FINAL
PROJECT REPORT

Please send this report ELECTRONICALLY to the Central Management Unit (CMU) as well as a copy to the National Contact Persons (NCPs) of the coordinator and project partners

The coordinator of the project must submit this report within 60 calendar days after the final date of the project, on behalf of the consortium.

If you have any additional question,
please contact the AAL CMU at CMU@aal-europe.eu,
or your NCP (see details on www.aal-europe.eu/aal-ncp)

Report date	31/10/2016

PUBLISHABLE PROJECT INFORMATION (TO BE USED BY AALJP)

1A. PROJECT	
Project full title	Assisting Carers for CooperativE Services to Seniors
Project acronym	ACCESS
Project No.	aal-2012-5-057
Project Website	http://access-project.org/
Project duration	•Starting date: 01/09/2013 •Termination date: 31/08/2016
Coordinator's name and details	Full name: David TIZON E-mail address: david.tizon@cev-sa.com Telephone number: +33 6 80 28 46 43

1B. PROJECT PARTNERS					
No.	**Partner organisation name**	**Partner org. acronym**	**Type***	**Project costs: Public grant in Euro**	**Project costs: Partner own contribution in euro**
1 (coord.)	CEV	CEV	SME	600.000,00	733.334,00
2	APOLOGIC	APO	SME	365.864,00	447.166,00
3	Centro Regionale Alzheimer - Policlinico Universitario di Roma Tor Vergata	CAR	RTD	212.500,00	333.008,52
4	LifeResult	LIF	SME	273.500,00	526.977,67
5	ADESSA A DOMICILE	ADE	END USER	113.176,00	138.330,00
6	FAMILIEHULP (non-profit organization)	FAM	END USER	86.940,00	161.460,00
Please select one of these options: SMEs, Large, END USER, RTD, other					

1C. PUBLISHABLE PROJECT RESULTS SUMMARY

ACCESS (Assisting Carers for CooperativE Services to Seniors) aims to develop a communication platform among all key actors and stakeholders in the care of elderly (older persons, families, home carers, nurses, etc.) to encourage the sharing of information but also access to various services and applications.
The information on the older people at home is currently not effectively shared among older persons, family members, caregivers, nurses, doctors. We are witnessing a real need for regular information sharing, in order to identify changes in situations and tailor caregivers' interventions accordingly. Given these needs, the project ACCESS aims to develop and evaluate an easy and permanent communication system to share data between older people and their stakeholders, through an innovative technological application. ACCESS proposes to improve the quality of life for older persons and their caregivers in their daily lives, by applying new technology.

Main steps of the ACCESS project

The European project ACCESS was tested and developed in three countries: Belgium, France and Italy. ACCESS proposes a software platform connecting the older persons and the formal and informal carers by a computer, smartphone or tablet. The system allows the management of visits, calls and daily activities. Also, it reminds older people what to do (taking the pills, exercises, etc.), enables the exchange of messages, documents, and enables access to proxy services (transport, shopping, etc.). In addition, the platform is connected to sensors and medical equipment (weight, blood pressure, vital parameter detectors, etc.) and alerts caregivers in case of problems and can even give doctors information about seniors' health parameters and response to therapies. The development was based on demand and specific context of each country (Belgium, Italy and France), providing a range of adaptable services according to the specific needs.
Two hundred older people and carers took an active part in the development and testing of the platform. The results were the development and testing of the software platform able to support informal and formal caregivers, particularly the management of activities of daily living at home.
Now that the project is completed and once the technical aspects at industrial level will be validated, the ACCESS system is intended to be marketed across Europe. Partnerships will be offered to professional organisations of caregivers, associations of older people, senior public health agencies, insurance companies private hospices and clinics, and various European networks involved in the identification of new partners throughout Europe.

Project partners

The project is supported by the Ambient Assisted Living (AAL) Joint Programme. The project implementation is carried out by:

- CEV GROUP (France)
- Apologic (France)
- Adessadomicile
- LifeResult (Italy)
- Centro Regionale Alzheimer Policlinico Universitario di Roma Tor Vergata (Italy)
- Familiehulp (Belgium)
- Algoé (France)
- European think & do tank POUR LA SOLIDARITE - PLS (Belgium)

ACCESS in short

- Analysis of users' needs and services
- Development of the technology of the platform ACCESS
- Recruitment of 200 seniors and their carers, and experimentations of the platform
- Follow-up and evaluation of experimentations

CONFIDENTIAL PART OF THE REPORT

2. DELIVERABLES SUBMITTED AND MILESTONES ACHIEVED DURING THE PROJECT

In this section, please provide details in case your project deviated from the Description of Work *(work plan) with respect to delivery dates, achievement of milestones or changes in planned outputs; please indicate whether and to whom (AAL NFA/NCP) the changes have been communicated.*

Has the project been finalised in line with the Description of Work?	**YES X**	**NO ☐**	**PARTLY ☐**
IN CASE OF DEVIATION, *PLEASE EXPLAIN:* /			
Has the project achieved its expected results as described in the Description of Work?	**YES X**	**NO ☐**	**PARTLY ☐**
IN CASE OF DEVIATION, *PLEASE EXPLAIN:* /			

3 A. PROJECT RESULTS - SCIENTIFIC/TECHNICAL PROJECT RESULTS

Provide a summary of the confidential results, including:

- The progress per work-package
- The performance of the project consortium (added value of cooperation, added value and performance of each partner etc.)
- Scientific/technical achievements during the course of the project
- End-user services developed during the course of the project
- Other confidential information

All work-packages are completed. Whereas WP1 provided valuable insights on the needs of the seniors and their circle of support, WP2, allowed us to develop the platform accordingly. WP3 forced us to reconsider the needs of the users. When confronted to the prototype, we saw that the users had to be resegmented. Some of them were not interested in the prototype, whereas others were very receptive to the took.

We could identify the variables that were key to target the future users of the service. Seniors needing complex care, and living at a distance from their family carers, will be the primary target of our tools, provided that their family carers already exchange by email and SMS.
This result is very important and will allow us to redesign the application with this target group in mind.
We also gathered valuable insights on each of the services that were tested by the users (seniors, relatives, professional carers doctors and paramedics). For example, relatives need to see the first names of professionals displayed on the schedule. The lifebook raised a lot of remarks and questions that we will answer in a next iteration.

In WP4, we studied the way to market the service, and we are now very confident that we can sell the service in France first, and in Europe after.

Regarding the WP5, the project was well managed by the coordinator. Despite some difficulties

encountered throughout the project, the partners have demonstrated responsiveness and dynamism to reset the ACCESS project in line with what was expected. In particular, despite the problems of payment of subsidies for the Italians partners, their involvement helped to quickly solve these budget issues. The coordination of the consortium, the day to day management, the project monitoring, and the update of the project time schedule have been efficient.

We think that we worked together well as a consortium, cross fertilizing our ideas and developments, having in mind the goal to provide a tool that could be used in different countries. Our goal at the beginning of the project was to provide a common way of representing electronically the needs of seniors in connection with their circle of support, elaborating a common digital format. This is the major scientific and technical achievement of our project.

3 B. PROJECT RESULTS – BUSINESS MODELS & INDICATORS

The product consists in a software platform connecting seniors, carers and relatives by a computer, smartphone or tablet. Two subproducts will be sold to answer the needs of two different populations :

1. A service (called DÔME) to exchange information between seniors (without cognitive impairment), nurses, professional carers, and family
2. A service (called OMNIACARE) dedicated to seniors with cognitive impairment, to monitor their health in relationship with medical staff, and family members.

Dôme will be the only service allowing family to visualize and manage information flowing right from the information system of home care providers. Dôme has an exclusivity with ISV providing connectivity to the home care providers, which is a huge entry barrier and virtually excludes any competitor from this market. The service will be sold by ISV to home care providers, which will make it available to their customers (seniors and family).

Omniacare lets doctors assess the efficacy of treatments for cognitive impaired patients and may potentially be expanded to other forms of impairment. Omniacare will be proposed to public and private hospitals and clinics, as well as to families thanks to the promotion of care structures. The system will be proposed on a service-based model (pay per use), and be offered with and without Dôme services too.

Omniacare must face competition from other companies that offer medical instruments and services. The differentiating factor, that in our opinion constitutes strong competitive advantages, stand in the very low costs for families and in the fact that no competitor's service can be at zero cost for doctors as Omniacare can be.

Please answer the questions below, if possible:

What is the **targeted range of manufacturing/service costs** per product/service unit (€, € per month etc.)?	2 to 5cts / day / senior for the home care service provider. Additional fees (60€/month) for optional services

What is the **estimated size of the targeted market** in Europe for your product/service (in €)?	40M€
In your business model, **who will pay** for the product/service (you can tick more than one box): X End user (older person) X Informal carers X Formal care providers ☐ Public subsidies ☐ Insurance X Other (Private clinics and hospices) ☐ not yet decided	
In your business model, **who will take the decision about purchase** of the product/service (you can tick more than one box): ☐ End user (older person) X Informal carers/family X Formal care providers ☐ Public subsidies ☐ Insurance ☐Other (add if necessary) ☐ not yet decided	
At what **stage of development** are you with your product/service (e.g. research, pilot, real life trial etc.)?	pilot stage
When will your product/service be **ready for market**?	spring 2017
What type of **further research/development** is necessary to finalize the product (technical, adoption, market research etc.)?	technical redesign
What **further investments** are necessary to launch product on the market?	400k€

The targeted market niche is the market of professional home care organizations. The only certification needed is an updated declaration to French agency CNIL, covering the confidentiality of the data.

Reliability testing will be realized on the industrial version of Dôme (which will be rather different from the actual version, in terms of technical architecture.

For services regarding cognitive impaired seniors, the targeted markets niches are public hospitals and private clinics and hospices. Certifications concerning the usage of medical devices are already available.

Reliability testing has been already done in two hospitals and home contexts, lessons are learned and the industrial version of the ACCESS system for the cognitively impaired will include the requested improvements to overall reliability.

3 C. PROJECT RESULTS – END USER INDICATORS

In the section below, please provide the information you have gathered during your project on primary, secondary and tertiary end-users[1] of your product/service. Note that secondary end-users can be formal and informal carers (see footnote). For the indicators cited below, please provide information if available; any other qualitative or quantitative information on beneficiaries can be provided instead.

In France, the use of smartphone application (iOS/Android) was tested by about 45 referents per home care organization. A referent is the senior's main family carer. The total number of home care organization concerned by the experimentation was 7

The use of the iPad application at home by the beneficiary, the referent and professionals involved about 20 seniors per home care organization.

The ergonomic tests on the iPad at the home care organization premises by professionals were conducted on approximately 5 professionals per home care organization.

The sample was elaborated in order to balance the criteria (age distribution, location, family situation, health status, socio economic background).

In Belgium, the end users were :

- Primary users:

16 older clients (most of them age + 70), with difficulties to sustain and continue managing daily life activities in their home (cleaning, washing, eating…)

1 informal carer who gives assistance to a family member

- Secondary users:

9 care professionals who need to be able to exchange actual information about their older clients, with the client itself, his or her informal carers, and other professionals.

We expected the unfamiliarity with the technology would be the biggest barrier. This indeed was the case for most of the clients. Clients need help to use the system.

On the other hand, the professional care providers (the Familiehulp employees) were very open to exploring this new way of communicating with their older clients and other professionals. They find the system useful.

So maybe we can conclude that at this time the 'secondary users' (care providers) need this product

1 Definition of end-users in AAL Joint Programme:

- *Primary end-user is the person who is actually using an AAL product or service, a single individual, "the well-being person". This group directly benefits from AAL by increased quality of life.*
- *Secondary end-users are persons or organisations directly being in contact with a primary end-user, such as formal and informal care persons, family members, friends, neighbours, care organisations and their representatives. This group benefits from AAL directly when using AAL products and services (at a primary end-user's home or remote) and indirectly when the care needs of primary end-users are reduced.*
- *Tertiary end-users are such institutions and private or public organisations that are not directly in contact with AAL products and services, but who somehow contribute in organizing, paying or enabling them. This group includes the public sector service organizers, social security systems, insurance companies. Common to these is that their benefit from AAL comes from increased efficiency and effectiveness which result in saving expenses or by not having to increase expenses in the mid and long term.*

more than the 'primary users' (older clients). Perhaps this would be different for younger clients (for instance clients living in service flats), who already are more familiar with the use of computers / tablets and have a less severe need for care.

Possibly the targeted client population was not chosen properly. Perhaps the system would be more useful for slightly younger clients (for instance in service flats, age 60 - 70), who already are more familiar with the use of computers / tablets.

In Italy, Omniacare did not target primary users directly, as seniors affected by cognitive impairments are not supposed to buy the service themselves. It was more directed to secondary users (relatives and caregivers) and tertiary users (care organization, mostly private, like private clinics and hospices, which host difficultly manageable patients like those affected by cognitive impairments).

Observed elderly patients (≥65 year old) were affected by cognitive decline and required ambulatory care by the Alzheimer Center - "Tor Vergata" University of Rome (CAR), between October 2014 and May 2016. During the project experimentation period, 144 consecutive new patients admitted at CAR for assessment or care were scrutinized, with a definite diagnosis of dementia of mild to moderate degree, after a previous complete work-up according to well-established diagnostic criteria.

58 Patients were initially enrolled after the clinical assessment. Of these, 37 were effectively recruited to participate in the experimentation after an interview with their caregivers, who showed good possibilities of success or sufficient confidence in using the ACCESS system. Only 33 patients (16 female and 17 male, 74.5 ± 8.4 years) completed the study. Dropouts were due to lack of caregivers at home when needed or errors committed by caregivers during data acquisition.

The biggest difficulty encountered was to find caregivers who were sufficiently comfortable with ICT tools. Many patients were left out of the experimentation because there was nobody living with them, able to use the tablet system and the devices. From a quick estimate, around 1 patient was actually recruited on 3-4 screened. Bearing in mind that patients are typically aged > 70 years and caregivers aged > 50 years, the statistic corresponds to the diffusion of ICT in the population. However, the use of the monitoring device and its application by an adhesive patch were the most problematic issues.

However, 94% of the interviewed people declared that the system was easy to use (score 3 or above) in its functionalities. For all functionalities, the intuitiveness evaluation was very positive (96% on average of score 3 or above). Percentages were positive also as concerns the emotional sphere, i.e. whether people liked the system in terms of colours, icons, and so on. More than 91% liked the graphical user interface (score of 2 or 3).

3 D. PROJECT RESULTS – OTHER INDICATORS	
Patents, which are the direct result of the project work	N/A
Collaboration to **standards**, which are the direct result from the project work	Yes, we work on a “de facto” standard which covers a large part of the market (in France)
Publications (scientific or other), which are the direct result from the project work (please provide details)	Poster on ACCESS Project at ISOCS-MINAB-ICT-MNBS Conference: “Remote Circadian Rhythm Monitoring in Alzheimer Affected People: a Telehealth Experience (Otranto, ITALY, 28-29/06/2016) Scientific paper about ACCESS Project on Springer’s Lecture Notes in Electrical Engineering: “Telemedicine for dementia-affected patients: the AAL-ACCESS Project experience”
Other **dissemination activities**	Different events (International forum, exhibitions, …) Creation of a company, DÔME, to commercialize the results of the project. This company communicates in the sector of professional home care. All the articles are listed on the website http://access-project.org
Type and size of audience reached by dissemination activities	All the home care organizations will be concerned by DÔME communication.

4. FINANCIAL INFORMATION - OTHER COMMENTS

Please check appropriate box:

The financial part of the project ☐ is in line with (or) X deviates from the partner's Grant Agreements & Work Packages plans (personal efforts, other costs, etc.)**?**

In case of deviation, please give a short explanation:

Italian partners, CAR and LIF, faced strong difficulties due to the delay from the local funding agency to sign the contract and in receiving the anticipation funds. Delay in signature of national grant agreement and, additionally, in payment of 30% anticipation have strongly impacted the partners, that have undergone difficulties in acquisition of hardware and recruitment of resources. In order to catch up with project schedule, the partners employed new and more expert resources during the second part of the project, in order to speed up the activities while ensuring the same quality of work. Those new resources were more expensive than the initial plan predicted; therefore actual costs are higher than the approved ones. For Tor Vergata: 292.500,00€ Partner own contribution are approved, for Liferesult: 368.500,00€ Partner own contribution are approved.

Other comments related to financial part of the project: /

5. AAL JP PROGRAMME

Please comment, using your AAL project experience, on the main advantages and disadvantages of AALJP projects.

We want to thank AAL programme for their financial support and guidance through the different steps (including the mid-term review). We think that the major advantage of such projects is to allow us to develop services on a large scale, taking into account needs of people from different countries, which would be totally impossible for SMEs otherwise. Being involved in an AALJP project with different European partners allows us to have a broader understanding of the market across Europe.

6. UPDATED PROJECT PARTNERS' CONTACT DETAILS[2]					
NO.	PARTNER ORGANISATION NAME	CONTACT PERSON		EMAIL ADDRESS	TELEPHONE NUMBER
		NAME	LAST NAME		
1 (coord.)	CEV	David	TIZON	david.tizon@cev-sa.com	+33 6 80 28 46 43
2	APOLOGIC	Claire	LOTTE	claire.lotte@apologic.fr	+33 2 96 87 17 81
3	Centro Regionale Alzheimer - Policlinico Universitario di Roma Tor Vergata	Giuseppe	SANCESARIO	sancesar@uniroma2.it	+39 06 72 59 60 02
4	LifeResult	Gianfranco	BORRELLI	'gianfranco.borrelli@liferesult.it'	+39 33 57 86 20 91
5	ADESSA A DOMICILE	Frederique	DECHERF	freddecherf@gmail.com	+33 6 82 72 73 50
6	FAMILIEHULP (non-profit organisation)	Donaat	VAN EYNDE	Donaat.Van.Eynde@Familiehulp.be	+32 92 69 65 20

[2] Please insert here, for every partner organization participating in your consortium, the updated email address and telephone number of the main contact person. These persons might be contacted after the closure of the project for statistical enquiries related to impact assessment.