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## Project description

PaeLife is a European Ambient Assisted Living Joint Programme (AAL JP) Project with a consortium of eight partners from Portugal, France, Hungary and Poland. Our Project focuses on individuals who are recently retired and who are used to some level of technology usage and who want to keep themselves active, productive and socially engaged.

PaeLife is our proposal for a Personal Life Assistant, a new solution of Human-Computer Interaction, making it easier and more natural for elderly to interact with computers and technology.

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## Partners

- [Microsoft Corporation \(Portugal\)](#)
- [Instituto de Engenharia de Sistemas e Computadores, Investigação e Desenvolvimento em Lisboa \(Portugal\)](#)
- [Budapest University of Technology and Economics \(University, Hungary\)](#)
- [The Bay Zoltán Nonprofit Ltd. \(R&D Institute, Hungary\)](#)
- [Knowledge Society Association \(Secondary End User, Poland\)](#)
- [Genigraph \(Company, France\)](#)
- [Troyes University of Technology \(University, France\)](#)
- [Universidade de Aveiro \(University, Portugal\)](#)

## Status of the development

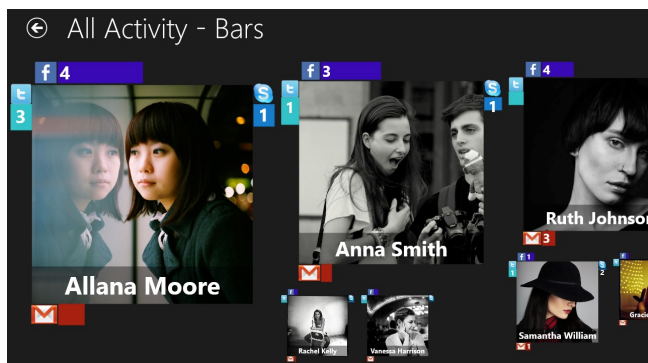
Good news. It is coming, soon to be available, AALFred - Personal Life Assistant! Since the development of AALFred's features are coming to the end and after several months of brainstorming and implementation, we are finally getting a version that merges the work of several partners and includes all the functionalities we aimed for. Next, the development team will focus on two things:

- improving AALFred based on more users test feedback;
- improving the multimodal interaction

## New AALFred's module

Over the years, people raise their children and watch them as they make their adult lives away from home. Because of that, seniors lose contact and intimacy with their loved ones, as physical presence isn't as possible as desired. Also, because of physical impairments that may arrive as years pass by, seniors may experience difficulties in communicating and interacting. In order to mitigate this problem, INESC-ID developed an AALFred module that shows the most active contacts in a visual, powerful and easy to understand way. We implemented a set of

prototypes that display the contacts' activity in different sources (email, social networks, etc.), and performed 2 sets of user tests that allowed us to understand if seniors correctly perceived the visualizations and also identified the best alternative. The preferred alternative is shown in the next figure. The results of this work were submitted to the NordiCHI'14 conference.



The interface of the contacts' activity

### Improve AALFred with user tests

With the new and developed modules, AALFred has now a more stable version with a lot of integrated features. This version was already used in some recent user tests that produced feedback to improve some aspects of the app, such as: navigation, the order and place of some buttons and textboxes, and even the behaviour of some features.

### Improving the multimodal interaction

Another point of focus of the development team will be the multimodal interaction. The modalities will also be improved based on the user's feedback and restructured to offer a more homogenous and coherent way of interaction through the whole app. For example, it will be much more easy and natural for the user if the speech and gesture interaction is coherent with the ones used when managing the contacts.



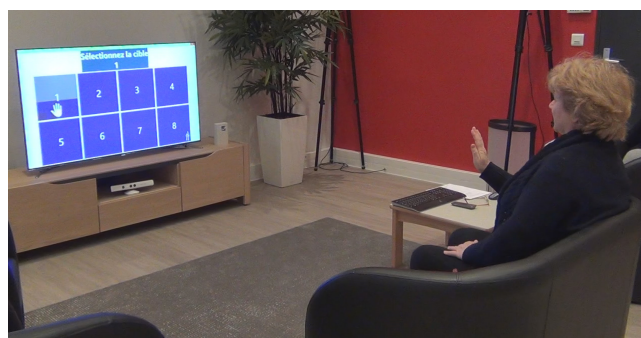
Wizard to configure AALfred settings

## Evaluation

Following the user-centred approach adopted by Pa-eLife, the partners involved in the evaluation tasks have been making several tests with senior users during the last 3 months. Till the field trial tests many others will be done.

### Gesture modality tests By Kinect

One of the strengths of AALFred is that it allows to interact by using several natural interaction interfaces, such as in-air gestures. In order to better understand the acceptance and suitability of the gestural interaction interface among the senior users, UTT performed a user study in France with 20 users and another user study of 20 older users is currently being conducted in Hungary, by BZN. The results of the first set of user tests showed that older people enjoyed using gestural interfaces, finding most of the evaluated gestures easy to learn and use. From our results, we were able to derive the best gestures for older people among the alternatives we purposed. Based on the user tests made in France, a research paper has been co-written (by INESC, who developed the gesture modality and UTT) and submitted to NordiCHI'14 international conference.



Gesture modality test in France

### AALFred user test

Following the release of the second version of the AALFred application, users have had the opportunity to discover the brand new AALFred and test its modules and services. In France, 6 users were involved in the tests, which focused both on the usefulness of the services and the usability of the interface. Of these 6 users, 3 had already been involved in the tests of the first version of the application. They were pleased to discover how AALFred had been improved following their previous feedback. Following these user tests, a set of development-oriented recommendations have been produced. They will be useful for developers to correct the current problems and further increase the ease-of-use of the application.

## Design selection

AALFred final GUI has also been selected by the users themselves among 3 different styles. These styles were proposed by a team of designers based on users feedback regarding what AALFred could represent for them. In order to evaluate the most appropriate style, we made a questionnaire where users had to grade, not only the aesthetics, but also the contrast, the shapes, the text readability and the understandability of icons and buttons.

## Voice Talent Selection (VTS)

Voice Talent Selection is a selection of a person who's „voice” will be the „voice of AALFred”. The VTS methodology has been created by MSFT and used in each of the participating countries. The chosen male voices for the VTS – which were mostly selected among those which had participated in the voice data collection - have been evaluated, first by a panel of experts, then a panel of older users. Casting sessions were organized in each of the consortium countries. After having the selected voice a studio recording will be done with the winners. The studio recording will consist of reading 2000 sentences. Afterwards the synthesized voices can be trained and generated.

In France, a special workshop was organized as part of the “Matinales” regularly organized at UTT's Living Lab and where the local TV was present. On the left screen, the AALFred application was displayed so that the users could constantly have AALFred in mind, on the other screen, the audio recordings could be listened one after the other. Now, the next step for the selected voice is the studio recording.



VTS casting in France

In Poland they also know what voice will be speaking to the Polish seniors. Seniors have chosen the winner voice out of the recorded voices. It is the voice of a man, aged 60 plus: low, quiet, balanced and at the same time strong and clear. Polish experts and a group of befriended seniors voted unanimously and decided on the winner. The Polish partner is planning to record soon and

looking forward to the birth of the AALFred – Personal life Assistant for the elderly speaking in Polish.

In Hungary not only a male but also a female voice has been selected. The casting session was held at the BZN where the candidates could also try the available gesture modalities and the second version of AALFred. The first evaluation of the recorded voices was done by BME and then after the votes of the older users the voices have been chosen. The studio recording will be done in May and the voice training and generation will be done till the end of June.

## Speech Data Collection

The Speech Data Collection Campaign, which involves the collection of speech provided by people using an online platform tool, is now ongoing in France, Hungary and Poland. We are confident of reaching the aim of 100 hours of pure speech (speech without pause) over the next few months of the project.

The Speech Data Collection Campaign, which involves the collection of speech provided by people using an online platform tool, is already finished in Poland and still ongoing in France and Hungary. Nevertheless, we are confident of reaching our initial goal in France and Hungary over the next few months of the project.

The Speech Data Collection is essential for the development of the PaeLife final product, where speech will form an important part of the multimodal interface. Therefore, we are always looking for people who would be willing to contribute and be a part of this project.

The requirements for participation are to be over 60 years old, to be born in one of the countries stated below, and to have good reading skills.

If you are interested in participating in this project, or know anyone who would like to donate their voice and who meets the criteria above, please contact the main coordinator of the following countries:

- **Hungary:** Tibor Fegyó - [fegyó@tmit.bme.hu](mailto:fegyó@tmit.bme.hu)
- **Poland:** Artur Kolesiński - [artur.kolesinski@ssw.org.pl](mailto:artur.kolesinski@ssw.org.pl)
- **France:** David Hewson - [david.hewson@utt.fr](mailto:david.hewson@utt.fr)

These coordinators will be able to give you further information and guide you through the process. As we require many elderly people to provide their voices, it would be great and immensely appreciated if we could have you on board and count with your participation!

After the data collection recordings are complete we will start the PaeLife data validation procedures to assure the quality of the recorded data. This will involve a data transcription and annotation process based on clear guidelines that were defined taking into account the PaeLife Project high quality standards.

## Further information

In order to be informed regarding the [PaeLife](#) community and its activities online, please join us on:

-  [Twitter](#)
-  [Linked In](#)
-  [Slideshare](#)
-  [Blog](#)

