffield is an ethnically diverse city, with around 19% of its population from minority ethnic groups. The largest of those groups is the Pakistani community, but Sheffield also has large Caribbean, Indian, Bangladeshi, Somali, Yemeni and Chinese communities. More recently, Sheffield has seen an increase in the number of overseas students and in economic migrants from within the European Union. It is estimated that migrants living in Sheffield actively speak at least 40 languages.

Migrants living in a new country face several challenges. These include the language of the new country, which is often different from the migrant's native language, and a general understanding of the processes, laws and regulations that govern many of the day-to-day tasks that are required to fully integrate the migrant as a citizen of the new country. One of the important challenges these migrants have to face is the understanding of and access to processes related to services offered for their children, such as information on school attendance, behavioural problems, learning, and health care.

Although a significant volume of information is openly available on the Sheffield City Council (SCC)'s website (http://www.sheffield.gov.uk/), current interactions between migrants and Sheffield City Council are mostly done in person or over the phone. The reasons behind this fact include the lack of personalised content online, e.g. for migrants from specific countries or in particular cases, based on previous interactions; the migrants' inexperience with the UK system and lack of knowledge of the English language; the perception and lack of trust from migrants regarding providing information into online forms; the inherent complexities of the processes, particularly in cases requiring long term engagement with the migrants. The volume of face-to-face/phone interactions with citizens whose native language is not English, and thus requiring interpretation or translation, is very high. This option was used by 1500 citizens in 2014 alone, resulting in enormous costs to the Council: in 2014, the costs with translation and interpretation exceeded 386,000 Euros. In addition, the need to rely on human interpreters and translators severely delays the interaction process.

Support and advice for issues concerning children of migrants living in the UK thus present several complexity factors and potential benefits that makes this an ideal use-case for SIMPATICO.

Sheffield City Council has been working with Adobe on a new website. The aim is to deliver a platform that will enable the Council to easily find and use customer-centric information and transactional services online through different devices.

An intended outcome is that more users of council services will prefer to use this digital channel rather than traditional face to face, email and telephone contact. As a result, its customers get 24/7 access to council services, and the council can achieve cost savings.

The original plan was for the council to provide this new digital channel by 1st April 2017 at the latest with integration with SIMPATICO as a requirement to the project. Due to integration issues these deadlines were extended with the channel going live whilst other areas are being developed.

Customer use, insight and feedback are central to the council's new approach to the web and will be central in the iterative reviews to reshape all online information and services.

SIMPATICO provides an opportunity to the council to extend the reach of the website to people new to Sheffield. The system can highlight to council content owners where readability issues occur and what improvements to make. It will enable people to query and reward hard to read information in real-time so they can complete what they came to the website to do.

6.1.2 Specific purpose and strategy of the use-case

As mentioned before, one of the challenges faced by SCC is to engage migrants in using the website. Increasing the number of website users would mean a significant reduction on costs with staff dedicated for face-to-face and phone interactions. Moreover, if more migrants are able to acquire information from the website by themselves, it would also mean a reduction on translation services costs.

This scenario offers the opportunity to the Sheffield use-case to experiment the integration of the SIMPATICO solution with the SCC website, and to assess their capability to provide easier and personalised interaction to the users of the website (focusing on migrants).

The main specific purpose of the first experiment phase in Sheffield use case was to validate the integration between systems underpinning the new website - Adobe AEM content and forms, and SIMPATICO solution. The main aim was to evaluate whether or not the SIMPATICO solutions developed so far work properly with the new implemented website.

Sheffield use-case used a plugin-based architecture in order to implement the SIMPATICO technologies into the City Council website for phase 1. SIMPATICO plugin was developed using the browser-side extension mechanism supported by Google Chrome, as better described in Section 6.2.1. Such approach was chosen under consideration of migration of Sheffield website: plugin base approach allowed development to continue in parallel with, and independently from, SCC new website.

In addition to this specific purpose, the Sheffield use-case contributed to the project level objective of the first phase, namely to evaluate the maturity, effectiveness and usability of the different SIMPATICO solutions, techniques and components.

More specifically, this included: (1) to measure the improvement in the usage of the selected testing e-services thanks to the adoption of the SIMPATICO solutions; and (2) to evaluate the potential social activation generated by the SIMPATICO approach in terms of community participation (e.g., number of comments, change requests, documentation improvements produced by the user community during the experimentation phase).

The strategy adopted for the Sheffield use-case was to validate SIMPATICO solutions in integration with the SCC website. During the first phase experiment, the testing e-services were related mostly to MAST (Multi Agency Support Team) services, which are aimed at children, young people and families. MAST provides advice and support to children and families who may need extra help with issues such as school attendance and behavioural problems, learning, behaviour and health care.

These e-services were used to validate all the different features and components of the SIMPATICO solution.

It was decided during the evaluation phase that 2 of the e-services that had been chosen (INSERT E-SERVICES) would not be used as the e-service were very simplified and it would not allow for the user to utilise many of the SIMPATICO tools. In the second phase better, more complex e-services will be chosen that utilise the SIMPATICO tools.

From the first evaluation several concerns have been highlighted:

- **Poor user experience during Text Simplification**
  There were many positives, especially from non-native speakers of the Text Simplification tool however there were also concerns highlighted in the fact that Users were required to login to use the tool. This goes against the Sheffield City Council UX guidance as we do not require any data to be given up unless required for a process.
- **UI Icons and prompts are not clear**
  A reoccurring issue throughout the feedback was that many users struggled with the processes on all tools as there were no tool tips or explanations of how the process worked or what the buttons or icons were for.

Both of these issues will be focused upon in Phase 2 to ensure an improvement in the usability of the SIMPATICO tools in phase 2.

6.1.3 Use-case objectives and success criteria

The objectives of the experiments performed during the first phase of the Sheffield use-case directly derive from the purposes of the use-case discussed in the previous section. They are described in the following paragraphs, together with their success criteria.

Obj-SHEF-1. To select test e-services with considerable complexity and high demand on human interaction.

Sheffield use cases were selected according to a list of criteria that aimed to identify e-services with considerable complexity and that still needs high human interaction (by phone or in person). Therefore, the focus was on choosing services with a mix of forms, external links and text in order to fully explore the SIMPATICO technologies. The e-services selected also needed to have a high demand by citizens non-native speakers of English.

Currently, only one e-service is provided fully online. However, after the refactoring of the SCC website, all services are expected to provide a higher interaction with the citizens, including online forms. By personalising its workflow and content, including simplifying it and translating important concepts, SIMPATICO will minimise the number of face- to-face/phone interactions and the need for translation or interpreting services, thus making the process faster and cheaper.

The additional e-services that will be tested are:

- **Apply for free school meals**
  Free school meals are the ideal candidate to test SIMPATICO software against, the demographic groups we are aiming to digitally enable using the SIMPATICO software are very likely to be eligible for the free school meals service. Secondly an annual application for free school meals applies so all eligible parents will have need to use this service during the evaluation period.

Sheffield has a higher proportion than the national average (13.7%) in terms of free school meal eligibility, with over 22% of pupils in primary schools eligible and 19% in secondary schools. It is essential that parents find it as easy as possible to apply for this service not only to ensure that their eligibility is taken up but to ensure schools receive the additional pupil premium which is related to free school meals.

This service is available online but most parents opt to fill in a paper application form available from their school.

- **Request equipment or an adaptation to a property for a disabled person**

  This highly popular service assists disabled people in living independently at home, the service is currently available online however many customers opt to use our telephone service. Last year we took over 1000 referrals online which is estimated than less than 30% of our total referrals in this area.

  Out hope is that by simplifying the e-service using the SIMPATICO application we can encourage citizens to use the more efficient online channel which will help reduce waiting times for the service which are currently over 3 months.

- **Calculate your contributions to the cost of social care**

  Contributions towards home care or residential care are a very complex subject which requires a citizen to provide in depth financial information so we can calculate whether they are eligible for state help to pay towards the cost of care.

  We believe that this online service will provide a strong test of the SIMPATICO software as much of the rules which govern this area are filled with technical jargon and complex calculations.

  As with most local authorities in the UK adult social care and meeting the needs of our citizens remains a challenge for Sheffield and helping our citizens access this service in a way which suits them is a key priority for us.

- **Apply for parenting classes**

  As this service was used in our initial evaluation we feel that a strong baseline of the SIMPATICO software was achieved in phase 1 which we would like to measure again after the suggested improvements to the software are made.

Success criteria: the selected test e-services shall be available on the SCC website at the beginning of the evaluation phase.

Obj-SHEF-2. To integrate and validate the SIMPATICO simplification techniques with the test e-services of Obj-SHEF-1.

This goal is to integrate the SIMPATICO technologies into the website of SCC, providing simplification tools for the citizens. The SIMPATICO tools will be applied to the 4 e-services selected in Obj-SHEF1.

This objective serves to validate the integration between the SCC website and SIMPATICO solution. Also, this objective ensures that the usage of the test e-services by citizens allows for validating the integrated techniques.

Specifically, this objective covers:
1) The integration and validation of the text simplification techniques on the test e-services;
2) The integration and validation of the text workflow adaptation techniques on the test e-services;

3) The integration and validation of the capability, offered by the CDV, to exploit information already provided by the service users in previous interactions to enhance.

Success criteria: successful integration of the identified SIMPATICO solution and tools within the City Council website and with the test e-services.

Obj-SHEF-3. To evaluate the improvements of the adoption of SIMPATICO solutions to the usability of the e-services and to the efficiency of the offices of the City Council.

The aim is to validate that effectiveness of SIMPATICO in the simplification of the user interaction. More precisely, this effectiveness is measured in terms of:
1) Increase in the usability of the website by citizens thanks to the personalization, adaptation and improvement of the interactions with the e-services;
2) Increment of the number of the requests sent directly online without interacting with civil servants;
3) Improvement of the efficiency and reduce in costs of the City Council face-to-face and phone services.

Success criteria: the number of applications presented online is sufficient to evaluate the effectiveness of SIMPATICO according to the identified measures; an increase in the applications presented on-line, in the satisfaction of the users, and in the efficiency of the City Council.

Obj-SHEF-4. To involve Sheffield community (civil servants and citizens) in the documentation of the e-services through Citizenpedia.

The goal is to demonstrate the possibility to engage the community in the e-service documentation task implemented through Citizenpedia; and to demonstrate that the most the community is involved in the e-service design and documentation, the better the final e-services will be accepted and used (evidences of the community participation).

Success criteria: evidence is collected that the community can be engaged to contribute to Citizenpedia (e.g., by measuring the number of interactions, comments and suggestion generated by the Sheffield civil servants, citizens and professional through Citizenpedia).

6.1.4 Assumptions and risks

Thanks to the plugin-based approach followed for Sheffield use-case in phase 1, project development will be independent from the new website development. However, there are still some technical risks that need to be taken into account in phase 2. To mitigate these risks we are moving to Sheffield City Councils infrastructure and will be working on a "Production like" environment.

Table 30 - Sheffield use-case assumptions

Assumption	Comment
The SCC's new website or sandbox environment will be delivered in time to allow the integration with SIMPATICO solution and instruments	The SCC's website project is currently proceeding according to the plan, which foresees a release by 31st May 2018. This release date compatible with the integration plan of SIMPATICO. Although the use of a plugin-based approach gives freedom to the SIMPATICO technology, SCC has the responsibility to monitor the progress of the new website and to report any problem that could invalidate this assumption.

The test e-services selected for validation will be ready and open for applications during the period of execution of the SIMPATICO use-case (M27-M32)	The test e-services have been selected taking into account their importance to the council and the high demand of migrants. However, it is not clear whether or not such services will be a priority to the new website. SCC has the responsibility to monitor both the delivery of these services and any obstacle that can make it impossible, complex or not effective to exploit these services during the period of execution of the SIMPATICO use case. Sparta has the responsibility to monitor any change in the planning of the SIMPATICO project that may affect the period of execution of the use case – and hence the possibility to exploit the selected e-services.
SIMPATICO solution should be accessible via Mobile browsers	The interactive services should be mobile responsive as per Use case requirements that half of the traffic goes on mobile devices.
Sheffield website should have an User identification system to allow SIMPATICO to update personalized content specific to User	There should be some user identification system so when User makes specific text or workflow adaptation request, it should be stored in SIMPATICO system with unique User details.

The violation of any of these assumptions can be critical effects on the Sheffield use-case: for this reason, specific attention has been dedicated in the validation of these assumptions, and specific emphasis will be dedicated to their monitoring.

In addition to the risk that any of these assumptions is violated, other use-case risks have been identified and are reported in the following table, with probability, impact and mitigation actions.

Table 31 - Sheffield use-case risks

Description of possible risk	Risk probability	Risk impact	Remedial actions
The new website does not support Google Chrome Extension technology.	Low	High	It has been suggested that we use the plugin till such a time as Sheffield council have their full service platform developed.
The selected e-services are not available on the date of the use-case evaluation.	Medium	High	To test the specific missing SIMPATICO project techniques and tools on a different e-service.
The selected e-services are not complex enough to experiment and evaluate all the relevant SIMPATICO project techniques and tools.	Medium	Medium	An extra e-service will be identified to test the specific missing SIMPATICO project techniques and tools on a different e-service.

Incompatibility between the selected test procedure and workflow adaptation techniques.	High	Medium	Experiment SIMPATICO with different services that can also be potential use-cases.
Integration Incompatibility between SCC new website and SIMPATICO components	High	High	Test SIMPATICO solution on sandbox environment in first phase of Use case development mitigates the risk.
Difficulty of the local community (civil servants, citizens and professionals) involvement	High	Medium	To promote a powerful communication campaign giving tangible advantages to the SIMPATICO community participants.
There will be no User identification or authentication system	High	Medium	A cookie based approach will be followed to identify the user.

6.1.5 Stakeholders and roles

The following table reports the stakeholders which involvement is foreseen for the Sheffield use-case; specific roles are identified for each of these stakeholders.

Table 32 - Sheffield use-case stakeholders and roles

Stakeholder (and type)	Role	Note
Sheffield City Council (project partner)	Responsible of: - alignment with council strategy for the new website - selection of the test e-services - engagement of users and stakeholders - use-case evaluation	The internal staff involved by Sheffield City Council includes: - Digital Services Team - Digital Production Manager - Head of Communications - MAST team
University of Sheffield (project partner)	Responsible of: - use-case planning and management - use-case requirements / project validation requirements matchmaking	
Sparta Technologies Ltd (project partner)	Responsible of: - use-case planning and management - use-case requirements / project validation	

	requirements matchmaking - use-case deployment and connection with legacy systems - use case Operation and Monitoring - use case Evaluation	
Citizens (end users)	Engaged as: - users of the test e-services users and contributors of Citizenpedia	Specific categories of citizens are identified for the different test e-services.
Civil servants (end users)	Engaged as: - users and contributors of Citizenpedia	The engagement of civil servants is not limited to the employees of the Sheffield City Council.

6.2 Use-case planning

6.2.1 Use-case methodology and plan

Using the lesson's learned and feedback from phase 1, Sheffield aims to integrate, test and deploy SIMPATICO tools within the SCC website in phase 2.

The second phase plan follows the schedule defined for the first phase. The use-cases experimentation will be structured in a pre-evaluation phase and an evaluation phase along with baseline feedback gathered for untested components in phase one with a larger pilot group and using more complex e-services.

During the **pre-evaluation phase**, civil servants will be invited to use the SIMPATICO technologies. They will need to install SIMPATICO plugin on their browsers and navigate into SCC's website, using the SIMPATICO technology when needed. The evaluation of the techniques will take place both implicitly, e.g., through the collection of information on the interaction of the user, and explicitly, e.g., by submitting questionnaires to the civil servants at the end of the service interaction.

During the **evaluation phase**, the opportunity to participate to the evaluation will be offered to all users accessing the selected test services through the Sheffield CC website. The users agreeing to participate will have to accept the terms and conditions of the SIMPATICO project. After that, the users will be able to exploit the techniques offered by SIMPATICO for what concerns: text simplification, workflow adaptation, usage of the CDV, usage of Citizenpedia. The evaluation of the techniques will take place both implicitly, e.g., through the collection of information on the interaction of the user, and explicitly, e.g., by submitting questionnaires to the users at the end of the service interaction.

As mentioned before, Sheffield use-case will focus on migrants, non-native speakers of English. Considering the council's demand of services that still require loads of face-to-face and phone calls interaction, as mentioned the second phase will consist of 4 e-services where we feel there is more scope to test this demographic.

As far as the strategy in which the Sheffield use-case is organized during the first experiment, we foresee different phases, aligned with the overall phases defined in Section 3.3:

1) **Preparation phase [M21-M24]**: Identify the new e-services to be integrated with SIMPATICO whilst achieving full integration with SIMPATICO software**.**

2) **Implementation and integration phase [M25-M26]**: where we set up all the components of the final solution, which means:
   a. to digitalize the module in the city e-service portal (or revise the existing digitalized module if already available);
   b. to integrate the text and workflow simplification and interaction enrichment techniques made available by SIMPATICO within the selected testing e-services, thus integrating the SIMPATICO solutions within the Sheffield e-service portal;
   c. to populate suitable sections of the Citizenpedia with information relevant for the specific selected e-services;
   d. to complete UX exercises with Sheffield users;
   e. to prepare communication and engagement campaigns for stakeholders and end-users.

3) **Pre-evaluation phase [M26-M27]**: where we perform a small experiment of the concrete use of the SIMPATICO solutions in conjunction with the selected e-services within a panel representative of the Sheffield community.

4) **Users evaluation phase [M27-M32]**: where we perform an experimentation of the concrete use of the SIMPATICO solutions in conjunction with the selected e-services in a production environment.

5) **Community evaluation phase [M26-M32]**: where the community of Sheffield is engaged in the documentation of the e-services through Citizenpedia.

6.2.2 Services

In the following tables the description of the e-services part of the experimentation.

Table 33 - Parenting Skills Course

e-Service	Parenting Skills Course
Target	Citizen
Link	www.sheffield.gov.uk/parenting
Description	The parenting skills course service aims to inform parents about the support provided by the city council and external partners to equip them with better parenting skills.
Process and user interaction	Users can visit this e-service by the following reasons: 1. Parents wants to find information about support activities provided by the city council and external partners; 2. Professionals want to find information to assist parents. Currently, there are no online form interaction with the user. Potentially, parents will be able to contact online for parenting skills courses via contact form.

The following table present the relations between the e-services and the features provided by the SIMPATICO technologies.

Table 34 - Services to SIMPATICO features mapping for Sheffield

E-Service	Target	Features	Description
All	Citizens	Text Adaptation Engine	Complex phrases/words are pre-highlighted so that it's clear to the user that other alternatives are available When a user clicks on one enlighten phrase or word, a pop-up within a simplified version of it is shown according to the user profile.
		Text Adaptation Engine	The user selected module phrases and words are automatically translated in the user language/profile.
		Workflow Adaptation Engine	Parts of the digital module are shown/hidden on the basis of an optimized compilation process defined according to the use profile.
		Citizen Data Vault	Information about the citizen and their family is stored and can be used to pre-fill forms and adapt the information presented to the user (e.g.: if the user inform the system that he/she does not have children, when accessing the School Attendance service the content can be modified).
		Question and Answer	The citizen can select a part of the digital module and ask for clarification.
Parenting skills course	Citizen	Text Adaptation Engine + Workflow Adaptation Engine	Near the most difficult fields to fill in the form (based on the user experience and CDV information) an icon will be presented. By clicking on it a pop-up will be presented within a text explaining what it is asked to insert for that specific field.

6.2.3 Personnel and user engagement

A communication plan has been developed in order to engage the users into using SIMPATICO technologies. The communication plan is structured in three main periods where a specific set of communication actions will be activated.

Pre-execution communication and engagement period [M21-M25]: the communication actions will focus on promoting the interest on the online services and to involve the local community in the council innovation strategy, projects and experimentations. The goal is achieved organizing and participating to specific events where the council innovation strategy, projects and experimentations are explained.

Pre-evaluation communication and engagement period [M25-M27]: the communication actions will focus on involving part of the local community in the evaluation of the e-services implemented in the scenario. The goal is achieved organizing and involving a panel of people representative of the community (citizens and civil servants).

Evaluation communication and engagement period [M27-M32]: the communication actions will focus on promoting the use of the online services and on involving the local community in the use of the participation mechanism and tools developed within SIMPATICO. A specific program with precise instruments to reward the citizens and professionals participating at the e-service and Citizenpedia evaluation will be launched and communicated.

The communication plan is described in D6.4.

6.2.4 Use case and KPIs evaluation

For the 2nd phase of the Sheffield use-case, four different objectives with specific success criteria have been identified (see Section 6.1.3). Within the following table, a matching between Objective, Success Criteria and KPI is reported. After that we will define scenario- and service-specific KPIs both for the pre-evaluation phase and for the evaluation phase.

Table 35 - Sheffield KPIs description

Objective	Success Criteria	KPI
Obj-SHEF-1. To select test e-services with considerable complexity and high demand on human interaction.	The 4 selected test e-services shall be available on the SCC website at the beginning of the evaluation phase.	Availability of the e-services on the beginning of the experimentation.
Obj-SHEF-2. To integrate and validate the SIMPATICO simplification techniques with the test e-services of Obj-SHEF-1.	Successful integration of the identified SIMPATICO solution and tools within the City Council website and with the test e-services	Number of e-services supported by SIMPATICO
Obj-SHEF-3. To evaluate the improvements of the adoption of SIMPATICO solutions to the usability of the e-services and to the efficiency of the offices of the City Council.	The number of applications presented on-line is sufficient to evaluate the effectiveness of SIMPATICO according to the identified measures.	Number of accesses to platform during experimentation
		Number of platform users
	An increase in the applications presented on-line, in the satisfaction of the users, and in the efficiency of the municipality is measures.	Percentage of time saved by civil servants in interactions with users (answering requests for clarifications, etc.)
		Reduction of average duration of the administrative process
		Reduction in time spent completing

		a procedure or filling a form
Obj-SHEF-4. To involve Sheffield community (civil servants and citizens) in the documentation of the e-services through Citizenpedia.	Evidence is collected that the community can be engaged to contribute to Citizenpedia (e.g., by measuring the number of interactions, comments and suggestion generated by the Sheffield civil servants, citizens and professional through Citizenpedia).	Number of engaged civil servants
		Number of engaged business owners
		Number of engaged citizens
		Disadvantaged users (migrants)

The following tables summarize the generic and services specific KPI defined within the pre-evaluation and evaluation phase. Note: some of the target values are still to be defined (TBD) at the time of writing. Moreover, the Young carers' service will be used only during the evaluation phase.

Table 36 - Sheffield general KPIs

Category	KPI	Value
SIMPATICO Platform	Number of procedures supported by SIMPATICO	4
	Number of accesses to platform during experimentation	85
	Number of platform users	50

Table 37 - Sheffield scenario specific KPIs for pre-evaluation and evaluation phases

Category	KPI	Pre-eval. value	Eval. value
Number of engaged stakeholders for each type	Civil servants	3	50
	Citizens	50	200
	Disadvantaged users (low English comprehension or reading ability)	50	200
Internal efficiency of PA processes	Percentage of time saved by civil servants in interactions with users (answering requests for clarifications, etc.) calculated as: 1 - [Average time spent answering the user online requests using the simplified online interaction (with SIMPATICO tools)] / Average time spent answering the user online requests using the standard offline interaction]	40%	40%
Reduction of administrative burden	Reduction in time spent completing a procedure or filling a form 1 - [Average time spent completing a procedure or filling a form using the simplified online interaction (with SIMPATICO tools)] / [Average time spent completing a procedure or filling a form using the standard offline	20%	20%

interaction]		

6.2.5 Test results collection

In order to support the evaluation of the objectives and of the KPIs of the Sheffield use-case, data need to be collected before and during the evaluation phase. Most of the data that are necessary for measuring the usage of the SIMPATICO solutions and tools are available in the logging components of the SIMPATICO platform – in particular in the Log and User Profile components. The evaluation of the KPIs also requires data that are not in the platform, as they concern aspects of the experiments that are in the domain of the administration (e.g., duration of the process triggered by the submission of a module); these data are also not present in the information system of the SCC, and need to be specifically monitored and computed by the administration, hence setting up specific procedures. Finally, the collection of data for the evaluation of the quantitative KPIs (e.g., Average duration of the administrative process using the standard offline interaction) will be done also through the administration of questionnaires that then need to be evaluated and analyzed.

In the case of the Sheffield use-case, the baseline refers to the current website procedures. In addition to this, during the execution of the experiments, the SCC will ask the civil servants to track in a precise way the data on the back-end management of the services.

The following tables define where and how to collect the data required to calculate the KPI for the specific e-service.

Table 38 - KPI data collection for e-services

KPI	Value
Percentage of time saved by civil servants in interactions with users (answering requests for clarifications, etc.)	*[Average time spent answering the user online requests using the simplified online interaction (with SIMPATICO tools)]* variable value will be calculated based on the information collected via the SIMPATICO Log module.
Reduction of average duration of the administrative process	*[Average duration of the administrative process using the simplified online interaction (with SIMPATICO tools)]* variable value will be calculated based on the report the Civil Servant will keep during the experimentation where applicable.
Reduction in time spent completing a procedure or filling a form	*[Average time spent completing a procedure or filling a form using the text simplification]* feature will be defined interviewing the civil servants. *[Average time spent completing a procedure or filling a form using the simplified online interaction (with SIMPATICO tools)]* value will be calculated based on the information collected via the SIMPATICO Log module.

6.2.6 Schedule

The following table collects all the scheduled activities concerning the Sheffield use-case.

Table 39 - Sheffield use-case activity schedule

Activity	From	To	Description
Preparation phase			
Scenario specification	11/2017 [M21]	02/2018 [M24]	To identify new more complex e-services, acquire all relevant documents as well as all relevant information on the e-services and analyse them.
Implementation and integration phase			
Achieve full integration with SIMPATICO software	02/2018 [M24]	04/2018 [M26]	Fix all remaining defects and move Sparta server to SCC Servers (Dev & Test).
Citizenpedia population	03/2018 [M25]	04/2018 [M26]	To populate suitable sections of the Citizenpedia with information relevant for the selected e-services.
Pre-Evaluation phase			
Scenario execution phase	04/2018 [M26]	05/2018 [M27]	To active a small experiment of the concrete use of the SIMPATICO solutions in conjunction with the selected e-services within a panel representative of the Sheffield community;
Users evaluation phase			
Involvement of the citizen	05/2018 [M27]	10/2018 [M32]	To activate a communication campaign targeting the citizens in order to explain the scenario, the e-services and the SIMPATICO participation tools
Scenario execution phase	05/2018 [M27]	10/2018 [M32]	To activate an experimentation of the concrete use of the SIMPATICO solutions in conjunction with the selected e-services in a production environment.
Scenario evaluation phase	05/2018 [M27]	10/2018 [M32]	The scenario evaluation will measure improvement of the e-services request modules submission before and after the integration of SIMPATICO techniques and tools.
E-service evaluation questionnaire	08/2018 [M30]	10/2018 [M32]	To send a questionnaire targeting the e-services evaluation to all the people who has used the services during the experimentation phase and evaluate the results.
Community evaluation phase			
Community involvement	07/2018 [M29]	10/2018 [M32]	Start the documentation of the e-services on Citizenpedia involving pre-evaluation panel and Sheffield community.

7 Conclusion

In this deliverable, we have presented the objectives, strategy and planning of the validation of the SIMPATICO project results in the three use-case sites of Trento, Galicia and Sheffield. These activities included the definition of the overall objectives and planning of the validation and the identification of a common methodology that will be adopted for use-case management by the three PAs. This second version of the deliverable focuses in particular on the specification of the second – and last – iteration of the validation in the three use-case sites.

In the following months, until Month 32, the activities related to use cases will focus on progressing on the preparation of the validation, which will start at Month 26. From a use-case management point of view, this includes the refinement of the activity plan, associating specific responsibilities and efforts for the partners participating to each of the foreseen activities; in parallel to this refinement, the progress of the planned activities will be tracked, and identified risks will be monitored and managed. During the next months, the consortium will also work to the set-up of the e-services and of the operational environment foreseen for the three sites, in strong synergy with WP5, as well as to perform the communication and engagement activities that are necessary for a successful execution of the use-cases.

8 References

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