

SOCIABLE DELIVERABLE D6.3

“Final Report on the Pilot of SOCIABLE technology platform”



Project Acronym	SOCIABLE
Grant Agreement No.	238891
Project Title	Motivating platform for elderly networking, Mental reinforcement and social interaction
Deliverable Reference Number	SOCIABLE_WP6_D6.3
Deliverable Title	“Final Report on the Pilot of SOCIABLE technology platform”
Revision Number	V1.2
Deliverable Editor(s)	Singularlogic (SLG)
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Project co-funded by the European Commission within the ICT Policy Support Programme		
Dissemination Level		
P	Public	P

Statement of originality:

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Revision History

Revision	Author(s)	Organization(s)	Date	Changes
0.1	Stelios Pantelopoulos	SLG	01/06/2012	Provision of Structure and Table of Contents
0.2	Stelios Pantelopoulos	SLG	22/06/2012	Introduction and Section 2
0.3	Veronica Guillen, Elena Rossato, Olga Lympelopoulou, Tomas Munkvold	COFO, HYGEIA, PREVI, TRONDHEIM	25/06/2012	Inputs from HYGEIA, TRONDHEIM, COFO, PREVI
0.4	Chiara Zacharrelli, Maria Stefa	AUSL, SPC	29/06/2012	Inputs from AUSL, SPC
0.5	Roberta Annicchiarico	FSL	09/07/2012	Inputs from FSL
1.0	Stelios Pantelopoulos	SiLO	10/07/2012	Lessons Learnt, Integrated Version
1.1	Silvia Jiménez	UPV	12/07/2012	Proof-read corrections and quality control
1.2	Stelios Pantelopoulos	SiLO	16/07/2012	Final Version

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Abstract

This deliverable reports on the pilot operations of the SOCIABLE ICT platform i.e. the surface platforms used in care centres (notably surface tables) and homes (notably surface PCs)). In particular, the deliverable describes the main issues that were observed during the pilot operations, as well as how these issues were solved. The reported issues include software, hardware, networking and process-related issues. Knowledge about the identification and resolution of these issues can serve as a basis for the effective use of the platform during the sustainability phase of the project, while also boosting the process of improving the SOCIABLE ICT platform.

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Executive Summary

SOCIABLE is devoted to the deployment, piloting and evaluation of a novel ICT based model for cognitive training and social activation of the elderly. This model emphasizes on the use of surface computers (surface tables and tabletPCs / surfacePCs) as a means to create and offer a motivating, ergonomic and pleasant play environment to the elderly that engage in cognitive training and social activation activities (notably cognitive training games). The project has already concluded more than one year of pilot operations, and is in the process of collecting and reporting experiences and lessons learnt. The present deliverable is the final report of the pilot operations of the SOCIABLE technology platform and emphasized on how the SOCIABLE technology platform was used and perceived by end users during the pilot operation. In particular the deliverable reports the main technical problems and incidents which the users (health professionals and elderly users) encountered in the scope of the pilot operations. A later deliverable in the SOCIABLE workplan (namely deliverable D6.2) will report on organizational and process-related issues that were encountered during the pilot operations of the SOCIABLE services.

All pilot sites have reported their experiences for the use of the SOCIABLE technology platform, with a particular focus on the main hardware and software failures and how they were resolved. The experiences of the partners varied depending on the different versions of the hardware and software that they used to support the SOCIABLE sessions, as well as depending on the time instants when they used them. In general hardware failures can have a negative impact on the SOCIABLE programmes, since their recovery can be lengthy (in terms of time). Therefore, SOCIABLE sites are advised to prepare contingency strategies in order to deal with and recover from hardware failures. Software issues were also encountered, yet they were mostly related to the quality of the SOCIABLE software. These issues were taken into account towards improving the robustness and quality of the SOCIABLE platform.

To a lesser extent the SOCIABLE pilot sites had also to deal with networking issues (e.g., network instability, low throughput). Such issues seemed to be peculiar to specific sites. In general networking issues are not directly related to the integration of the SOCIABLE platform, which was carried out in the scope of the project. Nevertheless, they have underpinned the value of a stable and high-speed internet connection. This is prerequisite for the graceful operation of the SOCIABLE technology platform.

The SOCIABLE pilot sites have also encountered more specific issues associated with the ergonomics (e.g., height, lighting) of the surface table platform. These issues have to be dealt as part of the setup of the SOCIABLE platform i.e. as part of its initial deployment. The SOCIABLE workplan included a dedicated three month period, which was devoted to testing and fine-tuning of the SOCIABLE platforms prior to the commencement of the pilot operations. This three month period has been proven invaluable to the graceful commencement and evolution of the SOCIABLE pilot

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operations. This was one of the main reasons for which only a few incidents were reported. Moreover, it is important that two out of the seven sites did not face any essential technical/technological issues with the SOCIABLE platform.

Overall, the users (i.e. health professionals, elderly) experience with the SOCIABLE technology platform can be characterized as positive. Indeed, all sites have provided a rather positive assessment of the SOCIABLE technology platform, even though in some cases they had to allocated time and effort in resolving technical issues. All the issues that have arisen have been taken into account in fine-tuning the platform, thereby preparing the technology platform for its coming commercial roll-out.

1. Introduction

The SOCIABLE project has been focusing on the introduction and piloting of a novel ICT based model for cognitive training and social activation of the elderly. According to this model, SOCIABLE offers to the elderly an ergonomic motivating and user friendly environment for undertaking cognitive training on the basis of a wide range of pleasant play activities (games) that target a variety of cognitive skills (including memory, attention, orientation, language and more). At the heart of this model lies the SOCIABLE surface computing platform, which facilitates the delivery of the games in an ergonomic and motivating environment. The SOCIABLE surface computing platform (including the SOCIABLE software) can be conveniently characterized as the SOCIABLE «technology platform». In the scope of SOCIABLE, the above mentioned model (and subsequently the SOCIABLE technology platform) has been deployed, tested and piloted under realistic conditions across seven pilot sites comprising care centers and hospitals in the four countries of the consortium (Spain, Italy, Greece, Norway).

The pilot operations of the project have provided significant insights on the added-value of the SOCIABLE cognitive training model, but also on the merits and drawbacks of deploying cognitive training on the basis of an ICT based. Furthermore, they have served as a basis for documenting and remedying issues associated with the SOCIABLE technology platform. The understanding of such issues (and of their potential remedy) is a key prerequisite for the successful and sustainable deployment of the SOCIABLE model within the pilot sites of the consortium, but also within third party care services providers i.e. as part of the project’s commercialization and exploitation plans. The purpose of the present deliverable is to report on the pilot operations of the SOCIABLE technology platform on the basis of the major incidents and issues that occurred during the pilot operations, but also on the basis of the partners’ experience in solving these issues. Note that the deliverable does not deal with problems related to the processes, operation and organization of the pilot process. These issues are equally (and sometimes more) important than technology issues, but they are out of the scope of the present deliverable. WP6 includes a distinct deliverable where issues associated with the pilot processes and organization (e.g., scheduling, availability of resources, recruitment of patients) are reported. The present deliverable is strictly focused on incidents associated with the SOCIABLE surface platforms (including the surface table and the surface PC platform).

Technology issues are reported separately for each pilot site. In particular, the deliverable reports problems associated with the use of the SOCIABLE technology platform on a per pilot site basis. These problems can be mainly classified as hardware and software problems, while technology-related process problems are reported as well. Along with the reporting of these incidents, the various pilot sites have also reported the techniques employed in order to remedy the problems successfully. Furthermore, an overall assessment of technology issues during pilot operations is attempted for each one of the pilot sites.

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On the basis of the reports from the various pilot sites, the present deliverable includes an overall assessment associated with the pilot operations of the SOCIABLE technology platform. Furthermore a number of «lessons learnt» are provided. The target audience for these lessons includes the prospective deployers of the SOCIABLE cognitive training models, including both care services providers and technology integrators. The duration of the pilots (i.e. more than eighteen months) and their multi-site nature maximizes the likelihood that these lessons learnt will be able to target the main deployment and operational issues of the SOCIABLE platform. While the existence of additional issues can never be ruled out, this deliverable aspires to equip prospective deployers with a sound background on how to address common issues.

The deliverable is structured as follows: Section 2 following this introductory section provides an overview of the SOCIABLE technology platform, through presenting its main components and their role in the scope of the SOCIABLE pilot operations. The objective of Section 2 is not to provide an in-depth description of the features and functionalities of the SOCIABLE platform, which are anyway described in the scope of WP3/WP4 deliverables. Rather, the aim of section 2 is to provide the readers with the terminology of the main functionalities that are referenced in the scope of the reports of the individual pilot sites. Sections 3 through 9 include the reports of the several SOCIABLE sites in terms of the pilot incidents associated with the SOCIABLE technology platform. Each one of the reports provides an overview of the pilot operations (including which modules of the SOCIABLE platform were piloted and when) and accordingly reports the pilot incidents experienced during the pilot operations. Each report is concluded with a short comprehensive assessment of the pilot operations of the SOCIABLE technology platform from the pilot site's perspective. Section 10 provides a summary assessment of the pilot operation of the SOCIABLE technology platform, including the main lessons learnt. Section 11 concludes the deliverable.

2. Overview of the Pilots of the SOCIABLE Technology Platform

2.1 Main Components

The SOCIABLE pilot operations were based on the SOCIABLE technology platform, which comprises the following main components:

- **Surface hardware:** The SOCIABLE platform is based on surface computing hardware. In the scope of the pilot operations, two kinds of surface hardware were deployed and used: (a) Surface table hardware, which was deployed at hospitals and care centers and (b) Surface PCs (including TabletPCs) which was used at the elderly homes. In each of the above categories, several variations of the hardware were used (e.g., the two versions of the Microsoft Surface Platform/Table and several models of the TablePCs). The particular hardware model used is reported within the information of the individual pilot sites. Note that the hardware platforms outlined above are accompanied by the appropriate operating systems, which are important for the operation and for the performance of the software applications that run over them.
- **The back-office module of the SOCIABLE software:** A main element of the SOCIABLE software is its back-office module, which provides functionalities for managing patients/elderly records, documenting assessment tests, configuring cognitive training sessions and more. This module provides therefore the functionality used by SOCIABLE health professionals (including the medical experts that supervise the SOCIABLE cognitive training sessions).
- **The cognitive games comprising the SOCIABLE software:** The heart of the SOCIABLE software comprises the SOCIABLE games, which are executed in the scope of an ergonomic motivating multi-touch environment. The games are used by the elderly, which participate in the SOCIABLE cognitive training sessions.
- **The book-of-Life module of the SOCIABLE software:** The book-of-life application is a specialized application that targets the social activation and interaction of the elderly. It can be consider as a special (i.e. sophisticated) type of cognitive training game and it is used by the elderly much in the same way cognitive training games are used. The "Book of Life" application is a personal diary, containing life experiences, emotions and thoughts, which is created by the elderly user through the SOCIABLE ICT platforms. Through the book of life, elderly users are able to share information about their life (e.g., photos, sounds) with other users. The book serves as both a collective memory and an individual memory.

2.2 Role in the Scope of the Pilots

The components outlined above have been extensively used in the scope of the pilot operations and they are the key elements of the SOCIABLE technology platform. Note however that during the evolution of the SOCIABLE platform, all these modules have undergone improvements, fine-tuning and (sometimes significant) updates. For instance:

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- Several pilot sites have started the pilot operations with the first version of the Microsoft Surface Table and have concluded them following an upgrade to the second version. This change/upgrade has had an impact on the flow of the pilot operations, since these pilot sites had to deal with the intricacies of the second version, after dealing with a range of early issues with the first version. On the other hand, pilot sites using the first version of the surface platform did not have to deal with the task of installing and deploying the platform twice.
- Different pilot sites have been using different games at different stages of the pilot operations. Therefore, their experience of the use of SOCIABLE games might differ depending on the specific time instant and the specific game versions used.
- The back-office application and the book-of-life application have undergone several evolutions and improvements. Therefore the experience of the pilot sites from the use of these applications depends also on when and how they were used in the scope of the pilot operations.

3. Report on the Pilot of the SOCIABLE Platform at HYGEIA

3.1 Overview

The following table (Table 1) provides summary information associated with the pilot of the SOCIABLE ICT platform at HYGEIA hospital.

Start Date of the Pilots	May 26 th , 2011
End Date of the Pilots	June 29 th , 2012
SOCIABLE Surface Platforms Used	<ul style="list-style-type: none">• Microsoft Surface V1• Microsoft Surface V2• Dell all-in-one TabletPCs
SOCIABLE Applications Used	<ul style="list-style-type: none">• All of the cognitive games of the SOCIABLE platform.• The Back-Office module of the SOCIABLE platform.• The Book-of-Life module of the SOCIABLE platform.

Table 1: Overview Information for the use of the SOCIABLE Platform in the scope of the HYGEIA Pilot Operations

3.2 Main Issues/Problems and their solutions

There were no technical issues associated with the pilot operations at HYGEIA.

3.3 Summary Assessment

The experience of the medical experts and the elderly that have participated in SOCIABLE using either the Microsoft Surface or the Tablet PCs was overall very positive. Even non-technical users needed no more than a SOCIABLE session to get familiar with the special features of the multi-touch screen. According to their feedback, the interaction with the computer felt very natural. It would be useful to highlight that even in the case of group sessions; the users could easily play in parallel, without facing particular problems.

4. Report on the Pilot of the SOCIABLE Platform at AUSL

4.1 Overview

The following table (Table 2) provides summary information associated with the pilot of the SOCIABLE ICT platform at AUSL hospital.

Start Date of the Pilots	9/05/2011
End Date of the Pilots	29/07/2012
SOCIABLE Surface Platforms Used	<ul style="list-style-type: none"> • Microsoft Surface V1 • Samsung Surface V2 (introduced just for the last training sessions of the pilot operations, G4/Q4) • ASUS TabletPCs EeeTop All-in-One
SOCIABLE Applications Used	<ul style="list-style-type: none"> • Games (Be a piano player, Guess who, Lost in the city, Analogies, Differences, Take away menu, Picture Sort, Similarities, Antonyms, Synonyms, Who belongs where, Remember the design, Remember the melody, Remember your order, Find the pairs, Copy the figures, Puzzle, Symbol addition, Incomplete grids, Domino). • Back-Office • Book-of-Life

Table 2: Overview information associated with the pilot of the SOCIABLE Technology Platform at the AUSL pilot site

4.2 Main Issues/Problems and their solutions

The following tables list the main issues (including pilot incidents), which occurred during the pilot period at the AUSL pilot site.

Issue No.	AUSL-1
Detailed Description	Microsoft Surface stopped working; need to suspend the sessions for the whole day.
Date Registered/Occurred	23 may 2011
Description of Solution and Remedial Actions	Contact with local technical partner (CEDAF) who came to AUSL and solved the problem.
Date Closed	24 may 2011
Type (Software/Hardware/Process)	Software

Table 3: Problem with Microsoft Surface at the AUSL pilot site

Issue No.	AUSL-2
Detailed Description	Sometimes the Microsoft Surface suddenly stop

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	working and restarts during the sessions.
Date Registered/Occurred	May-2011
Description of Solution and Remedial Actions	Contact with local technical partner (CEDAF) and hospital technicians who identified the problem and recommended to use the internet cable connection instead of the wireless connection.
Date Closed	May-2011
Type (Software/Hardware/Process)	Networking

Table 4: Wireless networking problem at the AUSL pilot site

Issue No.	AUSL-3
Detailed Description	Problems in usability of the Tablet PCs by many users, especially with the touch screen functionality, that results too slow (e.g., when the user has to drag the pieces of puzzle or in rotating domino pieces).
Date Registered/Occurred	October-December 2011
Description of Solution and Remedial Actions	We asked to technicians from CEDAF but the problem couldn't be solved so far. We found a strategy to overcome this problem, explaining the fault to our users and suggesting them to drag slowly the pieces without lift the finger. Some problems still remain also with other games (e.g. domino, copy of figures) that are difficult to use with Tablet PCs.
Date Closed	Open
Type (Software/Hardware/Process)	Software

Table 5: Touch screen problem with Tablet PC at the AUSL pilot site

Issue No.	AUSL-4
Detailed Description	Problem with usability of Samsung Surface V2, due to the same difficulties in touch screen functionalities as the Tablet PC, besides a greater sensitivity to the touch and to the light that make it difficult to use; since that we couldn't use the Surface V2 and continued to use V1.
Date Registered/Occurred	14 June
Description of Solution and Remedial Actions	So far not solved. We're waiting for the technological partners to develop the new software
Date Closed	Open
Type (Software/Hardware/Process)	Software

Table 6: Touch screen problem with Surface V2 at the AUSL pilot site

Issue No.	AUSL-5
Detailed Description	Errors/imperfections in the games
Date Registered/Occurred	May 2011-June 2012
Description of Solution and Remedial Actions	Asked the technical partners to fix them, suggested solutions to improve them, explained to users that this is an experimental phase so some errors are expected and tolerated.
Date Closed	Work in progress; some have been solved, other in updating
Type (Software/Hardware/Process)	Software

Table 7: Game Errors at the AUSL pilot site

Issue No.	AUSL-6
Detailed Description	Difficulty to find users to give the tablet PC at home for the training, because of different reasons (no internet connection and/or not relative/caregiver available in assisting the user during the training).
Date Registered/Occurred	May 2011-July 2012
Description of Solution and Remedial Actions	No training at home
Date Closed	N/A
Type (Software/Hardware/Process)	Networking

Table 8: No Home Training at the AUSL pilot site

4.3 Summary Assessment

Since the very beginning of the experimentation, the medical experts observed a positive and good interaction of the elderly users with the technological devices used, although for many of the users involved it was often the first approach with a computer. They all learned very quickly to use the touch screen and the first embarrassment were overcome immediately. At the end of the SOCIABLE experience, the users reported an increase of self-efficacy and self-esteem thanks to their learning and using of new technology.

At the end of the training some users became almost independent with the Games application so that they could have continued the training at home alone (with a programmed program provided by the medical experts); as for the BOL application instead more problems have been showed in teaching the elderly to use and interact with it without any assistance, despite it was very appreciated as an application.

5. Report on the Pilot of the SOCIABLE Platform at FSL

5.1 Overview

The following table (Table 9) provides summary information associated with the pilot of the SOCIABLE ICT platform at the FSL hospital.

Start Date of the Pilots	9/5/2011
End Date of the Pilots	9/8/2012
SOCIABLE Surface Platforms Used	<ul style="list-style-type: none">• Microsoft Surface V1• Samsung Surface V2• ASUS TabletPCs EeeTop All-in-One
SOCIABLE Applications Used	<ul style="list-style-type: none">• All of the cognitive games of the SOCIABLE platform.• Back-Office• Book-of-Life

Table 9: Overview information associated with the pilot of the SOCIABLE Technology Platform at the FSL pilot site

5.2 Main Issues/Problems and their solutions

There were no essential technical issues associated with the pilot operations at FSL.

5.3 Summary Assessment

The experience of Alzheimer Disease users that participated in SOCIABLE was very positive. They learned to use the platform and they used the multi-touch screen without any effort. The difficulty of the games was tailored to their cognitive level. At the end of the training they reported that the training improved their mood, self-esteem and it made easier their approach with technology. Most of them expressed the will to continue to use the platform. Medical experts were also very positive about SOCIABLE and they were all interested in adopt SOCIABLE in their clinical practice.

6. Report on the Pilot of the SOCIABLE Platform at COFO

6.1 Overview

The following table provides an overview of the pilot operations of the SOCIABLE technology platform at the COFO pilot site.

Start Date of the Pilots	09/05/2011
End Date of the Pilots	27/07/2012 (estimated)
SOCIABLE Surface Platforms Used	<ul style="list-style-type: none"> • Microsoft Surface V1 • Microsoft Surface V2 (introduced just for the last training sessions of fourth period of pilot operations (G4/Q4)) • ASUS TabletPCs EeeTop All-in-One
SOCIABLE Applications Used	<ul style="list-style-type: none"> • Games (Be a piano player, Guess who, Lost in the city, Analogies, Differences, Take away menu, Sort the pictures, Similarities, Antonyms, Synonyms, Who belongs where, Remember the design, Remember the melody, Remember your order, Find the pairs, Copy the figures, Puzzle, Symbol addition, Incomplete grids, Domino). • Back-Office. • Book-of-Life.

Table 10: Overview information associated with the pilot of the SOCIABLE Technology Platform at the COFO pilot site

6.2 Main Issues/Problems and their solutions

The following tables list the main issues (including pilot incidents), which took place during the pilot period at the COFO pilot site.

Issue No.	COFO-1
Detailed Description	Microsoft Surface lamp broke, pilot operation suspended from October 5 th to October, 24 th . Then carried out on tablet PCs till November, 7 th
Date Registered/Occurred	5/10/2011
Description of Solution and Remedial Actions	Contact with local technical partner (CEDAF) that afterwards contacted Microsoft to get the necessary parts to substitute the lamp.
Date Closed	7/11/2011
Type (Software/Hardware/Process)	Hardware

Table 11: Microsoft Surface lamp Problems at COFO

Issue No.	COFO-2
Detailed Description	VPN connection not working: it was impossible to open the BoL or the games
Date Registered/Occurred	12/2011

Description of Solution and Remedial Actions	Contact with local technical partner (CEDAF) and the technicians of the Municipality to solve the situation
Date Closed	01/2012
Type (Software/Hardware/Process)	Networking

Table 12: VPN Connection problem at COFO

Issue No.	COFO-3
Detailed Description	Difficulties in having more than 2 people playing on the Microsoft Surface platform at the same time
Date Registered/Occurred	07/2011
Description of Solution and Remedial Actions	Social-health workers deal with relational issues, taking turns and sometimes the different level of cognitive abilities among players during the sessions. Tried to have groups with just 2 people.
Date Closed	08/2011
Type (Software/Hardware/Process)	Process

Table 13: Problems with group play using the platform at COFO

Issue No.	COFO- 4
Detailed Description	Difficulties in finding MCI patients to enroll in the project
Date Registered/Occurred	2011, April
Description of Solution and Remedial Actions	Social-health workers helped in the recruitment of users thanks to dissemination and promotional activities on the Forlì territory. Contacts with the local sanitary partner (AUSL) to have some names of possible participants from them.
Date Closed	2012, May
Type (Software/Hardware/Process)	Process

Table 14: Difficulties with patients' enrollment in COFO

Issue No.	COFO-5
Detailed Description	Errors in the games or not working games.
Date Registered/Occurred	09/2011
Description of Solution and Remedial Actions	Asked the technical partners to fix them, suggested solutions to improve them, explained to users that this is an experimental phase so some errors are expected and tolerated.
Date Closed	N/A

Type (Software/Hardware/Process)	Software
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Table 15: Game Errors at the COFO pilot site

6.3 Summary Assessment

First of all, COFO would like to stress a fact that more or less all users involved in SOCIABLE project figured out and with which we agree: they were satisfied with the system and they had a lot of fun in solving the games. They also declared that memory and attention improved with the passing of time.

Talking about day to day life, instead, they do not see any significant change in their memory and attention performances.

As far as social life is concerned, there seem to be no major changes, since during individual sessions users come into contact just with the social health worker that follows the session and in group sessions, elderly people tried to have a friend playing with them or, if they did not know any of the people taking part in Sociable, they just got in contact with them during the programme, but not outside of it, that is, they did not develop any kind of friendship with the partner.

Moreover, it is very difficult to organize the group sessions taking into consideration the free time of the elderly and the fact that sometimes they do not get on well with the other people they meet there.

As far as the games and the BoL are concerned, as COFO already stated in many occasions, there are some bugs should be fixed and some improvements that could be made.

For example, some games are too repetitive (there are few items, so people tend to learn them by heart instead of having to reason to solve the game), some explanations were not clear and some games are not working properly or not working at all.

As for the BoL, instead, it was really appreciated and people liked it a lot, even though they could not use it properly (it is too difficult for them) and they want it to be printed, since many users do not have a PC at home. However, in group sessions, sometimes, it was necessary to separate the people to do the BoL, since not always elderly people are willing to tell their personal business to other people.

As a conclusion, the opinion of COFO is pretty much in line with the feedback given by users and stated above: SOCIABLE is nice and stimulating, it makes people feel better since they know that they have something to do on that day, a commitment to follow, but the main issue to be addressed is that users are not able to use the platform by themselves and they always need a supportive figure.

7. Report on the Pilot of the SOCIABLE Platform at TRONDHEIM

7.1 Overview

The following table provides summary information associated with the pilot of the SOCIABLE ICT platform at the TRONDHEIM pilot site.

Start Date of the Pilots	May 2011
End Date of the Pilots	1.aug/1.sept 2012
SOCIABLE Surface Platforms Used	<ul style="list-style-type: none"> • Microsoft Surface V1 • Microsoft Surface V2 • TabletPCs (DELL inspiron AIO 2205)
SOCIABLE Applications Used	<ul style="list-style-type: none"> • Games (Similarities, Differences, Picture Sort, Travelling in Europe, Who Belongs Where, Copy of Figures, Hide and Find, Puzzle, Analogies, Lost in Translation, Synonyms, Antonyms, Guess Who, Find the pairs, Take away menu, Do you remember your order, Remember the design, Piano player, Remember the song, Incomplete grids) • Back-Office • Book-of-Life

Table 16: Overview information associated with the pilot of the SOCIABLE Technology Platform at the TRONDHEIM pilot site

7.2 Main Issues/Problems and their solutions

Following tables described the main technical issues encountered at the TRONDHEIM pilot site during the SOCIABLE pilot operations.

Issue No.	TRONDHEIM-1
Detailed Description	Harddrive failure in MS Surface: Harddrive failed and needed replacement. Harddrive is mounted within a closed container called a unit. Sending of unit not passing customs due to missing information, and unit is returned to sender. Damaged unit replaced 27 th of May 2011.
Date Registered/Occurred	27/04/2011
Description of Solution and Remedial Actions	Mail was sent to Microsoft and handled by Chris Wohajn. The replacement of the damaged unit was handled by Stein Halland, from the company Infocare in Norway.
Date Closed	27/05/2011. (NOTE: Replacing the damaged unit leads directly to Issue TRONDHEIM-2)
Type (Software/Hardware/Process)	Hardware

Table 17: Hard drive failure in MS Surface

Issue No.	TRONDHEIM-2
Detailed Description	<p>MS Surface Calibration: To work, MS Surface needed calibration, and the site was not in possession of a calibration board. After retrieving this board from NTNU, MS Surface would still not calibrate. Getting the corner-guides needed for accurate calibrating did not solve the problem.</p> <p>Troubleshooting showed one of the cameras not functioning. Infocare could not come due to vacation and problem was solved by Tomas Munkvold.</p>
Date Registered/Occurred	27/05/2011
Description of Solution and Remedial Actions	<p>Mail was sent to both Microsoft and Stein Helland, Infocare.(Microsoft did not reply to this inquiry).</p> <p>Stein Helland, Infocare was able to put us in contact with Roger Alterskjær, NTNU, which lent us the calibration board. The same person also got us the corner-guides needed for the calibration board (10th of June). As this did not solve the problem, a mail was sent to Infocare.</p> <p>16th of June, a reply from Infocare is received with instructions in how to open the Surface.</p> <p>Tomas Munkvold opened the surface and fixed the problem, which was the network cable going to the second camera. After this the calibration worked.</p>
Date Closed	17/06/2011
Type (Software/Hardware/Process)	Hardware

Table 18: MS Surface Table Calibration Issues at TRONDHEIM

Issue No.	TRONDHEIM- 3
Detailed Description	<p>MS Surface suddenly goes black. Problem lies in Surface's screen. Connecting by remote access shows screen. Screen shows before entering windows, telling it is not the Surface's lamp.</p>
Date Registered/Occurred	2th of Feb 2012. (Marking the end of using the Surface v1)
Description of Solution and Remedial Actions	<p>No solutions or remedial actions. Decided to use tablet until Surface v2 arrives.</p>
Date Closed	16 th of March 2012 with the arrival of MS Surface SUR40

Type (Software/Hardware/Process)	Hardware
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Table 19: Surface Table Problems at TRONDHEIM

Issue No.	TRONDHEIM- 4
Detailed Description	MS Surface SUR40 (v2) sensitivity problems: The Surface SUR40 is reacting to palms/arms, resulting in difficulties in playing. By installing LED-lights, this is now much less a problem, though still not 100%.
Date Registered/Occurred	16/03/2011
Description of Solution and Remedial Actions	Replacing the fluorescent lights with LED-lights made huge difference in sensitivity/accuracy. Positioning of lights/amounts of lights are being tried out.
Date Closed	Not entirely closed. Different lighting optimizations are still being tested for optimal result.
Type (Software/Hardware/Process)	Hardware

Table 20: MS Surface SUR40 (v2) sensitivity problems at TRONDHEIM

7.3 Summary Assessment

The first version of Surface seems to have several weaknesses, one of the severe ones being hard drive failures. NTNU, which lent us the calibration board, experienced much of the same problems as us. This is no longer relevant as we now have the Surface v2 (SUR40) table. Experiences with both table platform show that the Surface (v2) SUR40 is more sensitive than the first table.

The touch-based technology in MS SUR40 is more demanding towards the site regarding the lighting, which is a great issue that needs to be addressed by Samsung/Microsoft - especially to make it more competitive.

In our site, we have changed the lights to LED, which made a huge difference in accuracy/accidental touching. This issue is less problematic after changing to LED-lights, but it still needs improvements as the table still reacts to the palms and not only the fingers. The Surface SUR40 makes the users irritated due to mis-clicking, caused by the reflection of their palms.

Feedback from the users shows they enjoy using Sociable (Surface version 1 and tablet). Following the adjustment/improvement of the Surface SUR40 (Surface 2) the users will have a good experience too.

For healthy users, the difficulty of several games needs to be increased as they get easily bored.

8. Report on the Pilot of the SOCIABLE Platform at SPC

8.1 Overview

The following table provides summary information associated with the pilot of the SOCIABLE ICT platform at the SPC pilot site.

Start Date of the Pilots	16/5/2011
End Date of the Pilots	6/7/2012(estimated)
SOCIABLE Surface Platforms Used	<ul style="list-style-type: none"> • Microsoft Surface V1 • Microsoft Surface V2(just for the last training sessions of fourth period, G4) • Dell all –in-one Tablet PCs
SOCIABLE Applications Used	<ul style="list-style-type: none"> • All of the cognitive games of the Sociable platform • Back-Office • The Book-of-Life module of the Sociable Platform.

Table 21: Overview information associated with the pilot of the SOCIABLE Technology Platform at the SPC pilot site

8.2 Main Issues/Problems and their solutions

Following tables described the main technical issues encountered at the SPC pilot site during the SOCIABLE pilot operations.

Issue No.	SPC 1
Detailed Description	Hardware (hard disk) damaged. Platform closed and we couldn't open it.
Date Registered/Occurred	6/6/2012
Description of Solution and Remedial Actions	We called to SLG and they tried to open the surface but it was not possible. They took the Hard disk tried to fix the problem. We replaced the surface V1 with the new surface V2.
Date Closed	19/6/2012
Type (Software/Hardware/Process)	Hardware

Table 22: Hard Disk Failure at SPC

Issue No.	SPC 2
Detailed Description	GAME (My home). The game is not working well , very difficult for users to play with it.
Date Registered/Occurred	20/5/2012
Description of Solution and Remedial Actions	We suggested solutions to improve it or replace with another game. We explained to users this is a pilot program and we try to improve the game or to have a new one.
Date Closed	N/A

Type (Software/Hardware/Process)	(Software
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Table 23: Problems with robustness/stability of cognitive games at SPC

Issue No.	SPC 3
Detailed Description	Tablet Problem with software
Date Registered/Occurred	2/4/2012
Description of Solution and Remedial Actions	We called to SLG and they helped us to fix the problem.
Date Closed	4/4/2012
Type (Software/Hardware/Process)	Software

Table 24: Problems with the software of the tabletPC at SPC

8.3 Summary Assessment

The experience of the users and the medical experts using the Microsoft Surface and the Tablet PCs was overall very positive. The interaction with surface was better than we can thought, because users found all the progress very interesting and they seemed to be familiar with the surface from the first 3-5 sessions. Even in the case of group sessions, they found all the programs very positive and they felt comfortable to be in cooperation with each other.

As for the BOL, users were very excited and most of them wanted to print the BoL, so we did this, included photos, with the help of SLG.

About tablet, caregivers helped a lot of users to get familiar with the tablet and we had volunteers in all time of progress for users at home.

We didn't have particular problems but we want to highlight that the cooperation and coordination of SLG and the other partners helped us a lot to solve all the problems we have faced up.

9. Report on the Pilot of the SOCIABLE Platform at PREVI

9.1 Overview

The following table provides summary information associated with the pilot of the SOCIABLE ICT platform at PREVI pilot site.

Start Date of the Pilots	June 2011
End Date of the Pilots	July- August 2012
SOCIABLE Surface Platforms Used	<ul style="list-style-type: none"> • Microsoft Surface V1 • TabletPCs (Model)? Dell
SOCIABLE Applications Used	<ul style="list-style-type: none"> • Games: Hide & Find, Puzzles, Analogies, Lost in the City, My Home , Synonyms, Antonyms, Guess Who , Find the Pairs , Take Away Menu , Picture Sort , Do You Remember Your Order , Travelling In Europe • Book-of-Life

Table 25: Overview information associated with the pilot of the SOCIABLE Technology Platform at the PREVI pilot site

9.2 Main Issues/Problems and their solutions

The following tables list the main issues (including pilot incidents), which took place during the pilot period.

Issue No.	PREVI-1
Detailed Description	<p>In the game “Hide & Find” the waiting time used to be 10 minutes and started increasing to 15 minutes. In “Synonyms” an error appeared and the game kept restarted. In “Who Belongs Where” The pictures match properly (people with their corresponding jobs) but the games feedback comes up as an “error”. In the game “Lost in the City” The computer says there is an error throughout the game. In “Take Away Menu” The game always indicates that the main course is not correct. Sometimes, when the Synonyms game crashes and the game is restarted, the therapist would use the user card belonging to “Salva” and the name “Amparo” will appear.</p> <p>We also had a problem with a home user as the computer we were installing at the home did not</p>

	start when we turned the computer on. We contacted the technical team at the UPV and they solved the problem.
Date Registered/Occurred	March 2012
Description of Solution and Remedial Actions	The technical team from Universidad Politécnica de Valencia (UPV) provisions of technological support in our pilot site in Spain; Our pilot site in Tres Forques detects any errors/ mistakes and it is PREVI who contacts UPV to report on any problems and asks for them to be sorted. UPV then derives the concerns to SINGULARLOGIC, who then answer (by email) how to solve the problems. UPV will then send technicians to Tres Forques Care centre to fix the software.
Date Closed	May 2012
Type (Software/Hardware/Process)	Software

Table 26: Problems with the functionality of the cognitive games at PREVI

Issue No.	PREVI-2
Detailed Description	We have difficulties recruiting over 65 year old home users who are willing take part in the project as they have never been in contact with new technologies before.
Date Registered/Occurred	Throughout the whole project
Description of Solution and Remedial Actions	We have taken the following measures in respect to this problem: <ul style="list-style-type: none"> - We install the computers ourselves and ensure they are working and ready to play before we leave. - We have started visiting the home user's home to train them on the games, activities and the book of life. - If we find the home user still finds it difficult to do the activities independently, then we arrange accompanied sessions with them. - We also offer telephonic advice to those who require it.
Date Closed	N/A
Type (Software/Hardware/Process)	Process

Table 27: Recruitement Problems (associated with technology use at PREVI pilot site

9.3 Summary Assessment

Regarding the technical issues, the cooperation and coordination of the different pilot sites and the UPV, has enabled the resolution of any problems which have arisen but it must be said that the project has sometimes been delayed due to the fact that there is an inevitable waiting time from the moment the problem is detected to the time when it is technically solved.

With respects to our second problem, since we have been giving the home users this extra support they have started to feel much more confident and comfortable with the computer and are therefore more willing to participate in the project.

10. Overall Assessment and Lessons Learnt

Previous sections have reported the experiences of the seven pilot sites in terms of the use of the SOCIABLE technology platform as part of the SOCIABLE pilot operations. In general the problems and issues reported feature diversity i.e. different pilot sites experienced different types of problems. This diversity was due to the following factors:

- Different sites deployed different versions of the surface hardware and the SOCIABLE software.
- Different sites used the platform differently during the sessions. For example different sites used different games, while some sites organized group sessions in addition to the individual sessions.
- The timing of the pilot operations (and the associated use of the SOCIABLE platform) was different at the various pilot sites.

Despite this diversity, the pilot sites experienced also some common problems the main ones being:

- Hardware problems associated with the failures in the surface tables (e.g., hard drive failures). Such problems were observed in multiple sites and in most cases were non trivial to solve. These problems cannot be ruled out and cannot also be difficult to control, because they can cause problems in the graceful conduction of the SOCIABLE sessions. Therefore, organization and health professionals engaging in SOCIABLE sessions need to have back-up plans associated with hardware failures, such as disk failures. Another lesson learnt is that surface tables are still in their early stages of commercial adoption and therefore can be prone to errors-failures. As their penetration and use increases, we expect a relevant decrease in the top incidents.
- Problems with the software of platform, notably the software of the games. The reported problems were different across the sites and concerned mainly performance and usability issues. These problems can be attributed to the fact that some of the games were in their infancy i.e. being more prototypes rather than robust products. Incidents reported during the pilot operations, along with the technological evaluation/assessment of the platform have led to substantial improvements. The consortium is intensively working towards having all the games robust prior to the commercial roll-out of the platform as part of its exploitation plans. The main lesson learnt concerns the fact that the games should be thoroughly tested, prior to being delivered to elderly users.

Despite the common hardware/software problems reported above, the total number of incidents can be considered relatively low given the scale and the time span of the pilot operations. This is a positive outcome associated with the pilots of the SOCIABLE technology platform. It was also impressive that two of the pilot sites (HYGEIA and FSL) did not experience any essential technical problems during the pilot operations. A factor that helped towards this direction was the fact that SOCIABLE accounted for a pre-pilot (three month) period (Feb11-Apr11), where all the pilot sites had the opportunity to test the SOCIABLE platform under realistic

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conditions and based on the involvement of actual users and health professionals. This period has helped in the identification and resolution of several problems before the commencement of the pilot operations. Hence, these early problems have not been reported in the scope of the present deliverable.

The SOCIABLE technological platform was well accepted by most of the elderly users, as reported by all pilot sites. This is in-line with the reports of the usability assessment in SOCIABLE WP7. The technical issues/problems encountered did not have a negative impact on the platform's acceptance by end-users. One could say that overall, the experience of all the participants at the pilot sites (including elderly, careers and health professionals) can be summarized as positive.

11. Conclusions

This deliverable has reported on the pilot operations of the SOCIABLE technology platform. Each pilot site has described the main technical incidents associated with the SOCIABLE platform and how were solved. The main technical incidents concerned:

- Hardware failures associated with the surface tables (such as hard disk failures).
- Ergonomic problems such as the lighting and the height of the surface table.
- Software failures associated with the robustness, maturity and usability of the games.

These issues were encountered at different capacities within the pilot sites and were in all case confronted successfully. The role of the technical partners in dealing with these problems has been instrumental, which underpins the importance of technical support. Another important lesson learnt in this respect is that software/hardware failures cannot be ruled out when using the SOCIABLE platform. Therefore, care services providers offering SOCIABLE services should have contingency plans in this respect. These may include the availability of back-up infrastructures (e.g., TabletPCs that could temporarily replace the malfunctioning surface table) or even the readiness to switch to the traditional cognitive training models (e.g., based on the use of paper & pencil).

In general the reported incidents were few and it was impressive that two of the pilot sites did not essentially reported any incidents. The number of incidents was probably minimized due to the extensive testing of the platform in the so called pre-pilot period, where all pilot sites had the opportunity to use and stress test the SOCIABLE platform under realistic conditions.

The reported incidents have already been taken into account towards the production of the final version of the SOCIABLE platform (as part of deliverable D4.5). The relevant fine-tuning of the platform is expected to contribute towards a robust technology platform that could gracefully support the commercialization activities to be undertaken.

The end-users of the SOCIABLE platform have overall reported the experience of using the surface computers as positive. This is in-line with results obtained so far as part of the end-users evaluation and assessment as part of WP7. The acceptance of the SOCIABLE platform by its users is another indication of its decent maturity, stability, ergonomics and usability.