ELF@Home

Elderly sELF-care based on sELF-check of health conditions and sELF-fitness at home

D1.2c Yearly Project Report

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Abstract

The ELF@Home project is a research and innovation project running from June 1st 2013 to May 31st 2016 and co-funded by the Ambient Assisted Living Joint Programme (AAL JP) and National Authorities in Spain, Sweden and Germany. The ELF@Home project relies on the use of the proven advantages of elderly fitness to develop a self-care solution based on self-check of health conditions and self-fitness at home. The project uses information and communication technologies (ICT) to build an autonomous fitness system targeting healthy or pre-frail elderly people aged over 65 and living independently at home.

All the activities carried out during the third year of execution of the ELF@Home project (from June 1st 2015 to May 31st 2016) are summarised in this report. The milestones achieved and the lists of tasks executed for each work package are described focusing on the general objectives of the project.

Executive Summary

The ELF@Home project is a research and innovation project running from June 1st 2013 to May 31st 2016 and co-funded by the Ambient Assisted Living Joint Programme (AAL JP) and National Authorities in Spain, Sweden and Germany. The ELF@Home project relies on the use of the proven advantages of elderly fitness to develop a self-care solution based on self-check of health conditions and self-fitness at home. The project uses information and communication technologies (ICT) to build an autonomous fitness system targeting healthy or pre-frail elderly people aged over 65 and living independently at home.

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Work Package	**Number**	WP1	**Title**	Project management

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Table of Contents

List of Figures

List of Tables

Abbreviations

CMU: Central Management Unit

DoW: Description of Work

ICT: Information and Communication Technologies

WP: Work Package

EUPE: Evaluation Unit and Planning Engine

FB: Fitness-box

1 Introduction

This report covers the period from the month M25 (June 2015) to M36 (May 2016) of the lifetime of the project. Figure 1 shows the Gantt diagram of the project for the reported period. As the main technical WPs have ended in month M24, the main WP of this reporting period was WP6, which started in month M25. In addition, WP1 and WP7 continue their execution, as they have been executing during all the project lifetime. The following milestones were achieved during the reporting period (according to the DoW):

- M2: Platform prototype ready
- M3: Field trials finished
- M4: Business and exploitation plan ready

Table 1 explains the means of verification for each milestone.

				Y3 (2015)							Y4 (2016)				
				J	J	A	S	O	N	D	J	F	M	A	M
ID	Title	Start	End	M25	M26	M27	M28	M29	M30	M31	M32	M33	M34	M35	M36
WP1	**Project management**	**1**	**36**												
T1.1	Technical and administrative assistance	1	36												
T1.2	Official meetings (consortium & AAL)	1	36												
T1.3	Coordination of technical and financial reports	1	36												
T1.4	Quality assurance and risk management	1	36												
WP6	**Field Trials**	**25**	**36**												
T6.1	Assembly of components and early technical tests	25	27												
T6.2	Specification of trials and user selection	25	27												
T6.3	Set-up and management of the trial	28	32												
T6.4	Data collection and analysis	32	33												
T6.5	Validation and evaluation of results	34	36												
WP7	**Dissemination, Exploitation and Business Plan**	**1**	**36**												
T7.1	Launch of the project web site	1	3												
T7.2	Diffusion and dissemination of project results	6	36												
T7.3	Development of business and exploitation plans	13	36												

Figure 1. Gantt diagram from the reported period

Milestone M2 [Month 27]: Platform prototype ready	
M2	**Platform prototype ready**. The different technical components developed in WP3, WP4 and WP5 have been integrated in WP6 to create a complete platform prototype. • Addressed in: **WP3, WP4, WP5, WP6** • Means of verification: **D6.1** • Lead by: **CTIC**
Milestone M3 [Month 36]: Field trials finished	
M3	**Field trials finished**. The users that took part in the pilots were defined and the field trials were executed, although with fewer users than planned. Then the results of these field trials were analysed. • Addressed in: **WP6** • Means of verification: **D6.3** • Lead by: **CTIC and UMU**
Milestone M4 [Month 36]: Business and exploitation plan ready	
M4	**Business and exploitation plan ready**. The business model for the ELF@Home product has been defined. The potential role of each partner has been established and several business and exploitation features have been analysed (such as opportunities, risks, market and competition, financial planning…).

	• Addressed in: **WP7** • Means of verification: **D7.3** • Lead by: **IM**

Table 1. Milestones covered during the reported period

2 Work progress and achievements during the period

This section describes each work package executed during the reported period. The objectives, work and the deliverables are described for each work package focusing on the reported period. Table 2 shows the list of deliverables in the reported period. Every deliverable has been sent to the CMU on time and before the due date.

Deliverable number	Deliverable name	Due date	Responsible partner	Delivery date
D.6.1	ELF@Home integrated prototype	31/08/2015	CTIC	31/08/2015
D.6.2	Trials procedure definition	31/10/2015	CTIC	30/10/2015
D1.2.c	Yearly Project Report	31/05/2016	CTIC	31/05/2016
D6.3	Trial result report	31/05/2016	UMU	31/05/2016
D7.2.c	Scientific and technical contributions in Conferences and Seminars	31/05/2016	INNO	31/05/2016
D7.3.b	Business and exploitation plan	31/05/2016	INNO	31/05/2016
D7.4	Final project meeting involving all the stakeholders	31/05/2016	CTIC	31/05/2016

Table 2. List of deliverables from the reported period

2.1 WP1 – Project management

Table 3 shows the summary of WP1 according to the DoW for the reported period. This WP extends from the start to the end of the project. It is executed throughout the lifetime of the project to control and guarantee the quality of the work.

WP number	**1**	**WP duration:**	*M1 – M36*
WP title	**Project Management**		
Activity type	*Management*		
Leader	**CTIC**		
Participants	**CTIC, IZER, SGGPA, UMU, CHE, SKO, IIS, INNO, 2DD**		

Objectives of the WP

This work package is about the management and co-ordination activities of the project. It will be running all along the project lifetime. Its main objective is to ensure a successful completion of the project goals on time, within budget and with quality standards adequate for European Projects. This general objective is comprised of the following more specific ones:

- Detailed project planning, monitoring and reporting
- Definition and implementation of the communication procedures to be followed within the project and with external agents.
- Scheduling and organising project meetings

Description of work

Task 1.1. Technical and administrative assistance: Financial control, formal revision and submission to the AAL of progress reports, supervising and informing all participants about the project, day to day assistance to the overall Project Management.

Task 1.2. Consortium meetings: Arrangement of required resources for project meetings and teleconferences. Task 1.3. Coordination of technical and financial reports (progress and final reports): Preparing and managing, with the support of the members of the project, the reports, documents and project results and in particular documents required by the AAL or its representatives. Task 1.4. Quality assurance and risk management: Quality control on development and implementations by constantly contrasting results with project specifications. Recovery activities. Project failures have been considered in the Risk Management tables **Role of partners:** • All partners: All partners are involved in the management and project monitoring
Deliverables of the WP: • D1.2c Yearly Project Report (M36)

Table 3. Summary of "WP1 – Project management"

During the reported period the coordinating person changed on 22/10/2015 from Juan Luis Carús to Sonia García. The contact persons of the project are now Sonia García and Fidel Díez.

Two face-to-face meetings were held:

- Fourth consortium meeting (June 2015, Germany)
- Final consortium meeting (May 2016, Spain)

Fourth consortium meeting

The fourth consortium meeting took place on the 2nd and 3rd of June 2015 in Munich (Germany), just after the technical work-packages were finished. It was hosted by INNO. This meeting was useful because the partners focused on the discussion of the integration of all of the work that had been developed and then the test procedure and other topics were also discussed. In addition, during this face-to-face meeting an AAL2Business workshop was held. In this session, a coach (Johan Groop from the Nordic Health Care Group) explained and helped the partners to discuss the definition of the business model plan.

A representative person from each partner attended to this meeting, except SKO and SGGPA who were not able to attend. In Table 4 the attendants to the face-to-face meeting are described and Figure 2 shows a picture taken during the meeting. In Table 5 the attendants to the AAL2Business workshop are described and Figure 3 shows a picture taken during the workshop.

Name	Partner	Contact
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Table 4. List of attendants to the fourth consortium meeting

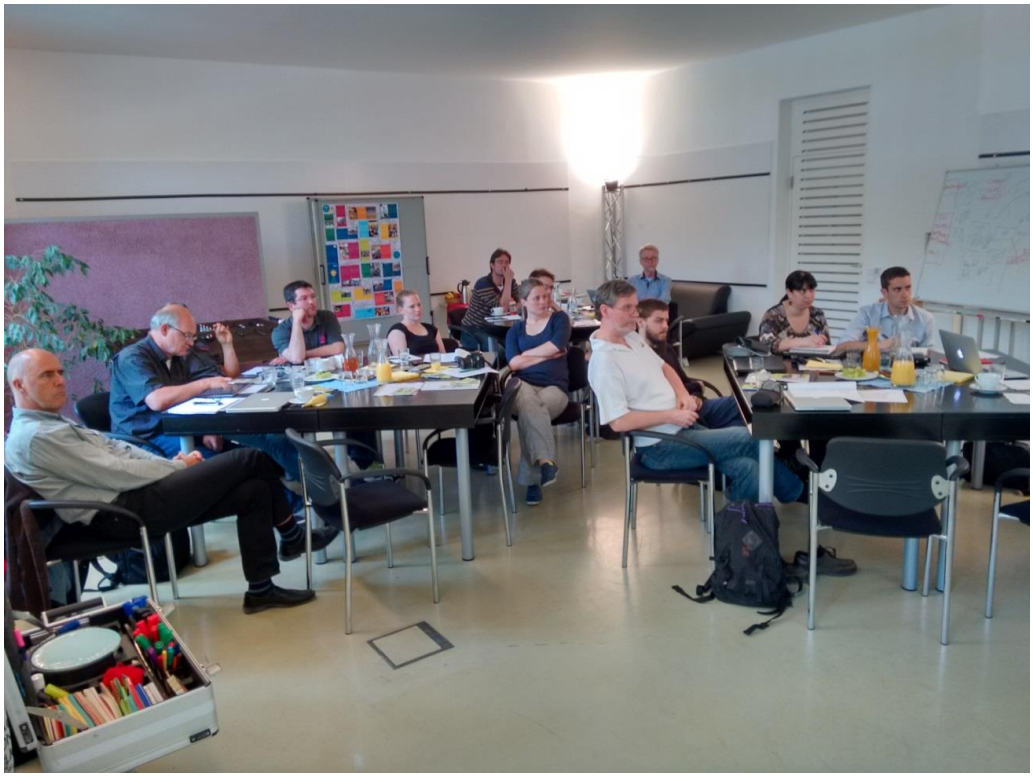

Figure 2. Picture taken during the fourth consortium meeting

Name	Partner	Contact
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Rainer Diebold	2DD	rd@2d-datarecording.com
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John Waterworth	UMU	jwworth@informatik.umu.se
Lucas Lundström	CHE	lucas.lundstrom@checkup.se
Arne Viktorsson	CHE	arne.viktorsson@ checkup.se

Table 5. List of attendants to the AAL2Business workshop

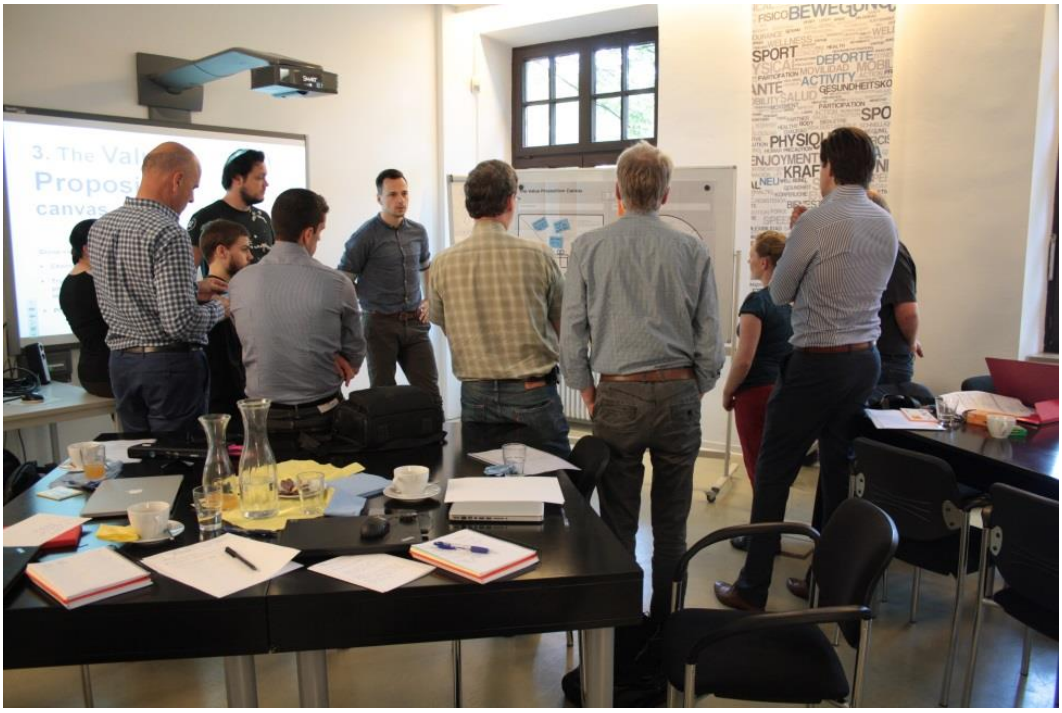

Figure 3. Picture taken during the AAL2Business workshop

Final consortium meeting

The fifth and final consortium meeting took place on the 11th of May 2016 in Gijón (Spain) and it was hosted by CTIC. This meeting was useful for the partners mainly to talk about the business model proposed and to discuss the future of the project. The trials results and the pending deliverables to finish the project were also discussed.

All the partners (except SKO) attended to this meeting. The attendants to the final face-to-face meeting are described in Table 6 and Figure 4 shows two pictures taken during the meeting.

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José Manuel Díaz	OVIDA	terapeutas@ovida.es

Table 6. List of attendants to the final consortium meeting

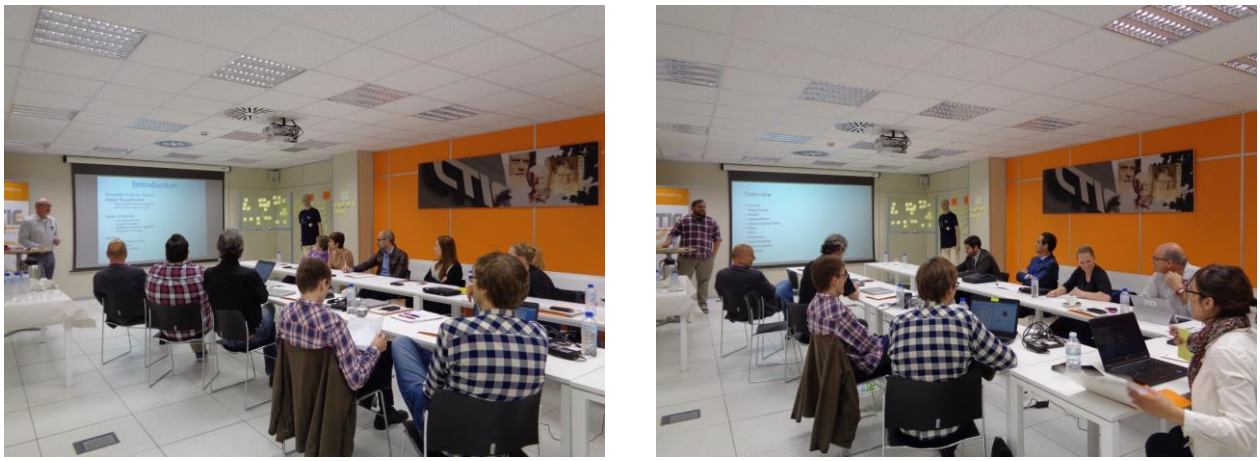

Figure 4. Pictures taken during the final consortium meeting

Follow-up meetings

During the reported period, twenty-three teleconferences have been held by the consortium to discuss all issues related to the project (see dates on Table 7). CTIC, as coordinator, managed all the follow-up meetings sending reminders to all the partners, designing the agenda, taking minutes and sending the minutes after the meeting to the general mailing list.

	Date
1	17/06/2015
2	08/07/2015
3	22/07/2015
4	05/08/2015
5	26/08/2015
6	09/09/2015
7	30/09/2015

8	14/10/2015
9	28/10/2015
10	11/11/2015
11	25/11/2015
12	02/12/2015
13	16/12/2015
14	13/01/2016
15	27/01/2016
16	10/02/2016
17	24/02/2016
18	09/03/2016
19	23/03/2016
20	06/04/2016
21	20/04/2016
22	04/05/2016
23	25/05/2016

Table 7. Follow-up meeting held by teleconference

The annual progress report was sent to the CMU on 26/02/2015 by CTIC with all the technical and financial information gathered from all the partners involved in the project.

2.2 WP6 – Integration and field trials

Table 8 shows the summary of the WP6 started in June 2015 and that finished in May 2016.

During the reporting period, CTIC led Task 6.1 and integrated all the different elements of ELF@Home into the fitness-box (bio-medical platform, wearable activity sensor and Intelligent Service Platform). Nevertheless, although at the end of the task a functional prototype was created, it could not be tested then in the real environment because it would need a server in Sweden that was not ready. CHE was responsible of installing all the backend architecture on a server in their company (because Swedish law states that health data cannot be stored outside Sweden). They had purchased a new server and there were some problems in the shipping and the configuration, so the tests in real-conditions were delayed. As a result, the partners agreed on extending the integration issues to all the duration of WP6, because some changes would surely have to be made during the initial tests.

In addition, there were several configuration problems when trying to deploy the backend architecture developed by IZER on the new server bought by CHE but finally it was all solved. Then, the partners spent some time testing the complete platform in order to be sure that all was ready before beginning the user trials. This phase took more time than was planned mainly because:

- The EUPE was tested in real conditions, so to test if the defined events (such as upgrading the exercises level) were created at the correct moment took a whole week.
- Some bugs were found in the Fitness-box application so CTIC had to correct them.
- The caregiver interface (which was needed for the partners to create the “fake” users to do the early tests) had several problems that took a lot of time to be solved by IZER.

Finally, when all these issues were solved, the field trials were able to start.

Task 6.2 was executed on time and in D6.2 the specification of the trial set-up, the methodology and the variables to collect were defined. This task and deliverable was led by CTIC with the collaboration of UMU.

As a consequence of the several unexpected problems that happened during the deployment of the system and the bugs found by the partners during the initial tests, Task 6.3, Task 6.4 and Task 6.5 were a bit delayed.

In Task 6.3 UMU and SGGPA decided the planning of the trials, defining where to install the equipment, and the users who were going to take part in the field trials. The trials started on March 2016 and Task 6.4 and Task 6.5 were being executed as the same time as the users were using the equipment, in order to have more time for the trials. The deliverable D6.3, led by UMU, explains all the issues and results of the field tests.

As a conclusion, during the development of WP6 some unexpected problems appeared, affecting the internal distribution of work during WP6 but as all of the tasks were part of the same WP, the partners did not have problems to adapt their work to the new necessities. And finally, all the work that was planned for WP6 was done; the only difference is that the partners would have liked to have more time for the final user trials.

WP number	**6**	**WP duration:**	*M25 – M36*
WP title	**Integration and field trials**		
Leader	**CTIC**		
Participants	**CTIC, IZER, SGGPA, UMU, CHE, SKO, IIS, INNO, 2DD**		
Objectives of the WP A field trial in a real scenario is defined in the scope of this project in order to validate the proposed solution. Partners involved in the project cover the whole chain of value, not only from the technical point of view (involving research organizations and infrastructure & service providers), but also end-user entities (primary, secondary and tertiary).			
Description of work Task 6.1. Assembly of components and early technical tests: the objective of this task is to integrate all the technical components and to do an early user validation. Task 6.2. Specification of trials and user selection: definition of the trial set-up, the variables to be collected, the methodology used to collect user impressions and the selection of a representative set of users. Task 6.3. Set-up and management of the trial: The objective of this task is to provide to users the necessary equipment to take part in the evaluation. This objective includes the installation and configuration of the required equipment and the user support. Task 6.4. Data collection and analysis: After the experimental field trial, participants will be interviewed about the difficulties they encountered during the trip in terms of hardware/software, the improvements that could be implemented and would help them improve their use of the equipment, the improvements in the ergonomic of the hardware, the functions provided by the software, and the eventual malfunctions of the software they experienced. Task 6.5. Validation and evaluation of results. Improvements and learnt lessons: Using the conclusions of the data analysis the necessary improvements will be proposed and implemented if possible. **Role of partners:** • CTIC: Work package coordination • SGGPA: T6.2, T6.3 • UMU, CTIC: T6.4, T6.5 • CTIC, IZER, CHE, IIS, 2DD: T6.1, T6.3			
Deliverables of the WP: • D6.1 ELF@Home integrated prototype (M27) • D6.2. Trial definition report (M29) • D6.3. Trial result report (M36)			

Table 8. Summary of "WP6 – Integration and field trials" for the reported period

2.3 WP7 – Dissemination and exploitation

Table 9 shows the summary of WP7 according to the DoW for the reported period. WP7 spans from the start to the end of the project and it is executed during all the lifetime of the project to disseminate all the results of the project and develop a useful business plan.

The webpage of the project was used during the reported period to upload news about the project and all the public deliverables. All the dissemination and exploitation activities of the third project year are reported and described in detail in the public deliverable D7.2.c.

The final version of the Business and Exploitation Plan (D7.3.b) was released on 31/05/2016. It identifies the potential role of each partner and also several business and exploitation features have been analysed (such as opportunities, risks, market and competition, financial planning…).

WP number	**7**	**WP duration:**	*M1 – M36*
WP title	**Dissemination and exploitation**		
Leader	**INNO**		
Participants	**INNO, CTIC, IZER, SGGPA, UMU, CHE, SKO, IIS, 2DD**		
Objectives of the WP The objectives of this work package are: • To coordinate and carry out dissemination of project results. The aim is to promote and empower the dissemination, transfer, assessment and adoption of the project results to the target audience and stakeholders. • Development of the business plan. The plan will cover key product achievements as well as the identification of target markets and potential target customers for the partners. The aim is to maximise project impact and exploitation opportunities.			
Description of work Task 7.2. Diffusion and dissemination of project results: This task will define a dissemination and diffusion plan with conferences, seminars and events in order to send scientific and technical contributions. Task 7.3. Development of business and exploitation plans: Development of the business plan specifying the customers to be addressed and the service model to be implemented mainly by consortium business members. **Role of partners:** • INNO: Work package coordination • IZER, EXP, 2DD, INNO: Business and exploitation plans (T7.3) • CTIC, UMU, IIS: Diffusion and dissemination of results (T7.2) • SKO: Contribution to business plan as a public administration (T7.3)			
Deliverables of the WP: • D7.2.c. Scientific and technical contributions in conferences and seminars (M36) • D7.3.b. Business and exploitation plan (M36) • D7.4. Final project meeting involving all the stakeholders (M36)			

Table 9. Summary of "WP7 – Dissemination and exploitation" for the reported period

3 Conclusions

This yearly report describes all the work carried out during the third year of the ELF@Home project (from 1st June 2015 to 31st May 2016).

The project has finished in line with the valid description of the work sent to the CMU on 2013/08/16 and amended on 2015/01/09 with the change of partner from EXP to CHE. Several unexpected problems happened during the development of WP6, but finally all the proposed work was finished on time.