**EUROPEAN COMMISSION**
Research Executive Agency (REA)
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# D6.1 – Use-case Planning & Evaluation v1

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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This deliverable contains original unpublished work except where clearly indicated otherwise.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.

Simpatico

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# Glossary

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| **AEM** | Adobe Experience Manage |
| **AEPD** | Agencia Española de Protección de Datos |
| **API** | Application Programming Interface |
| **CDV** | Citizen Data Vault |
| **CeMIT** | Centros para la Modernización y la Inclusión Tecnológica |
| **CNS** | Carta Nazionale dei Servizi |
| **CSV** | Comma-Separated Values |
| **DPA** | Data Protection Authority |
| **CPD** | Collaborative Procedure Design |
| **DB** | DataBase |
| **DOC** | Diario Oficial de Galicia |
| **DOM** | Document Object Model |
| **EAB** | Ethics Advisory Board |
| **EIF** | European Interoperability Framework |
| **e-GIF** | e-Government Interoperability Framework |
| **ES** | Spain |
| **EU** | European Union |
| **GL** | Galicia |
| **ICO** | Information Commissioner's Office |
| **ICT** | Information and Communications Technology |
| **ID** | Identity |
| **IEC** | International Electrotechnical Commission |
| **IGE** | Instituto Galego de Estatistica |
| **IFfG** | Interoperability Frameworks for Government |
| **ISO** | International Organization for Standardization |
| **IT** | Italy |
| **KPI** | Key Performance Indicator |

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|---|---|
| **MAST** | Multi Agency Support Team |
| **N/A** | Not applicable |
| **Obj** | (Use case) Objective |
| **PA** | Public Administration |
| **PC** | Project Coordinator |
| **PDF** | Portable Document Format |
| **PM** | Project Manager |
| **PMB** | Project Management Board |
| **QAP** | Quality Assurance Procedure |
| **QCP** | Quality Control Procedure |
| **RO** | Research Objective |
| **REST** | REpresentational State Transfer |
| **RSS** | Rich Site Summary |
| **SCC** | Sheffield City Council |
| **SHEF** | Sheffield |
| **SIM** | SIMPATICO Project |
| **SME** | Small Medium Enterprise |
| **TAE** | Text Adaptation Engine |
| **TBD** | To Be Defined |
| **TIC** | Tecnologías de la Información y Comunicaciones |
| **TN** | Trento |
| **TR** | Technical Report |
| **TSL** | Transfer Security Layer |
| **UREC** | University Research Ethics Committee |
| **UK** | United Kingdom |
| **VDT** | Video Display Terminal |
| **XACML** | eXtensible Access Control Markup Language |
| **XML** | eXtensible Markup Language |

# Executive summary

This document is the deliverable **"D6.1 – Use-case Planning & Evaluation v1"** 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 will enable 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 first 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 first iteration in each of the three project sites**.

A second version of this deliverable, planned for project month 24, will cover the specification and planning for the second iteration 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”. During the first 6 months of 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).
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 (Fig. 1).

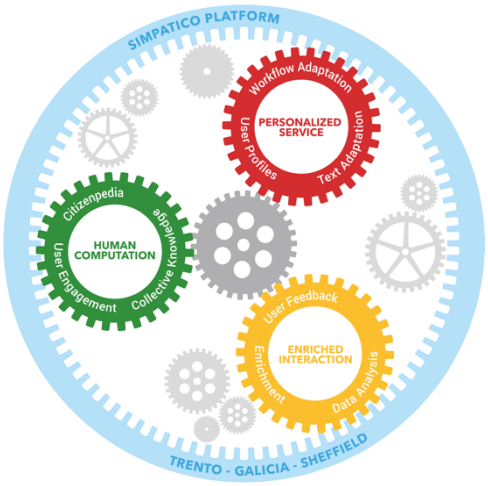


Figure 1 - SIMPATICO concept as a glance

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. **Chapter 3** will then describe the common, cross-site methodology that will be adopted for use-case management, covering ethical concerns, user and stakeholder engagement methodology, operation monitoring and issue management, data collection.

From **Chapter 4**, the content of the deliverable will focus on the first iteration of the experiments foreseen in SIMPATICO plan: the chapter presents the specific technical environments, engaged communities, 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 first iteration in the three project sites: Trento (**Chapter 5**), Galicia (**Chapter 6**), and Sheffield (**Chapter 7**).

**Chapter 8** completes the deliverable with some concluding remarks.

# 2 Use-case Objectives and Overall Planning

This chapter defines the overall objectives of the SIMPATICO use-cases and overall planning of the related activities. In particular, Section 2.1 will analyze 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 analyze 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.

## 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.

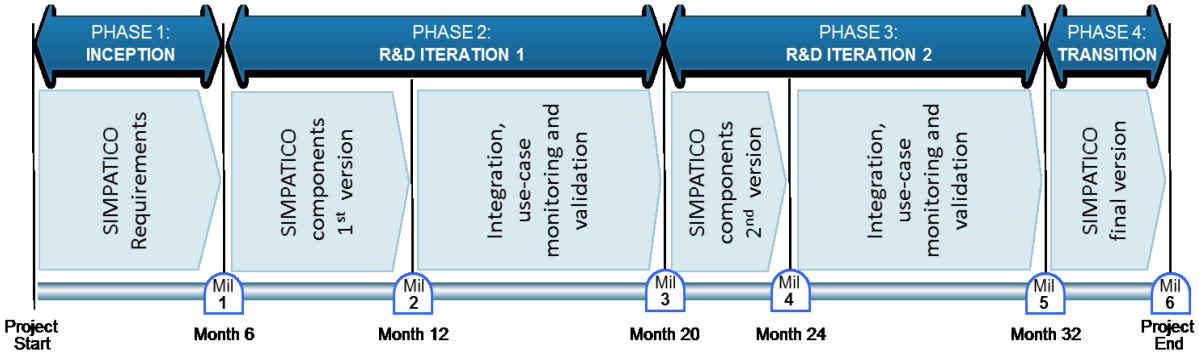


Figure 2 - SIMPATICO project phases

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:
  - 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.
  - 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.

## 2.2 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 lead 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.

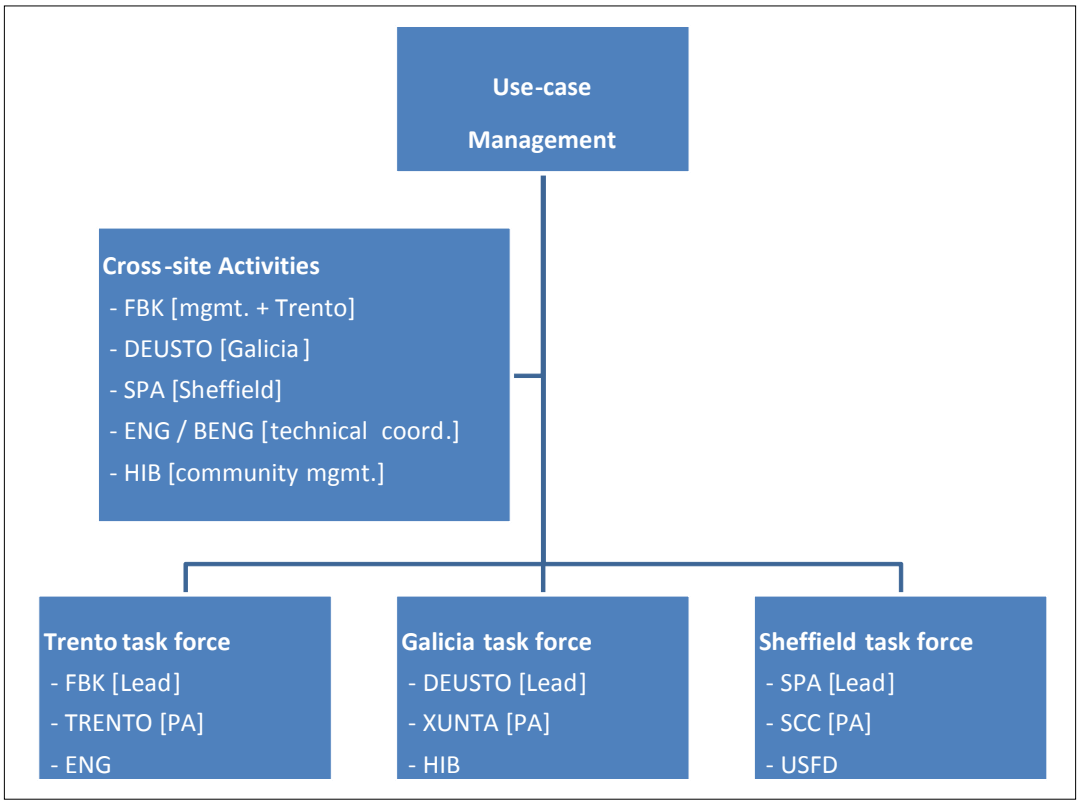


Figure 3 - Team organization for use-case management

# 3 Methodology for Use-case Management

This chapter provides background information on **the cross-site methodology for use-case management of the SIMPATICO project** and identifies in brief the following issues: privacy and ethical issues (Section 3.1); user and stakeholder engagement, training and support (Section 3.2); use-case monitoring and issue management (Section 3.3); and data collection (Section 3.4).

## 3.1 Privacy and ethical concerns

The SIMPATICO Consortium is committed to **perform a professional management of any ethical issue** that could emerge in the scope of the activities of the project, also through the support of its **Ethics Advisory Board (EAB)** (see deliverable "D1.5 Ethics compliance report"). For this reason, the Consortium has identified relevant ethical concerns already during the preparation of the project proposal and then during the preparation of the Grant Agreement. Data collected within SIMPATICO will be treated and managed following strict rules to assure privacy and data protection. With specific regard to **security and privacy within the SIMPATICO Platform**, the project coordinator (FBK) has vast experience in dealing with these issues in the context of smart cities platforms. The PAs involved in the project activities have already adopted privacy-compliant approaches when managing user's information. All privacy and ethical concerns, including informed consent procedures, are detailed in deliverables "D1.5 Ethics compliance report", "D8.1 H – Requirement no. 1", and "D8.2 POPD – Requirement no. 2".
The **reference national and/or local Data Protection Authorities** competent to provide the above-mentioned SIMPATICO EAB with the necessary **instructions/authorizations/notifications** for each project site are the following.

**Trento (Italy): the Italian Data Protection Authority (DPA - http://www.garanteprivacy.it/).**
According to the "Italian Data Protection Code" (Legislative Decree no. 196/2003), an authorisation by the Italian DPA is required to enable private (and public) bodies to process specific typologies of personal and sensitive data (see Section 26 of the Italian Data Protection Code). More precisely, the DPA needs to be notified (also through an electronic form) whenever a public or private body undertakes a personal data collection, or personal data processing activity, as data controller. A data controller is required under the law to only notify the processing operations that concern e.g., data suitable for disclosing health and sex life, data processed with the help of electronic means aimed at profiling the data subject and/or his/her personality, analysing consumption patterns and/or choices. In such context, the DPA is also responsible for evaluating and expressing opinions on specific arguments concerning data protection (see "Simplification of Notification Requirements and Forms. Decision of the DPA dated 22 October 2008, as published in Italy's Official Journal no. 287 of 9 December 2008").
In the case of Trento use-case, we consider this public authority appropriate for providing the SIMPATICO EAB with the necessary instructions/authorizations/notifications.

**Sheffield (United Kingdom): the University Research Ethics Committee (UREC) of the University of Sheffield (https://www.sheffield.ac.uk/ris/other/committees/ethicscommittee).**
The University Research Ethics Committee (UREC) of the University of Sheffield is an independent, unbiased and interdisciplinary university-wide body that scrutinizes any potential issues related to

research ethics for staff and students of the University of Sheffield, including collaborative research deriving from external funding. The key tasks this committee is in charge of are:

- Advise on any ethical matters in research that are referred to it from within the University;
- Keep abreast of the external research ethics environment and ensure that the University responds to all external requirements.

In the case of the Sheffield use-case, we consider this committee appropriate for providing the SIMPATICO EAB with the necessary instructions/authorizations/notifications. We remark that, in the case of Sheffield Council, Sheffield University and Sparta Technologies Ltd, all involved entities comply with the UK data protection regulations and intend through the committee to ensure that act is enforced. Only if necessary, the EAB will engage the UK Information Commissioner's Office (ICO - https://ico.org.uk/).

**Galicia (Spain): the Research Ethics Committee of the University of Deusto (http://research.deusto.es/cs/Satellite/deustoresearch/en/home/research-ethics-comittee).**
This committee is an independent, unbiased and interdisciplinary body that is both consultative and advisory in nature and reports to the Vice-Rector's Office for Research. Among other responsibilities, this committee is in charge of:

- Conducting the ethical assessment of research projects and drawing up the ethical suitability reports requested by institutions and researchers.
- Ensuring compliance with best research and experimentation practices with regard to individual's fundamental rights and the concerns related to environmental defence and protection.
- Supervising assessment processes or ethical requirements in research carried out by institutions and public bodies.
- Preparing reports for the University's governing bodies on the ethical problems that may arise from R+D+I activities.
- Ensuring compliance with the Policy on Scientific Integrity and Best Research Practices of the University of Deusto.
- Providing guidance on laws, regulations and reports on research ethics.
- Reviewing procedures that have already been assessed, or proposing the suspension of any experimentation already started if there are objective reasons to do so.

In the case of the Galicia use-case, we consider this committee appropriate for providing the SIMPATICO EAB with the necessary instructions/authorizations/notifications. Only if necessary, the EAB will engage the Spanish Data Protection Authority, i.e., Agencia Española de Protección de Datos (AEPD - http://www.agpd.es/).

During this first reporting phase, the European Commission (EC) has also carried out an **ethics scrutiny of the proposal**, with the objective of verifying the respect of ethical principles and legislation. With regard to SIMPATICO, the research entails specific ethical implications, involving human subjects and risks for the protection of personal data. In particular, the **SIMPATICO ethical issues (requirements)**, as reported in the European Commission ethics scrutiny report and acknowledged by the SIMPATICO project, are the following:

### a) Humans - "D8.1 H – Requirement no. 1"

1. *Details on the procedures and criteria that will be used to identify/recruit research participants must be provided.*

2. *Detailed information must be provided on the informed consent procedures that will be implemented.*

SIMPATICO involves **work with humans** ('research or study participants'): namely, according to the EC, collection of personal data, interviews, observations, tracking or the secondary use of information provided for other purposes. End-users (i.e., citizens and businesses) will be **engaged in the project use-cases** to test the functionalities provided by the SIMPATICO solution for the usage of e-services. Specific **engagement campaigns** will be defined and executed for each use-case. The use-cases will involve **only voluntary participants aged 18 or older and capable to give consent**, who will be informed on the nature of their involvement and on the data collection/retention procedures through an **informed consent form** before the commencement of their participations. **Terms and conditions** will be transparently communicated to the end-users by means of an **information sheet** including descriptions of e.g., purpose of the research, adopted procedures, data protection and privacy policies. For further details, please see deliverables **"D1.5 Ethics compliance report"** and **"D8.1 H – Requirement no. 1"**.

### b) Protection of personal data – "D8.2 POPD – Requirement no. 2"

1. *Copies of ethical approvals for the collection of personal data by the competent University Data Protection Officer/National Data Protection authority must be submitted by the coordinator to REA before commencement of data gathering.*
2. *Clarification and if relevant justification must be given in case of collection and/or processing of personal sensitive data. Requirement needs to be met before commencement of relevant work.*
3. *The applicant must explicitly confirm that the existing data are publicly available.*
4. *In case of data not publicly available, relevant authorisations must be provided, requirements to be met before grant agreement signature.*

SIMPATICO involves **collecting and processing personal data** (i.e., any information which relates to an identified or identifiable natural person, such as name, address, email) and **sensitive data** (e.g., health, sexual life, ethnicity). The **Citizen Data Vault** represents the component that will take care of personal and sensitive data exchange between a user and SIMPATICO components. Personal and sensitive data will be made **publicly available** (e.g., for the data of **Citizenpedia**) only after an **informed consen**t has been collected and suitable **aggregation and/or pseudonymization techniques** have been applied. Mechanisms for encryption, authentication, and authorization (e.g., TSL protocol, Single-Sign-On implementations, Policy Enforcement Point for XACML) will be exploited in the processes, so to ensure the satisfaction of core **security and data protection requirements**, namely confidentiality, integrity, and availability. For further details, please see deliverables **"D1.5 Ethics compliance report"** and **"D8.2 POPD – Requirement no. 2"**.

### c) Vulnerable groups

In addition to the above-mentioned ethical requirements, it is also important to specify that SIMPATICO use-cases may involve certain **vulnerable groups**: e.g., **elderly people and immigrants** (see also deliverables **"D1.5 Ethics compliance report"** and **"D8.1 H – Requirement no. 1"**). Please note that all the research participants will have the **capacity to provide informed consent**: individuals who lack capacity to decide whether or not to participate in research will be appropriately excluded from research. Anyway taking into account the scope and objectives of the research, researchers should be **inclusive in selecting participants**. Researchers shall not exclude individuals from the opportunity to participate in research on the basis of attributes such as culture, language,

religion, race, sexual orientation, ethnicity, linguistic proficiency, gender or age, unless there is a valid reason for the exclusion.

Vulnerable groups could be misapplied for stigmatisation, discrimination, harassment or intimidation. Concern for **the rights and wellbeing of research participants** lies at the root of ethical review. The perception of subjects as vulnerable is likely to be influenced by diverse cultural preconceptions and so regulated differentially by localised legislation. It is likely to be one of the areas where researchers **need extra vigilance to ensure compliance with laws and customs**. Some vulnerability may not even be obvious until research is actually being conducted.

To reduce the risk of enhancing the vulnerability/stigmatisation of the above-mentioned individuals, the SIMPATICO **Ethics Advisory Board** (see **"D1.5 Ethics compliance report"**) will provide **specific assessment on vulnerable groups** that may be involved, prior of the commencement of the use-case activities. Such an assessment will be included in the expected versions of the reports "**Project progress report"** (M12), **"D1.2 Intermediate activity report"** (M22), as well as in the reports concerning the use-case planning. In particular, it will include further details on the:

- Type of vulnerability;
- Recruitment/inclusion criteria and informed consent procedures;
- Appropriate efforts to ensure fully informed understanding of the implications of participation.

**Language, educational, administrative and technical barriers** affecting certain societal collectives at risk of exclusion will be captured, recognized, analysed and tackled by the dynamic adaptation of services towards **maximizing user experience**. Diversity will be tackled by matchmaking citizens and organizations profiles, securely preserved within the SIMPATICO platform, with the services and range of adaptations readily available by SIMPATICO. The process of e-service delivery will be transformed by allowing service providers and consumers to **cooperate through the SIMPATICO Platform**, mutually enriching themselves and contributing to the co-creation of the knowledge base of **Citizenpedia**. **Political, legal and cultural obstacles** and factors affecting the acceptability and effectiveness of this transformation will be analysed and addressed throughout the project. For the above-mentioned reasons, it remains vital on ethical grounds that all the participants (and also vulnerable groups) should be able **to freely decide for themselves**, with advocacy support if needed. If a research study like SIMPATICO enhances the provision of services to the community, then **study participants may gain both directly and indirectly**.

Not only we exploit **end-users' logs**, but also the involvement of certain categories of users (e.g. **elderly people**) make privacy and data security a primary concern for the SIMPATICO project. The SIMPATICO Platform will consider **gender diversity** in its workflow, taking into account different citizens' profiles. If specific categories, such as single mothers or migrant women, deserve particular attention or are part of specific workflows in the administrative system, it will be taken into account by SIMPATICO, which will provide support tailored to their specific needs. The platform will also support a gender-aware use of the language in public documents, by providing if necessary an improved version of the original documents with an appropriate lexical choice (e.g. not using only male-oriented terms). In sum, research which reflects the needs and perspectives of service users may even be more likely to produce **successful policy and practice recommendations**, also with regard to the vulnerable groups of populations involved.

## 3.2 User and Stakeholder engagement, training and support

In addition to a successful application of the technologies that we will develop, for the success of the activities in SIMPATICO it is critical that the users of the e-services will be adequately targeted,

trained and monitored. This is reflected in the work programme in task *T6.3 Use Case Community Building* which will run from month 9 to month 32 and will be led by HIB.

The core resource for an adequate validation and testing of the SIMPATICO approach are citizens. They will be testing the system from its most obvious perspective: citizens wanting to use e-services produced by the PA to fulfil their daily needs. For the validation activities of the project's results, a required number of users for the services have been defined (see Sections 5.2.4, 6.2.4 and 7.2.4 for Trento, Galicia and Sheffield respectively) and we have counted number of resources of the involved PAs to identify in a primary stage the target citizens. This will be further refined in the course of task T6.3.

Completing the all-round approach for the SIMPATICO vision of e-services, in addition to citizens we need to include the perspectives of other stakeholders that are also important for the e-services ecosystem proposed by SIMPATICO. These other stakeholders will be roughly divided into two major groups of stakeholders:

- Professional users of the e-services, rather than regular citizens. This is very much use case oriented, with the Trento Use Case providing services of great interest to stakeholders such as construction firms and the Galicia Use Case enabling services by third party stakeholders such as providers of the spa and wellness services to have an influence in the design of the systems.
- Civil servants which are dedicated to process the e-services that we will improve in the project and as such will have a great influence in the final design of the platform.

The involvement of these two major groups of stakeholders will be thus managed differently. The Civil Servants will be involved by design in the project: they are part of the global loop controlling the final appearance of the e-services as it can be seen in the system architecture presented in deliverable "D5.1 SIMPATICO platform requirements and architecture". Their systems for authoring the e-services will be augmented with SIMPATICO capabilities -- e.g., to detect user satisfaction with interaction elements and workflows from both objective metrics such as engagement time in different stages and direct questioning.

This is the first approach to the identification of the different groups of users and stakeholders of the system. In Section 4.2 we will present a first approach to the design of the actions supporting the Phase I experiments for this task.

## 3.3 Use-case monitoring and issue management

The stakeholders engaged in the three use-cases were 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, the Consortium 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. This section provides an overview of the project activities relating to **(1) use-case monitoring** and **(2) issue management**.

1) Firstly, 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) Secondly, **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.

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 **quality organisation** is under the responsibility of the **Project Coordinator** (PC). The PC is supported by the **Project Manager** (PM) in the definition of the QAP items applied to the SIMPATICO project, and in the execution of the control activities planned and/or considered useful during the project. He is in charge of ensuring that deliverables to be submitted are structured, harmonized and organized to ensure that they are timely, exhaustive, clear and effective. The Project Coordinator receives also **support, advice and help** at several levels:

- ***from Work Package Leaders*** in several quality functions related to the delivery process. They are fully responsible for scientific and technical quality check of all deliverables.
- ***from the European Commission*** that (through the Project Officer) may provide advice on any quality issue related to the project. The Work Package Leaders may also request advice from the Project Officer on quality issues whenever necessary, usually communicating through the Project Coordinator.

### 3.3.1 Use-case monitoring

The **use-case monitoring** is connected with the **project quality management** (see "D1.1 Project Management Plan"). 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 this Management Plan.

**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 **recommendation**s and possible **corrective action plans**.

The **Work Plan of the SIMPATICO** project describes milestones and the acceptance criteria for each phase of the project. Assessing adherence to these baseline conditions provides the method for evaluating both the project and its products. The outcomes of SIMPATICO will be measured through the success indicators and KPIs, with associated tools used for measuring them, that 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. These success indicators and KPIs have been preliminarily identified in SIMPATICO's Description of Action; they have been refined and are further discussed in Section 4.6.

### 3.3.2 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, such as the issue log. **Issue log** is a documentation element of project management. An issue log 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.

### b) Management of software-related issues

The **management of software-related issues** within the project is powered by the adoption of the **Redmine issue tracker**[1]. Redmine's issue tracking feature meets the need for an agile instrument that being simple, though fully-featured, might really be effective limiting the adoption overhead. Redmine issue tracker offers a very powerful tool that can, nevertheless, be also used in a very simple and agile way **to overcome the issues arising in the development of the SIMPATICO platform** and **during the execution of related use-cases**. This is actually the kind of usage that is going to be done within the SIMPATICO project.

The visualization of reported issues can be **customized to the needs of the user** using the attributes of the bugs in two different ways. The columns referring to such attributes can be optionally displayed or not. The entries in the issue table can be filtered, also in a very complex way, to show only those that are most interesting for the user. Issues can be exported into **several formats**: Comma Separated Value (CSV), PDF and ATOM or RSS feed. 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);

[1] www.redmine.org

- 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. **Calendar and Gantt views** can also be created using the monitoring information (e.g., start and end date, estimated efforts, and percentage done).

## 3.4 Data collection

Data management is a key issue for SIMPATICO. This section provides an overview of the **data collection methodology** and, in particular, of the: **(1) project datasets**; **(2) use-cases objectives and KPIs evaluation**; **(3) public availability of data**.

### 3.4.1 Project datasets: summary

This subsection represents a **brief summary of the deliverable Data Management Plan - DMP** ("D1.3 Data Management Plan v.1" - M6). It is aimed at shortly describing datasets characteristics and defining principles and rules for the distribution of data within SIMPATICO. The DMP will present in details only the procedures of creating 'primary data' (i.e., data not available from any other sources) and of their management. As such, only the datasets named **"SIMPATICO 01 - Citizenpedia Dataset"**, **"SIMPATICO 02 - Logging/Feedback Dataset**", and **"SIMPATICO 03 – Citizen Data Vault (CDV) Dataset"** are indicated below, as any other datasets already exist and their creation is not foreseen in the GA.

#### a) SIMPATICO 01 - Citizenpedia Dataset

Citizenpedia is the **human computation framework** inside the SIMPATICO platform. Its aim is to be a place where citizens can find useful information regarding e-services and public administration. Thus, **most of the content will be created and consumed by humans**. It will be mainly stored in plain text.
Citizenpedia is composed of **two main interactive parts** for the users, a Question Answering Engine and a Collaborative Procedure Designer. Thus, the typology of data is twofold:

1. **Question Answering Engine:** questions, answers, comments and terms/definitions, generated in the Question Answering Engine. All of them will be created, stored and retrieved in plain text.
2. **Collaborative Procedure Designer:** diagrams representing procedures, and comments to these diagrams. The diagrams will be stored and encoded, in a computer processable manner, and not as a bitmap. Comments will be stored in plain text.

Both types of data will be stored in the **same database**, within Citizenpedia. Citizenpedia, along with the SIMPATICO platform, is intended to be deployed in **three different cities/regions of different countries** (i.e., Italy, Spain, and the United Kingdom). Each country speaks its own language (i.e.,

English, Italian, and Spanish), and the human-generated data in each Citizenpedia will be in **different languages**. For that reason, we are using a different database in each project site.

### b) SIMPATICO 02 - Logging/Feedback Dataset

The SIMPATICO project provides a series of interactive front-end components as depicted in the yellow blocks in the diagram below, i.e., the **user interaction and feedback analysis layer** of the SIMPATICO Platform (Figure 4).

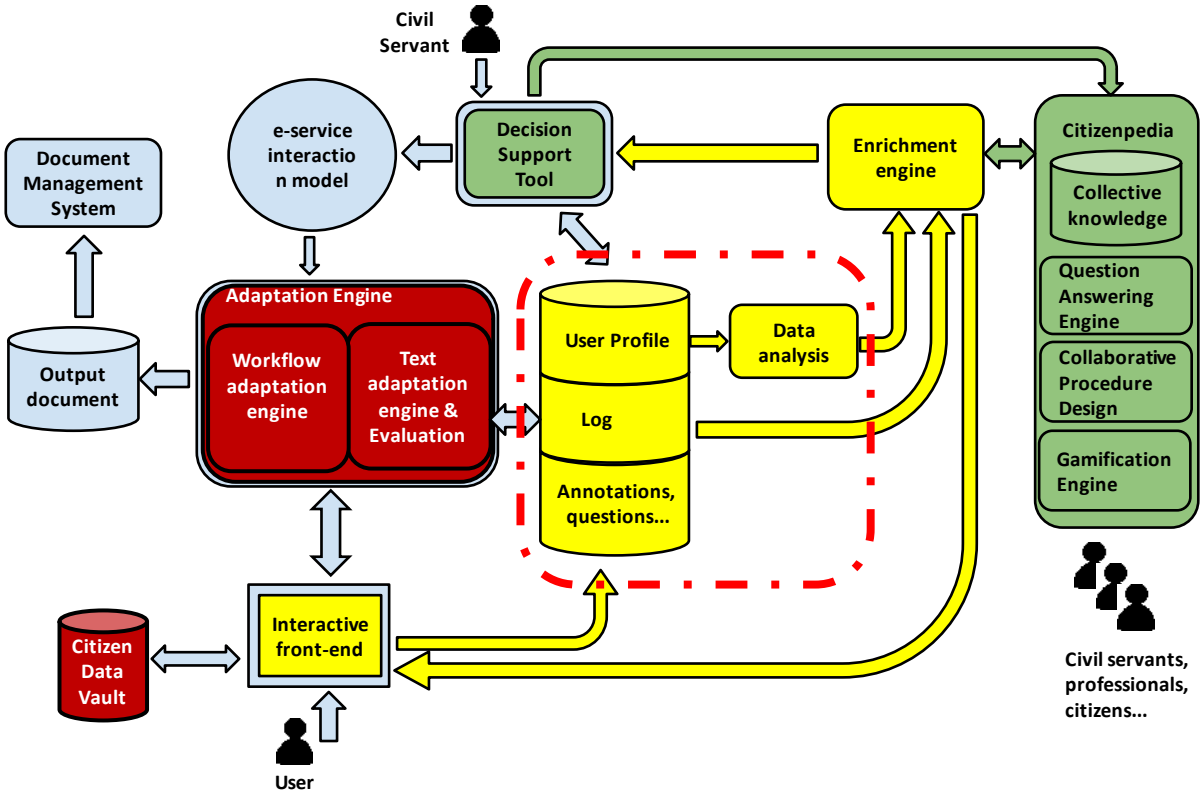


Figure 4 - User interaction & feedback analysis layer in the SIMPATICO Platform (yellow blocks)

During the project's inception, it was proposed that valuable information would be generated by the users during this interaction. This was argued to occur by two different mechanisms:

- **Explicit information gathering**, e.g., asking users directly to assess their interaction after it has happened. This is widely done in the industry and can be performed by a number of different mechanisms.
- **Implicit information collection**, e.g., analysing metrics of interest in the interaction without requiring the users to be providing any extra information. As an example, upon the execution of an e-service, request information about the time spent for each step may be collected and then analysed to find insights such as bottlenecks.

Both of these data generation sets were conceptualized in the platform's architecture (see Figure 4 above), as the blocks depicted in the red box with a dotted line. This includes **two data storage**

**modules** for explicit and implicit data plus a data analysis step to generate new insights (e.g., statistics) from gathered data elements.

**c) SIMPATICO 03 – Citizen Data Vault (CDV) Dataset**

The **Citizen Data Vault (CDV)** is a **repository of the citizen personal data, profile and information**. It is continuously updated through **each citizen interaction** and is used mainly to automatically fill e-service forms. In this way, citizens will give information only once to PA and then the information will be stored in the vault and used in all the following interactions. As regards the CDV, for personal data we will use the **definition provided by the World Economic Forum (June 2010)** [1]**:**

**"Personal data is defined as data (and metadata) created by and about people"**, encompassing:

- **Volunteered data** – created and explicitly shared by individuals, e.g., social network profiles.
- **Observed data** – captured by recording the actions of individuals, e.g., location data when using cell phones.
- **Inferred data** – data about individuals based on analysis of volunteered or observed information, e.g., credit scores."

According to this definition, through CDV **citizens have a practical mean to manage their personal data** with the ability to grant and withdraw **consent** to third parties for access to data about themselves (see "D1.5 Ethics compliance report" – Annex I "Informed consent form").

In summary, data collected by the means of CDV is referring on the context of personal data. In a first stage, we have identified a **first categorization of such personal data**, referring to: 1. Government Records; 2. Profile; 3. Education; 4. Relationship; 5. Banking and Finance; 6. Health; 7. Communication & Media; 8. Energy; 9. Mobility; 10. Activities. For each category **several data fields** are going to be defined. This is a first version of the "**Personal Data Category"**, and it will be refined, reduced or modified according to the actual personal data that each citizen could manage by the means of CDV against the **three use cases** identified by the three SIMPATICO sites (i.e., Trento, Sheffield, and Galicia). The personal data collected or linked by the CDV will **never be shared at any time**. **Each citizen** has the control and ability of **removing all data from CDV**.

### 3.4.2 Use-cases objectives and KPIs evaluation

In order to support the **evaluation of the objectives and of the KPIs of the three use-cases**, **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 administrations (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 PAs involved, and need to be specifically monitored and computed by the administrations, 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.

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**

**administrations**. 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**.

For the above-mentioned reasons, SIMPATICO solution requires **the interaction of ad-hoc project components** with **the legacy systems of the PAs involved**: legacy workflow engines and document management systems need to be exploited and suitably enriched by the SIMPATICO components. In addition, existing **data sources and services of the PAs** need to be integrated in the above-mentioned **Citizen Data Vault** and in the **e-service workflows**, to support personalized service interaction models. This reuse of information and data into heterogeneous context is often cause of inefficiency and is error-prone. To respond to this critical issue, SIMPATICO will rely on **Interoperability Frameworks for Government (IFfG)**, and in particular the **European Interoperability Framework (EIF,**[2]**)** and the national **eGovernment Interoperability Framework** defined in the UK (UK e-GIF, [3]). An IFfG provides methodological and technological guidelines and standards, as well as policies and best practices, **to support and facilitate the openness of public data and the delivery of e-services in a cross-border** and cross-sectorial interoperability context. Within SIMPATICO, the guidelines of IFfG will be followed to develop specific connectors between SIMPATICO components and the different PAs legacy systems.

### 3.4.3 Public availability of data

In order to discuss the **public availability of data**, as briefly outlined above and with deliverables "D1.3 Data Management Plan" and "D1.5 Ethics Compliance Report", it is convenient to distinguish three different types of datasets within the SIMPATICO project:

1. **Not publicly available personal and sensitive data will be collected and processed as part of the execution of the SIMPATICO use-cases**, more specifically for the execution of the e-services. Specifically, the use-cases will involve only voluntary participants aged 18 or older and capable to give consent, who will be informed on the nature of their involvement and on the data collection/retention procedures through an informed consent form before the commencement of their participations. Informed consent will follow procedures and mechanisms compliant with European and national regulations in the field on ethics, data protection and privacy (see also deliverables "D1.5 Ethics compliance report", "D8.1 H – Requirement no. 1", and "D8.2 POPD – Requirement no. 2).
2. **SIMPATICO adheres to the open access policy of all project results.** Specifically, we are committed to make available, whenever possible, the data collected during the execution of SIMPATICO, in particular data collected during the use-cases, also to researchers and other relevant stakeholders outside the project Consortium. Whenever possible, these additional data sources will also be made available as open data or through open services. In this context, any personal data will only be published after suitable aggregation and/or pseudonymization techniques have been applied, and after an informed consent that explicitly authorizes this usage has been collected.
3. **SIMPATICO intends to build an open knowledge base on public services and processes through Citizenpedia**, released as a new public domain resource co-created and co-operated by the community (i.e., citizens, professionals and civil servants). The initial content of Citizenpedia will be based on datasets and other digital goods that are publicly available. In the case of datasets and other digital goods owned by the PAs and not already publicly available, the Consortium will pursue to obtain an authorization for public release, as open content, before inclusion in the Citizenpedia. For what concerns the data contributed to

Citizenpedia by the community, SIMPATICO will require that they are made available as open content (e.g., with licenses such as Creative Commons).

Special attention will be given to the **security of data sources**, **services and interfaces** as well as to the **data protection and privacy of persons**, which are important aspects for stakeholders and components in SIMPATICO solution. In particular, data protection and privacy will be managed by the **Citizen Data Vault (CDV)**. It represents the component that will take care of the storage of personal and sensitive data of the users, and of the exchange of these data with the users, the legacy systems of the PA, and components of the SIMPATICO Platform. The CDV is a **repository of the citizen (or company) profile and related information**; this profile is continuously updated through each interaction and is used to automatically pre-fill forms; in this way the citizen (or company) will give to the PA the same information only once, as the information will be stored in the vault and used in all the following interactions. Mechanisms for **encryption, authentication, and authorization** will be exploited in the processes, so to ensure the satisfaction of core **security and data protection requirements**, namely confidentiality, integrity, and availability (for further details, please see deliverables “D1.3 Data Management Plan” and “D1.5 Ethics Compliance Report”). Personal and sensitive data will be published (e.g., for reporting demographic data on the engaged users) only after **suitable aggregation and/or pseudonymization techniques** have been applied, in order to ensure the data protection and privacy of the users of the e-services.

# 4 Specification of Phase 1 Experiments

This chapter focuses on the first iteration of the evaluation performed by SIMPATICO (Phase 1 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 1 (Section 4.1), the communities that are planned to be engaged (Section 4.2), and, on this basis, the objectives and success criteria for Phase 1 (Section 4.3). The chapter proposes then an overall planning of the activities to guide the definition of the site-specific plans (Section 4.4), project-level assumptions and risks (Section 4.5) and KPIs (Section 4.6).

## 4.1 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 basing on the data collected and analysed with the support of the platform component.

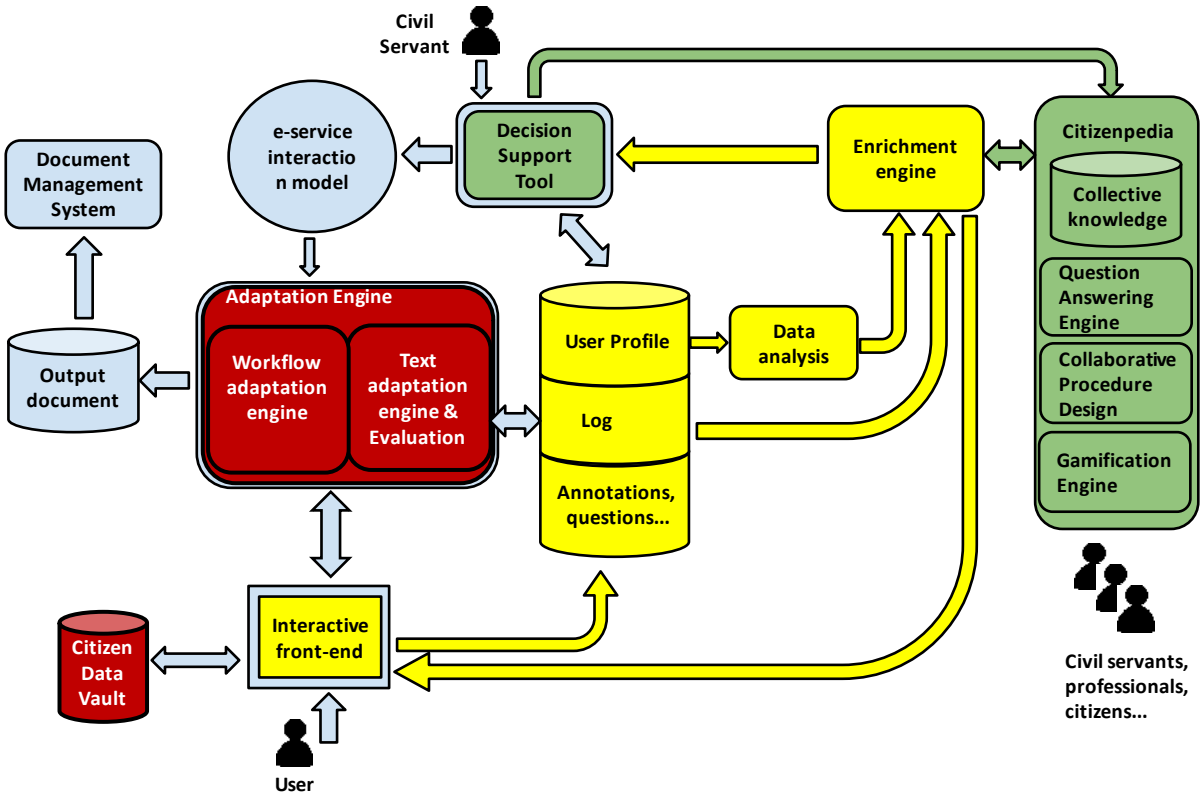


Figure 5 - SIMPATICO conceptual architecture – Phase 1.

Below a brief description of the components belonging to the SIMPATICO platform depicted in the previous Figure 5. For more information please refer to "D5.1 SIMPATICO platform requirements and architecture".

The Interactive Front-End is the first access point to the e-services that allows the citizens to request for text simplification, to have a pre-filled web form with their personal data and to send data regarding the interaction between user and system to be analysed. The Citizen Data Vault allows the citizen to give to the PA each information only once manages the personal data. The citizen information will be updated constantly at every user interaction. 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 responsible to simplify the interaction flow (e.g. hiding a specific web page to a specific user) is 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. The annotations and the question made by user are stored in the Annotation & Question. Both Log and Annotation & Question send their data to the Data Analysis that is in charge to analyse the data and send to the Enrichment Engine responsible to enhance the performance of the whole system, basing the collected interactions. On the other side the analysed data are sent also to the User Profile to keep it continuously updated.

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:

1) **Question Answering Engine,** where citizens can send questions to other citizens, professionals or civil servant to solve some doubt to complete a administrative procedure;
2) **Collaborative Procedure Designer,** a tool where citizen can understand the workflow of an administrative procedure or e-service and cooperate with civil servants to improve it;
3) **Collective Knowledge Base,** a database where all the information generated in Citizenpedia are stored;
4) **Gamification Engine,** a mechanism to increase the participation and engagement of the Citizenpedia users.

All the information collected by Citizenpedia, Enrichment Engine and User Profile will be used by the Decision Support System in order to create a dashboard where the civil servants can control the status of the e-services and the entire system in order to understand where they can intervene to improve the service, the procedure, the text and so on.

Many of the aforementioned components will be up and running during the first phase of experimentation. Some of them such as the Workflow Adaptation Engine and the Decision Support System will provide the system with a limited set of their functionalities in order to be tested and enriched during the second year taking into account the feedback coming from the data collected and the e-service users and civil servants.

## 4.2 Community engagement

As part of the activities of T6.3, all of the identified groups above (citizens, external professionals and civil servants dedicated to the management of services) will be approached by SIMPATICO in a direct

manner. As of the writing of this document the task is still not running but the general approach will resemble the following:

1. Overall planning of the task activities and global fit with the rest of WP6 tasks for use-case monitoring and evaluation.
2. Identification of a number of significant professional users of the e-services (in collaboration with the site task forces) and involved Civil servants. A small number of them (1-5 per group and site) will be tagged as qualitative evaluators for more extended interviews and in-depth evaluation.
3. Detection of the most appropriate points in time for actuations and actual design of the actuation protocol, with the following ideas in mind:
    - Pre-deployment: information releases about general aspects of SIMPATICO (T6.3). Elements of this have been already deployed in WP4 work for the Citizenpedia in the form of a survey.
    - Following the lab testing, training and hands-on sessions with actual stakeholders and possibly a number of citizens (T6.3)
    - Execution of the use-cases (T6.4).
    - Post-execution, conduction of stakeholder experience interviews, in which the identified qualitative evaluators will be questioned for an account of the overall experience (T6.3/T6.5).
    - Post analysis of the results, communication actions upon the stakeholders (T6.3), mentioning the achieved benefits for the different groups.

The steps 1 and 2 will be first defined prior to the first trials (starting in M12) and will be documented in D6.3. These will be the basis for a more comprehensive protocol of user engagement to be presented in the final tests of the SIMPATICO system and which shall be outlined in D6.4. The evaluation aspects of the step number 3 will be documented in other WP6 deliverables.

Table 1 - Community engagement targets and means

| **Target Audience** | **How do we Engage** | **Engagement Channel** |
|---|---|---|
| Research Community | Provide realistic innovation model and share knowledge | SIMPATICO Website, Social network profiles and Scientific publications. |
| SMEs and IT Industry | Show them a clear business plan to get their involvement | Public sector trade shows and Fairs: Based on the use cases and intermediate results, the project will participate in at least three trade show and fairs per year. Listed in the D7.2. |
| NGOs | Engage them introducing the possibility to bring their experience in facilitation process | Simpatico Website, Social network profiles, Newsletter, Leaflets and Posters: Leaflets/posters will be produced in different languages and with different contents, depending on the phase of the project. Promoted by Sheffield City Council. |

## 4.3 Objectives and success criteria for Phase 1 experiments

In the following, we define project-level objectives and associated success criteria for the first 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 goal of phase 1, namely to evaluate the techniques and tools developed by SIMPATICO, in order to direct their evolution during the following project phases, and in particular identifying those techniques and tools that are more mature and robust.

The project-level objectives described in this section are refined into use-case specific objectives in the following chapters (see Sections 5.1.2, 6.1.2, and 7.1.2).

**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 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 first 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 already in the first phase of the project – 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 4.6).
- Third, use-case-level KPIs are defined, which contribute to the project-level KPIs (see Sections 5.2.4, 6.2.4, 7.2.4).

- 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 indentified 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.

Based on this analysis, the most promising techniques and tools to be further developed for the second phase of the project are identified.

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 the second iteration of the experimentation: the reason is that, at that time, the SIMPATICO solution will be more mature, and will be deployed in a near-operational setting that will facilitate the evaluation of the impact.

Still, a preliminary evaluation of the potential impact, based on the information collected during the first iteration of the evaluation, is important not only to better direct the efforts in the second phase, but also to revise the target impact and KPIs. This preliminary evaluation will be performed on the basis of the information collected during the execution of the experiments.

Success criteria: revision of the impacts and KPIs achievable through the adoption of the SIMPATICO approach.

## 4.4 Overall planning

In the overall planning of the SIMPATICO project, the first phase evaluation is part of R&D Iteration 1, which starts at Month 6 and ends at Month 20, when Milestone 3 (First integration and validation of use-cases) is reached. The actual activities on the use cases started earlier in the project, since Month 1, when the planning of the use-case experiments has begun. For this reason, the overall planning

presented in this section covers the period from Month1 until Month 20.

**Preparation phase [M1-M6].** The objective of this phase is to plan and prepare the following phases of the experiments in the use-cases. During this phase, use-case teams analyze the operational environments in the 3 project sites, acquire all relevant documents and regulations, as well as all relevant information on the available e-services that can be used as a basis of the experiment. Based on this information, the integration and deployment strategy for the 3 project sites is defined, the approach and strategy for the evaluation is defined, and the e-services to be exploited in the experiments are selected. A detailed planning of the validation phase is also performed, both at the site level and at the project level.

**Implementation phase [M7-M14].** 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 validation 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 e-services in the 3 project sites;
d) the preparation of communication and engagement campaigns for stakeholders and end-users.

**Pre-validation phase [M15].** 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 validation 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.

**Validation phase [M16-M20].** During this phase, users will have the possibility to interact with the SIMPATICO solutions in conjunction with the selected e-services in a production environment (or in an environment that simulates production). Data are collected during the whole duration of the experiments, target KPIs are regularly measured and analyzed 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.

## 4.5 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 2 - 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.<br>In those cases the development plan is compatible with the integration plan of SIMPATICO and offers an adequate time margin to address integration problems.<br>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 for validation will be ready and open for applications during the period of execution of the SIMPATICO use-case (M15-M20). | The test e-services have been selected taking into account their delivery date according to the integration plan of SIMPATICO plan.<br>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.<br>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.<br>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.<br>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.<br>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 3.

Table 3 - 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 terrorist acts) in EU. | 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 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 non 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. |

## 4.6 Project-level KPIs

The project requires measuring 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 Table 4 we highlighted 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 4 - Most relevant KPIs for phase 1

| 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 5 - 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…) 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]<br>*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 | 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 |

| | |
|---|---|
| filling a form | 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]<br>*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]<br>*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 |

# 5 Trento Use-case – Phase 1

## 5.1 Specification of the Trento use-case

### 5.1.1 Context and background

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 is working to realize a new e-service portal: it will serve 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 will be 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 is to install and set up a system based on a standardized model for online service delivery: this is the step the Municipality is currently engaged in. For this step, the Municipality of Trento has adopted “Sportello Telematico”, 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 handle 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 aims 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 above will be ready between September 2016 and December 2016. Together, they will cover needs of different stakeholders, ranging from citizen to professionals, and offer an important test-bed for the whole "e-service portal" project.

### 5.1.2 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 is to install and set up a system based on a standardized model for online service delivery.

This situation offers 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 is to **validate the integration between the Trento e-service portal and SIMPATICO solution**. In this regard, it is important to stress that this validation will evaluate 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 Telematico" 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 will contribute 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 will include: (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 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 will be 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** currently under delivery. Since "Sportello Telematico" 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 Telematico"**. 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 injection of JavaScript in the digital module is 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 will deploy the CDV component within border of the information system of the Comune di Trento, while the others SIMPATICO tools could expect to be deployed on the project cloud infrastructure. This is mainly due to the constraints bound to the fact the CDV contains user personal data. This solution will prevent voluntary or accidental access to the personal data. This solution simplifies the integration security and authentication issues between "Sportello Telematico" and CDV.

"Sportello Telematico" 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).

Also, during the first phase experiment, **the testing e-services are 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 (regarding building, musical entertainment at public premises or events). **These e-services will be used to validate all the different features and components of the SIMPATICO solution.**

During the evaluation phase the e-services will be used by real citizen with real needs in a real environment. This means the e-services and SIMPATICO tools integration must be well tested since the implication of malfunctioning would be catastrophic. In order to mitigate this possibility a pre-evaluation phase has been included into the plan. The e-services testing will be done involving a panel representing the Trento Community. The e-services will work in a sandbox which will be an exact replica of the production environment, but based on testing; also, the integration with the backend systems in charge of processing the requests of the users will not be active for the sandbox environment, i.e., the test requests will not be processed.

### 5.1.3 Use-case objectives and success criteria

The objectives of the experiments performed during the first phase of the Trento 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-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 test e-services will be selected from the ones developed during the first phase of delivery of the Municipality e-service portal, with the aim of ensuring coverage of all the features and components of the SIMPATICO solution to be validated during phase 1. The selected services will have to be compatible with the SIMPATICO tools and solution, or will have to be adapted to ensure this compatibility. The e-services tentatively selected are those for the enrolment to day nursery service and for the permit on acoustic derogation for temporary activities.

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 validation 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 validation 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).

### 5.1.4 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 6 - Trento use-case assumptions

| Assumption | Comment |
|---|---|
| The "e-service portal" project will deliver in time to allow the integration with SIMPATICO solution and instruments | The "e-service portal" project is currently proceeding according to the plan, which foresees a release by end of September 2016. This release date is compatible with the integration plan of SIMPATICO and offers an adequate time margin to address integration problems.<br>TRENTO has the responsibility to monitor the progress of the "e-service portal" project 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 (M15-M20). | The test e-services have been selected taking into account their delivery date according to the plan of the "e-service portal" project – they are expected to be M10 of SIMPATICO project. The planned period of execution of the SIMPATICO use-case is compatible with the periods when these test e-services will be open for applications, and when users are expected to apply to these services.<br>TRENTO 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. FBK 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.<br>TRENTO 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 7 - 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.<br>Project Management techniques are in place to monitor the situation and to rise signals in case of plan misalignments.<br>Technical and Plenary meetings have been set up also to prevent major impact situation to show up.<br>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 supported by "Sportello Telematico" (JavaScript injection and invocation of | Medium | Major | A pre-evaluation of "Sportello Telematico" integration capabilities has been made. |

| | | | |
|---|---|---|---|
| external REST web services) are not adequate for the integration with SIMPATICO. | | | Integration test will be take place starting from the end of September 2016, in order to better assess the probability and extent of this risk.<br>Comune di Trento will assure GLOBO srl involved in the local SIMPATICO technical team. |
| The selected e-services are not complex enough to experiment and evaluate all the relevant SIMPATICO project techniques and tools. | Medium | Significant | An extra e-service will be identified to test 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. |
| Integration incompatibility between the authentication system of Trento's new e-service portal and the one adopted by SIMPATICO components, in particular the Interactive Front End, Citizenpedia and CDV., that are the three user access points according to the SIMPATICO Platform Architecture (see D5.1). | Medium | Major | The development timeframe of SIMPATICO Platform Components (M7-M12, Sept. 2016 – Feb. 2017) and related integration (M13-M14, March 2017 – April 2017) is compatible to the "e-service portal" project delivery in order to better assess and mitigate this risk.<br>In particular, mitigations of this risk are: the use by the service provider (GLOBO srl) of the same authentication system based on national standards such as the National Service Card (CNS), also adopted at the regional level through the specifications defined by the Province of Trento and its subsidiary companies (Informatica Trentina SpA); and the involvement of these companies in the analysis of the authentication mechanism of the e-service portal for the Trento use-case. |
| 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 (Sept. 2016 – Dec. 2016) |

| | | | |
|---|---|---|---|
| | | | mitigates the risk.<br>The e-service portal and the required e-services will be ready two month before SIMPATICO integration phase. This amount of time prevents system misalignment due for the deployment immaturity of the solution.<br>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. | Medium | 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. |

### 5.1.5 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 8 - Trento use-case stakeholders and roles

| Stakeholder (and type) | Role | Note |
|---|---|---|
| Trento Municipality (project partner) | Responsible of:<br>- alignment with municipality strategy for e-service portal<br>- selection of the test e-services<br>- engagement of users and stakeholders<br>- use-case operation | |

| | | |
|---|---|---|
| | - use-case evaluation<br>- management of the relations with GLOBO srl | |
| Fondazione Bruno Kessler (project partner) | Responsible of:<br>- use-case planning and management<br>- use-case requirements / project validation requirements matchmaking | |
| Engineering (project partner) | Engaged as :<br>- support for the technical integration of SIMPATICO Platform with the Trento systems<br>- technical support on SIMPATICO platform during the operation of the Trento use-case | ENG will contribute in the integration of 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:<br>- 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:<br>- users of the test e-services<br>- users and contributors of Citizenpedia | Specific categories of citizens are identified for the different test e-services. |
| Professionals (end users) | Engaged as:<br>- users of the test e-services<br>- users and contributors of Citizenpedia | Specific categories of professionals are identified for the different test e-services.<br>Specifically, professionals potentially interested in contributing to Citizenpedia for professional reasons will be engaged. |
| Civil servants (end users) | Engaged as:<br>- users and contributors of Citizenpedia | The engagement of civil servants is not limited to the employees of the Municipality of Trento. |

## 5.2 Use-case planning

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

### 5.2.1 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 two of the services made available on the portal: the enrolment to day nursery service modules and on the acoustic derogation for temporary activities - the first service is going to be used by the citizens meanwhile the second is going to be used both by professionals and citizens.

In order to minimize the risks of the fact that the services enriched with the SIMPATICO extensions will be available from time zero for all the citizens and professionals, the use-cases experimentation has been 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 (civil servants, professionals and citizens). After the acknowledgment 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 **user 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 5.2.3.

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 4.4, 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 [M1-M6]:** where we 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 analyze them. We also look at past interactions and see where the most common mistakes are, to find the most problematic parts of the procedures and of the integrations. An in-depth analysis have been carried out from Comune di Trento in the Sportello Telematico requirement elicitation phase. The resulted documents and reports in Italian language are available in the SIMPATICO repository.
2) **Implementation and integration phase [M7-M15]:** 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); this is done on the basis of the results of the analysis of the preparation phase;
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 testing e-services;
d) to prepare communication and engagement campaigns for stakeholders and end-users.

3) **Pre-evaluation phase [M15-M18]:** 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. This phase will last two months (M15-M16) for the e-service "Permit on acoustic derogation" (active throughout the year), and will last three months during summer (M16-M18) for the e-service "Enrolment to day nursery service", in view of the fact at that time the service is not active for citizens, but will be made available for volunteers for test purposes the activation of the e-service in September 2017 (M19).
4) **Users evaluation phase [M16-M20]**: where we activate an experimentation of the concrete use of the SIMPATICO solutions in conjunction with the selected e-services in a production environment.
   NOTE: Due to the fact the e-service "Enrolment to day nursery service" is active only between the 1st of September to the 30th of April, the evaluation phase of this service will take place from M19 to M21. To minimize the risk of having too few requests, specific communication and involvement action must be taken.
5) **Community evaluation phase [M15-M20]**: where the community of Trento is engaged in the documentation of the e-services through Citizenpedia.

### 5.2.2 Test services

The following tables describe the e-services that have been selected for the Trento experimentation.

Table 9 - 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.<br>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:<br>1) the citizen (usually a parent) compiles the enrolment to day nursery service request module before a specific deadline;<br>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.<br>The service enrolment request must be presented from 1st of September to 30th of April. |

Table 10 - 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.<br>The service has different specialization, in the project context we will handle:<br>• temporary acoustic derogation for building;<br>• temporary acoustic derogation musical entertainment at public premises or events derogation for concerts, events, performances. |
| **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:<br>1) the requestor compile the request for acoustic derogation for temporary activities permit<br>2) the council evaluates the request and base on internal rules releases the acoustic derogation permit.<br>The timespan between steps 1) and 2) depends on the derogation the user is asking for: 20 day for temporary acoustic derogation musical entertainment at public premises or events derogation for concerts, events, performances permit; 30 days for temporary acoustic derogation for building permit. |

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 11.

Table 11 - Service to SIMPATICO feature application mapping for Trento

| E-Service | Target | Features | Description |
|---|---|---|---|
| Enrolment to day nursery service | Citizens | Interactive Front End | Through the Interactive Front End the user will access to all the provided SIMPATICO components and tools. |
| | | Text Adaptation Engine | Complex words and |

| | | | |
|---|---|---|---|
| | | | phrases are highlighted.<br>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. |
| | | Text Adaptation Engine | The user selected module phrases and words are automatically translated in the user language/profile. |
| | | Text Adaptation Engine + Workflow Adaptation Engine | Near the most difficult fields to fill (understood thanks to logs or other evidences such as Q&A) a symbol/icon will be present. Clicking on it, a pop-up will appear with a text explaining what it is asked to insert for that specific field according to the user profile. |
| | | Workflow Adaptation Engine | Parts of the digital module are shown/hidden on the basis of an optimized compilation process defined according to the user profile. |
| | | Workflow Adaptation Engine | When the citizen chooses an option that change the workflow (with the rules of the "Sportello Telematico" solution), the parts of the module that are no longer to be compiled (because eg disabled) will be hidden, while the parts of the module that will return fillable will be shown again.<br>In addition to this, the next section to compile will be highlighted. |
| | | Citizen Data Vault | All the useful information |

| | | | |
|---|---|---|---|
| | | | filled in the module (such as the information on the degrees of relationship of persons) is 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 than the information retrieved from the administration DBs (such as the Citizen Register) that provide authoritative information. |
| | | Question and Answer | The citizen can select a part of the digital module and ask for clarification. |
| Permit on acoustic derogation for temporary activities | Professionals | Interactive Front End | Through the Interactive Front End the user will access to all the provided SIMPATICO components and tools. |
| | | Text Adaptation Engine | Complex words and phrases are highlighted.<br>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. |
| | | Text Adaptation Engine + Workflow Adaptation Engine | Near the most difficult fields to fill (understood thanks to logs or other evidences such as Q&A) a symbol/icon will be present. Clicking on it, a pop-up will appear with a text explaining what it is asked to insert for that specific field according to |

| | | | |
|---|---|---|---|
| | | | the user profile. |
| | | Workflow Adaptation Engine | Parts of the digital module are shown/hidden on the basis of an optimized compilation process defined according to the user profile. |
| | | Citizen Data Vault | All the useful information filled in the module (such as the information on the degrees of relationship of persons) is 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 than the information retrieved from the administration DBs (such as the Citizen Register) that provide authoritative information. |
| | | Workflow Adaptation Engine | When the citizen chooses an option that change the workflow (with the rules of the "Sportello Telematico" solution), the parts of the module that are no longer to be compiled (because eg disabled) will be hidden, while the parts of the module that will return fillable will be shown again.<br>In addition to this, the next section to compile will be highlighted. |
| | | Question and Answer | The professional can select a part of the digital module |

| | | | |
|---|---|---|---|
| | | | and ask for clarification. |
| | Citizen | Interactive Front End | Through the Interactive Front End the user will access to all the provided SIMPATICO components and tools. |
| | | Text Adaptation Engine | Complex words and phrases are highlighted.<br>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. |
| | | Text Adaptation Engine | The user selected module phrases and words are automatically translated in the user language/profile. |
| | | Text Adaptation Engine + Workflow Adaptation Engine | Near the most difficult fields to fill (understood thanks to logs or other evidences such as Q&A) a symbol/icon will be present. Clicking on it, a pop-up will appear with a text explaining what it is asked to insert for that specific field according to the user profile. |
| | | Workflow Adaptation Engine | Parts of the digital module are shown/hidden on the basis of an optimized compilation process defined according to the user profile. |
| | | Workflow Adaptation Engine | When the citizen chooses an option that change the workflow (with the rules of the "Sportello Telematico" solution), the parts of the module that are no longer to be compiled (because eg disabled) will be hidden, |

| | | | |
|---|---|---|---|
| | | | while the parts of the module that will return fillable will be shown again.<br>In addition to this, the next section to compile will be highlighted. |
| | | Citizen Data Vault | All the useful information filled in the module (such as the information on the degrees of relationship of persons) is 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 than the information retrieved from the administration DBs (such as the Citizen Register) that provide authoritative information. |
| | | Question and Answer | The user can select a part of the digital module and ask for clarification. |
| All Services | Civil Servants | Decision Support System | The civil servants can receive reports about the use of the front-end. |
| | | Citizenpedia (CPD) | The civil servants will be able to graphically design administrative procedures. 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 |
| | Citizen | Citizenpedia (CPD) | The citizen can access the administrative procedures' diagrams and comment on the interaction elements in the case they do not fully understand the steps to take in order to receive the service. |
| | Professional | Citizenpedia (CPD) | The professional can access the administrative procedures' diagrams and comment on the interaction elements in the case they do not fully understand the steps to take in order to receive the service. |

### 5.2.3 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 communication plan is structured in three main periods where a specific set of communication actions will be activated.

Pre-execution communication and engagement period [M7-M14]: 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 for find citizens and professionals engagement in the e-service pre-evaluation and evaluation will be open.

Pre-evaluation communication and engagement period [M14-M18]: 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 a panel of people representative of the community (citizens, civil servants and professionals).

Evaluation communication and engagement period [M15-M20]: 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 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 are described in the following table.

Table 12 - Communication and engagement activities in Trento

| Period | Action | Description |
|---|---|---|
| Pre-execution communication and engagement period | Participation to the IEEE Smart City Week [September 2016] | During the event:<br>- the council innovation strategy will be presented to the local community;<br>- the one-stop-shop project will be presented to the community;<br>- the SIMPATICO project will be presented to the community;<br>- the possibility to register for being part of an experimentation panel of people will be promoted within the community. |
| | Scientific café event | Two events will be organized in November and December 2016 to have the panel start talking about the council innovation strategy, the one-stop-shop project and the SIMPATICO project. |
| | Call aimed at finding citizens and professionals for pre-evaluation and evaluation engagement | In parallel with the communication actions a call aiming at finding citizens and professionals for pre-evaluation and evaluation engagement will be open. |
| Pre-evaluation communication and engagement period | E-service pre-evaluation questionnaire | Involving the panel in the evaluation of the developed e-services and have the panel compiling a questionnaire on the services usability. |
| | Definition of the scenario social game and rewarding program | Involving the panel in the definition of the scenario social game and rewarding program. |
| Evaluation communication and engagement period | Involvement of the professional association | To organize an event with the profession association in order to explain the scenario, the e-services and the SIMPATICO |

| | | |
|---|---|---|
| | | participation tools. |
| | Involvement of the citizen | To activate a communication campaign targeting the citizens in order to explain the scenario, the e-services and the SIMPATICO participation tools |
| | E-service evaluation questionnaire | To send a questionnaire targeting the e-services evaluation to all the people who has used the services during the experimentation phase. |
| | Activate the rewarding program | The defined social game and rewarding program is activated. |

### 5.2.4 Use-case KPIs and evaluation

For the 1st phase of the Trento use-case, four different objectives with specific success criteria have been identified (see Section 5.1.2). 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 13 - 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 validation 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…). |

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

Table 14 - Trento general KPIs

| Category | KPI | Value |
|---|---|---|
| SIMPATICO Platform | Number of procedures supported by SIMPATICO | 2 |
| | Number of accesses to platform during | 40 |

| | | |
|---|---|---|
| | experimentation | |
| | Number of platform users | 20 |

Table 15 - Trento scenario specific KPIs for pre-evaluation and evaluation phases

| Service | Category | KPI | Pre-eval. value | Eval. value |
|---|---|---|---|---|
| Enrolment to day nursery service | Number of engaged stakeholders for each type | Civil servants | 3 | 4 |
| | | Citizens | 5 | 12 |
| | | Disadvantaged users (migrants, elderlies…) | 1 | 3 |
| | Internal efficiency of PA processes | Percentage of time saved by civil servants in interactions with users (answering requests for clarifications, etc.) calculated as:<br>*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:<br>*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 | 5% | 10% |

| | | | | |
|---|---|---|---|---|
| | | sent to users calculated as:<br>*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]* | | |
| | Reduction of administrative burden | Reduction in time spent completing a procedure or filling a form calculated as:<br>*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% |
| Permit on acoustic derogation for temporary activities service | Number of engaged stakeholders for each type | Civil servants | 2 | 3 |
| | | Business owners | 3 | 10 |
| | | Citizens | 1 | 4 |
| | | Disadvantaged users (migrants, elderlies…) | 0 | 1 |
| | Internal efficiency of PA processes | Percentage of time saved by civil servants in interactions with users (answering requests for clarifications, etc.) calculated as:<br>*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 | 5% | 10% |

| | | | | |
|---|---|---|---|---|
| | | for accepting and validating application calculated as:<br>*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]* | | |
| | Internal effectiveness of PA processes | Reduction in request for integration of information sent to users calculated as:<br>*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 interaction]* | 5% | 10% |
| | Reduction of administrative burden | Reduction in time spent completing a procedure or filling a form calculated as:<br>*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]* | 10% | 20% |

### 5.2.5 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 analyzed.

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[2]. 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, 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 1st phase of the Trento use-case. This is the case of "Decrease in average number of requests for help from users for each procedure", "Increase in percentage of disadvantaged users that can complete the e-service autonomously" and "Decrease in average number of requests for help from users for each procedure".

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

Table 16 - KPI data collection for Enrolment to day nursery service

| 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.<br>*[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 |

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

| | |
|---|---|
| | 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.<br>*[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.<br>*[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 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.<br>*[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. |

Table 17 - KPI data collection for Permit on acoustic derogation for temporary activities service

| **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.<br>*[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.<br>*[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.<br>*[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 report the Civil Servant will keep during the experimentation. |
| 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.<br>*[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. |

### 5.2.6 Schedule

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

Table 18 - Trento use-case activity schedule

| Activity | From | To | Description |
|---|---|---|---|
| **Preparation phase** | | | |
| Scenario specification | 03/2016 [M1] | 08/2016 [M6] | 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 analyze them. |
| **Implementation phase** | | | |
| Participation to the IEEE Smart City Week | 09/2016 [M7] | 09/2016 [M7] | During the event:<br>- the council innovation strategy will be presented to the local community;<br>- the one-stop-shop project will be presented to the community;<br>- the SIMPATICO project 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. |
| Engagement call organization and execution | 09/2016 [M7] | 02/2017 [M12] | To plan and organize the call for find citizens and professionals pre-evaluation and evaluation engagement |
| Scientific café events organization and execution | 11/2016 [M9] | 12/2016 [M10] | To plan and organize the scientific café events.<br>Two events will be organized in November 2016 and December to have the panel start talking about the council innovation strategy, the one-stop-shop project and the SIMPATICO project. |
| E-service pre-evaluation questionnaire preparation | 10/2016 [M8] | 12/2016 [M10] | To prepare the E-service pre-evaluation questionnaire |
| E-service modules digitalization | 09/2016 [M7] | 12/2016 [M10] | To digitalize the module “Enrolment to day nursery service”. The resulted e-services will complaint with SIMPATICO constraints. |
| | 09/2016 [M7] | 02/2017 [M12] | To digitalize the module “Permit on acoustic derogation for temporary activities”. The resulted e-services will complaint with SIMPATICO constraints. |
| **Integration phase** | | | |
| “Sportello Telematico” integration capabilities tests | 09/2016 [M7] | 02/2017 [M12] | To activate different tests in order to evaluate the “Sportello Telematico” integration capabilities. |
| Sportello Telematico and SIMPATICO techniques and tools integration | 03/2017 [M13] | 04/2017 [M14] | To integrate the SIMPATICO solutions within the Trento e-service portal. |
| Develop e-service pre-evaluation sandbox | 04/2017 [M14] | 05/2017 [M15] | To develop a system sandbox that will be used by the citizens and professionals representative panel in |

| | | | |
|---|---|---|---|
| | | | the pre-evaluation phase.<br>The system sandbox will integrate real e-services with real version of the SIMPATICO tools and techniques. |
| Citizenpedia population | 05/2017 [M15] | 07/2017 [M17] | To populate suitable sections of the Citizenpedia with information relevant for the "Enrolment to day nursery service" e-service. |
| | 05/2017 [M15] | 06/2017 [M16] | To populate suitable sections of the Citizenpedia with information relevant for the "Permit on acoustic derogation for temporary activities" e-service. |
| **Pre-Evaluation phase** | | | |
| Scenario execution phase | 05/2017 [M15] | 06/2017 [M16] | To active a small experiment of the concrete use of the SIMPATICO solutions for the e-service "Permit on acoustic derogation for temporary activities" within a panel representative of the Trento community. |
| Scenario execution phase | 06/2017 [M16] | 08/2017 [M18] | To active a small experiment of the concrete use of the SIMPATICO solutions for the e-service "Enrolment to day nursery service" within a panel representative of the Trento community. |
| Definition of the rewarding program | 05/2017 [M15] | 07/2017 [M17] | Definition of the scenario social game and rewarding program. |
| E-service pre-evaluation questionnaire execution | 05/2017 [M15] | 07/2017 [M17] | To involve the panel compiling a questionnaire on the services usability.<br>The representative panel will evaluate the improvement of the service request module submission after the integration of SIMPATICO techniques and tools. |
| **Users evaluation phase** | | | |
| Involvement of the | 04/2017 | 10/2017 | To organize three events with the |

| | | | |
|---|---|---|---|
| professional association | [M14] | [M20] | profession association in order to explain the scenario, the e-services and the SIMPATICO participation tools.<br>The events should:<br>1. To communicate the vision and involve the professionals in the experimentation<br>2. To evaluate and reinforce the professional engagement and participation in the experimentation<br>3. To report to the professionals the results of the experimentation |
| Involvement of the citizen | 04/2017 [M14] | 10/2017 [M20] | To activate a communication campaign targeting the citizens in order to explain the scenario, the e-services and the SIMPATICO participation tools.<br>NOTE: Due to the fact the "Enrolment to day nursery service" enrolment phase of lasts between the 1st of September to the 30th of April, the evaluation phase of this service will take place from M19 and M21.<br>To minimize the risk of having too few requests specific communication and involvement actions must be taken. |
| Scenario execution phase | 05/2017 [M16] | 10/2017 [M20] | To activate an experimentation of the concrete use of the SIMPATICO solutions in conjunction with the selected e-services in a production environment.<br>NOTE: Due to the fact the "Enrolment to day nursery service" enrolment phase of lasts between the 1st of September to the 30th of April, the evaluation phase of this service will take place from M19 and M21. |
| Scenario evaluation phase | 04/2017 [M14] | 10/2017 [M20] | 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 | 08/2017 [M18] | 10/2017 [M20] | 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 | 03/2017 [M13] | 10/2017 [M20] | Start the documentation of the e-services on Citizenpedia involving pre-evaluation panel and Trento community. |
| Activate the rewarding program | 06/2017 [M16] | 10/2017 [M20] | The defined social game and rewarding program is activated. |

# 6 Galicia Use-case – Phase 1

## 6.1 Specification of the Galicia use-case

### 6.1.1 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).

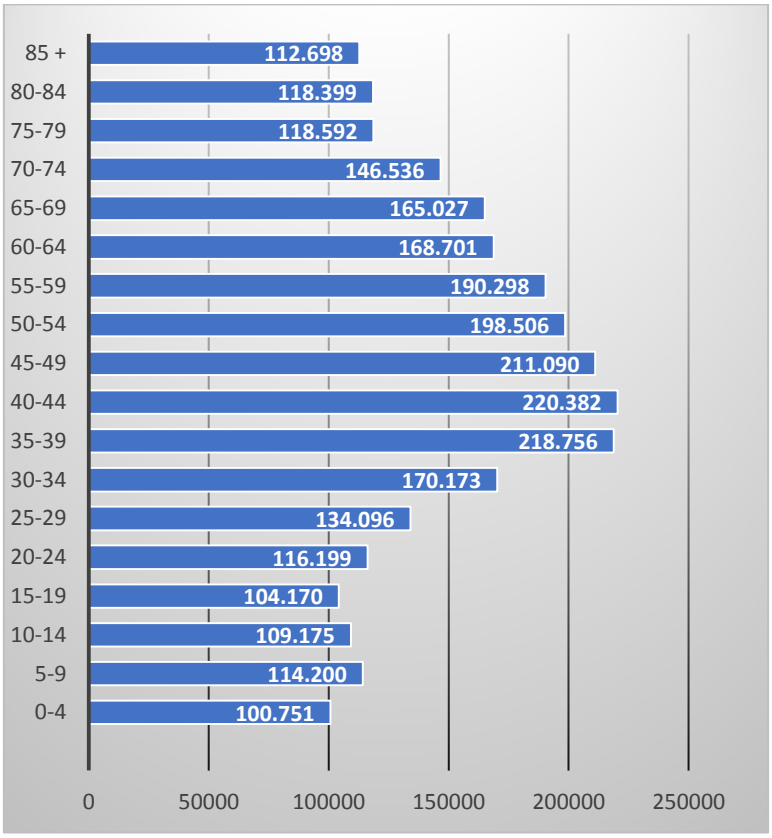


Figure 6 - Number of citizens per age group

According to data provided by IGE (Instituto Galego de Estatistica[3]), 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.**

[3] 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"[4] (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)[5].
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[6]. 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 cannot reach a number of 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[7], 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

[4] https://sede.xunta.es/portada
[5] http://www.xunta.gal/diario-oficial-galicia
[6] http://faitedixital.xunta.gal/sites/default/files/documentos/Plan_Inclusion_Dixital_Galicia.pdf
[7] https://cemit.xunta.gal

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.

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 will be selected:

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

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

The replicated services in the active ageing domain described above will be ready between November 2016 and January 2017 to offer an important test-bed for the execution of the defined strategy.

### 6.1.2 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 is to **analyse and validate the technological acceptance of elderly groups 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[8], ISO 9241-11[9]) 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 environment will be used to validate how elderly people behave and accept the SIMPATICO solution and its features.

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

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

### 6.1.3 Use-case objectives and success criteria

The objectives of the experiments implemented during the first 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 groups in order to compare and detect the most impaired ones 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 criterion: 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 tentatively selected are the previously mentioned: BS607A and BS613B.

Success criterion: the selected test e-services shall be available on a replicated portal at the beginning of the validation phase.

**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 validation 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 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 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).

### 6.1.4 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 19 - 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.<br>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.<br>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.<br>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 (M15-M20). | 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.<br>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 20 - 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 decrease of the size of testing community during the use case execution. | High | Significant | This risk is directly related to the previous one. 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. |
| 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. |
| 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. |
| 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. |

### 6.1.5 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 21 - Galicia use-case stakeholders and roles

| **Stakeholder (and type)** | **Role** | **Note** |
|---|---|---|
| GALICIA (project partner) | Responsible of:<br>- alignment with Xunta's strategy | The internal staff involved by Xunta includes:<br>a) Manager<br>b) Specialist for integrations |

| | | |
|---|---|---|
| | - selection of the test e-services<br>- engagement of users and stakeholders<br>- use-case operation<br>- use-case evaluation | c) Specialist for elderly and active ageing strategies |
| DEUSTO (project partner) | Responsible of:<br>- use-case planning and management<br>- use-case requirements / project validation requirements matchmaking<br>- replication of the selected e-services and integration of them with SIMPATICO<br>- technical support during the operation of the use-case | They are responsible of the replication of the "Wellness and spas program" e-service. |
| HIB (project partner) | Responsible of:<br>- replication of the selected e-services and integration of them with SIMPATICO<br>- 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:<br>- users of the test e-services<br>- users and contributors of Citizenpedia | Specific categories of citizens are identified for the different test e-services. |
| Civil servants (end users) | Engaged as:<br>- contributors of Citizenpedia | Social workers of Galician municipalities help citizens, especially elderlies, to perform procedures related to Xunta. |

## 6.2 Use-case planning

### 6.2.1 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 two 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,** 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 first released version of SIMPATICO, and the non-enhanced ones.

After performing this first phase, the collected feedback 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** 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.

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 this experiment, we foresee different phases, aligned with the overall phases defined in Section 4.4.

1) **Preparation phase [M1-M6]:** all relevant documents, regulations, e-services and Xunta's deployments are analysed.
2) **Environment set up phase [M7-M14]:** 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.

d) *gather* potential sources and populate suitable sections of the Citizenpedia with information relevant for the specific selected testing e-services.
e) *prepare* communication and engagement campaigns to enhance the social, participatory and digital innovation through SIMPATICO.

3) **Pre-evaluation phase [M13-M14]:** The first experiment is activated. It compares the replicated e-services enhanced with the first released version of SIMPATICO, and the non-enhanced ones. It provides a complete feedback of the usage and the main drawbacks of the initial SIMPATICO version.
4) **Users evaluation phase [M15-M20]**: An experimentation of the concrete usage of the SIMPATICO solutions is activated, in conjunction with the selected e-services in a replicated environment.

### 6.2.2 Test services

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

Table 22 - 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.<br><br>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.<br><br>Public administration should get in touch with the solicitant in a period of 20 calendar days. |

Table 23 - 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.<br><br>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.<br><br>Public administration should get in touch with the solicitant 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 24.

Table 24 - Service to SIMPATICO feature application mapping for Galicia use-case

| E-Service | Target | Features | Description |
|---|---|---|---|
| Wellness and spas program | Citizens | Text Adaptation Engine | Complex words and phrases are highlighted.<br>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<br>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. |
| | | 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. |
| | | Citizenpedia | The modeled documentation of the e-service is used by the Citizen to clarify possible doubts |
| | Civil Servants | Question and Answer | The civil servant can provide clarification and responses of the digital e-service to the user community. |
| | | Citizenpedia | The documentation of the e-service is modeled by the civil servant. |
| | | Data Analytics | The civil servant can receive reports about the use of this service. |
| Individual grants for personal autonomy and complimentary personal assistance for disabled people | Citizens | Text Adaptation Engine | Complex words and phrases are highlighted.<br>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.<br>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. |
| | | 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. |
| | | Citizenpedia | The modeled documentation of the e-service is used by the Citizen to clarify possible doubts. |
| | Civil Servants | Question and Answer | The civil servant can provide clarification and responses of the digital e-service to the user community. |
| | | Citizenpedia | The documentation of the e-service is modeled by the civil servant. |
| | | Data Analytics | The civil servant can receive reports about the use of this service. |

### 6.2.3 Personnel and user engagement

In order to promote the use of SIMPATICO in the Galicia use case, we describe in this section a proposal for a communication plan. This plan is structured in three phases, which match with the periods described in the previous section.

Environment set up period [M7-M14]: 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 councils will try to reach citizens/professionals and civil servants though the organization of specific events and the communication through electronic ways. Within this phase a public call for 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.

Pre-evaluation period [M13-M14]: 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).

Users' evaluation period [M15-M20]: 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.

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

Table 25 - Communication and engagement activities for Galicia

| Period | Action | Description |
|---|---|---|
| Environment set up 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. |
| | 1st October elderly meeting | The 1st of October is the national day to tribute the elders. Xunta sees feasible to organize a dissemination activity of the project this day. |
| Pre-evaluation phase | Definition of the scenario social game and rewarding program | Involving the panel in the definition of the scenario social game and rewarding program. |
| | TICSENIOR workshop | Organize a workshop that acts as a meeting point between the elders and the ICT world (TIC in Spanish). This workshop has been already organized in previous years. |
| Users evaluation phase | Involvement of the citizen | To activate a communication campaign targeting the citizens in order to explain the scenario, the e-services and the SIMPATICO participation tools |
| | E-service evaluation questionnaire | To send a questionnaire targeting the e-services evaluation to all the people who has 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 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. |

### 6.2.4 Use case evaluation and KPIs

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

Table 26 - 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 validation phase | Number of procedures available for testing on the beginning of the experimentation, supported by SIMPATICO |
| 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 validation phase; | Number of accesses for each testing procedure at the beginning of the experimentation |
| | | Number of accesses to platform during experimentation |
| | | Number of platform users |
| | 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, | Number of engaged civil servants |
| | | Number of engaged citizens, in particular, disadvantaged users: elderlies |

| | | |
|---|---|---|
| | comments and suggestion generated by the Xunta civil servants, citizens and professional through Citizenpedia). | |

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

Table 27 - Galicia general KPIs

| Category | KPI | Value |
|---|---|---|
| SIMPATICO Platform | Number of procedures supported by SIMPATICO | 2 |
| | Number of accesses to platform during experimentation | 300 |
| | Number of platform users | 100 |

Table 28 - Galicia scenario specific KPIs for pre-evaluation and evaluation phases

| Service | Category | KPI | Pre-eval. value | Eval. value |
|---|---|---|---|---|
| Wellness and spas program | Number of engaged stakeholders for each type | Civil servants | 2 | 8 |
| | | Number of engaged citizens, in particular, disadvantaged users: elderlies | 10 | 130 |
| | Reduction of administrative burden | Reduction in time spent completing a procedure or filling a form calculated as:<br>*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:<br>*1 - [Number of autonomously completed e-services using the simplified online interaction (with SIMPATICO tools)] /* | 25% | 25% |

| | | | | |
|---|---|---|---|---|
| | | *[Number of autonomously completed e-services using the standard offline interaction]* | | |
| | | Decrease in average number of requests for help from users for each procedure calculated as:<br><br>*[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 | 8 |
| | | Number of engaged citizens, in particular, disadvantaged users: elderlies | 10 | 130 |
| | Reduction of administrative burden Inclusion | Reduction in time spent completing a procedure or filling a form calculated as:<br><br>*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:<br><br>*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 | 2 | 2 |

| | | | | |
|---|---|---|---|---|
| | | users for each procedure calculated as:<br><br>*[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]* | | |

### 6.2.5 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 29 - KPI data collection for Wellness and spas program e-service

| **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.<br><br>*[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 | *[Average duration of the administrative process using the standard* |

| | |
|---|---|
| duration of the administrative process | *offline interaction]* variable value will be taken interviewing the civil servants.<br><br>*[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.<br><br>*[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.<br><br>*[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 requests for help from users for each procedure. | *[Number of completed e-services using the standard offline interaction and asking for help]* value will be obtained from the report of civil servants involved into the experiments.<br><br>*[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. |

**Table 30 - KPI data collection for Individual grants for personal autonomy and complimentary personal assistance for disabled people e-service**

| **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.<br><br>*[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 | *[Average duration of the administrative process using the standard offline interaction]* variable value will be taken interviewing the civil |

| | |
|---|---|
| administrative process | servants.<br>*[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.<br>*[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.<br>*[Number of autonomously completed e-services using the simplified online interaction (with SIMPATICO tools)]:* the information is collected via the SIMPATICO Log module. |
| Decrease in average number of requests for help from users for each procedure. | *[Number of completed e-services using the standard offline interaction and asking for help]* value will be obtained from the report of civil servants involved into the experiments.<br>*[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. |

### 6.2.6 Schedule

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

Table 31 - Galicia use-case activity schedule

| Activity | From | To | Description |
|---|---|---|---|
| **Preparation phase** | | | |
| Scenario specification | 03/2016<br>[M1] | 08/2016<br>[M6] | To analyse (also used to enhance the requirements of SIMPATICO), describe and gather all relevant documents, regulations and e-services that will be used as a basis of the experiment. |

| | | | |
|---|---|---|---|
| **Environment set up phase** | | | |
| Engagement call organization and execution | 09/2016 [M7] | 02/2017 [M12] | To plan and organize the call for find citizens and professionals pre-evaluation and evaluation engagement |
| 1st October elderly meeting | 10/2016 [M8] | 10/2016 [M8] | The 1st of October is the national day to tribute the elders. Xunta sees feasible to organize a dissemination activity of the project this day. |
| Testing community creation | 09/2016 [M7] | 12/12016 [M10] | To define and set up all testing groups which conforms the community to test the solution |
| Selected e-services replication and deployment | 09/2016 [M7] | 12/12016 [M10] | To replicate and deploy the "Wellness and spas program" service. |
| | 09/2016 [M7] | 12/12016 [M10] | To replicate and deploy the "Individual grants for personal autonomy and complimentary personal assistance for disabled people" service |
| SIMPATICO techniques and tools integration | 03/2017 [M13] | 04/2017 [M14] | To integrate the SIMPATICO solutions within the replicated e-services |
| Citizenpedia population | 03/2017 [M13] | 04/2017 [M14] | To populate suitable sections of the Citizenpedia with information relevant for the "Wellness and spas program" e-service. |
| | 03/2017 [M13] | 04/2017 [M14] | To populate suitable sections of the Citizenpedia with information relevant for the "Individual grants for personal autonomy and complimentary personal assistance for disabled people" e-service. |
| TICSENIOR workshop | 11/2016 [M9] | 12/2016 [M10] | Organize a workshop that acts as a meeting point between the elders and the ICT world (TIC in Spanish). This workshop has been already organized in previous years. |
| **Pre-Evaluation phase** | | | |
| E-service pre- | 03/2017 | 04/2017 | To prepare the E-service pre- |

| | | | |
|---|---|---|---|
| evaluation | [M13] | [M14] | evaluation questionnaire |
| Definition of the rewarding program | 03/2017 [M13] | 04/2017 [M14] | Definition of the scenario social game and rewarding program. |
| Involvement of Amtega | 03/2017 [M13] | 04/2017 [M14] | 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 | 05/2017 [M15] | 10/2017 [M20] | To organize an event with the professional association in order to explain the scenario, the e-services and the SIMPATICO participation tools. |
| Involvement of the citizen | 05/2017 [M15] | 10/2017 [M20] | To activate a communication campaign targeting the citizens in order to explain the scenario, the e-services and the SIMPATICO participation tools |

# 7 Sheffield Use-case – Phase 1

## 7.1 Specification of the Sheffield use-case

### 7.1.1 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 is currently working with Adobe on a new website. The aim is to deliver a platform that will enable the Council to easy 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 it's customers get 24/7 access to council services, and the council can achieve cost savings.

There is a need for the council to provide this new digital channel by 1st April 2017 at the latest. The council's Web and Intranet Project is currently assessing existing website content, will rewrite retained content and redevelop online forms, in addition to commissioning a new information architecture, customer journeys and designs to simplify customer experience.

Integration with SIMPATICO is a requirement of the project.

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.

### 7.1.2 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 is to validate the integration between systems underpinning the new website - Adobe AEM content and forms, and SIMPATICO solution. The main aim is to evaluate whether or not the SIMPATICO solutions developed so far work properly with the new implemented website.

Sheffield use-case will use a plugin-based architecture in order to implement the SIMPATICO technologies into the City Council website for phase 1. SIMPATICO plugin is being developed using the browser-side extension mechanism supported by Google Chrome, as better described in Section 7.2.1. Such approach was chosen under consideration of migration of Sheffield website: plugin base approach allows development to continue in parallel with, and independently form, SCC new website.

In addition to this specific purpose, the Sheffield use-case will contribute 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 will include: (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 that will be adopted for the Sheffield use-case is to validate SIMPATICO solutions in integration with the SCC website currently under delivery. During the first phase experiment, the testing e-services are 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 will be used to validate all the different features and components of the SIMPATICO solution.

### 7.1.3 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. The selected services are:

- School attendance
- Young carers
- Parenting skills course

Currently, none of the above e-services are 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.

Success criterion: the selected test e-services shall be available on the SCC website at the beginning of the validation 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. In the first phase, SIMPATICO tools will only be applied to the e-services selected in Obj-SHEF-1.

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 criterion: 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).

### 7.1.4 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 risks that need to be taken into account.

Table 32 - 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 1st April 2017. This release date compatible with the integration plan of SIMPATICO.<br>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 (M15-M20). | 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.<br>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 33 - 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 | Medium | Medium | An extra e-service will be identified to test the specific missing SIMPATICO project techniques and tools on a |

| | | | |
|---|---|---|---|
| the relevant SIMPATICO project techniques and tools. | | | 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 | | 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 |

### 7.1.5 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 34 - Sheffield use-case stakeholders and roles

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

| | | |
|---|---|---|
| (project partner) | - use-case requirements / project validation requirements matchmaking<br>- use-case deployment and connection with legacy systems<br>- use case Operation and Monitoring<br>- use case Evaluation | |
| Citizens (end users) | Engaged as:<br>- 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:<br>- users and contributors of Citizenpedia | The engagement of civil servants is not limited to the employees of the Sheffield City Council. |

## 7.2 Use-case planning

### 7.2.1 Use-case methodology and plan

Sheffield use-case will use a plugin-based architecture in order to implement the SIMPATICO technologies into the City Council website for phase 1. Such approach was chosen under consideration of migration of Sheffield website and avoiding potential risks / conflicts might encounter whilst embedding JavaScript code to underdeveloped website. Plugin base approach allows development to continue in parallel with SCC new website. Moreover, this guarantees that the SIMPATICO tools will be developed independently from the SCC's website for this phase and, therefore, minor changes in the structure and content of the website would not directly affect the performance of the tools in this phase.

The selected e-services as mentioned before are: school attendance, young carers and parenting skills course. 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.

SIMPATICO plugin is being developed using Google Chrome Extension API[10] and the current version supports lexical simplification and text elaboration. For the phase 1 experiments in Sheffield, **the plugin/chrome-extension will represent the Interactive Front End component** for Phase 1 and will hence be interacting with the other components; this is possible since Google Chrome plugins can modify the content of webpages, communicate with external web services and capture a wide range of actions taken by the user while browsing. The user will be asked to install the plugin for the very first interaction with selected e-services..

The user will be asked to install the plugin for the very first interaction with selected e-services. At the moment Sheffield use-case doesn't have any user identification or authentication process in place so our proposal is to ask information about the user when he/she installs the plugin into the browser and keep this information in a database located in a external server (where the CDV would be stored) or use cookie based approach to store the User information. The plugin would be able to personalise the content to the user needs and according to the information provided in the installation phase, as well as the data collected from interactions. Cookies could also be used to improve the personalised content.

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, the selected services for phase 1 evaluation are described in Section 7.2.2.

SIMPATICO techniques and tools will be experimented on all four services and they are going to be used by the citizens. A **pre-evaluation phase** of the services is also planned where SIMPATICO technologies will be first assessed by a panel from SCC (civil servants and citizens). The plugin will go through **user evaluation phase** or be available for the general public only after the acknowledgment of the representative panel.

[10] https://developer.chrome.com/extensions

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 4.4:

1. **Preparation phase [M1-M6]**: where we acquire all relevant documents and all relevant information on the available e-services that will be used as a basis of the experiment, and analyze them. We also look at past interactions and select the services with higher demand for non-native of English in order to use in our use-case.
2. **Implementation and integration phase [M7-M14]**: 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); this is done on the basis of the results of the analysis of the preparation phase;
    b. to test the text and workflow simplification and interaction enrichment techniques made available by SIMPATICO within the selected testing e-services, by using the SIMPATICO plugin with the e-services;
    c. to populate suitable sections of the Citizenpedia with information relevant for the specific selected testing e-services;
    d. to prepare communication and engagement campaigns for stakeholders and end-users.
3. **Pre-evaluation phase [M14-M15]**: 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; this phase will be executed in M13 during the integration phase with the opportunity to finish it in M14. to start with confidence the next evaluation phase

    Note: Due to SCC new website will be fully available by 1st April 2017, the pre- evaluation phase of this service will take place from M14-M15 considering to minimize risks and to have constructive evaluation of SIMPATICO solution.

4. **Users evaluation phase [M16-M20]**: 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 [M16-M20]**: where the community of Sheffield is engaged in the documentation of the e-services through Citizenpedia.

### 7.2.2 Services

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

Table 35 - School Attendance

| | |
|---|---|
| **e-Service** | School Attendance |
| **Target** | Citizen |
| **Link** | www.sheffield.gov.uk/attend |
| **Description** | The school attendance service aims to inform parents, education workers and general citizens about the importance of school attendance by children.<br>The following tasks presented in the page: |

| | |
|---|---|
| | - Information advising why school attendance is important<br>- Form to report suspected truancy<br>- Pay term time absence fine |
| **Process and user interaction** | Users can visit this e-service by the following reasons:<br>- Parents have already received a fine from a school for term time absence and wish to pay it (the online payment is held by company CAPITA and is out of the scope of SIMPATICO);<br>- A citizen wants to report a case of school absence. In this case he/she will use an online form to fill the information required. |

Table 36 - 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:<br>1. Parents wants to find information about support activities provided by the city council and external partners;<br>2. Professionals want to find information to assist parents.<br>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. |

Table 37 - Young Carers

| | |
|---|---|
| **e-Service** | Young Carers |
| **Target** | Citizen |
| **Link** | www.sheffield.gov.uk/youngcarers |
| **Description** | The young carers services aim to support and provide information for people under 21 who look after someone else.<br>All young carers under 18 have the right to an assessment.<br>An assessment can help find ways to make their carer's life and caring role easier.<br>Most often, a social care support worker will visit a young carer and take them through an assessment by using this web page. |

| | |
|---|---|
| **Process and user interaction** | Users can visit this e-service by the following reasons:<br>1. Young carers want to find information on how they can be assessed;<br>2. Adults want to find information on how to help or assess a young carer.<br>Currently, the website does not provide forms and/or interaction with the user. However, there is potential to include online assessment for young carers. |

Note: the "Young carers" service will not be used during the pre-evaluation phase, but only in the evaluation phase.

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

Table 38 - 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<br>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. |
| School attendance<br>Parenting skills course<br>Young carers | 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) a 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. |

### 7.2.3 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 [M7-M14]: 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. Within this phase a public call for find citizens and professionals engagement in the e-service pre-evaluation and evaluation will be open.

Pre-evaluation communication and engagement period [M14-M15]: 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 [M16-M20]: 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 are described in the following table.

Table 39 - Communication and engagement actions for Sheffield

| Period | Action | Description |
|---|---|---|
| Pre-execution communication and engagement period | Participating to Smart City Expo World Congress Event [Barcelona , November 2016] | During the event, the SIMPATICO project will be presented to the community to engage stakeholders.<br>Showcase SIMPATICO solution in context to engage User and digitalising Government services leading to Smart city solution.<br>Focussing on latest technology SIMPATICO embed to address citizen issue. |
| | Participating to THINK.DIGITAL GOVERNMENT 2016 [London, December 2016] | Target of this event is Public Sector.<br>During the event, the SIMPATICO project will be presented to the attendees.<br>Share SIMPATICO scope and vision with top speakers from Government and Industry. |
| | Call for find citizens and professionals pre-evaluation and evaluation engagement | In parallel with the communication actions a call for find citizens and professionals pre-evaluation and evaluation engagement will be open. |
| Pre-evaluation communication and engagement period | E-service pre-evaluation questionnaire | Involving the panel in the evaluation of the developed e-services and have the panel compiling a questionnaire on the services usability. |
| Evaluation communication and engagement period | Involvement of the citizen | To activate a communication campaign targeting the citizens in order to explain the scenario, the e-services and the SIMPATICO tools. |

| | | |
|---|---|---|
| | 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 | The defined social game and rewarding program is activated. |

### 7.2.4 Use case and KPIs evaluation

For the 1st phase of the Sheffield use-case, four different objectives with specific success criteria have been identified (see Section 7.1.3). 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 40 - 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 selected test e-services shall be available on the SCC website at the beginning of the validation 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 procedures 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 | 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 |

| | | |
|---|---|---|
| offices of the City Council. | | |
| | 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 41 - Sheffield general KPIs

| **Category** | **KPI** | **Value** |
|---|---|---|
| SIMPATICO Platform | Number of procedures supported by SIMPATICO | 1 |
| | Number of accesses to platform during experimentation | 20 |
| | Number of platform users | 15 |

Table 42 - Sheffield scenario specific KPIs for pre-evaluation and evaluation phases

| **Service** | **Category** | **KPI** | **Pre-eval. value** | **Eval. value** |
|---|---|---|---|---|
| School | Number of engaged | Civil servants | 2 | 3 |

| | | | | |
|---|---|---|---|---|
| attendance | stakeholders for each type | Citizens | 7 | 30 |
| | | Disadvantaged users (low English comprehension or reading ability) | 0 | 3 |
| | Internal efficiency of PA processes | Percentage of time saved by civil servants in interactions with users (answering requests for clarifications, etc.) calculated as:<br>*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]* | TBD | TBD |
| | Reduction of administrative burden | Reduction in time spent completing a procedure or filling a form<br>*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]* | TBD | TBD |
| Parenting skills course | Number of engaged stakeholders for each type | Civil servants | 3 | 5 |
| | | Citizens | 5 | 30 |
| | | Disadvantaged users (migrants) | 3 | 5 |
| | Internal efficiency of PA processes | Percentage of time saved by civil servants in interactions with users (answering requests for clarifications, etc.) calculated as:<br>*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]* | TBD | TBD |

| | | | | |
|---|---|---|---|---|
| | | Reduction of average duration of the administrative process calculated as:<br>*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 interaction]* | TBD | TBD |
| | Reduction of administrative burden | Reduction in time spent completing a procedure or filling a form<br>*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]* | TBD | TBD |
| Young carers | Number of engaged stakeholders for each type | Civil servants | N/A | 3 |
| | | Citizens | N/A | 30 |
| | | Disadvantaged users (migrants) | N/A | 5 |
| | Internal efficiency of PA processes | Percentage of time saved by civil servants in interactions with users (answering requests for clarifications, etc.) calculated as:<br>*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]* | N/A | TBD |
| | | Reduction of average duration of the administrative process calculated as:<br>*1 - [Average duration of the* | N/A | TBD |

| | | | | |
|---|---|---|---|---|
| | | *administrative process using the simplified online interaction (with SIMPATICO tools)] / [Average duration of the administrative process using the standard offline interaction]* | | |
| | Reduction of administrative burden | Reduction in time spent completing a procedure or filling a form calculated as:<br>*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]* | N/A | TBD |

### 7.2.5 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 43 - KPI data collection for School Attendance service

| **KPI** | **Value** |
|---|---|
| Percentage of time saved by civil servants in | *[Average time spent answering the user online requests using the simplified online interaction (with SIMPATICO tools)]* variable value |

| | |
|---|---|
| interactions with users (answering requests for clarifications, etc.) | 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.<br>*[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. |

Table 44 - KPI data collection for Parenting skills course service

| **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. |
| 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.<br>*[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. |

Table 45 - KPI data collection for Young carers service

| **KPI** | **Value** |
|---|---|
| Percentage of time saved by civil servants in interactions with users (answering requests for | *[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. |

| | |
|---|---|
| clarifications, etc.) | |
| 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. |
| 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.<br>*[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. |

### 7.2.6 Schedule

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

Table 46 - Sheffield use-case activity schedule

| Activity | From | To | Description |
|---|---|---|---|
| **Preparation phase** | | | |
| Scenario specification | 03/2016 [M1] | 08/2016 [M6] | To acquire all relevant documents as well as all relevant information on the available e-services that will be used as a basis of the experiment, and analyze them. |
| **Implementation and integration phase** | | | |
| Engagement call organization and execution | 09/2016 [M7] | 02/2017 [M12] | To plan and organize the call to find citizens for evaluation engagement |
| E-service pre-evaluation questionnaire preparation | 09/2016 [M7] | 10/2016 [M8] | To prepare the E-service pre-evaluation questionnaire |
| E-service development | 01/2017 [M12] | 02/2017 [M12] | To develop the new e-service “School attendance”. |
| | 01/2017 [M12] | 02/2017 [M12] | To develop the new e-service “Parenting skills course”. |

| | | | |
|---|---|---|---|
| | 01/2017 [M12] | 02/2017 [M12] | To develop the new e-service “Young carers”. |
| | 01/2017 [M12] | 02/2017 [M12] | To develop the new e-service “Costs and paying for care”. |
| Develop a stable version of the SIMPATICO plugin for pre-evaluation phase | 03/2017 [M13] | 03/2017 [M13] | To develop a stable version of the SIMPATICO plugin that will be used by the citizens panel in the pre-evaluation phase.<br>The plugin in this stage will integrate real e-services with A REAL version of the SIMPATICO tools and techniques. |
| **Integration phase** | | | |
| SIMPATICO techniques and tools integration | 04/2017 [M14] | 05/2017 [M15] | To integrate the SIMPATICO solutions within the Sheffield website |
| Citizenpedia population | 04/2017 [M14] | 05/2017 [M15] | To populate suitable sections of the Citizenpedia with information relevant for the “School Attendance” e-service. |
| | 04/2017 [M14] | 05/2017 [M15] | To populate suitable sections of the Citizenpedia with information relevant for the “Parenting skills course” e-service. |
| | 04/2017 [M14] | 05/2017 [M15] | To populate suitable sections of the Citizenpedia with information relevant for the “Young carers” e-service. |
| **Pre-Evaluation phase** | | | |
| Scenario execution phase | 05/2017 [M15] | 06/2017 [M16] | 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; |
| Definition of the rewarding program | 05/2017 [M15] | 06/2017 [M16] | Definition of the scenario social game and rewarding program. |
| E-service pre-evaluation | 05/2017 | 06/2017 | To involve the panel compiling a questionnaire on the services |

| | | | |
|---|---|---|---|
| questionnaire execution | [M15] | [M15] | usability.<br>The representative panel will evaluate the improvement of the service request module submission after the integration of SIMPATICO techniques and tools. |
| **Users evaluation phase** | | | |
| Involvement of the citizen | 06/2017 [M16] | 10/2017 [M20] | 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 | 07/2017 [M17] | 10/2017 [M20] | 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 | 07/2017 [M17] | 10/2017 [M20] | 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 | 08/2017 [M18] | 10/2017 [M20] | 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 | 07/2017 [M17] | 10/2017 [M20] | Start the documentation of the e-services on Citizenpedia involving pre-evaluation panel and Sheffield community. |
| Activate the rewarding program | 08/2017 [M18] | 10/2017 [M20] | The defined social game and rewarding program is activated. |

# 8 Conclusion

In this deliverable, we have presented the achievements of the first 6 months of SIMPATICO activities for what concerns the organization and planning of the validation of the 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. Substantial effort has also been devoted to the specification of the first iteration of the validation in the three use-case sites.

The overall outcome of this activity, task forces have been defined at the three sites and have started operating to ensure the successful execution of the use-cases; detailed activities have been planned for the three sites; and requirements have been identified and defined that will direct the development and integration activities that will be carried in project work packages 2 to 5.

In the following months, until Month 14, the activities related to use cases will focus on progressing on the preparation of the validation, which will start at Month 15. 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.

# 9 References

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