

ALFRED

Personal Interactive Assistant for Independent Living and Active Ageing



WP9 – Impact

D9.2.4 – Advisory Board Summary Feedback Report

Deliverable Lead: IESE

Contributing Partners: All

Delivery Date: 03/2016

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Version 1.0

The purpose of this deliverable is to describe the communication of the ALFRED Consortium with the Advisory Board (AB) members, the 2nd AB meeting and the diverse interactions between the ALFRED project and the AB members during the last six months. As the next meeting with the AB is at the start of M31 during the next ALFRED plenary meeting, this deliverable is a preliminary version.



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This deliverable is subject to final acceptance by the European Commission.

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Project Partners

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|---|--|
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|  <p>Worldline, Spain</p> |  <p>Charité - Universitätsmedizin Berlin - Department of Geriatrics, Germany</p> |
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Executive Summary

This is the fourth Advisory Board Summary Feedback Report, of five foreseen reports by the project as part of the task 9.2 “Advisory Board Coordination and Interaction”. The main objective of this report is to update on the communication with the ALFRED AB members since last September 2015.

The next Advisory Board Members meeting is scheduled on the next days, the 5th of April in Gothenburg, in occasion of the Plenary Sessions of the Project Consortium. Therefore, the information contained in this document merely covers the communication exchanged with AB members for the invitation to this meeting and Project Progress Report that was sent to them.

An updated version of D9.2.4 will be submitted just after the third AB meeting, in M31, containing the feedbacks and discussions developed during the meeting.

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1 Introduction

The following text needs to be adapted and used in every single ALFRED deliverable. Its purpose is to give a general introduction to the project for these people knowing little or nothing about the project. The following introduction of chapter 1 (without the last clause) as well as the subchapter 0 can be directly copied to your own deliverable, the remaining subchapter need to be altered or extended. The following example is taken from D2.1.

ALFRED – Personal Interactive Assistant for Independent Living and Active Ageing – is a project funded by the Seventh Framework Programme of the European Commission under Grant Agreement No. 611218. It will allow older people to live longer at their own homes with the possibility to act independently and to actively participate in society by providing the technological foundation for an ecosystem consisting of four pillars:

- **User-Driven Interaction Assistant** to allow older people to talk to ALFRED and to ask questions or define commands in order to solve day-to-day problems.
- **Personalized Social Inclusion** by suggesting social events to older people, taking into account their interests and their social environment.
- A more **Effective & Personalized Care** by allowing medical staff and (informal) caretakers to access the vital signs of older people monitored by (wearable) sensors.
- **Physical & Cognitive Impairments Prevention** with serious games that help the users to maintain and possibly even improve their physical and cognitive capabilities.

Within this deliverable, the last communication among ALFRED Scientific Consortium and the Advisory Board members is reported, including the list of the AB members who accepted the invitation to the third AB Meeting in Gothenburg.

1.1 ALFRED Project Overview

One of the main problems of western societies is the increasing isolation of older people, who do not actively participate in society either because of missing social interactions or because of age-related impairments (physical or cognitive). The outcomes of the ALFRED project will help to overcome this problem with an interactive virtual butler (a smartphone application also called ALFRED) for older people, which is fully voice controlled.

The ALFRED project is wrapped around the following main objectives:

- To empower older people to live independently for longer by delivering a virtual butler with seamless support for tasks in and outside the home. This virtual butler (the ALFRED app) aims for a very high end-user acceptance by using a fully voice controlled and non-technical user interface.
- To prevent age-related physical and cognitive impairments with the help of personalized serious games.
- To foster active participation in society for the ageing population by suggesting and managing events and social contacts.

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- And finally, to improve caring by offering direct access to vital signs for carers and other medical staff as well as alerting in case of emergencies. The data is collected by unobtrusive wearable sensors monitoring the vital signs of ALFRED's users.

To achieve its goals, the project ALFRED conducts original research from a user centred perspective and applies technologies from the fields of Ubiquitous Computing, Big Data, Serious Gaming, the Semantic Web, Cyber Physical Systems, the Internet of Things, the Internet of Services, and Human-Computer Interaction. For more information, please refer to the project website at <http://www.alfred.eu>.

1.2 Deliverable Purpose, Scope and Context

The purpose of this deliverable is to describe the communication of the ALFRED scientific consortium with the Advisory Board (AB) members, the invitation to the 3rd AB meeting and the diverse interactions between the ALFRED project and the AB members. This deliverable D9.2.4 - Advisory Board Summary Feedback Report - is the fourth of five deliverables as part of the task T9.2 - Advisory Board Coordination and Interaction. Next and last version is due month 36.

1.3 Document Status and Target Audience

This document is listed in the Description-of-Work (DoW) as “public”, as it provides a summary feedback form from the Advisory Board Committee.

1.4 Abbreviations and Glossary

A definition of common terms and roles related to the realization of the ALFRED project as well as a list of abbreviations is available in the supplementary document “Supplement: Abbreviations and Glossary”, which is provided in addition to this deliverable. Further information can be found at <http://www.alfred.eu>.

1.5 Document Structure

This deliverable is broken down into the following sections:

- Chapter 1 introduces briefly the project and outlines the purpose, scope, context, status and target audience.
- Chapter 2 describe the communication flow with members of the ALFRED Advisory Board and those members who have accepted the invitation to the 3rd AB meeting.
- Chapter 3 includes the document sent to AB members such as a report on the project status and the agenda of the 3rd AB meeting.

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2 ALFRED Advisory Board Committee

The ALFRED Advisory Board committee consists of a group of excellent professionals who represent stakeholders from industry and the scientific community interested in new technologies as a tool for independent living and active aging. Table 1 shows the final Advisory Board and their attendance to the ALFRED AB meetings.

Table 1: Advisory Board Committee and Meeting Attendance

| Name | Institution | Profile | Country | Attending 1 st AB meeting | Attending 2 nd AB meeting | Attending 3 rd AB meeting |
|--|-----------------------------------|---|----------------|--------------------------------------|--------------------------------------|--------------------------------------|
| Oliver Heckmann | Youtube | Engineering director at YouTube | Switzerland | No | No | No |
| Diane Whitehouse | The Castlegate Consultancy/ EHTEL | Director | United Kingdom | Yes | Yes | Yes |
| Petra Wilson | International Diabetes Foundation | Director | Belgium | No | No | No |
| Jaume Raventós and Jordi Rovira | Telefónica Spain | eHealth Department | Spain | Yes | No | No |
| Koen van Os | Philips Research | Senior Scientist Intelligent Textiles | Netherlands | Yes | Yes | Yes |
| Albert Alonso | Hospital Clinic Barcelona | ICT healthcare management director | Spain | Yes | Yes | Yes |
| Heidrun Mollenkopf | BAGSO | Academic, age researcher and politician | Germany | No | No | No |

2.1 Communication with the Advisory Board Members

Next 5th April 2016 is scheduled the third Advisory Board meeting to continue receiving very valuable feedbacks on the project progress and suggestions for its exploitation plan expected results. Invitations were sent together with an updated status of the project activities and results.

It is very important for the ALFRED project to keep a constant communication with the AB members, update them in the progress of the project and get their assistance and recommendations for the continuous improvement of the project.

The agenda for this third AB meeting will focus much more on giving space and time for AB members to give their inputs and suggestions. Each session includes a brief description from project partners and at least 15 minutes discussion with AB members.

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Three members have accepted the invitation for this meeting, namely Diane Whitehouse, Koen Van Os and Albert Alonso. These members have attended the all previous ALFRED AB meetings hence they have very good knowledge of the project status and its developments.

A further and up to date version of this deliverable will be submitted few days after the 3rd AB meeting, by end of month 31 (M31), with the objective to complement this document with the latest feedbacks and suggestions received during the meeting from the AB members.

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3 Correspondence with AB Members

3.1 Email Communiqué – 02/2016

Dear ALFRED Advisory Board Member,

My name is Federica and I have recently joined IESE to work on ALFRED project. I will replace Esther Vizcaino who has just left IESE team accepting a new exiting job offer. I would also like to introduce you Esther Arévalo the new CRHIM Coordinator at IESE and copied in this email.

The reason I am writing is to invite you to the upcoming third AB meeting that will take place the 5th April from 14.00 – 18.30h at Gothenburg University, followed by the Social Dinner with all ALFRED partners. We would be delighted if you could attend both events. The final agenda will be send out shortly.

As usual, this AB meeting will be organized in the context of the Alfred Third Scientific Consortium Meeting, which will be held from 4 - 6 April.

We would be very grateful if you could attend to provide assistance and recommendations for the continuous improvement of the project. We would like you to confirm your intention to attend as soon as possible in order to start with the arrangements.

Please remind that for the AB Members, the project can cover the cost of the flight and one hotel night. Please, let us know in case you do not need to make use of these funds - which would be very welcome.

Flight

We are happy to help with the flight arrangements. Actually we prefer to do so when covered by project funds. Please let us know your flight preferences: departure airport and preferred timing, etc. We will then get back to you with the different options.

Accommodation

The venue hotel is still to be confirmed. We will inform you as soon as possible.

Dinner on the 5th April

As you have seen, we would very much like you to join us for dinner with all ALFRED partners on the evening of the 5th April. Would be wonderful if you could attend. Please let us know if you can attend.

Finally, we also would like to thank for sharing your time and experience with us. If you have any questions or concerns, please do not hesitate to contact us.

Please, confirm us you have received this e-mail. I am looking forward to hearing from you soon.

Best regards,

Federica Righi

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3.2 Project Status Update Provided

Since October 2015, the project realised important advancements in all the prototypes and made important efforts to integrate ALFRED components. The exploitation plan has also been developed, and dissemination of project's results is undergoing continuously. In terms of deliverables: 24 new deliverables are being prepared and will be submitted within the next two weeks, in Month 30 (M30). The most important results of each WPs are described below:

WP2 Concept, Requirements & Specification

As a continuous task over the whole course of the project, the market watch has been updated during this period and results are included in the exploitation plan due by end of March 2016. The participation in the LeanLaunchPad Pilot initiative constituted a decisive moment for the segmentation of ALFRED's potential users and customers. One more Market Watch Deliverable is foreseen by the end of month 36, September 2016.

WP3 ALFRED Core

The prototype of the battery warner app has been improved. It inherits Google Maps support, so that users may mark their house areas themselves. In addition, the Personal Assistant (PA) has been prepared for being properly presented at ICT 2015, 20-22 Oct. in Lisbon. Therefore, a few improvements were realized. The Personal Assistant App now is much stronger integrated into the Service itself.

New versions of CADE were also published. The Service is now able to receive and interpret incoming speech commands. CADE supports DDDs in Dutch and French. The CADE frontend library for Android has been completed, enabling full support for Android.

Improvements concerning the adaptations of the Personalization Manager PM have been made for the integration of the PM component with the rest of the ALFRED system.

A new SDK for the mobile app of the market place has been developed in order to make it easy to integrate any kind of application to the server Market Place.

Big efforts are being deployed to terminate the implementation of the navigation sample app, which will be delivered by end of month 30, so that the users studies may start with full functional, integrated solutions.

WP4 Pillar I: User-Driven Interaction Assistant

The dictation in CADE is now more robust. Two prototypes have been developed to help with communication, offering support to users by calling and sending an sms respectively. The prototypes deal with a dialogue user interface, in addition to the graphical one.

WP5 Pillar II: Personalized Social Inclusion

Significant efforts were spent in the data mining services. A number of updates and refactoring work were deemed necessary to improve the performance of the crawled and extracted events. Moreover, KPIs and analytics were added for providing more context and metrics for the recommendation of the events. Also, support and work for the integration with other components and specifically for the recommendation of the events functionalities were involved.

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Finally, another significant task that required a lot of efforts is the crawling of web resources aimed for human readers. It is a very difficult problem and a lot of efforts were spent for researching frameworks, tools and approaches for performing this task and prototyping solutions. It is as mentioned a challenging task but if achieved it will significantly increase both the volume of available events and the flexibility in selecting event sources. However, current data mining performed is still quite good with approximately 10.000 events worldwide inserted in the data warehouse each day.

The first prototype for the event recommendations was implemented. The recommendation services were deployed and notification functionalities of the recommended events to users were developed in the ALFRED system. The recommendation services of ALFRED were showcased in the second review.

WP6 Pillar III: Effective & Personalized Care

Efforts have been developed with the HMC (Health Monitor Client). Progress has been made to obtain access information and sensor configuration. This information is obtained from the HMS (Health Monitor Server) and services used to start considering identifiers configurations of sensors and data collection frequency.

In addition, a complete Data Transmission Manager module has been implemented, responsible for the transmission of data to the HMS (Health Monitor Server). This information is sent following the interfaces defined by assigning each item a timestamp. Progress in implementing the HMS (Health Monitor Server) has been made allowing a definition of settings for sensors, multiple users, authentication support with the authentication server, and support for data reception and temporary storage. It has also begun to build Anomaly Detection module that allows to analyse the data received by post processed. These expansions especially affect: Health Monitor Configurator, Health Profile Manager, Data Post-process framework and Alarm Manager. Also a first prototype for the integration of the Effective & Personalized Care functionality was added to the ALFRED Web Portal. It is integrated with the HMS and is capable of showing graphs.

Finally, efforts have been made in preparation for the development of several apps in the context of this WP to allow interaction with CADE. This task has been made following the results of user stories and initial requirement analysis.

WP7 Pillar IV: Serious Games for Physical & Cognitive Impairments Prevention

The implementation of the Game Manager Profiler application was continued and completed. Furthermore, an extensive literature review on the effectiveness of therapeutic interventions for patients with acute, subacute, or chronic non-specific mechanical low back pain (LBP) was also conducted. The results of this review gave in-depth insight on the pathomechanisms of LBP, identified the latest exercise regimes and adapted this knowledge in the development of the ALFRED back trainer exercise programme. All efforts were undertaken to assure that the exercises are senior friendly and can be adapted to a broad population of older adults.

The development of the ALFRED game triggering mechanisms was started and has made good progress – an evaluable prototype is expected by the end of March 2016. Partner WORLD has worked on a toolkit that allows developers to define gamified missions and achievements for users in order to encourage them for physical and/or cognitive activity.

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Some of these missions will be “team” missions, requiring a group of players teaming up in order to achieve them, which is supposed to increase social interaction. This system will also provide leaderboards in order to enable a certain degree of friendly competition among users.

A robust Android-based SDK in order to make it simple for other developers to integrate any kind of their Android applications into ALFRED's gamification system has been developed. Finally, serious game prototypes is progressing with the completion of five serious games (Dancicians, Back Trainer, and Balance Bike), although their integration into the ALFRED personal assistant is expected by end of March 2016. The work on two more games (Puzzle Arena and City Explorer) was started.

WP8 Piloting & Validation

The approach of the ALFRED project is to continuously involve the target groups in the development of the system through Iterative Evaluations. The aim of this approach is to provide the system developers continuous recommendations from the end users in order to obtain final results that are easy to use by older people and are adapted to their requirements and needs.

Deliverable D8.2.1 develops a set of simple tables with recommendations in order to inform technical partners on problems and necessary improvements to adapt to target group needs. A second prototype evaluation, including the ALFREDO marketplace, the game “Dance with ALFRED” and the ALFRED Sensor T-shirt was performed. Altogether there were 12 (9 females, 3 males) seniors participating in the testing. The Evaluation Cycle was done in France and in the Netherlands in November 2015 and in Germany in December 2015. The third prototype evaluated the User Profile Editor, the ALFRED t-shirt and the connected health app, the “Dancicians” game and the ALFREDO marketplace. The Post-Study System Usability Questionnaire (PSSUQ) was used to evaluate the usefulness and usability of the currently available prototypes with older adults. Altogether 25 (22 females and 3 males) participated in the testing in the Netherlands, France and Germany.

WP9 Impact

In M30 the second and last exploitation plan will be delivered. This plan is currently under internal revision in the project consortium and will be presented to AB members during the meeting in Gothenburg.

This plan is based on the decisions taken during the participation in the Lean LaunchPad Pilot Initiative and following the comments from the last Meeting Project Review in Utrecht (November 2015).

The main idea consists of defining different scenarios, on a short and long term run, to reach well defined customers targets and to carefully differentiate between users and customers. Given the difficulties to commercialize a tech-based product into the “silver market”, we opt to first reach those caregiver organizations that are already working in the provision of long-term care either at home of recipients or in institutions.

In fact, we believe that the pull factors encouraging these organizations, to introduce a system such as ALFRED in their operations management, are mainly two: (i) to improve the efficiency of their resources management by allowing caregivers to have constant

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communication channels with their patients and to monitor their health values by remote positions; (ii) to improve the quality of care by offering a novel technology to their clients that improves patients' involvement and capacity to autonomously check their health status and prevent deterioration through several Apps in their smartphones.

On a long-term perspective, the strategy is to pass smoothly to other customers segments from private providers to non-profit and public and, hopefully, finally selling the ALFRED platform directly to the senior population and to their families.

The document describes the added value that ALFRED offers in comparison with its main competitors and how it positions in the market. A rough financial plan is also presented in the deliverable.

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3.3 Advisory Board Feedback

The project team takes the opportunity of the organization of next Project Team Plenary Meeting to invite Advisory Board Members to participate for one day and to present the project progress status. This event takes place just after a very important momentum of the project, month 30 (M30), when many deliverables are due and the interoperability of the system through the integration of ALFRED system's various components will be in place.

Also the exploitation plan will be presented and ideas for next piloting phases and dissemination activities. See the Agenda for the meeting with the AB below.

Table 2: Advisory Board Meeting Agenda

| 13:30 – 13:45 | Welcome of Advisory Board and General Update of ALFRED Project | IESE |
|----------------------|---|---------------------------|
| 13:45 – 14:00 | ALFRED Core and Interoperability | ASC AB Members |
| 14:00 – 14:20 | Apps Development: Research Excellence | TUDA AB Members |
| 14:20 – 15:00 | Apps Development: State of the Art | TALK, AITEX AB Members |
| 15:00 – 15:20 | Pilot Demo in Utrecht | ESE/NFE AB Members |
| 15:20 – 15:30 | Coffee Break | |
| 15:30 – 17:00 | Exploitation Strategy | IESE AB Members |
| 17:00 – 17:15 | 2 nd ALFRED Workshop | TIE AB Members |
| 17:15 – 17:30 | Final Remarks | AB members /All |
| | * Each section includes time for AB Members' inputs and suggestions. | |