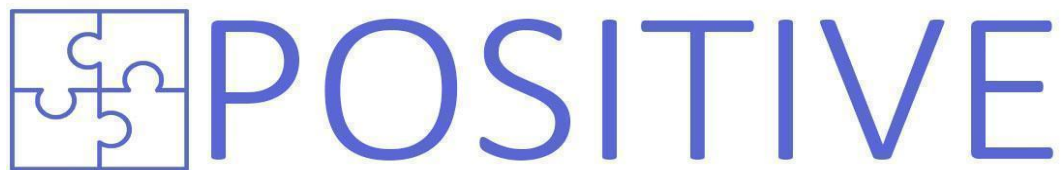


D2.2 [Report on End User Mobilization and Recruitment]



**Personalized platfOrm aSsisting seniors in healThy, fulfilled and active
lifE**

Project No.	AAL-2018-2-118
Project Acronym	POSITIVE
Start date (duration)	01/05/2019
Deliverable Leader	ESKILARA
Contributors	FSL, AAIF, REALL
Deliverable No.	2.2
Deliverable Title	Report on End User Mobilization and Recruitment
Dissemination level	PU
Status	FINAL – Second Updated
Version	5
Delivery date	October 2019

Copyright © AAL-2018-2-118 POSITIVE Consortium

This document is proprietary of the POSITIVE Consortium. Neither this document nor the information contained herein shall be used, distributed or communicated, in any form or by any means, without the prior written consent of the POSITIVE Consortium.

Revision History

Revision	Date	Organization(s)	Changes
Draft1	14-10-2019	ESKILARA	First version of the deliverable
Draft 2	29-10-2019	FSL	Second version of the deliverable
Draft 3	5-11-2019	ESKILARA	Third version of the deliverable
Final	26-11-2019	ESKILARA	Final version of the deliverable
Review	27-11-2019	REALL	Partner review of the final deliverable
Review	28-11-2018	GAIA	External review of the final deliverable
Review	02-12-2019	AAIF	Partner review of the final deliverable
Draft 4	31-10-2020	ESKILARA	First version of the deliverable's second version due on M20
Draft 5	12-11-2020	REALL	Pilot Testing Phase I - Input from Poland
Review	16-11-2020	BPC	Partner Review
Review	16-11-2020	FSL	Partner Review

Executive Summary

This document D2.2 is listed in the DOW in work package 2 End user involvement/ co-creation. There we have the two tasks T2.1 Co-Design and Requirements Analysis and T2.2 User Mobilization and Recruitment, that are the base for this document. At the same time, D2.2 is the base for D2.1 Co-Design and Requirements Analysis and for the work package 4 Testing and Validation and the documents therein.

D2.2 Report on End User Mobilization and Recruitment provides an appropriate report for the mobilization and recruitment of end users for different testing periods (M12, M20). In the deliverable, the recruitment criteria is described, used for the selection of users within each of the three evaluation phases that will be undertaken throughout the project. Those evaluation phases were initially planned for: Design and requirements confirmation (M06), Pilot Operations Phase I (M15) and Pilot Operations Phase II (M24), but due to COVID-19 pandemic, Pilot Operations Phase I was postponed to M18 and Phase II to M28.

In any case the different pilot phases are planned in order to co-design and validate the different prototypes to be evaluated with the Primary End Users. Therefore, the inclusion and exclusion criteria for our primary end users are derived. In short, they have to be healthy people with minor health problems and/ or disabilities and independent, the age should be in the range between 55 and 75, to deliver most representative results for the envisioned target group. In the POSITIVE project we have three testing phases (Design and requirements confirmation evaluation phase, Pilot operations Phase I evaluation phase and Pilot operations Phase II evaluation phase), before and after each of which a set of questionnaires, focus group and physical interviews are executed with all users. We want to see the development of expectation, motivation and acceptance during the course of the project.

Essential for the project in any case is the co-creation aspect, to sharpen POSITIVE from iteration to iteration to the actual end user needs.

Privacy and protection of the user data is a central aspect, as shown in Annex 1 and Annex 4 Informed Consents and will further be described in D2.1 Co-Design and Requirements Analysis.

Content

Revision History.....	2
Executive Summary.....	3
List of Figures	5
List of Tables.....	5
About this Document	6
Role of the deliverable	6
Relationship to other deliverables	6
Introduction	7
Scope and Objectives	7
User Recruitment and Mobilization Criteria	8
End Users categorization.....	8
User Recruitment and Mobilization	9
Design and Requirements confirmation evaluation phase.....	11
Basic structure of the focus group interviews	11
4.2 Focus Groups Specifications within Design and requirements confirmation phase.....	12
<i>Focus Group in Romania</i>	13
<i>Focus Group in Italy</i>	14
<i>Focus Group in Spain</i>	15
<i>Focus Group in Poland</i>	16
Individual Interviews Specifications for Pilot Operations Phase I.....	17
<i>Individual Interviews in Romania</i>	18
<i>Individual Interviews in Italy</i>	19
<i>Individual Interviews in Spain</i>	19
<i>Individual Interviews in Poland</i>	20
Conclusions	22
Design and requirements confirmation evaluation phase.....	22
Pilot Operations Phase I	23
Annex 1.....	24
Annex 2.....	27
Annex 3.....	28
Annex 4.....	30
Appendix	35

List of Figures

N/A

List of Tables

Table 1. List of deliverables related to D2.2 Report on End User Recruitment and Mobilization

About this Document

Role of the deliverable

This deliverable will try to describe the criteria and strategy followed for the end users' mobilization and recruitment process that will precede three evaluation phases that will be executed during the project for the evaluation of the different prototypes.

The target user groups' specifications will also be described, as well as the distribution of the participants.

Relationship to other deliverables

The deliverable is related to the following POSITIVE deliverables:

Deliverable	Relation
D2.1	Co-Design and Requirements Analysis
D2.3	System architecture and Technical Specifications
D4.1	Validation and Demonstration Planning
D4.2	Pilot Operation Summary Report
D4.3	Evaluation Report

Table 1. List of deliverables related to D2.2 Report on End User Recruitment and Mobilization

Introduction

Scope and Objectives

The POSITIVE project aims to help seniors to connect, organize simply and to stay active in life, resulting in a positive impact on their wellbeing and preventing future cognitive and physical decline, through the development of a holistic, gamified and personalised platform. Therefore, POSITIVE project emphasizes on the early involvement of end users in the design of the platform.

Acknowledging the importance of user testing for the success and the marketability of the project's solution in several different countries, the consortium is involving end users from Italy, Romania, Spain and, additionally, Poland. To this end, POSITIVE expects to involve more than 250 end users in total throughout the different phases of the project.

The objective of this deliverable **D2.2 Report on End User Recruitment and Mobilization** is therefore to establish the criteria and strategy followed for the end users' mobilization and recruitment process that will precede three evaluation phases to be executed during the project for the evaluation of the different prototypes and in which the aims are to:

- Involve primary end users in the co-design from the early stages of POSITIVE
- Gather more in-depth information about their needs, preferences and requirements related to the proposed solution
- Collect information about their attitudes toward technology use and future adoption

User Recruitment and Mobilization Criteria

As already indicated in section 2, POSITIVE expects to involve more than 250 end users in total throughout the three evaluation phases. The plurality of the cultures involved in these evaluation phases of the project will provide insights about the possible different features to be offered arising by end users of each country.

End Users categorization

End users are recruited on a voluntary basis, consisting of people who mainly do not know each other but are able to share their experiences and express their opinions and their insights about the POSITIVE solution. The project has identified as end users:

- **Primary end users**, active 55+ people, split in two groups:
 - o The first group, including 55-75 years-old educated, mobile seniors who would like to connect and socialize, with at least minor experience using the internet, will be present throughout the whole project time, especially in the phase of co-creation of the platform and attracting other users.
 - o The second group, including 55-75 years-old inexperienced with Internet and digital solutions will also be actively involved to evaluate the ease of use.
- **Secondary end users** will be the families and acquaintances, often informal caregivers of the primary end users, acting mainly as champions recommending the platform or installing it for the end users. They may happen to be the payers, however, due to the independence-focus of the platform it is not expected.
- **Tertiary end users** will be organised providing events and content (NGOs, commercial partners, healthcare providers, local municipalities and senior clubs/centres) in turn for having an extra contact channel to the seniors and increasing efficiency of their own operations.

The elderly suffer more from social isolation than other age groups. As people grow old, they are more likely to encounter loss of relationships due to age-related causes and less likely to initiate new relationships or be part of new networks¹. Compared to those aged 26 to 45, adults aged 65 and over are 9 percentage points more likely not to engage often in social activities. This figure is above 15 percentage points in Eastern Europe. Again, family ties, varying cultures and closeness of friendships might drive regional variations².

According to Eurostat, 35.6% of the elderly in Romania, 30.7% of the seniors in Italy, 28.2% in Poland, and 24.1% of the elderly in Spain live alone⁵.

The significance of loneliness for individual wellbeing and social cohesion should not be underestimated. The mortality risk of loneliness is comparable to that of obesity and smoking. Persistent loneliness is further associated with unhealthy behaviours, mental problems and poor cognitive performance. Lonely individuals also report more pessimistic judgements and feel more threatened by life situations compared to their 'non-lonely' counterparts².

At the moment, we can find few interventions to tackle social isolation or loneliness in European countries, some of which include: befriending, mentoring, Community Navigators, social group schemes. Nevertheless, people who use befriending or Community Navigator services report less loneliness and social isolation following the intervention⁴.

Our project intends to help seniors connect and positively impact their well-being tackling the problem of loneliness through a digital solution. Therefore, it is important to highlight that, though from the age of 55 there is a decrease in the percentages of people who use the internet, perceiving a digital divide between the elderly and the rest of the population. However, the gap is rapidly shrinking in recent years, especially due to the arrival at these ages of people who previously used the Internet, rather than a digital literacy of the elderly; in 2007, the gap was 78.6 percentage points between the most connected age group (16-24 years) and that of the elderly (65-74 years); in 2018, it has been reduced to 51.6 points. Among people aged 65-74, men use the computer and access the internet to a greater extent than women. In 2008, seven adults out of 100 used the internet; In 2018, this figure reached 47. This increase has been more considerable in women³.

Nevertheless, according to Eurostat, in some countries like Romania, only 13% of the elderly Romanians use the Internet once weekly. This percentage is quite low compared to 45% of seniors in EU⁵.

User Recruitment and Mobilization

End users will take part in four pilot sites: Bilbao (Spain); Rome (Italy); Bucharest (Romania); Warsaw (Poland). Furthermore, to promote the dissemination and consequent mobilization in addition to the various activities that will be set up at the local level in each country, POSITIVE project will also make active use of our project website and social media channel following the dissemination plan objective to contribute to the attraction to end users and potential stakeholders.

The selection criteria to be followed are: **age, status of health and technology usage level**. Whereas gender, place of origin and certain level of education are not relevant for our research.

Therefore, the target group specifications are:

- The target groups of the evaluation: elderlies between 55 and 75 years, with two groups of age range: 55-65, 66-75 years old.
- According to health status, the target group is formed by healthy people with minor health problems and/ or disabilities and independent.
- The size of the samples:
 - o **Design and requirements confirmation evaluation phase:**
 - 30 structured questionnaires (9 per Ana Aslan International Foundation, 9 per Fondazione Santa Lucia, 9 per Eskilara and 3 per Reall) and, in the case of the semi structured interviews, there will be between 4-5

interviews within each of the 3 pilot countries and 2-3 interviews for the Polish participants within the “Design and requirements confirmation” phase during M5.

- **Pilot Operations Phase I evaluation phase:**
 - 60 PEUs (18 per Ana Aslan International Foundation, 18 per Fondazione Santa Lucia, 18 per Eskilara and 6 per Reall) were recruited within the Pilot Operations Phase I, in which end users tested the first prototype of POSITIVE platform during M18. 30 interviews were conducted after the end of Pilot Operations Phase I (6 PEUs + 3 TEUs for Romania, Italy and Spain and 2 PEUs and 1 TEU for Poland, as described in the D4.1 Validation and Demonstration Planning.
- **Pilot Operations Phase II evaluation phase:**
 - 90 PEUs (27 per Ana Aslan International Foundation, 27 per Fondazione Santa Lucia, 27 per Eskilara and 9 per Reall) will be recruited within the “Pilot Operations phase II”, in which end users will test the POSITIVE integrated platform between m22 and M29. After the testing, 36 interviews will be conducted (8 PEUs plus 3 TEUs for Romania, Italy and Spain and 2PEUs and 1 TEU for Poland).

POSITIVE consortia will also take special care of the ethical aspects of gathering personal data.

Design and Requirements confirmation evaluation phase

Basic structure of the focus group interviews

1. **Welcome + brief introduction** – The interviewer welcomes participants and describes the objectives of the focus group interview. That is, participants are provided with information regarding the purpose of the meeting, given an explanation of how the interviewees were chosen to participate as well as how the information from the interview will be used in the future. Pointing out the significance of this interview for the future development of POSITIVE is important.
2. **Informed consent + demographic information** – The interviewer has to collect the signed and dated informed consent from all participants prior to the beginning of the session. Then, he/ she collects the necessary demographic data on the interviewees. Gathering demographic data from interviewees is beneficial for the POSITIVE's consortium because it will give a clear description of the focus group participants. The demographic data should include **age, gender, education status, living status, and socio-economic status**. By living status, we mean a multiple-choice question like:

What is your living status? Choose one answer only.

- I live alone
- I live with spouse/ partner only
- I live with spouse/ partner and other family members
- I live with other members of my family
- I live in a retirement home
- Other – please specify:

Identifying the living status is important because people who live alone are prone to loneliness.

Data related to the **socio-economic status** of the participants will also be included because it is an important influencing factor on decision-making and access to technology. People with lower socio-economic status (poor people) have limited or no access to technology, internet at home and modern devices such as tablets and smartphones. This is one of the reasons why they belong to one of the vulnerable groups that are affected by the digital divide nowadays.

3. **Confidentiality** – Interviewees might have concerns regarding the confidentiality of their answers. Therefore, prior to the beginning of the session, the interviewer has to assure respondents that their replies will be kept confidential. That is, the interviewer and the other members of the evaluation team will know who the interviewees and

their answers are, but they will not reveal them to anyone. No identifying information will be given without their permission.

4. **Recording responses** – Responses can be documented in various ways i.e. digital audio recording, video recording, handwritten or computer written notes. If digital audio or video recording is used, each interviewee must agree to the recording in advance. I would suggest a combination of digital audio recording and taking notes, if this is possible. Digital audio recording is a good way to prevent summarizing or paraphrasing participants' responses. 'Summarizing or paraphrasing a response results in a loss of information and can distort the interpretation of the interview data, since the summarized response obscures the interviewee's own answer' (Russ - Eft and Preskill, 2009)
5. **Refreshments** – It might seem obvious and logical to some but it is good not to forget that some refreshments need to be provided before and during the session.
6. **Rules for group discussion** – Clarifying and agreement on some basic rules for discussion are important in ensuring a relaxed and friendly atmosphere. These rules might include: confidentiality (whatever is said here, stays here), freedom of expression (the right to express your opinions/ views freely whatever they might be), respect to other people's opinions and open-mindedness, there are no right or wrong answers (just answers).

4.2 Focus Groups Specifications within Design and requirements confirmation phase

The Focus Groups will take place in four different European locations: Poland, Rumania, Italy and Spain, and though all focus groups dynamics will be similar, each of the sites have different specifications in relation to the user recruitment process, ethical and legal requirements and management of the focus groups' sessions.

In each institution there will be a person with the role of "facilitator" who will have the task of providing an overview of the project to participants, presenting the mock-up and responding to participant's requests.

The usability tests will be held with tablets supporting a clickable version of the mock-up and partly by filling out a paper-structured questionnaire, followed by a semi-structured interview.

The procedure will be as follows:

- The facilitator will introduce the POSITIVE project with a presentation (Annex 2) translated into the native languages of the participating countries (Spanish, Italian, Romanian and Polish);
- The second step will consist in asking participants to fill out a brief structured questionnaire on demographic data, comprehension of loneliness, expectations, information on user behaviour on the internet and user needs. The aim of the questionnaire will be to gather information from the end users about specific needs regarding the POSITIVE platform, expected utility and usability of the solution for its early design and potential future needs end users may have.

- After the questionnaires are completed by participants, the focus group session will start, and the mock-up solution will be presented.

The *focus group* will be structured as follows:

- 1) Participants presentation, warm-up and questions (Annex 3) (30 minutes);
 - 2) Mock-up presentation: modules and functionalities (20 minutes);
 - 3) Discussion on the proposed solution (30 minutes);
 - 4) Wrap up: quick summary, acknowledgement.
- Once the focus group session is terminated, participants will be asked to complete a structured questionnaire regarding the POSITIVE platform, their attitudes toward technology and technology usage.
 - All the data collected through the questionnaires will be registered in a database previously constructed by the partner in charge of the analysis.

Focus Group in Romania

a. User recruitment process

The Ana Aslan International Foundation approached the recruitment process in four ways:

- Announcement about the POSITIVE project as well as the focus group interview was posted on our closed Facebook group for senior volunteers. Recruitment criteria was included in the post.
- Announcement about the POSITIVE project as well as the focus group interview was printed and placed on visible places at Seniors' Club Sector 1 in Bucharest.
- Senior volunteers from our database were contacted by phone and invited to take part in the session.
- Online survey was posted on our closed Facebook group for senior volunteers. Its response rate was high. Eleven anonymous elderly people submitted their responses online.

We reached out to and phoned all seniors who expressed their wish to be volunteers. The strategies above helped to acquire the seniors' user base that can be used for testing in the future.

- b. Ethical and legal requirements** - no ethical committee or approval was needed, the informed consent presented in Annex 1 was signed by the interviewees and they were given the copy to take home.
- c. Management of the Focus Groups' sessions** – The interview was scheduled on the 21st of October 2019 at 10 am. Eight volunteers came to

the headquarters of the foundation. During the first and the second session, refreshments and a closed room was prepared for the interviews. Four researchers facilitated the session. It lasted two and a half hours. All volunteers took active part in the session and expressed their enthusiasm for POSITIVE.

Focus Group in Italy

- a. **Recruitment process** - In Rome, the first evaluation phase of the POSITIVE mock-up will be carried out by the end of November 2019 at Fondazione Santa Lucia. The recruitment process will involve the personnel of the FSL Laboratory of Neuropsychiatry that will select participants from the database of healthy controls subjects within the study titled “Multidimensional assessment of neuropsychological, psychopathological, neuroradiological and genetic features in patients with Mild Cognitive Impairment, Alzheimer disease and comparison with control subjects: longitudinal analysis of the clinical course’s predictors”, already approved by the FSL Ethics Committee. The head of the FSL Laboratory of Neuropsychiatry (Dr. Spalletta) and the Dementia area coordinator (Dr. Banaj) will manage the implementation of this stage of the project. The first contact will be made through a phone call explaining the purpose of the POSITIVE project, and the willingness to come to FSL in order to fill out the questionnaires and participate to the focus group requested. Nine elderlies between 55 and 75 years will be selected, while people aged under 55 and above 75 years old and those affected by cognitive decline, major health problems and/or disabilities will be excluded.
- b. **Ethical and legal requirements** - Prior to the beginning of the session, all participants will be informed of the anonymous use of the data in full respect of privacy. Then, every project participant will sign a written informed consent approved by the FSL Ethics Committee. The FSL Ethics Committee is a collegial body, multidisciplinary in composition, which operates fully autonomously and meets monthly. It evaluates proposals for research protocols and clinical trials to be carried out at FSL and approves their implementation, according to scientific, ethical and economic criteria. The Committee is informed by the guidance given by international health agencies, general medical ethics, the Helsinki Declaration as well as the guidelines of *Good Clinical Practice*.
- c. **Management of the Focus Groups’ sessions** - The focus group will be performed in specific appointment arranged with the end-users involved and will consist of four phases. The first phase includes the description of the project and the concept of the POSITIVE platform with a presentation the consortium agreed upon translated into Italian. In the second phase, participants will be asked to fill out a structured questionnaire aimed at gather information about specific needs regarding the POSITIVE platform, expected utility and usability of the solution and future needs end users may have. After this, 4 participants will be involved in the focus group session following the procedure detailed above.

Lastly, the 4 participants will fulfil another structured questionnaire regarding socio-demographic data, the presented POSITIVE platform solution, attitudes toward technology and technology usage. The two fulfilled questionnaires will be collected and the data obtained entered in the online data management.

Focus Group in Spain

In Bilbao, the first evaluation phase of the POSITIVE mock-up has been carried out on the 22nd of October 2019 at Eskilara's premises.

- a. **User recruitment process** - the recruitment process has involved the following organisations from Bilbao: Aletu Association and Uribarri's Elderly Association, which will collaborate in the selection of participants from their bases. Idoia Muñoz and Itziar Vidorreta, project managers from Eskilara, have managed the implementation of this stage of the project. The first contact has been made through a physical meeting explaining the purpose of the POSITIVE project, and the willingness to come to Eskilara in order to fill in the questionnaires and participate in the focus group requested. Nine elderlies between 55 and 75 years have been selected, while people aged under 55 and above 75 years old and those affected by cognitive decline, major health problems and/or disabilities were excluded.
- b. **Ethical and legal requirements** - no ethical committee or approval was needed, the informed consent presented in Annex 1 was signed by the interviewees and they were given the copy to take home
- c. **Management of the Focus Groups' sessions** - Prior to the beginning of the session, all participants were informed of the anonymous use of the data in full respect of privacy and were asked to fill in and sign the Informed Consent (Annex 1).

The focus group was performed in specific appointments arranged with the end-users involved and consisted of four phases. The first phase included the description of the project and the concept of the POSITIVE platform with a presentation the consortium agreed upon translated into Italian. In the second phase, participants were asked to fill out a structured questionnaire aimed at gathering information about specific needs regarding the POSITIVE platform, expected utility and usability of the solution and future needs end users may have. After this, 5 participants were involved in the focus group session following the procedure detailed above. Lastly, the 5 participants fulfilled another structured questionnaire regarding socio-demographic data, the presented POSITIVE platform solution, attitudes toward technology and technology usage. The two fulfilled questionnaires were collected and the data obtained entered in the online data management.

Focus Group in Poland

a. User recruitment process

Reall approached the recruitment process in three ways:

- Browsing the Internet and shortlisting the list of most prominent senior organisations (e.g., FISE, Zaczyn, Third Age University, Kluboteka dojrzałego człowieka, Nowolipie, Klubokawiarnia Międzypokoleniowa, Senior City Council), conferences (e.g., elderly innovation conference organized by local foundations) or local activity centers (e.g., Klub Kultury na Hożej). They were picked based on their community opinion and type of seniors attending - we looked for seniors that could have broader perspective on themselves and their peers. The organisations' employees helped to select the seniors fulfilling our recruitment criteria and organized the first meetings with them, or gave us the direct contact if the seniors previously agreed to share their data with us. This resulted in the biggest number of acquired high-quality contacts.
- Initiating conversations with the municipality (vice presidents for 3 Warsaw' districts), the districts agreed to unofficially support POSITIVE and organized an event in the local activity center for introducing the project to elderly. The event was promoted on municipality posters and social media. This was a less effective recruitment strategy because the municipality itself struggles to attract seniors for their own events and this was the case here as well. Furthermore, the seniors that joined the meeting were an older group (80+) and were not keen on being introduced to POSITIVE. This could be predicted as the municipality's political focus is mostly on helping the older, immobile group.
- Writing posts in Facebook groups for seniors - this strategy did not result in high outcomes either as there are not many active Facebook groups in Warsaw during the summer when the recruitment was carried out.

Once a contact to a senior was collected, one of the team members usually reached out to the senior to acquaint them with the project and prepare for the future contact. All seniors reacted positively and asked to be informed about the progress.

The strategies above helped to acquire the seniors user base that can be used for testing in the future.

b. Ethical and legal requirements - no ethical committee or approval was needed, the informed consent presented in Annex 1 was signed by the interviewees and they were given the copy to take home

c. Management of the Focus Groups' sessions – the interviewees were given 3 different timings (24.10, 25.10, 29.10) to select from, accounting for different preferences:

- beginning of the week
- middle of the week
- end of the week

- afternoon

- late afternoon

The morning was not offered as seniors indicated during the previous conversations; it's not a good time to go out due to their everyday morning routines and longer sleep cycles.

2 seniors picked afternoon (2pm) on Friday (25.10) and 1 senior picked late afternoon (6pm) on Tuesday (29.10), which showed they have similar preferences to other age groups and are busy with activities during the weekday. This conclusion may be biased as these seniors live in the capital - Warsaw.

The seniors were invited to Reall's offices in the strict city centre of Warsaw - many seniors mentioned this is very convenient to them and they wouldn't come if we invited them to the city's outskirts.

During the first session, the refreshments and closed room was prepared for the interviews. However, they all expressed proactive willingness to stay in the open space among the crowd of start-up workers. This was unexpected as the room was noisy, and some of the topics included intimate topics. They also rejected the sweet refreshments giving the diet and taking care of their figures as the reasons.

Individual Interviews Specifications for Pilot Operations Phase I

The Focus Groups took place in four different European locations: Poland, Romania, Italy and Spain, and though all focus groups dynamics were similar, each of the sites had different specifications in relation to the user recruitment process and management of the focus groups' sessions. What is more, due to the COVID-19 pandemic each of the end user organisations had to adapt the deployment of the pilot phase to the specific restriction measures imposed in Poland, Romania, Italy and Biscay, and whereas in Poland, Italy and Romania the informed consent form was obtained during a face-to-face meetings, in Spain it was signed at the volunteers' house. Thus, the different measures and protocols followed in each of the locations are described below.

In each end-user organisation there was a person with the role of "facilitator" (in Biscay the role was in this case assumed by two people) who had the task of providing an overview of the project to participants, presenting the first prototype and responding to participant's requests.

The pilot testing was done for one month (M18) by end users at their home, either using tablets, mobile devices, laptops or PCs, testing the first prototype of the POSITIVE platform. 4 pre-test and post-test surveys were filled in by participants namely WHOQOL-BREF, KPIs, UCLA Loneliness Scale, SUS, were completed by the participants as described in D4.1 Validation and Demonstrating Planning, followed by individual interviews at the end of M18. All PEUs did the socio-demographic and technology usage surveys as well. Detailed description of end user involvement and testing the first prototype of POSITIVE is available in D 4.2 Pilot Operation

Summary Report. This part describes only the focus groups interviews that took place after the end of Pilot Operations Phase I.

Individual Interviews in Romania

- a. **User recruitment process** - Recruitment of PEUs and TEUS in Romania began in June, 2020 (M14). AAIF decided to be proactive in the recruitment process. AAIF's fear was that another lockdown might happen in the fall. Another quarantine would seriously hinder recruitment of senior volunteers as well as obtaining their informed consent during a face-to-face meeting. Announcement on AAIF's Facebook community was placed and senior volunteers signed up. Experienced volunteers from AAIF's database were invited too. TEUs that were asked to take part in Pilot Operations Phase I, were organisations with which the foundation had established excellent relations and had collaborated in the past.

18 volunteers were recruited in June. By the time the actual testing began i.e. in October 2020, 6 of them dropped out. Therefore, 6 new PEUs were recruited in September.

- b. **Ethical and legal requirements** - All PEUs were informed about the project's objectives, duration, and their participation in it during informative meetings. Then, volunteers signed the informed consent and received a copy of it. No ethical approval was needed from an external Ethics Committee for testing the prototype. At all times Covid-2019 safety measures were taken and strictly followed by AAIF's researchers and seniors i.e. the meeting room was well aired, distance was kept, hand disinfectants, masks and disposable socks were provided.
- c. **Management of the Focus Groups' sessions** - Focus groups interviews with many participants were impossible due to Covid- 2019 pandemic and the possible risks for senior's health. Therefore, individual face-to-face interviews were conducted with PEUs by 2 researchers. In total, 6 face-to-face individual interviews were conducted with Romanian volunteers and 3 online interviews with representatives of TEUs. Due to the rising number of cases in Romania, AAIF highly appreciated the loyalty and dedication of its volunteers. Conducting the interviews in such a situation was a success for POSITIVE.

Interviews were done following the protocol described in D4.1 Validation and Demonstration Planning. Senior volunteers gladly replied to all questions and were happy to give their opinion and valuable feedback. TEUs also shared their views and comments about the platform and their experience with it. All findings from data collected during Pilot Operations Phase I will be described in D 4.3 Evaluation Report.

Individual Interviews in Italy

- a. **Recruitment process** - Recruitment of PEUs and TEUs in Italy started by June 2020 and continued in September to prevent potential problems arising from a second lockdown and guarantee the proper number of participants for the pilot testing. The recruitment process was conducted by the personnel of the FSL Laboratory of Neuropsychiatry that selected participants from the database of healthy controls subjects within the study titled “Multidimensional assessment of neuropsychological, psychopathological, neuroradiological and genetic features in patients with Mild Cognitive Impairment, Alzheimer disease and comparison with control subjects: longitudinal analysis of the clinical course’s predictors”, already approved by the FSL Ethics Committee. The first contact was made through a phone call explaining the purpose of the POSITIVE project, and the willingness to come to FSL in order to fill out the questionnaires and participate in the pilot testing procedures. Eighteen elderlies between 55 and 75 years were identified and recruited, while people aged under 55 and above 75 years old and those affected by cognitive decline, major health problems and/or disabilities were excluded. TEUs were selected from a list of organizations based in Rome whose activities are in line with PEUs interests according to results of the focus groups conducted previously. In total, four TEUs accepted to participate
- b. **Ethical and legal requirements** - All PEUs and TEUs were informed about the project's objectives, duration, and their participation in it prior by phone call and then during the training session. After project procedures were fully elucidated, every participant signed a written informed consent approved by the FSL Ethics Committee. The FSL Ethics Committee is a collegial body, multidisciplinary in composition, which operates fully autonomously and meets monthly. It evaluates proposals for research protocols and clinical trials to be carried out at FSL and approves their implementation, according to scientific, ethical and economic criteria. The Committee is informed by the guidance given by international health agencies, general medical ethics, the Helsinki Declaration as well as the guidelines of Good Clinical Practice.
- c. **Management of the Focus Groups’ sessions** - Face-to-face focus group’s sessions were impossible due to the worsening of the Covid situation in Italy. In order to not expose participants to any health-related risk, interviews with PEUs were conducted in a scheduled session on GoogleMeet, while TEUs were contacted individually by phone call. Interviews were done following the protocol described in D4.1 Validation and Demonstration Planning.

Individual Interviews in Spain

Spain is one of the most affected countries in Europe with the COVID-19 pandemia. Restrictions have been periodically updated according to the infected rate of each region and/or municipality. What is more, taking into consideration that our PEUs are members or the at-risk

group, ESKILARA team decided to follow the guidance of the Ministry of Health and avoid physical training with volunteers. Therefore, each participant had been sent the semi-structured questionnaires via Whatsapp and contacted afterwards to give explanations to them and go with them through the different questionnaires and expected outcomes:

- a. **User recruitment process** - the recruitment process has involved the following organisations from Bilbao: Aletu Association and Uribarri's Elderly Association, and Gernika-Lumo's Retirees Association which have collaborated in the selection of participants from their bases. Idoia Muñoz and Itziar Vidorreta, project managers from Eskilara, have contacted the organizations and previous PEUs selected for testing in M17 via whatsapp calls or phone calls, explaining the purpose of the Pilot Operations Phase I, and the new procedures to be followed according to the COVID-19 scenario. Due to the COVID19 crisis, no physical meetings have been held following the safety protocols according to the BOPV Nº 162 19/08/2020. 18 elderlies between 55 and 75 years have been selected, while people aged under 55 and above 75 years old and those affected by cognitive decline, major health problems and/or disabilities were excluded.
- b. **Ethical and legal requirements** - All PEUs were informed about the project's objectives, duration, and their participation in it during informative meetings. Then, volunteers signed the informed consent form at their respective homes and kept a copy of it. No ethical approval was needed from an external Ethics Committee for testing the prototype. At all times Covid-2019 safety measures were taken and strictly followed by ESKT.
- c. **Management of the Focus Groups' sessions** - All interviews were impossible due to COVID-19 pandemic and the potential risks for the volunteers' health. Therefore, individual WhatsApp and phone calls were conducted with PEUs by 2 researchers. In total, 6 individual phone interviews with Spanish volunteers and 2 online and 1 physical interviews with TEUs representatives were held. Conducting interviews in such a situation was a great challenge and a success for POSITIVE.

Interviews were done following the protocol described in D4.1 Validation and Demonstration Planning. Senior volunteers gladly replied to all questions and were happy to give their opinion and valuable feedback. TEUs also shared their views and comments about the platform and their experience with it. All findings from data collected during Pilot Operations Phase I will be described in D 4.3 Evaluation Report.

Individual Interviews in Poland

- a. **User recruitment process** - REALL stayed in touch with the potential PEU's and TEU's and stored the contact information in a separate file to navigate their relationship with the consortium. Thanks to the fact that each contact is assigned to one researcher, a more personal relationship is established, which encourages seniors to participate. Due to the fear of another lockdown two

meetings were organised, the first informative meeting took place to update seniors about the development of the project and make them realize the project has little chance of success without their contribution. During the first meeting socio-demographic and technological surveys together with the informed consent were collected. Reall recruited 6 PEU's who felt the most technologically capable out of 10 participants. The second physical meeting's goal was to conduct the train seniors for the upcoming monthly testing and fill the remaining surveys (Annex 3). Small details make a difference when it comes to contacting seniors. In order to distinguish ourselves from the overload of promotional materials everybody is flooded with, we decided to take a more personalised approach. In Positive AAL each person is not a figure. Everyone is an individual with an opinion and a different perspective, carefully noted by our team and taken into account while creating the platform. Guided by this, we start from a preliminary contact via personalised emails. Every email is written to the person, explaining which feedback we appreciate and why. This helps with creating a more meaningful interaction when everyone feels included, listened to and powerful enough to make an impact on the final look of the platform. After fruitful cooperation seniors are thanked for their participation and a summary is shared with them to sum up and present the results of the meeting. Emails also encourage us to follow us on our website and social media to remain informed and engaged in Positive AAL's progress. Reporting the current progress, being active on social media and creating engaging content is a must if the enthusiasm for the project is to remain. Regular posts, updates and other content is constantly updated and monitored by our team.

- b. **Ethical and legal requirements** - no ethical committee or approval was needed, the informed consent presented in Annex 4 had been signed in person by all the participants 3 months prior to the Pilot Testing, during the previous meeting with seniors. A copy was given to them to be kept. REALL's team members collected all the signed forms and stored it in their premises.
- c. **Management of the Focus Groups' sessions** – The first meeting took place outside the premises due to lower risk of COVID-19 contraction and favourable weather in July. The second one took place in a large room in which the PEU's with the researchers occupied less than 25% of space. The following part involved a monthly pilot testing period, during which seniors were in weekly contact with REALL's team through GoogleMeets. This allowed not only monitoring their progress and activity on the platform but also helped to dispel doubts and identify inconsistencies in the prototype and most importantly the risk of COVID-19 contraction was eradicated. Managing the weekly meetings online was a challenge, finding a suitable platform, making sure that seniors know how to connect proved to be significantly more time-consuming than expected. Except from the monthly calls, certain seniors required additional personal contact to slowly explain and discuss mostly technological issues. Overall, despite taking almost double the planned time, the monthly pilot was a success.

Conclusions

Design and requirements confirmation evaluation phase

As conclusions for this first evaluation phase, we can highlight that:

- According to Eurostat, 35.6% of the elderly in Romania, 30.7% of the seniors in Italy, 28.2% in Poland, and 24.1% of the elderly in Spain live alone⁵. The mortality risk of loneliness is comparable to that of obesity and smoking. Persistent loneliness is further associated with unhealthy behaviours, mental problems and poor cognitive performance. Lonely individuals also report more pessimistic judgements and feel more threatened by life situations compared to their 'non-lonely' counterparts². Furthermore, recent studies show that adults over 65 years old are 9 percentage points more likely not to engage often in social activities, compared to those aged 26 to 45, being even above 15 percentage points in Eastern Europe. Nevertheless, as an important data for POSITIVE project, it is important to highlight that, though from the age of 55 there is a decrease in the percentages of people who use the internet, the gap is rapidly shrinking in recent years, especially due to the arrival at these ages of people who previously used the Internet, rather than a digital literacy of the elderly; in 2007, the gap was 78.6 percentage points between the most connected age group (16-24 years) and that of the elderly (65-74 years); in 2018, it has been reduced to 51.6 points³.

- Four partners of the consortium (AAIF, FSL, REALL and ESKILARA) have been particularly active in these tasks, as stated in the "User recruitment and mobilization criteria".

- Only FSL has been obliged to receive the EC approval before moving forward to the pilots, which has caused a delay of one month in the execution of the first evaluation phase.

- In the three first countries which have undergone this first evaluation phase, the participation of the elderly was according to the accorded criteria:

- On the 21st of October 8 elderly people between 55 and 75 years old participated in the Romanian session, and all of them finally took part in the second phase (interview and semi-structured questionnaire). 11 anonymous responses were gathered from other seniors through an online survey.
- On the 22nd of October 9 elderly people between 55 and 75 years old participated in the Spanish sessions, all of them filled in the structured questionnaire physically, from which 5 took part in the second phase (interview and semi-structured questionnaire).
- In Poland, this first evaluation was divided in two days, having 2 different elderly people participating in each of the days (25th and 29th of October). All of them

filled in the structured questionnaire physically, whereas 3 of the participants took part in the second phase (interview and semi-structured questionnaire).

- The next version of the deliverable will gather the protocols and structure, as well as the participation results of the Pilot Operations Phase I evaluation phase.

Pilot Operations Phase I

Due to COVID-19 pandemic, all 4 end users organizations from Poland, Romania, Italy and Spain had to adapt the Pilot Operations Phase I structure and organize individual interviews instead of the focus groups initially planned, due to the new restrictions and safety protocols within each country.

Just in the case of Spain and Eskilara all contact with volunteers had to be done virtually, as the safety protocols prevented the primary end user organization from organizing any physical contact with them. In Poland, Romania and Italy, individual face-to-face interviews were organized with each participant.

In any case, in each institution there was a person with the role of “facilitator” (in Biscay the role was in this case assumed by two people) who had the task of providing an overview of the project to participants, presenting the mock-up and responding to participant's requests.

The individual interviews in each of the countries finally took place as follows:

- In Romania, focus groups interviews with many participants were impossible due to Covid- 2019 pandemic and the possible risks for senior’s health. Therefore, individual face-to-face interviews were conducted with PEUs by 2 researchers. In total, 6 face-to-face individual interviews were conducted with Romanian volunteers and 3 online interviews with representatives of TEUs.
- In Spain, focus Groups interviews were impossible due to COVID-19 pandemic and the potential risks for the volunteers’ health. Therefore, individual interviews via WhatsApp and phone call were conducted with PEUs by 2 researchers. In total, 6 individual phone interviews with Spanish volunteers and 2 online and 1 physical interviews with TEUs representatives were held. On the other hand, informed consents had to be delivered one by one to each participant’s house to be signed by them, following the safety measures of COVID-19 protocols in the Basque Country.
- In Italy, it was not possible to conduct the focus group in person due to Covid-19 pandemic situation and the possible risk for participants’ health. Therefore, a virtual focus group session was organized with 6 PEUs and conducted by 2 researchers. Four TEUs representatives were contacted for individual phone interviews as well.
- Similarly, due to the pandemic, in Poland the focus group was conducted online - Through both GoogleMeets and through phonecalls with 6 PEUs, 1 TEU and 2 researchers.

Annex 1

Informed consent form designed for Design and requirements confirmation phase:

[PARTNER ORGANIZATION LOGO]



Informed consent

for participating in a survey and a focus group interview within the **POSITIVE** project
organized by **[Partner Organization]**

This meeting aims to present the **POSITIVE** project, its vision and objectives, respectively, to evaluate and establish the needs and requirements of the users of the proposed solution within **POSITIVE** project. **POSITIVE** will be an online platform that will help seniors to connect, get information about local events, initiate their own events, discuss topics of their interest with their peers, learn new things through e-learning, and stay active in life. The project is funded by the **AAL 2018 program** (Active Assisted Living Program).

You, as a volunteer, have been invited to take part in a research study of the POSITIVE project. Before making a decision on whether you want to participate or not, please read this document carefully. Please, ask all the questions you may have so you can be completely sure that you understand the scope and procedure of the study. You will receive your personal copy of this consent to keep. At all times, we assure the compliance to the current legislation.

Your involvement in this activity will consist in:

- participating during the presentation of the project - its description, objectives
- completing an anonymous survey and a questionnaire

- expressing your opinion and active involvement in a focus group interview – Your views and opinions will help us identify the needs and requirements of the persons who will use the **POSITIVE platform** in the future.

Approximate duration of this session will be two hours.

The working group will be led by **[Person name and surname]**, assisted by **[Person name and surname]** and **[Person name and surname]**, representatives of the **[Partner Organization]**. Your participation is voluntary and you are entirely free to withdraw at any time. The entire session will be recorded on audio. Also, we shall be taking pictures for the purpose of disseminating the information about this project and your participation in it on our POSITIVE consortium media channels (Facebook, Twitter, project’s website, Ana Aslan International Foundation’s social media and website etc.). If you disagree to be photographed, please mention this below.

The information you share with us during the focus group interview and the completion of the questionnaires will be kept anonymous and confidential, in accordance with the legislation in force. The collected data will be processed and analysed in confidentiality and the identity of the participants will not be disclosed under any circumstances. You have the right to withdraw at any time from this study and all your personal data can be deleted at your specific request.

For any information regarding this working group or the POSITIVE project, please contact our representatives at any time:

Name and Surname	Phone:	Email:
Name and Surname	Phone:	Email:
Name and Surname	Phone:	Email:

Your signature represents the informed consent to participate in this Working Group and your agreement to process the data collected solely for the above mentioned purpose.

Thank you!

Please answer if you agree or not to appear in the pictures taken for the purpose of disseminating this event:

- Yes Yes, but blurred
 No

Participant name and surname

Signature

Date.....

Annex 2

[PARTNER ORGANIZATION LOGO]



Project presentation

The objective of the POSITIVE (Personalized platfOrm aSsisting seniors in healThy, fulfilled and actiVe life) Project is to provide a holistic digital platform to reduce the disconnect experienced by seniors. The platform will be gamified and personalized according to interests and experience with technology of seniors, bringing fun and entertainment into the portal and forgoing patient-oriented mindset of seniors. In particular, we aim to solve loneliness of the seniors caused not necessarily by the social isolation resulting from immobility but by a lack of meaningful connections and a clear purpose in life or disconnection and boredom even when around people and active in the family.

The main features of the platform for supporting elderly people will be:

- Holistic approach - a place to go to find everything, gathering information from the Internet and providing it in a structured form;
- Gamified and personalized tools, according to interests and personality of a senior experience with technology;
- Software integrated with physical event facilitation and content parts for facilitating deeper social connections through meaningful activities and sharing knowledge;
- Validation of the approach and the platform in a number of field trials.

The project is in the initial phase and would like to know from elderly what their experience with technology and internet is, and how they would prefer to exploit them.

Annex 3

[PARTNER ORGANIZATION LOGO]



Questions for semi-structured interview

0- Warm-up questions

How your typical day is structured?
Are there any aspects/behaviour in your lifestyle you would be willing to change/improve? If yes, which ones?

1- Technological literacy

Which technological devices/services/apps do you use?

What is the most frequent purpose of using such technological devices/services/apps?

What type of communication tool do you prefer to contact your relatives and friends?

2- Attitudes toward technology

In which situations do you feel the need to use a specific devices/services/apps?

Is the current available devices/services/apps appropriate for your needs?

Would you like to use other or better devices/services/apps? If yes, what kind of devices/services/apps should be?

3- Current inclination toward POSITIVE

Would you like to use a digital platform with an integrated event facilitation and content part?

Do you use reminders?

Do you feel that notifications/reminders should be better “personalised”? How?

Annex 4

Consent form designed for Pilot Operations Phase I. Found also as Annex 8 within D4.1 Validation and Demonstration Planning

Informed consent

for participating in a survey, focus group interviews, and Pilot Operations Phase I within the **POSITIVE** project organized by **[End-user organization name]**

I. INTRODUCTION

You, as a volunteer, have been invited to take part in a research study of the *POSITIVE* project. Before making a decision as to whether you want to participate, please read this document carefully. Please ask any questions you may have so you can be completely sure that you understand the scope and procedures of the study. You may take a copy of this consent form to think about it or talk to your family and friends before making any decision. At all times, we assure you of compliance with current European legislation.

II. PURPOSE OF THE STUDY/PROJECT

POSITIVE project's main objective is to fight loneliness of the seniors caused not necessarily by the social isolation resulting from immobility but by a lack of meaningful connections and a clear purpose in life or disconnection and boredom even when around people and active in the family.

POSITIVE project aims to help seniors to connect, organize simply and to stay active in life,

resulting in a positive impact on their wellbeing and preventing future cognitive and physical

decline, through the development of a holistic, gamified and personalised online platform. The project is funded by the **AAL 2018 program** (Active Assisted Living Program).

More specifically, POSITIVE will offer the following services in a user-friendly environment for older people:

- 1) Information about physical events organized by third-party organizations such as senior clubs, local municipalities, NGOs etc.

- 2) Opportunities for acquiring new skills and knowledge through online courses provided by the POSITIVE Consortium and other third-party organizations
- 3) Opportunities for users of the platform to express their opinions, discuss with other peers, and comment on topics of their interest in POSITIVE's online forums
- 4) Opportunities for users to create and publish their own events and find like-minded people for their initiatives/ ideas
- 5) Online games

We aim to develop an easy to use, intuitive interface on familiar devices and to offer you the means and support to stay active and independent.

III. PARTICIPANTS IN THE STUDY AND POSSIBLE PARTICIPATION

We kindly request your voluntary participation in this research project. Please make sure that you are well informed about the purpose of the study and your participation in it. Please ask us to clarify any information you do not understand. Please do not sign if you are not sure that you have fully understood all the information provided to you. Participation in this project is totally voluntary and you will not have any financial burden. You can withdraw at any moment without providing any explanation or having any consequences.

The inclusion criteria for participating in this study are as follows:

- being over the age of 55 years and living independently, with no cognitive impairment
- willing to participate voluntarily in the project.

IV. PROCEEDINGS:

The users are involved throughout the project in order to ensure that their needs are met. The involvement of users is required in the following phases: (a) Co-design and Requirement Analysis, (b) Mock-up testing, (c) Pilot Operations Phase I i.e. pilot testing of the first prototype, and (d) Pilot Operations Phase II i.e. 2nd prototype testing. By signing this informed consent, you are stating that you are willing to participate in the testing phase of the POSITIVE project.

Each testing phase asks you to test an iterative which will be provided to you by the researcher. The researcher will explain to you the procedure that you need to follow during the testing and will support you at any time. You will be required to fill in some surveys and to respond to some questions asked by the researcher/s in order to gather your feedback on the platform you tested.

V. RISKS OR INCONVENIENCE

The only potential inconvenience foreseen during the testing is that the participants may feel anxiety due to exposure and adaption to the prototype. The project team will provide support

to participants so as to facilitate the use of the POSITIVE platform. You have the right to withdraw any time you wish.

VI. BENEFITS

Participants will have the opportunity to test and adopt techniques to help them stay active and independent. The personal benefit from participating in any activity of the *POSITIVE* project is that you can make a substantial contribution to the development of future technologies focusing on the enhancement of the quality of life of ageing persons and supporting an independent lifestyle. In any case, the data collected in this study will lead to a deeper and better knowledge and understanding of the wishes and needs of ageing persons as well as their social environment to enhance future health services and care processes.

VII. DATA PROCESSING

We respect the principles of data processing (General Data Protection Regulation (EU GDPR): transparency, lawfulness and fairness. Once you decide to take part in the study and sign in on the POSITIVE platform the following personal information will be collected from you:

1. Your name;
2. Your gender;
3. Your email address;
4. Your location;
5. Your IP address

The purpose of personal data processing:

Results from this study will be used for the design of and the improvement of the POSITIVE platform, and for scientific purposes only. Personal data will be processed in a manner that ensures appropriate security and confidentiality of personal data, which includes preventing unauthorized access to or use of personal data and the equipment used for processing.

Your registered and/or recorded responses will not include any personal identification information. Hence, it will not be possible to identify you after your participation in any study. Recorded information will be processed during the phase of data analysis and will be included in project internal reports or later in scientific publications. Your recorded information will only be processed for the purposes of the project ('purpose limitation') and limited to what is necessary in relation to the purposes for which they are processed ('data minimisation'). It will not be possible to identify the source of the information. The results of this study may be published in scientific magazines, conference proceedings or books. Complete anonymity of personal data is guaranteed by the *POSITIVE* Consortium partners.

If you should decide to withdraw your consent, please contact the research contact person and let her/him know of your intention of leaving the research project. You can contact the research contact person at the address given below (VII CONTACT PERSONS). Please keep in mind that if you do not provide us with your authorization now or if you cancel it in the future, you will not be able to participate in this study.

From the moment you withdraw from the *POSITIVE* project, your data will not be used in any further phase of the project and your registered and/or recorded responses will be deleted and destroyed upon your request.

VIII. CONTACT PERSONS

For further information about your rights as a participant in the testing phases, or if you are not satisfied with the way this study is being carried out, or if you have any question or complaint during the testing phase, please contact the leading researcher:

[Name, surname of researcher/s]

[End-user organization name]

[Full address of end-user organization]

[Telephone number of researcher/ s]

[Email address of researcher/s]

X. CONFIRMATION

I have read the information in this informed consent. All of my questions about the study and my participation in it have been answered. I authorize the use and analysis of my answers to the entity aforementioned for the purposes above indicated. Signing this informed consent does not imply giving up to any of my legal rights. I accept to participate in this study in a voluntary capacity

Please answer if you agree or not to appear in the pictures taken for the purpose of disseminating this project by the POSITIVE Consortium.:

- Yes
- Yes, but blurred
- No

Name and surname of the participant:

Name and surname of the researcher:

Signature	Signature
Date:	Date:

Appendix

1. Singh & Misra 2009
2. https://ec.europa.eu/jrc/sites/jrcsh/files/fairness_pb2018_loneliness_jrc_i1.pdf
3. ABELLÁN GARCÍA, Antonio; ACEITUNO NIETO, Pilar, PÉREZ DÍAZ, Julio, RAMIRO FARIÑAS, Diego, AYALA GARCÍA, Alba y PUJOL RODRÍGUEZ, Rogelio (2019). “Un perfil de las personas mayores en España, 2019. Indicadores estadísticos básicos”. Madrid, Informes Envejecimiento en red nº 22, 38p. Publication date: 06/03/2019.
4. Karen Windle, Jennifer Francis and Caroline Coomber. Preventing loneliness and social isolation: interventions and outcomes. SCIE Research briefing 39. October 2011.
5. <https://ec.europa.eu/eurostat/cache/infographs/elderly/index.html>