"This project has received funding from the European Union's Horizon 2020 research and innovation programme under the grant agreement No 769765."

Project acronym:	WellCo
Project full title:	Wellbeing and Health Virtual Coach
Call identifier:	H2020-SC1-2017-CNECT-1
Type of action:	RIA- Research and Innovation Action
Start date:	1 December 2017
End date:	30 November 2020
Grant agreement no. :	769765

D2.1 – Users Involvement Plan

WP2	Co - Design
Due Date:	30/04/2018
Submission Date:	08/05/2018
Responsible Partner:	GSS
Version:	1.3
Status:	Final version
Reviewer(s):	HIB, JSI
Deliverable Type:	R : Report
Dissemination Level:	PU: Public

VERSION HISTORY

Version	Date	Author	Partner	Description
0.1	02/04/2018	**Mª Jesús Miján (EUC)**	GSS	Initial Draft Version
0.2	11/04/2018	**José Miguel Sánchez (GSS)**	GSS	Reviewed version
0.3	16/04/2018	**Benedicto Caminero (Steering Committee Member)**	GSS	Reviewed version
0.4	23-25/04/2018	**Margarita González (FastCyL), Torben Uhrenholt (SDU), Venet Osmani (FBK)**	FastCyL, SDU, FBK	Reviewed version
0.5	26-27/04/2018	**Maj Smerkol (JSI), Mitja (JSI), Inmaculada Luengo (PC), Paloma Jimeno (Steering Committee Member - QAS)**	JSI, HIB	Reviewed version
1.0	30/04/2018	**Mª Jesús Miján (EUC)**	GSS	Reviewed version
1.1	03/05/2018	**Mª Jesús Miján (EUC)**	GSS	Reviewed version
1.1	04/05/2018	**Mitja (JSI), Inmaculada Luengo (PC)**	JSI, HIB	Reviewed version
1.2	04/05/2018	**Mª Jesús Miján (EUC)**	GSS	Reviewed version
1.2	07/05/2018	**Katarzyna Wac (SC)**	UPCH	Reviewed version
1.3	08/05/2018	**Mª Jesús Miján (EUC)**	GSS	Final version

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1 Executive Summary

The objective of this deliverable is to define the protocol for the involvement of end users in all phases of the WellCo project, from its design to validation, up to the end of the project, by the end of November 2020.

For this purpose, the different phases in which their participation is foreseen and how they will be involved in these phases as well as the corresponding activities are described in this deliverable.

This document includes the managerial structures and its coordination activities.

This document addresses the target population for WellCo and the overall methodology for the involvement of users, describing in detail the capacity of enrolment of the trial sites, the procedures and its schedule.

It also includes the actions planned by the pilot sites to solve the possible risks derived from the lack of commitment or participation of the end users.

In summary, a comprehensive description of all the actions that will be performed in WellCo and that involve in any way to users, are addressed in this document.

2 Introduction

WellCo will deliver a radical new ICT-based solution in the provision of personalised advice, guidance and follow-up of users for the adoption of healthier behaviour choices that help them to maintain or improve their physical cognitive, mental and social well-being for as long as possible.

In WellCo, elderly people in need of guidance and care due to age related conditions, but also their relatives as well as multi-disciplinary experts will be involved since the very beginning until project end.

WellCo is based on a systematic user co-design methodology that is carried on WP2 (The co-design phase gives title to WP2), where users are central actors in all the research and innovation processes performed in the project.

Thus, in WellCo end-users play a crucial role, so they will be involved in the different processes within the project and in the complete life of the prototype, starting with a mock-up development, as initial proof of concept with the users, and continuing with the three incremental prototypes envisaged in the project, to ensure the correct integration and validation.

Co-Design makes users an integral part and central actors in the design process, ensuring that elicited requirements match with the real needs of the elderly. Following a co-design methodology does favour a better user-acceptance.

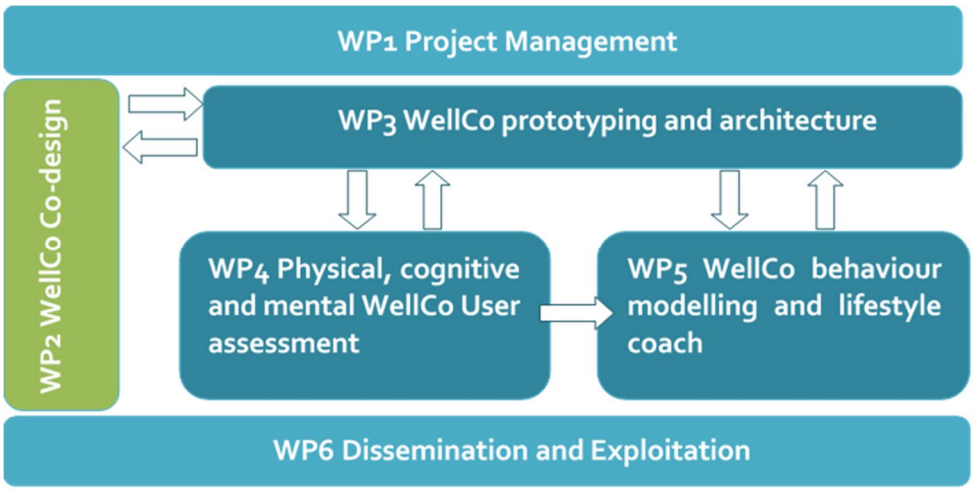


Figure 1.- WellCo Pert Diagram

3 Coordination structures and activities

3.1 Coordination structures

The involvement of participants will be managed by the End users & Ethics Board (EUEB) as a joint organizational structure and by the End Users Coordinator (EUC) as a unipersonal organizational structure.

End Users & Ethics Board (EUEB) and EUC will coordinate the activities where end-users are participating and guarantee their implication and active participation in the project.

The **End Users Coordinator (EUC)** will ensure the compliance in the WellCo trials.

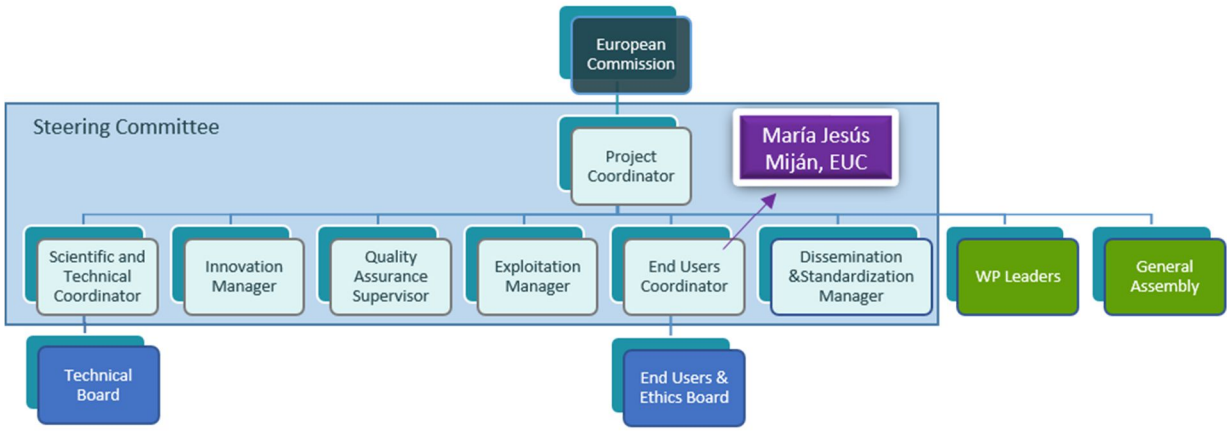


Figure 2.- Organigram of the project

Management structure	Tasks
End Users & Ethics Board (EUEB)	• Research and document the practices, ethics and requirements for personal data protection in the project, including secure and privacy-ensuring data acquisition, analysis, storage and dissemination to different actors. • Follow up all activities, developments and results in the project to ensure that they are complying with gender/ethics aspects and current regulation for data protection/privacy, liability and consumer protection.

Representative from SDU	Dr. Torben Uhrenholt
Representative from FBK	Enrico Maria Piras
Representative from GSS	María Jesús Miján

End Users Coordinator (EUC)	Responsible for the coordination between the technical progress and the integration with end users in the different pilots and along the evolution of the prototypes plan. The EUC is in charge also of ensuring the fulfilment of the agreed Ethical Commitments for the WellCo Project

Table 1.- Tasks of the EUEB and the EUC

3.2 Coordination activities and tools

The activities carried out for coordination purpose are described below:

Periodic meetings:	Apart from the agreements made during the KoM regarding involvement of participants, all partners contribute by participating in the regular meetings of the General Assembly (GA) where these issues are discussed within W2, as well as through Ad-hoc meeting addressed to discuss in depth all the questions to be decided.
IT Tools:	Additional to the ordinary process of emailing, the partners have exchanged documents through a specific link in google docs (such as preliminary version or working documents or deliverables where comments may be included), and uploaded them to an Alfresco repository. One/two skype meetings have been developed monthly for WP2, being the frequency variable, depending on the needs of the project.
Minutes:	The correspondent Minutes of the telco meetings have been elaborated, reflecting the discussions, agreements, and next steps;being sent to the participants for their validation and uploaded to the WellCo repository.

Table 2.- Coordination Activities

4 WellCo target users

In WellCo, target users are elderly people in need of guidance and care, due to age related conditions.

In engaging with participants during the project, every effort will be made to include as many as possible, to respect gender balance and to embrace a wide range of ages and abilities (with an exception of persons with severe dementia and/or mental or personality disorders).

With this purpose in the WP2 an Ethics/gender and Data Protection Compliance protocol will be carried on covering the different countries involved in the trials providing robust safeguards to ensure compliance with ethical standards and privacy protections and take account of the gender dimension.

It is expected that end-users in the project are active participants throughout the project and so, they will be designated WellCo pioneers. Every effort will be made by all project partners to develop a solution that can be used by as wide a range of people as possible.

4.1 Scope of the term "users"

In WellCo, different users will be considered.

- **Seniors / elderly people (properly called end-users)**: above 55 years old.
- **Family (Informal) Caregiver**: any relative, partner, friend or neighbour who has a significant personal relationship with, and provides a broad range of assistance for, an older person or an adult with a chronic or disabling condition. These individuals may be primary or secondary caregivers and live with, or separately from, the person receiving care.
- **Formal Caregiver**: a provider associated with a formal service system, whether a paid worker or a volunteer, as a provider associated with a formal service system, whether a paid worker or a volunteer.

Apart from users, **multidisciplinary professional teams will support the trials** and **WellCo** service, together **with informal caregivers** motivating and empowering the engagement of the users with the service.

4.2 Criteria to select users

The following criteria for defining the profile of the members of the sample, within the scope of each participating territory has been established: Test trials with urban/rural environment and age group, according to each territory.

a) In a rural environment (Castilla y León) it should be noted that the user for the test trials would be mostly:

- Aged over 65;
- Mainly living alone (with informal caregivers in some cases);

- With multiple pathologies and a certain level of fragility - mild (mainly over 60 in Barthel Score/Barthel ADL index):
- Able to follow independently healthy living guidelines: no cognitive impairment diagnosed (mainly over 24 scoring in Mini–Mental State Examination (MMSE) or Folstein test).

b) In an urban environment (Danish and Trento test trials), users will be:

- Mostly age between 55 and 65 in Denmark and over 65 in Trento;
- Healthy albeit with health-risk issues;
- No cognitive impairment or associated dependency conditions as judged by the formal caregiver, e.g. GP or municipal health professional;

4.2.1 Exclusion criteria

People with cognitive difficulties diagnosed who do not understand the nature, purpose and methodology of the study will be appropriately excluded from research.

Just in case there will be any participant with soft cognitive difficulties (e.g. some difficulties in understanding or writing-reading skills), the foreseen face-to-face interviews will require the involvement of the family caregiver.

Also blind or deaf people will not be included in the target population address by this project, due to this condition determine the inability and/or unfeasibility of following the WellCo recommendations, key aspect in the project development.

Further exclusion criteria may be defined in a future deliverable if necessary when technical issues will be determined, due to it will not be feasible to make the prototype WellCo coach suitable for people with all health conditions).

4.2.2 Contexts and environments

The geographical locations where trials will be performed are Denmark, Italy and Spain. Thus, end-users will be placed in rural and urban areas of three different European geographical contexts and environments:

- Trento (Italy), users involved will be elderly (>65) living along in urban environments.
- Castilla y León (Spain), users involved will be elderly mainly living alone (>65) in rural and isolated environments.
- Copenhagen area and the Southern Denmark area (Denmark), people involved will be early elderly (aged 55-65), in "good health status" and in urban area.

4.2.3 IT skills

In spite of WellCo solution will be user-friendly and adapted to the needs of elderly users, minimum skills of handling new technologies will be required to participate in the trials, due to interaction with the platform is the key to foster a behavioural change.

Anyway, training on the use of the platform will be offered to participants to a better response and motivation to be involved.

4.2.4 Motivation to participate

Some recommendations will be taken into consideration:

- Trial sites will try to choose for the sample those seniors with a rich calendar of activities, dynamic and active because they are more open to face challenges and changes. Nevertheless, the challenge is to motivate their participation in any case.
- It would be helpful to used WellCo dissemination resources, such as official website and social media, ppt presentations, flyers, press releases, videos or events to introduce the project.
- To facilitate participants the details of the contact person within the beneficiary party will be included in the informed consent.
- To be sure of the total comprehension of the information offer to participant, using plain language and avoiding technical terms of complex understanding.
- Make it clear that there will be no financial compensation, but to use as an incentive to participate the fact that after participating in the trials, they will keep the tablet/smartphone that we will offer them to access the WellCo platform.

5 Capacity of enrolment and risk mitigation

Note: The **Annex 1** included in this report, gives detailed information on the differences among countries in relation of the users´involvement.

5.1 Capacity of enrolment

The enrolment capacity in every pilot site is detailed below.

5.1.1 Denmark

From November 1st, 2014, all residents (from the age of 15) with a Danish CPR-number have been assigned a digital mailbox called Digital Post to receive electronic communication from public authorities such as SKAT and the municipality.

Residents are automatically assigned a Digital Post account unless they have applied for and been granted an exemption.

SDU has great experience with recruitment to scientific project (> 9000 participants) through Digital Post invitations and regular mail. Population size in the Southern Denmark area is 1.2 million.

In the Danish trial participants are also recruited from an intervention testing a model for prevention of chronic diseases (the TOF project). Participants will be verbally informed and handed a letter/leaflet, that provides the above information.

5.1.2 Italy

Participants will be recruited by FBK with an intermediate organization (Cooperativa Kaleidoscopio) from elderly living in the municipality of Trento.

The ability of FBK to count on the collaboration of Kaleidoscopio to implement the WellCo project is based on the following terms.

- FBK is a research center of excellence and, in particular, its High Impact Initiative Health and Well-being has a consolidate expertise in the field of technological innovation in healthcare systems. In twenty years of research, FBK has constructed solid network with local institutions and organizations, involving them in several Living Lab aimed at developing and testing new technological solutions.
- In particular, FBK has a long established relationship with Kaleidoscopio, one of the biggest social cooperative in Trentino that provides services for elderlies and other targets with relevant health and social issues.

FBK is going to pilot the WellCo project in city context with the constant support of Kaleidoscopio. Kaleidoscopio provides services for hundreds of elderlies in area of Trento, guaranteeing the possibility of recruit new users in the case that old users drop out of WellCo project. Moreover, FBK has solid relationships with local institutions (as the Autonomous

Province of Trento and local public health authority) and local associations and other social cooperatives. This network guarantees the possibility to recruit users and, more in general, to finalize WellCo project.

5.1.3 Spain

Participants will be recruited by GSS with an intermediate organization (Diputación Provincial de Ávila) from elderly living in the following municipalities: Navas del Marqués, Navalperal de Pinares, Hoyo de la Guija, Peguerinos, Hoyo de Pinares and El Tiemblo.

In fact, the recruitment activity for the co-design phase has already been developed counting on this collaboration.

The capacity of GSS to count on the collaboration of these Local Councils and Provincial Council to implement the WellCo project is based on the following terms:

- GSS is an autonomous organization under the Regional Ministry for Family and Equal Opportunities, being responsible for the design, planning and management of the entire Social Services System of Castilla y León.
- GSS leads the Social Services System in Castilla y León.
- The Social Service System in Castilla y León is integrated by 24 local governments (being nine provincial governments and fifteen municipalities >20,000 inhabitants) and private entities delivering social services and social non-profit organizations, including the ones where WellCo trials are going to be performed.

GSS is going to pilot the WellCo project in a specific rural context: several municipalities of Avila province.

Although there are enough population fitting the foreseen profile for WellCo project within these municipalities, in case of need, we could open the territorial context to other nearby municipalities up to the desire group of participants.

GSS has foreseen a replacement rate (15% of the sample size), which we consider that it is a usual drop-out in this kind of projects, so a waiting list will be managed for this purpose.

5.2 Risk mitigation

The potential risks that can merge in the project will be managed following the common methodology in the project:

The risk #11 foreseen in the project and included in the GA states that during the small R&D and exploratory user studies in early stages of the project or, especially during the longitudinal field trials, the project might experience large drop out of users.

The mitigation for this risk consists on involving a sufficiently large number of users so that the results are still valid.

The foreseen size of the sample would be increased at an agreed rate (around 10-15%), which is consider as a usual drop-out in this kind of projects, thus a waiting list will be managed for this purpose in order to reduce the mortality of the sample by reasons of abandonment and other adverse events.

Every trial site will manage a pool of candidate end-users, ready to compensate dropouts.

The representative on the End users & Ethics Board (EUEB) from every pilot site must guarantee to the End Users Coordinator, María Jesús Miján (GSS) that the size of the committed sample is achieved.

6 Sample size and enrolment procedures

6.1 Total sample size

WellCo will involve a minimum sample of 150 end-users composed by elderly people in need of guidance and care due to age related conditions, their relatives as well as multi-disciplinary experts that will be comprised since the very beginning until project end.

6.2 Enrolment by phases

End-users will be distributed in the different project phases as specified below:

- 1st Group of users (30 end-users) for requirements gathering, mock-up design and validation. This phase will last 12 months starting since the beginning of the project. At least 10 users will be involved per country, being 50% seniors and the other 50% formal and informal caregivers.

- 2nd Group of end-users (135 end-users) composed additional people than the one involved in the first group, to reach a total of 150 participants, that will participate in the test trials for integration and validation of the three incremental prototypes envisaged in the project. Test trials will have a duration of 3 months after each prototype delivery, so feedback from the users could be include in the next prototype. After the final prototype delivery next phase will start.

- 3rd Group of end-users, composed by those engaged in long-term longitudinal studies after the delivery of the final prototype[1], and that will be used to measure the level of achievement of the objectives of the project.

Disclaimer: Note that only 50% of the 1st group are seniors/elderly properly considered end-uses. So the total sample size is reached throught 15 from the 1st group + 135 from the 2nd group.

Despite there is a commitment of engagement of 150 participants, there will be a gradual involvement, which is under discussion.

The current approach is shown below:

[1] The consortium is, at this moment, deciding if there will be necessary to include in this 3rd group those participants from the interaction with Prototype 2 (instead of the final prototype) in order to fulfil the commitment of 6 months of interaction with the platform, taking into account that the delivery of final version is schedule for M30 and the end of the project is M36.

Phase	Activity	Recruitment per pilot site	Subtotal	TOTAL
Phase 1	Requirements gathering prior to test trials, until validation of the clickable mockup	At least 10 participants among seniors (5), formal and informal caregivers	30, being 15 seniors	15 seniors
Phase 2	Testing and validation of Prototype #1	At least 5 additional seniors to the ones engaged in Phase 1	15	15 + 15 =30 seniors
Phase 3	Testing and validation of Prototype #2	At least 15 additional seniors to the ones engaged in Phase 2	45	45 + 30 = 75 seniors
Phase 4	Testing and validation of Prototype #3	At least 25 additional seniors to the ones engaged in Phase 3	75	75 + 75 = 150 seniors

Table 3.- Enrolment by phases

6.3 Engagement commitment and drop-out

Participants will be asked in the recruitment process to commit their engagement in the trials for at least six months, considering this term as the minimum timing for users being able to face successful behavioural change in at least one aspect of their life.

Their involvement is free and they can refuse to continue their participation at any moment.

7 Involvement of 1 st Group of users: co-design

Note: The **Annex 2** included in this report, gives detailed information and some photos of the performance of the first activities unde co-design.

7.1 Enrolment

7.1.1 Purpose:

The purpose of the enrolment of the 1st group of end-users is to have a group of users able to help co-design the requirements gathering, the mock-up design and the mock-up validation.

7.1.2 Size

The commitment was to enrol 10 participants per country, 30 in total. Finally, we counted on 31 people. Thus, the commitment of engaging 10 users per country has been fulfil, including formal and informal caregivers.

7.1.3 Criteria

Participants were required to have a smartphone, have minimum computer literacy, and have familiarity with instant messaging apps.

7.1.4 Schedule:

The enrolment of the 1st group of end-users for requirements gathering, mock-up design and validation, has been already successfully concluded. It was started by the end of February and concluded by the end of March 2018.

7.1.5 Enrolment process

- In Denmark, the Digital Post invitations mechanism already explained and the regular mail to those being participants in the TOF project as well, has been followed
- In Italy, a nearby seniors centre has been contacted to provide collaboration through an intermediate organization (Cooperativa Kaleidoscopio).
- In Spain, the seniors were reached with the collaboration of the social workers from the municipality and the province where trials will take place.

7.1.6 KoM

After the selection of the users, a kick-off meeting has been organized in each country with the participation of researchers involved in WellCo, professionals from some organizations acting as collaborators (previously mentioned)-and the participants.

The meeting has been used to:

- Explain the main aims of WellCo and, in particular, the main characteristics of WellCo platform.
- Explain the activities of the co-design phase (including probes, focus groups and interviews).
- Provide probes and diaries for information gathering (e.g. installing WhatsApp, explaining how use it to share information with partners).

7.2 Activities

Task 2.2 and 2.3 are key constituents of the WellCo co-design process. Both tasks are closely coupled and complementary. A document was elaborated to describe the proposed plan-of-approach for a combined approach to both tasks, describing the activities, planning, user involvement and responsibilities.

- Deadline Task 2.2: M7 June 2018
- Deadline Task 2.3: M10 September 2018

Note: The methodology followed for the requirements gathering, will be informed in detail in deliverable D2.3 End Users' requirements. The methodology followed for the mock-up design and validation will be described in detail in deliverable D2.4. WellCo Design Document and Mock-up. The summary may be founded below.

7.2.1 Partners involved

The partners involved are CON, HIB, FBK, SDU, GSS, leading GSS due to its role of WP2 leader.

7.2.2 Aims

Task 2.2 aims at defining the requirements in the following key areas:

- Requirements for monitoring;
- Requirements for an intuitive and engaging interaction through the virtual coach;
- Behaviour change requirements and SMART (Specific, Measurable, Attainable, Realistic and Timely) objectives.

Task 2.3 aims to design the WellCo interactive concept and consists of:

- Defining the functional and non-functional requirements
- Development of personas, scenarios, user journeys
- Designing wireframes and mock-ups.

7.2.3 Methodology

The co-design process is iterative and by nature actively involves the end users. The input and feedback from end-users in each phase guides the WellCo researchers and designers. For this reason, the two tasks are combined first and their shared set of content is divided into 4 phases.

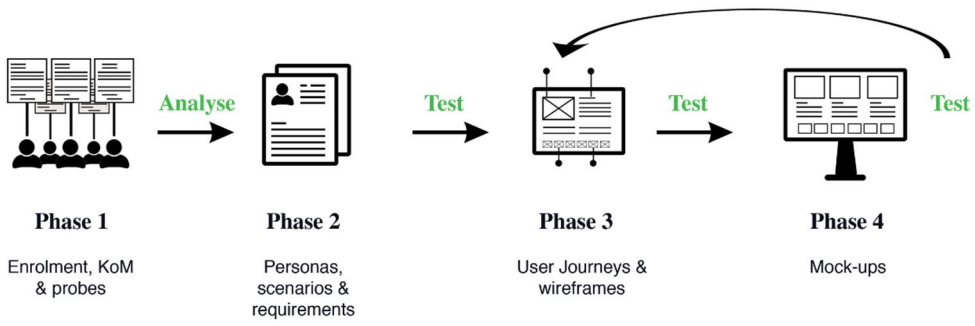


Figure 3.- Phases in T2.2 and T2.3

1. Phase 1 aims to understand the user needs through cultural probes and interviews.
2. Phase 2 aims to define and validate personas, scenarios and requirements.
3. Phase 3 aims to define and validate user journeys and wireframes.
4. Phase 4 aims to define and validate mock-ups.

7.2.4 Phase 1

The overall description of phase 1 is as follows:

- Step 1: The recruitment was made and the project was introduced to the participants in a KoM per country.
- Step 2: Then, participants were followed for 7 days autonomously and individually cultural probes methodology described below.
- Step 3: An individual interview was carried out where individual routines, needs and challenges were discussed in more detail.
- Step 4: An individual interview was carried out to ask participants about their preferences in relation to functional and technical requirements. End users has been asked about their preferences in terms in order to guide the functional and technical requirements for WellCo platform, performing a guided interview (by means of telephone interview, face-to-face interview, or online questionnaire).
- Step 5: With all these information a list of user requirements has been developed at the current moment. If needed, the analysis of literature review will be made.

Cultural probes

Cultural Probes was developed by Gaver, Dunne and Pacenti in 1999.

Cultural probes (or design probes) is a technique used to inspire ideas in a design process. It serves as a means of gathering inspirational data about people's lives, values and thoughts. The probes are small packages that can include any sort of elements (like a diary and others) along with evocative tasks, which are given to participants to allow them to record specific events, feelings or interactions. The aim is to elicit inspirational responses from people, in order to understand their culture, thoughts and values better, and thus stimulate designer's imaginations. Probes is one of the prominent approaches in the practice of co-designing.

The so- called cultural probes methodology has been follow in order to gather information in relation of Interests and lifestyle from the first round of users, including seniors, informal and formal caregivers.

Cultural probes (including WhatsApp and a diary) has been used to gather information in the field. Participants will receive a 'cultural probe package'. Using the package, the participants have collect data on their routines and needs for a period of 7 days.

The main goal of cultural probes is to sensitize the participants, in preparation of the interviews.

Through WhatsApp, participants sent to a dedicated phone number provided by each partner: notes, photos, videos, audios, with a frequency of 5 times a day to provide input on a particular topic/thought, including:

- Macro area (physical activity, nutrition, entertainment, health status, peer interactions and health).
- Brief description of activity (where and what)
- Emotions (also emoticons are well accepted)
- What could I do with the help of WellCo platform?

WhatsApp were also used to:

- Provide information to users (if needed)
- Remind them to share their thoughts and experiences
- Ask for clarifications

In individual interviews, the individual routines, needs and challenges were discussed in more detail.

After the interviews, the local partners will analyse the data, summarizing general findings, and suggesting user requirements for the WellCo Platform, using the templates provided by CON and agreed between partnerships.

Intermediate products in phase 1

Product	Responsible partner	Status
Recruitment criteria / protocol	GSS	Done
Diary format	CON	Done
Interview template	CON	Done
User research template (excel)	CON	Done
User research summary template	CON	Done
Filled-in user research templates	FBK/GSS/SDU	Done
Filled-in summary templates	FBK/GSS/SDU	Done
List of suggested user requirements based on data	FBK/GSS/SDU	Done

Table 4.- Intermediate Products phase 1

7.2.5 Phase 2

The overall description of phase 2 is as follows:

- Step 1: Analysis of the input from the cultural probes and interviews are used for the writing of the requirements and creating "personas".
- Step 2: Then, the scenarios can be written, based on the requirements and the personas.
- Step 3: Validation. The requirements, personas and scenarios will be validated by the multidisciplinary teams from every pilot site, mainly by those who were analysing and reporting after cultural probes and the two mentioned individual interviews in phase 1, in order to find out if the personas and scenarios properly reflect the target user group and if the requirements fits their needs.

Personas

Personas are descriptions of fictional users and give insight in who the users are, their motivation to use the product and how they would want to use the product. The personas guide

the designers when designing the WellCo application - the personas are tangible fictional users of the future system.

Scenarios

The scenarios describe when, how and where the personas use the product. The scenarios provide a better understanding of the flow of interaction the users will have with the product.

Intermediate products in phase 2

Products to deliver based on the description of phase 2:

Product	Responsible partner	Status
End-user requirements list	FBK	Done
Report of personas	CON	In progress
Report of scenarios	CON	In progress
Template for focus groups	CON	In progress
Filled in templates of focus groups with professionals from the pilot sites	FBK/GSS/SDU	To be done
Updated personas, scenarios, requirements based on focus-group validation	CON	To be done
Findings + User requirements report (D2.3)	FBK	To be done

Table 5.- Intermediate Products in phase 2

7.2.6 Phase 3

The overall description of phase 3 is as follows:

- Step 1: Based on the personas, scenarios and requirements, the wireframes and user journeys are defined.
- Step 2: The user journeys and wireframes will be validated in-depth with the end users in individual interview sessions: 10 participants in each country (with an approximate ratio of 5 primary end-users, 3 family members, 2 professionals). An end-user and family member can together participate in a single interview.

Wireframes

The wireframes are a sketch-level design of the application. At this stage, on purpose, we will not design the application at pixel level - since we need user feedback on the concept as a whole rather than on specific visuals. The wireframes are used to validate design directions, before choosing a particular design direction.

User journeys

User journeys describe at a high level of detail exactly what phases the WellCo users will go through when using the WellCo platform. The journeys show the interaction (touch points) and experience (emotions) the user has with the product. User journeys enable us to view the WellCo concept at a high level, and understand the product value, user experience and design challenges.

Intermediate products in phase 3

Products to deliver based on the description of phase 3:

Product	Responsible partner	Status
Wireframes report	CON	To be done
User journey report	CON	To be done
Interview template/guidelines	CON	To be done
Filled in interview templates	FBK/GSS/SDU	To be done

Table 6.- Intermediate Products in Phase 3

7.2.7 Phase 4

The overall description of phase 3 is as follows:

- Step 1: Based on the wireframes and the user feedback on the wireframes, the mock-ups will be designed.
- Step 2: The mock-ups will be validated in-depth with the end users in **mock-up interviews**: 10 participants in each country (with an approximate ratio of 5 primary end-users, 3 family members, 2 professionals).

Mock-ups

The mock-ups are detailed clickable graphical designs of the user interfaces (e.g. in PowerPoint), and are used to validate in-depth the design, flow and interaction of the application.

Intermediate products in phase 4

Products to deliver based on the description of phase 4:

Product	Responsible partner	Status
Clickable mockup	CON	To be done
Template for mockup interview	CON	To be done
Filled in templates for mockup interviews	FBK/GSS/SDU	To be done
Adapted clickable mockup based on mockup interviews	CON	To be done

WellCo Design document (D2.4)	CON	To be done
First part of Pilots Validations Report (D2.5) based on filled in mockup-interview templates	FBK/GSS/SDU	To be done

Table 7.- Intermediate Products in phase 4

8 Involvement of 2nd & 3rd Group of users: test trials

8.1 Enrolment

8.1.1 Purpose:

The purpose of the enrolment of the 2nd and 3rd group of end-users is to test the WellCo solution in different versions of an incremental prototype.

8.1.2 Size

The commitment was to enrol 135 end-users, additionally to the 15 seniors end-users already involved in the 1st group. That totals 150 participants throughout the entire project,

8.1.3 Criteria

Participants are not required to have a smartphone[2] or tablet but desirable. The needed budget has been allocated to be able to provide smartphone/tablet to those users that do not have. By contrast, having basic computer literacy is needed.

8.1.4 Schedule:

The enrolment of the 2nd group of end-users will start one month before the prototype 1 is ready for delivery, at the latest, that is, M14.

Prototypes delivery	Information regarding the prototype
D3.3 : Prototype 1 [M15]	Delivery of first integrated version of WellCo prototype including basic functionalities like initial usable interfaces, basic profile, database, social well-being and easy integration of health monitoring (functionalities included could be modified based on the requirements and use cases). It will also include a user manual of the platform.
D3.4 : Prototype 2 [M22]	Second integrated version of incremental WellCo prototype, including the improvements on the first prototype based on the users' feedback, and adding new functionalities that are initially envisaged as the final user assessment evaluation, initial WellCo Coach, social network and risk awareness tool.
D3.5 : Final Prototype [M30]	Final WellCo prototype delivery including the improvements on Prototype 2 based on the feedback from the users' and integration of the final functionalities, mainly the Lifestyle Coach recommendations.

Table 8.- Prototype Scheduling

[2] A smartphone was needed in the 1st group of users as well as familiarity with instant messaging apps.

8.1.5 Enrolment process

As mentioned before, the general outlined procedure includes ordinary mail to the potential participant informing:

a) His/her selection as a participant in the project;

b) A summary of the information relating to the project drafted to ensure its understanding and motivate its participation;

c) Selection procedure carried out;

d) Main milestones of the project and the expected duration of their participation;

e) Data relating to the appointment with their professional of reference, with the purpose of going into details of the project and to sign the informed consent regarding their participation.

The specific conditions for the enrolment process in every trial site are as follows:

- In Denmark, the Digital Post invitations mechanism already explained and the regular mail to those being participants in the TOF project as well, has been followed
- In Italy, a nearby senior's centre has been contacted to provide collaboration through an intermediate organization (Cooperativa Kaleidoscopio).
- In Spain, the seniors were reached with the collaboration of the social workers from the municipality and the province where trials will take place.

8.2 Activities

8.2.1 Ex-ante evaluation and ex-post evaluation

In order to know the status of the users involved in test trials, prior to interact with WellCo, an ex-ante evaluation will be made.

The same parameters will be used in the ex-post evaluation to determine their status after participating in the trials, in order to compare the results obtained.

The details about the methodology of these evaluations will be discuss in task 2.4 and described in the correspondent deliverables regarding Pilots validation (D2.5) and Validation and success (D2.6).

8.2.2 Use and feedback of the WellCo solution: use of the incremental prototypes

The following chart illustrates how users will be involved.

	2018				2019												2020										
	M10	M11	M12	M13	M14	M15	M16	M17	M18	M19	M20	M21	M22	M23	M24	M25	M26	M27	M28	M29	M30	M31	M32	M33	M34	M35	M36
Delivery of Mock-up (DMU)	DMU																										
Testing of Mock-up																											
Feedback Report of Mock-up	R																										
Delivery of Prototype 1						DP1																					
Testing of Prototype 1																											
Feedback Report of Prototype 1									R																		
Delivery of Prototype 2													DP2														
Testing of Prototype 2																											
Feedback Report of Prototype 2																R											
Delivery of Prototype 3																					DP3						
Testing of Prototype 3																											
Feedback Report of Prototype 3																											R

Legend of the chart.

The periods in ___ are the scheduled delivery of the incremental prototypes, being

DMU: DELIVERY OF MOCK-UP (M10)

DP1: DELIVERY OF PROTOTYPE 1 (M15)

DP2: DELIVERY OF PROTOTYPE 2 (M22)

DP3: DELIVERY OF PROTOTYPE 3 (M30)

The periods in ___ are the testing periods for end-users to interact with every incremental prototype, just ending when the following prototype is delivered.

TESTING PERIOD OF PROTOTYPE 1: from M15 or M16 (if delivery was the last day of the month) until M22.

TESTING PERIOD OF PROTOTYPE 2: from M22 or M23 (if delivery was the last day of the month) until M30.

TESTING PERIOD OF PROTOTYPE 3: from M30 or M31 (if delivery was the last day of the month) until M36.

Pilots Validation Report, named as **"R"**, includes user´s feedback after testing mock-up and prototypes containing key information to guide WP3, WP4 and WP5 development.

Report on user´s feedback on mock-up: Delivery on M10 *(In the project was scheduled in M12, but due to the shorter period of testing needed, it will be M10)*

Report on user´s feedback on Prototype 1: Delivery on M18

Report on user´s feedback on Prototype 2: Delivery on M25
Report on user´s feedback on Prototype 3 (Validation and Success Final Report): Delivery on M36

8.2.3 Continuous monitoring through devices and WellCo platform:

Users will be involved in activities of their own monitoring through devices and the functionalities that will be developed in WellCo.

In terms of devices, the technical partners are at this moment deciding the wearable device (bracelet) that is going to be offered to participants in test trials, as it was budgeted in the proposal, with the purpose of monitoring their physical activity that will feed the WellCo platform.

Despite the wearable devices will be all bought and distributed to the pilot sites to be available when required, they will not be used by the participants prior to sign their informed consents regarding their involvement in the test trials. Once the final decision on the device model will be taken, the process to be available for the seniors' use will start.

In terms of monitoring through the functionalities that will be developed in WellCo, the information is detailed below.

Monitoring tasks within WP4	How users are going to be monitored
T4.2: Physical activity recognition. [M12-M17]	This task will use data mining algorithms developed in area of activity recognition in order to understand the type of physical activity the elder is engaged in. Specific activities could be types of exercise, or activities of daily living such as personal hygiene activities, self-feeding, dressing and so on. A particular focus will be put on unobtrusive monitoring of these activity, thus there will be no fixed and dedicated sensing infrastructure. Rather, activity monitoring will function in an opportunistic manner, where data available from any sensor, either wearable or in the environment, will be mined as much as possible in order to extract the relevant features that can be used to understand the activity of the elder.
T4.3: Nutrition Monitoring [M5-M19]	In this task, JSI will develop a module for monitoring the user's nutrition. A wristband equipped with physiological sensors and the smartphone, which will provide sensor data as input to machine-learning models, will be used. These models will detect nutrition-related activities such as eating, food preparation and grocery shopping. JSI and FBK will collaborate on their development as activity recognition is also needed in T4.3. Additional models will be built that will attempt to infer the type of meal (e.g., snack, sit-down meal) and the quantity of food from the hand motion, duration and other cues (such as the location detected with the phone GPS). For developing the machine-learning models, labelled training data from natural settings will be collected by JSI and also requested to the test-trials partners. In addition, for better performance and personalization of the machine-learning models, data labelled by the users themselves will be utilized. The labelled users' data will be gathered with a minimally obtrusive approach, i.e., by asking the users only when the machine-learning models are uncertain (active learning).

T4.4: Physical Health State Monitoring [M5-M15]	This task will operationalize all the vital signs and behavioural markers, along the individual state model as defined in T4.1 (Except physical activity and nutrition, as operationalized in T.4.2. and 4.3. and except mental state as in T4.5.). Therefore, the goal of this task is to identify the tools and techniques (or develop ones, whenever applicable) for accurate, yet minimally intrusive, embedded physical state assessment, suitable for a longitudinal monitoring, feeding the virtual coaching service with the data. Theoretical foundations will be developed based on current theories of ambulatory assessment. WellCo employs advanced sensors for state assessment including a) physiological monitoring of galvanic skin response (GSR, indicator of arousal) and pulse rate and its variability, embedded in the smartphone itself or in a watch-like sensor; b) the individual's length and quality of sleep.
Mental Health State Assessment [M6-M19]	This task will complement T4.4 by focusing on the mental health state assessment of the individual that will underpin the project focus on the social and interactional aspects of daily life as most relevant in the health state and health risks assessment. Therefore, the goal of this task is to identify the tools and techniques (or develop ones, whenever applicable) for accurate, yet minimally intrusive, embedded mental state assessment, suitable for a longitudinal monitoring, feeding the virtual coaching service with the data. Theoretical foundations will be developed based on current theories of ambulatory assessment. WellCo employs advanced sensors for state assessment including a) stress and anxiety level assessment b) depression assessment and c) the individual's social interaction rate and for each social interaction - speech monitoring for volume, pitch, pace and fluency (not a content).

Table 9.- Monitoring through devices in WP4

Monitoring tasks within WP5	How users are going to be monitored
T5.1:Affective computing – Sentiment analysis via visual features [M10-M23]	Facial and bodily Expressions are widely used and accepted mode in emotion detection as it is activated immediately by the experienced affect and is one of the very successful modes in understanding the mental state. The goal of this task is to perform automatic facial expression and body gesture recognition. Deep learning based techniques will be used taking into account its advantages such as the easiness of training and the less time-consuming for features engineering. The video and images will be obtained (when allowed) by the camera of the devices during the users interaction with the WellCo Virtual Coach. The output of this task together with T5.2 will provide the emotional assessment of the user feeding the Dynamic modelling of the user T5.3 and the WellCo Life Coach T5.5..

T5.2: Affective computing – Speech emotion analysis [M12-M23]	In this task a module for speech emotion analysis, which will be utilized by the WellCo virtual coach in T3.2, will be developed. During the virtual coaching, the user will be asked to answer questions verbally. Some users will be asked to provide labelled data for speech emotion analysis – they will label their emotion when verbally interacting with the WellCo prototype. The smartphone will record the user's answers, and the recorded speech will be input to machine-learning models for affective analysis. The machine-learning models will use sentiment and prosody analysis. For the sentiment analysis, the input analyser from T3.3 will be utilized. For the prosody-analysis, existing state-of-the-art prosody-based feature extractors will be used (e.g., OpenSmile) in combination with deep learning. The outputs of the sentiment and prosody analysis will be combined in a multi-layered machine-learning architecture. For developing the machine-learning models, labelled data will be needed. The initial machine-learning models will be built using existing databases (e.g., HUMAINE database) of recorded utterances which are labelled with the emotion expressed in the utterance. In addition, new data from typical users will be recorded and labelled during the project by JSI, MONSENSO and HIB to improve the performance and adapt to the devices and scenarios in the project.

Table 10.- Monitoring through devices in WP5

8.2.4 Life Plan determination

The end-users of the test trials will participate in a process in order to gather the information needed to feed their End-Users 'individual Life Plan.

This process will be made by inferring the information from the questions answered by the user and their interaction with the WellCo platform.

After the process of collecting information, as an outcome (a product), the individual report will be delivered and validated by the user. Validation means that the report is truly defining his/her goals in life, expectancies and aims in relation to his/her life and quality of life.

Then, the individual final goals, desires and life expectations gathered will be used to adapt the WellCo recommendations to everyone´s desires and taking into account their territorial contexts and the available resources on them.

In summary, the information gathering related to everyone´s life expectations will be fed by means of the proper user interaction with WellCo (through machine learning technics), being inputs for the WellCo recommender tool.

This task it was not scheduled in the proposal and it will be decided due to the technical reasons, in WP5.The calendar and other detailed information about the Life Plan process will be included in the proper deliverables of WP5, not being determined at this stage.

8.2.5 Final validation

The previous results together with Observer-Based Outcomes (Obs-BO) from end-users' relatives as well as the Expert-Related Outcomes (Exp-RO) and clinical evidence provided by the multidisciplinary team of experts, will be delivered at project end in D2.6 Validation and Success Final Report in order to determine the success and impact of the project.

The details about the methodology of this final validation will be discuss in task 2.4 and described in the correspondent deliverable D2.6. Validation and Success Report.

8.3 Products

The following outputs (products) will be obtained as results of the test trials process.

Deliverable Number: D2.5
Deliverable Title: Pilots Validation Report
Lead beneficiary: GSS
Due date: M12, M18, M25
Dissemination level: Confidential
Objective: The validation by users starts after the delivery of the first mock-up (M10) and will continue with the iterative prototypes, they will be tested and users' feedback will be reflected in the different releases of D2.5. User's feedback from the first prototype and increased functionalities will be included in the second prototype; the same process will be followed for third prototype (including the whole functionalities and modules) with the aim to have a validated and co-designed solution for the final prototype. Final WellCo prototype will include the improvements on Prototype 2 based on the feedback from the users' and integration of the final functionalities, mainly the Lifestyle Coach recommendations.
Content: This deliverable includes user´s feedback after testing mock-up and prototypes containing key information to guide WP3, WP4 and WP5 development. Questions regarding user´s requirements on WellCo features and functionalities, user acceptance (usability), as well as willingness to pay and how they would like the solution to be offered commercially, will be asked to the participants.

Table 11.- Deliverable D2.5

Deliverable Number: D2.6
Deliverable Title: Validation and Success Final Report

Lead beneficiary: GSS
Due date: M36
Dissemination level: Confidential
Objective: The previous results together with Observer-Based Outcomes (Obs-BO) from end-users' relatives as well as the Expert-Related Outcomes (Exp-RO) and clinical evidence provided by the multidisciplinary team of experts, will be delivered at project end in D2.6 Validation and Success Final Report in order to determine the success and impact of the project.
Content: This deliverable will include validation of the final prototype and impact of the project under the Ex-ante/Ex-post evaluation based on the KPIs and measures of success.

Table 12.- Deliverable D2.6

9 Conclusions

The different beneficiaries of the project have contributed to the elaboration of this deliverable, based on the agreements taken in a consensual manner both in general meetings and in specific WP2 meetings organized for that purpose.

The procedures foreseen for the resolution of possible risks in relation to the involvement of the users have been mitigated.

The objective proposed for this deliverable, described in the introduction of the document, has been fulfilled until now and therefore the result is adjusted to the expectation.

In addition, the process of reviewing its contents by all partners and officially by the named reviewers, HIB and JSI has been completed.

Annex 1: Summary of the protocol by trial site

SDU	
END-USERS´ PROFILE:	Copenhagen area and the Southern Denmark area (Denmark), people involved will be early elderly (aged 55-65), in "good status" and in urban area
HOW SDU IS GOING TO MANAGE THEIR INVOLVEMENT AND GUARANTIEE ENOUGH END-USERS AT ANY STAGE	The University of Southern Denmark will recruit participants. The recruitment activity for the co-design phase has already been developed.
RISK MITIGATION ON CAPACITY FOR INTERMEDIARIES ENGAGEMENT AND SAMPLE SIZE	From November 1st, 2014, all residents (from the age of 15) with a Danish CPR-number has been assigned a digital mailbox called Digital Post to receive electronic communication from public authorities such as SKAT and the municipality. Residents are automatically assigned a Digital Post account unless they have applied for and been granted an exemption. SDU has great experience with recruitment to scientific project (> 9000 participants) through Digital Post invitations and regular mail. Population size in the Southern Denmark area is 1.2 million.
HOW SDU IS GOING TO ENGAGE	For the trials and pilot tests - the WellCo project in Denmark needs to be submitted and proved to either the "National Committee on Health Research Ethics" (http://www.nvk.dk/english) or Danish Data Protection Agency (https://www.datatilsynet.dk/english/the-danish-data-protection-agency/introduction-to-the-danish-data-protection-agency/). Copenhagen University (KU) will apply as the data controller and SDU will be data processor. After approval from National Ethics Committee or the Data protection agency, SDU will create invitations to the specific target group (55-65) through Digital post or recruit manually by sending letters directly to people in the target group and through local advertising and awareness for the WellCo Project. SDU will try to get a 50/50 sex ratio in the enrollment. We expect 15% dropout (higher during prototype testing) and SDU will continuously recruitment to cover the dropout.

Table 13.- Protocol for SDU

FBK	
END-USERS´ PROFILE:	**Trentino (Italy),** users involved in test trials will be **elderly (>65)** mainly **in the city of Trento.**
HOW FBK IS GOING TO MANAGE THEIR INVOLVEMENT AND GUARANTIEE ENOUGH END-USERS AT ANY STAGE	Participants will be recruited by FBK with an intermediate organization (Cooperativa Kaleidoscopio) from elderly living in the municipality of Trento.
RISK MITIGATION ON CAPACITY FOR INTERMEDIARIES ENGAGEMENT	The ability of FBK to count on the collaboration of Kaleidoscopio to implement the WellCo project is based on the following terms. FBK is a research center of excellence and, in particular, its High Impact Initiative Health and Well-being has a consolidate expertise in the field of technological innovation in healthcare systems. In twenty years of research, FBK has constructed solid network with local institutions and organizations, involving them in several Living Lab aimed at developing and testing new technological solutions. In particular, FBK has a long established relationship with Kaleidoscopio, one of the biggest social cooperative in Trentino that provides services for elderlies and other targets with relevant health and social issues.
RISK MITIGATION ON SAMPLE SIZE AT ANY STAGE	We are going to pilot the WellCo project in city context with the constant support of Kaleidoscopio. Kaleidoscopio provides services for hundreds of elderlies in area of Trento, guaranteeing the possibility of recruit new users in the case that old users drop out WellCo project. Moreover, FBK has solid relationships with local institutions (as the Autonomous Province of Trento and local public health authority) and local associations and other social cooperatives. This network guarantees the possibility to recruit users and, more in general, to finalize WellCo project.

Table 14.- Protocol for FBK

<table>
<tr><th colspan="2">GSS</th></tr>
<tr><td>END-USERS´ PROFILE:</td><td>Castilla y León (Spain), users involved in test trials will be elderly (>65) living in rural environments, mainly living alone</td></tr>
<tr><td>HOW GSS IS GOING TO MANAGE THEIR INVOLVEMENT AND GUARANTIEE ENOUGH END-USERS AT ANY STAGE</td><td>Participants will be recruited by GSS with an intermediate organization (Diputación Provincial de Ávila) from elderly living in the following municipalities: Navas del Marqués, Navalperal de Pinares, Hoyo de la Guija, Peguerinos, Hoyo de Pinares and El Tiemblo.
In fact, the recruitment activity for the co-design phase has already been developed counting on this collaboration.</td></tr>
<tr><td>RISK MITIGATION ON CAPACITY FOR INTERMEDIARIES ENGAGEMENT</td><td>The ability of GSS to count on the collaboration of these Local Councils and Provincial Council to implement the WellCo project is is based on the following terms:
GSS is an autonomous organization under the Regional Ministry for Family and Equal Opportunities, being responsible for the design, planning and management of the entire Social Services System of Castilla y León.
- GSS leads the Social Services System in Castilla y León.
- The Social Service System in Castilla y León is integrated by 24 local governments (being 9 provincial +15 municipalities >20,000 inhabitants) and private entities delivering social services and social non-profit organizations, including the ones where WellCo trials are going to be performed.</td></tr>
<tr><td>RISK MITIGATION ON SAMPLE SIZE AT ANY STAGE</td><td>GSS is going to pilot the WellCo project in a specific rural context: several municipalities of Avila province.
Although there are enough population fitting the foreseen profile for WellCo project within these municipalities, in case of need, we could open the territorial context to other nearby municipalities up to the desire group of participants.
GSS has foreseen a replacement rate of the 15%, which we consider that it is a usual dropout in this kind of projects, so a waiting list will be managed for this purpose.</td></tr>
<tr><td>HOW GSS IS GOING TO ENGAGE MULTIDISCIPLINARY PROFESSIONAL TEAMS</td><td>Multidisciplinary professional team in Castilla y León will support the trials and WellCo service, together with informal caregivers motivating and empowering the engagement of the users with the service.
The multidisciplinary professional team will include.
<table><tr><td>ENTITY</td><td>PROFESSIONAL</td><td>EDUCATIONAL BACKGROUND</td><td>Know-how and Possible contributions</td></tr></table></td></tr>
</table>

GSS			
GSS	Benedicto Caminero Pérez	Arquitecture	Managing ageing care
GSS	Mª Jesús Miján Serrano	History and Geography	Managing ageing care
GSS	José Miguel Sánchez Redondo	Social Psychology	Personalized and usable interfaces, concept development, requirements gathering, user statement, behaviour change
GSS	Carmen Vázquez Pino	Clinical psychology	Sociology and clinical research, behaviour change
GSS	Rosa Fraile	Medicine	Ethics, Life Plan
FASTCYL	Juan Miguel Calvo Marcos	Sociology	User state assessment models and scales
FASTCYL	Margarita González Fdez.	Economist	Data protection issues, dissemination
University of Valladolid (external collaborators)	José Luis Izquieta Etulain Juan Mª Prieto Lobato Carmen Rodríguez Sumaza Pablo de la Rosa Gimeno	Professor of University.	Sociology research, behaviour change, user statement
GSS counts on the collaboration of **Senior Citizens Board of the Social Services Council of Castilla y León,** which is an advisory body and participation in the elderly care of community, comprising more than 30 representatives of Alzheimer's family associations, retirees and pensioners from the federations of associations of the elderly, Federation of Parkinson, several associations of residential centres for the elderly, Spanish Committee of Representatives of Persons with Disabilities, councils, municipalities and other local administrations.			

Table 15.- Protocol for GSS

Annex 2 – Report of cultural probes

Use of “cultural probes” as a co-design methodology

The leaders of Tasks T2.2. (FBK) and T2.3. (CON), propose the use of the methodology called "cultural probe" to gather information from participants. Cultural Probes was developed by Gaver, Dunne and Pacenti in 1999 and can be used for idea generation and inspiration in a design process. We have chosen this technique because it helps to make the requirements in a more attractive way for the participants.

Cultural probes (or design probes) is a technique used to inspire ideas in a design process. It serves as a means of gathering inspirational data about people's lives, values and thoughts. The aim is to elicit inspirational responses from people, in order to understand their culture, thoughts and values better, and thus stimulate designer's imaginations.

The use of cultural probes within WellCo is based on a Diary/Logbook designed specifically and structured in 7 days, including one activity or set of questions to be answered every day.

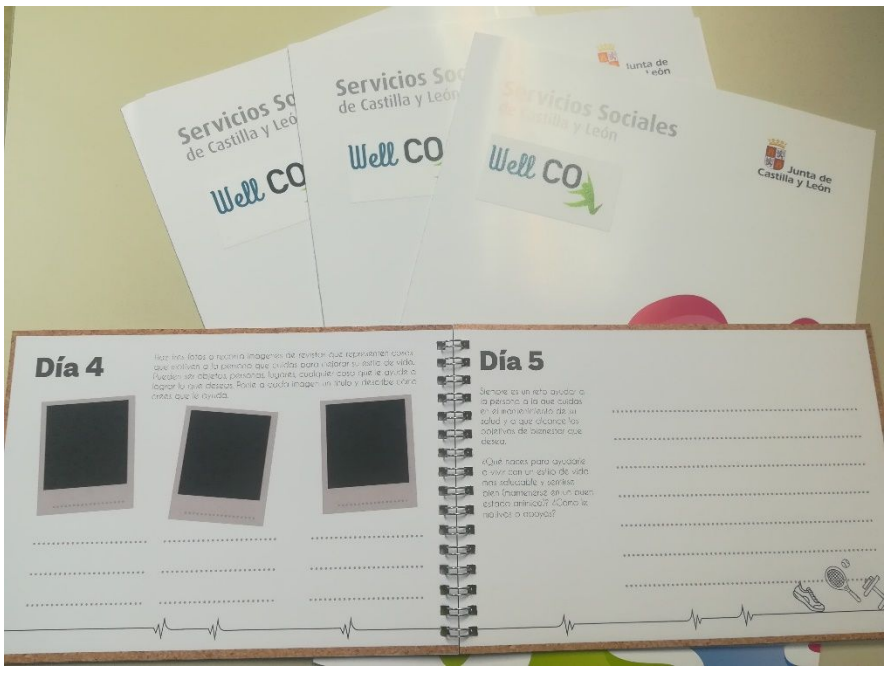


Figure 4.- Picture of the Diary/Logbook

Also during these 7 days, the participants will send us WhatsApp messages, in a desirable ratio of 5 times a day. Through WhatsApp, end-users will be able to send to a dedicated phone number provided by each partner: notes, photos, videos, audios, to provide input on a particular topic/thought.

The aim it is to collect data on their routines and needs for a period of 7 days.

A mobile phone in every pilot site has been devoted to receive these messages. In order to get the mobile phone number of every kind of participants (users, formal and informal caregivers, 3 specific files were designed.

Beneficiario del proyecto WellCO:

Junta de Castilla y León

Servicios Sociales de Castilla y León

Beneficiario en calidad de tercera parte vinculada

tutelas

DATOS DE CONTACTO DE PARTICIPANTES DE CASTILLA Y LEÓN EN FASE DE CO-DISEÑO DEL PROYECTO WELLCO

TIPO DE PARTICIPANTES: CUIDADORES PROFESIONALES

	NOMBRE	EDAD	TELÉFONO	CORREO ELECTRÓNICO
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

This Project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 769765

Well CO

Figure 5.- Model of a contact details form.

Current tasks performance

On January 2018 the WellCo project has launched the **co-design phase**, in which the participants, both seniors (end users) as well as informal caregivers (family members) and formal caregivers (professionals) have contributed with interesting contributions.

In January 2018, the development of this phase was designed, being carried during February and March.

During these months we have developed Task 2.2 (WellCo requirements gathering) and T2.3 (WellCo co-design and concept development), which are key constituents of the WellCo co-design process.

Thus, the leading entities for these tasks (**FBK** and **CON)** have merge all necessary actions in a single protocol. It describes the proposed plan-of-approach for both tasks, describing the activities, planning and user involvement.

In the phase of **requirements gathering,** user centred design and living lab approaches has been followed with representative groups of target users in order to have accurate user requirements that answer to realistic user needs;

However, groups with users' relatives and experts belonging to the multi-disciplinary team have been also created. In particular, experts from the multidisciplinary team provide a solid theoretical understanding of the psychosocial and socio-economic factors that underpin effective behaviour changes and that are the basis over which user requirements are set.

For each trial site (DK, ES, IT), 10 participants have been recruited for the co-design process, including end-users, formal and informal caregivers.

A kick-off meeting with the participants is organized in each country - a meeting with researchers involved in WellCo, social workers of enrolled organization and the participants.

Figure 6.- Co-Design participation in a pilot site, during WellCo presentation at the beginning of T2.2

The meetings in every pilot site have been used to:

1. Explain the main aims of WellCo and, in particular, the main characteristics of WellCo platform. Explain the activities of the co-design phase (including probes, focus groups and interviews).

Figure 7.- Model of a specific ppt presentation used for this purpose in Spain.

2. Provide "cultural probes" for information gathering.

Figure 8.- Model of Diaries translated to Spanish

3. Installing WhatsApp to participants, if needed, and explaining how use it to share information with partners. For the co-design process, we have been require the participants to have a smartphone, have basic computer literacy, and have familiarity with instant messaging apps.

4. To collect the signed documents to be able to start with co-design actions.

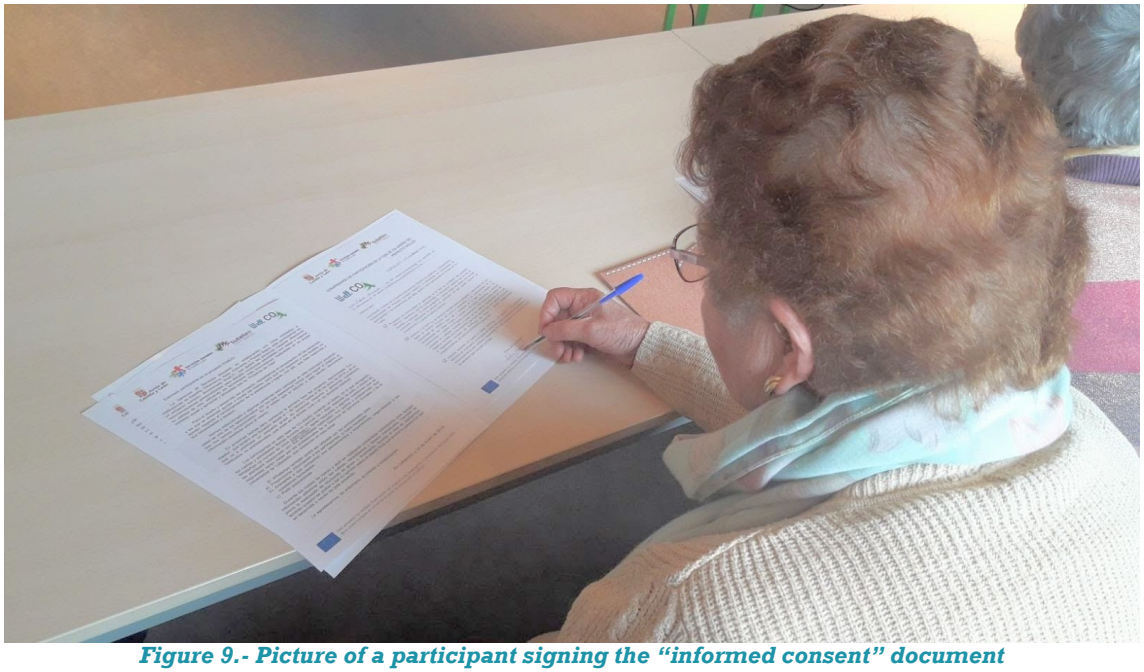


Figure 9.- Picture of a participant signing the "informed consent" document

Set of information provided

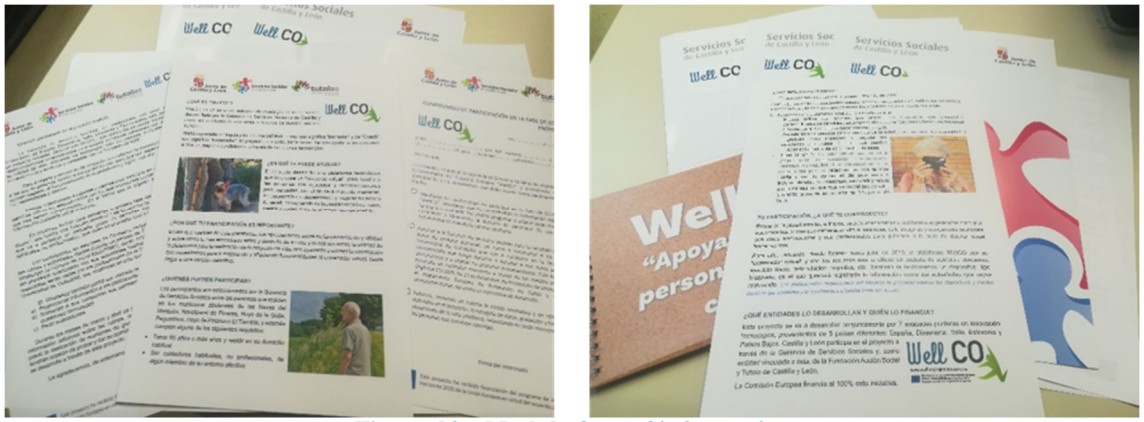
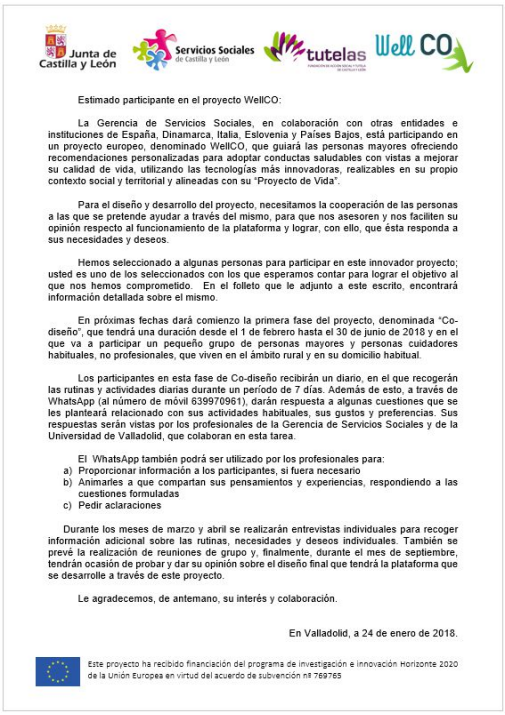


Figure 10.- Model of set of information

The pilot sites (GSS, FBK, SDU) have provided a complete set of information regarding their participation in this initial co-design phase, including:

a) A letter address to engage their participation, including specific information on commitments and schedule.



Estimado participante en el proyecto WellCO:

La Gerencia de Servicios Sociales, en colaboración con otras entidades e instituciones de España, Dinamarca, Italia, Eslovenia y Países Bajos, está participando en un proyecto europeo, denominado WellCO, que guiará las personas mayores ofreciendo recomendaciones personalizadas para adoptar conductas saludables con vistas a mejorar su calidad de vida, utilizando las tecnologías más innovadoras, realizables en su propio contexto social y territorial y alineadas con su "Proyecto de Vida".

Para el diseño y desarrollo del proyecto, necesitamos la cooperación de las personas a las que se pretende ayudar a través del mismo, para que nos asesoren y nos faciliten su opinión respecto al funcionamiento de la plataforma y lograr, con ello, que ésta responda a sus necesidades y deseos.

Hemos seleccionado a algunas personas para participar en este innovador proyecto; usted es uno de los seleccionados con los que esperamos contar para lograr el objetivo al que nos hemos comprometido. En el folleto que le adjunto a este escrito, encontrará información detallada sobre el mismo.

En próximas fechas dará comienzo la primera fase del proyecto, denominada "Co-diseño", que tendrá una duración desde el 1 de febrero hasta el 30 de junio de 2018 y en el que va a participar un pequeño grupo de personas mayores y personas cuidadores habituales, no profesionales, que viven en el ámbito rural y en su domicilio habitual.

Los participantes en esta fase de Co-diseño recibirán un diario, en el que recogerán las rutinas y actividades diarias durante un período de 7 días. Además de esto, a través de WhatsApp (al número de móvil 639970961), darán respuesta a algunas cuestiones que se les planteará relacionado con sus actividades habituales, sus gustos y preferencias. Sus respuestas serán vistas por los profesionales de la Gerencia de Servicios Sociales y de la Universidad de Valladolid, que colaboran en esta tarea.

El WhatsApp también podrá ser utilizado por los profesionales para:

a) Proporcionar información a los participantes, si fuera necesario
b) Animarles a que compartan sus pensamientos y experiencias, respondiendo a las cuestiones formuladas
c) Pedir aclaraciones

Durante los meses de marzo y abril se realizarán entrevistas individuales para recoger información adicional sobre las rutinas, necesidades y deseos individuales. También se prevé la realización de reuniones de grupo y, finalmente, durante el mes de septiembre, tendrán ocasión de probar y dar su opinión sobre el diseño final que tendrá la plataforma que se desarrolle a través de este proyecto.

Le agradecemos, de antemano, su interés y colaboración.

En Valladolid, a 24 de enero de 2018.

Este proyecto ha recibido financiación del programa de investigación e innovación Horizonte 2020 de la Unión Europea en virtud del acuerdo de subvención nº 769765

Figure 11.- Model of letter address to participants

b) A leaflet with complete information on WellCo project, in plain language, address to end-users

WHAT IS "WellCO"?

WellCo is a European research and innovation project developed by the entity Gerencia de Servicios Sociales of Castilla y León, in collaboration with other entities within our European environment.

WellCo comes from English and is the combination of "Well-being" and "Coach". The objective of the project, therefore, is to help people to live in better conditions, using new technologies.

HOW CAN IT HELP YOU?

The project is developing a technological platform which incorporates a "virtual assistant", to help people with exercises and personalised recommendations so that they can maintain their autonomy and independence and improve their state of health, retaining their cognitive, physical, mental and social well-being for as long as possible.

WHO CAN PARTICIPATE?

Participants are selected by the entity Gerencia de Servicios Sociales from people living in the Ávila municipalities of Navas del Marqués, Navalperal de Pinares, Hoyo de la Guija, Peguerinos, Hoyo de Pinares and El Tiemblo who also meet the following requirements:

- People who live in their habitual residence and are 65 years old or above
- People who are habitual, not professional, caregivers of a member of their family environment.

The professionals responsible for the project will provide you with the technical devices and means that you need and we will help you to get used to using them.

HEALTHY LIFESTYLE

WHAT DOES THE PROJECT INVOLVE?

1. We will help you to put together your own "Life Plan"

This will be the way in which you can guide us regarding how you want to live, what your life goals and expectations are and what kind of support you need and want in order to live in such a way.

2. You will access the "WellCO" platform and with it:

- You will be able to use the resources offered by this platform, with personalised exercise proposals, useful information, recommendations and even a social network which you can use to make new friends.
- You will access proposals to care for your health, retain your cognitive abilities, maintain and improve your personal relationships, or so that you can practise the leisure activities that interest you.
- You will have a "virtual trainer" which will provide you with personalised assessment, guidance and monitoring of the most important issues for you, related to your daily life and your capacity for autonomy and independence. It will assess you, motivate you and challenge you to follow routines which improve your quality of life, always keeping your "Life Plan" in mind.

WHAT COMMITMENT DOES YOUR PARTICIPATION IN THE PROJECT INVOLVE?

You will test the technological platform, you can assess us and give us suggestions so that we can make the virtual trainer just as you imagine it to be and you will share meetings with other participants and with professionals to guide us when designing these tools.

For this purpose, you will use, from February to June 2018, the WellCO platform with its "virtual trainer" and with the resources that it offers you in terms of nutrition, rest, physical exercise, cognitive stimulation, etc.

We will also provide you with a device, a type of bracelet, which will register information on the activities that you carry out (I'm not sure if this is correct or if the bracelet registers another type of information).

WHY IS YOUR PARTICIPATION IN THIS PROJECT IMPORTANT?

The use that you make of this platform, your opinions regarding its functionality and use, how you felt before and after using it and your opinion on the usefulness of the platform for achieving your "Life Plan" will help us to extract the information that we need in order to improve and add functionalities to the virtual trainer, until we reach a definitive version.

WHICH ENTITIES ARE DEVELOPING THIS PROJECT?

This project will be developed collaboratively by 7 leading entities in technological innovation, which come from 5 different countries: Spain, the Netherlands, Denmark, Slovenia and Italy. Castilla y León participates in the project through the Gerencia de Servicios Sociales and, as a linked entity, the Fundación Acción Social y Tutela de Castilla y León.

WHO IS IT FUNDED BY?

The European Commission is providing 100% of the funding for this initiative.

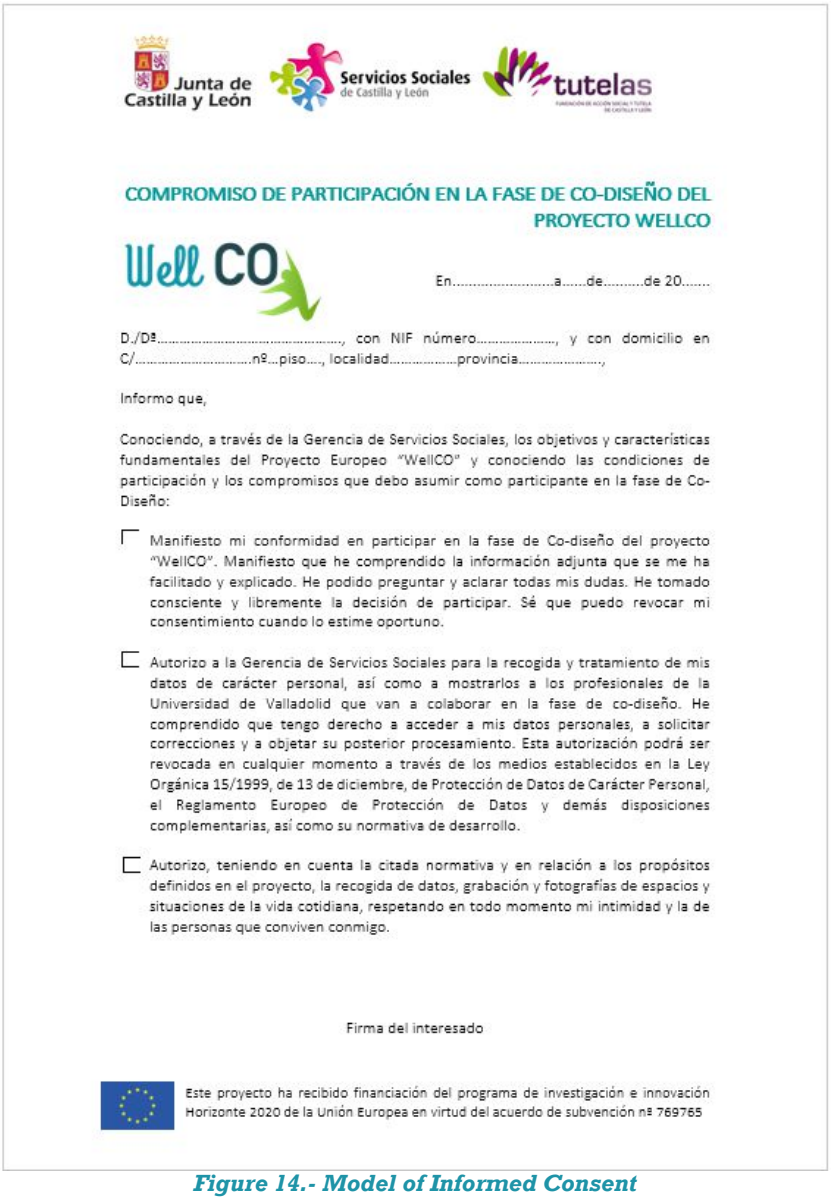
www.wellco-project.eu

Figure 12.- Model of the two-page leaflet address to participants (Translated to Spanish, Danish and Italian)

c) Specific Diary for every kind of participant

Figure 13.- Model of different Diaries

d) The INFORMED CONSENT to be signed by participants



Junta de Castilla y León — Servicios Sociales de Castilla y León — tutelas

COMPROMISO DE PARTICIPACIÓN EN LA FASE DE CO-DISEÑO DEL PROYECTO WELLCO

Well CO

En.....a.....de.....de 20.....

D./Dª....., con NIF número....., y con domicilio en C/.....nº...piso...., localidad.....provincia.....,

Informo que,

Conociendo, a través de la Gerencia de Servicios Sociales, los objetivos y características fundamentales del Proyecto Europeo "WellCO" y conociendo las condiciones de participación y los compromisos que debo asumir como participante en la fase de Co-Diseño:

☐ Manifiesto mi conformidad en participar en la fase de Co-diseño del proyecto "WellCO". Manifiesto que he comprendido la información adjunta que se me ha facilitado y explicado. He podido preguntar y aclarar todas mis dudas. He tomado consciente y libremente la decisión de participar. Sé que puedo revocar mi consentimiento cuando lo estime oportuno.

☐ Autorizo a la Gerencia de Servicios Sociales para la recogida y tratamiento de mis datos de carácter personal, así como a mostrarlos a los profesionales de la Universidad de Valladolid que van a colaborar en la fase de co-diseño. He comprendido que tengo derecho a acceder a mis datos personales, a solicitar correcciones y a objetar su posterior procesamiento. Esta autorización podrá ser revocada en cualquier momento a través de los medios establecidos en la Ley Orgánica 15/1999, de 13 de diciembre, de Protección de Datos de Carácter Personal, el Reglamento Europeo de Protección de Datos y demás disposiciones complementarias, así como su normativa de desarrollo.

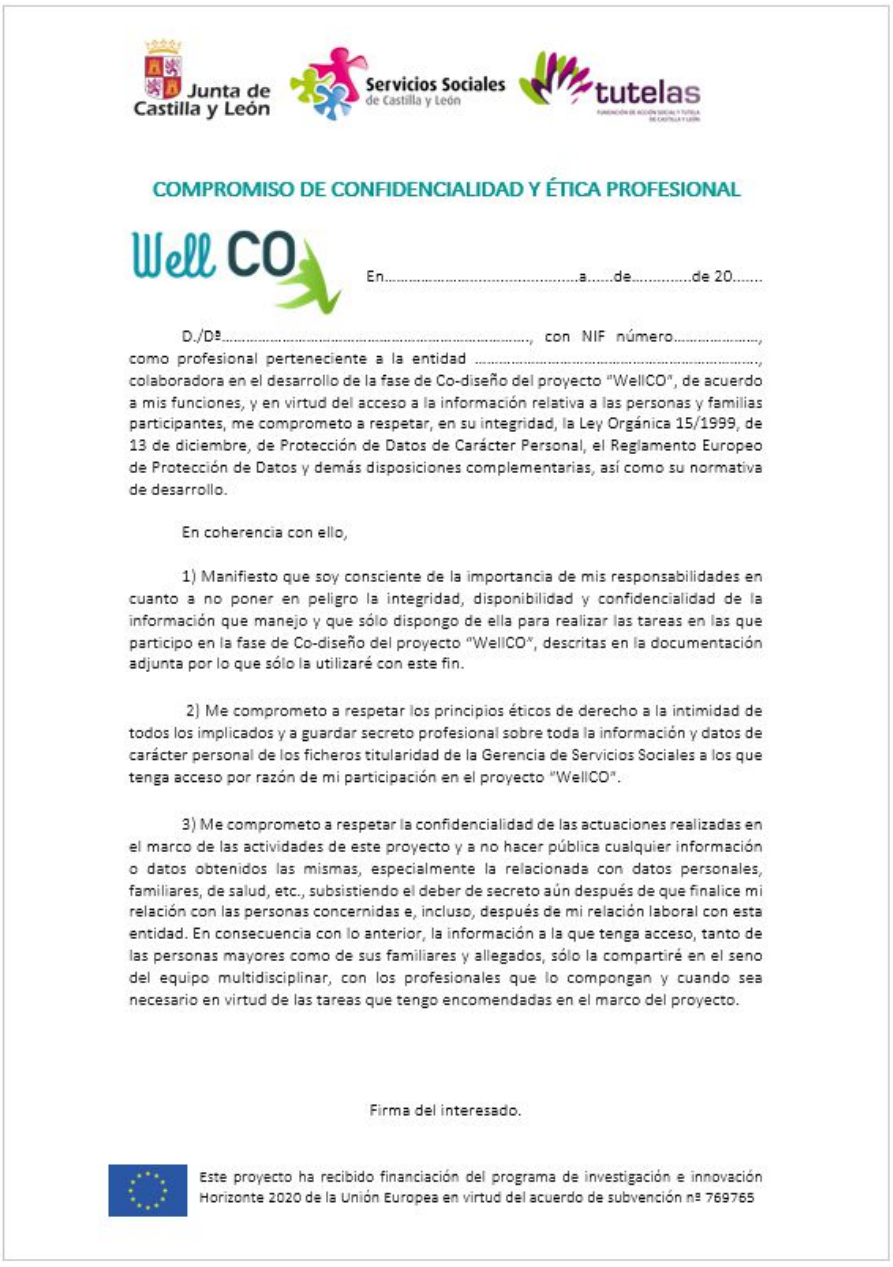
☐ Autorizo, teniendo en cuenta la citada normativa y en relación a los propósitos definidos en el proyecto, la recogida de datos, grabación y fotografías de espacios y situaciones de la vida cotidiana, respetando en todo momento mi intimidad y la de las personas que conviven conmigo.

Firma del interesado

Este proyecto ha recibido financiación del programa de investigación e innovación Horizonte 2020 de la Unión Europea en virtud del acuerdo de subvención nº 769765

Figure 14.- Model of Informed Consent

In addition, professionals undertaking activities during this phase have been provided a CONFIDENTIALITY AND PROFESSIONAL ETHICS AGREEMENT to be signed



Junta de Castilla y León

Servicios Sociales de Castilla y León

tutelas

COMPROMISO DE CONFIDENCIALIDAD Y ÉTICA PROFESIONAL

Well CO

En.....a.....de.....de 20.....

D./Dª....., con NIF número....., como profesional perteneciente a la entidad ....., colaboradora en el desarrollo de la fase de Co-diseño del proyecto "WellCO", de acuerdo a mis funciones, y en virtud del acceso a la información relativa a las personas y familias participantes, me comprometo a respetar, en su integridad, la Ley Orgánica 15/1999, de 13 de diciembre, de Protección de Datos de Carácter Personal, el Reglamento Europeo de Protección de Datos y demás disposiciones complementarias, así como su normativa de desarrollo.

En coherencia con ello,

1) Manifiesto que soy consciente de la importancia de mis responsabilidades en cuanto a no poner en peligro la integridad, disponibilidad y confidencialidad de la información que manejo y que sólo dispongo de ella para realizar las tareas en las que participo en la fase de Co-diseño del proyecto "WellCO", descritas en la documentación adjunta por lo que sólo la utilizaré con este fin.

2) Me comprometo a respetar los principios éticos de derecho a la intimidad de todos los implicados y a guardar secreto profesional sobre toda la información y datos de carácter personal de los ficheros titularidad de la Gerencia de Servicios Sociales a los que tenga acceso por razón de mi participación en el proyecto "WellCO".

3) Me comprometo a respetar la confidencialidad de las actuaciones realizadas en el marco de las actividades de este proyecto y a no hacer pública cualquier información o datos obtenidos las mismas, especialmente la relacionada con datos personales, familiares, de salud, etc., subsistiendo el deber de secreto aún después de que finalice mi relación con las personas concernidas e, incluso, después de mi relación laboral con esta entidad. En consecuencia con lo anterior, la información a la que tenga acceso, tanto de las personas mayores como de sus familiares y allegados, sólo la compartiré en el seno del equipo multidisciplinar, con los profesionales que lo compongan y cuando sea necesario en virtud de las tareas que tengo encomendadas en el marco del proyecto.

Firma del interesado.

Este proyecto ha recibido financiación del programa de investigación e innovación Horizonte 2020 de la Unión Europea en virtud del acuerdo de subvención nº 769765

Figure 15.- Model of Confidentiality and Professional Ethics Agreement

WellCO beneficiary:

Junta de Castilla y León — Servicios Sociales de Castilla y León

Linked third party:

tutelas

Tracking messages received by WhatsApp				
PARTICIPANTES		AGE	Nº. WhatssApp in 7 days	Average Nº. WhatssApp/day
END-USER	Participant #1	77	26	4
	Participant #2	82	15	2
	Participant #3	76	42	6
	Participant #4	79	42	6
	Participant #5	66	68	10
Sub-Total End-Users			193	28
INFORMAL CAREGIVERS	Participant #6	65	33	5
	Participant #7	72	23	3
	Participant #8	62	39	6
	Participant #9	64	51	7
Sub-Total Informal Caregivers			146	21
FORMAL CAREGIVERS	Participant #10	57	25	4
	Participant #11	40	36	5
Sub-Total Formal Caregivers			61	9
TOTAL			400	57
Average				5

This Project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 769765

Figure 16.- Model of analysis of Whatsapp

The findings from Diaries and WhatsApp are already done, using two specific templates, as shown below

This Project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 769765

Don't fill in the grey cells. Use this template for all situations: if you don't have one of the 3 categories, leave the column empty.

	Senior	Formal Caregiver	Informal Caregiver	Example data or details on the question
General information				
Was WhatsApp used as a probe?	Yes			Yes / No, because...
Number of text messages	21			Example: 5
Number of photos	1			Example: 6
Number of audio messages				Example: 2
Number of videos				Example: 1
Was the diary used as a probe?	Yes			Yes / No, because...
Was the interview used as a probe?	Yes			Yes / No, because...
Length of interview	60 minutes			Example: 50 minutes
Venue of interview	Multi-service center (services and support elderly center).			Example: Living room in the elderly center
Living conditions				
Country	Spain			Example: Spain / Denmark / Italy
City	Navas del Marqués, Ávila			Example: Amsterdam
Living environment	Rural Area			Example: City / Rural Area / Country side / Village
Accomodation	Own house			Example: Own house / Elderly-home / Apartment / Farm
Sociodemographic profile				
Gender	Female			Example: Male / Female
Age	77			Example: 75
(Former) Profession	Homemaker			Example: Bartender, Accountant, Politician, Nurse, Doctor. If there are more, mention the most important ones.
Educational background				Example: high school, university, only primary education
Person with whom you live	Lives alone			Example: husband, kids
Mobility	Not specified but from her dialy activity described, walking.			Describe what means of transportation or mobility the senior has. Example: Car, Public Transport, Walking only, doesn't get out of the house

Figure 17.- Template for reporting individual interviews

1.2. Summary of all perspectives of seniors

Fill in this part of the template based on the combined perspectives of the seniors on themselves.

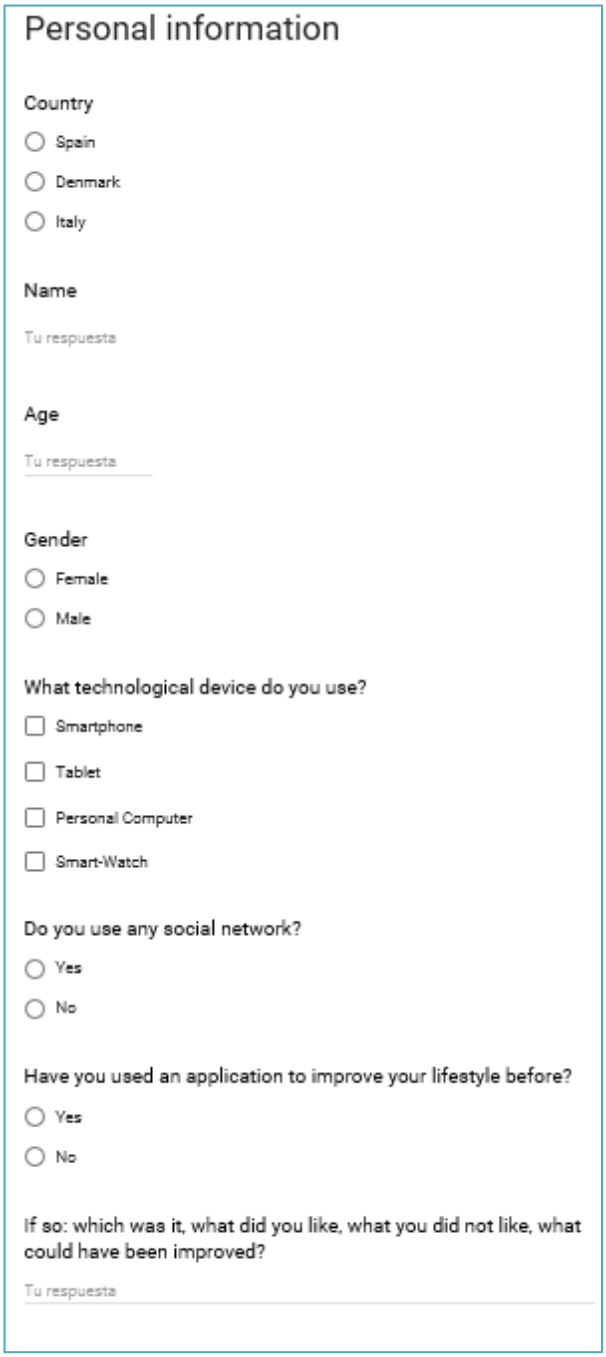
Topic	Summary
Common day structure of seniors based on physical, social, cultural and cognitive **activities**	
Common **goals**, obstacles and challenges regarding physical, social, cultural and cognitive activities of the seniors	
Common **nutrition** patterns, nutrition goals and challenges of seniors around nutrition	
Common **motivations and activities** of seniors to improve their well-being and their requested or received **support**	
Average social **network** of the senior and common roles and interactions within this network related to wellbeing	
Common mentioned aspects/**pointers** towards improving the seniors own well-being and the wanted insight into his own wellbeing	
Average affinity with **IT** and comfort around technology	

Figure 18.- Template for summary report by category

End-Users Requirement List

The concern parties have agreed the content of a questionnaire to gain knowledge in order to be able to prepare the End-Users Requirement List.

Then, an online document was created to be able to report (April 2018) and analyse their answers. The status is that the information reported by the trial sites is been analysed.



Personal information

Country

- Spain
- Denmark
- Italy

Name

Tu respuesta

Age

Tu respuesta

Gender

- Female
- Male

What technological device do you use?

- Smartphone
- Tablet
- Personal Computer
- Smart-Watch

Do you use any social network?

- Yes
- No

Have you used an application to improve your lifestyle before?

- Yes
- No

If so: which was it, what did you like, what you did not like, what could have been improved?

Tu respuesta