

Project acronym	INCARE
Project number	AAL-2017-059-INCARE
Project full name	Integrated Solution for Innovative Elderly Care
Dissemination level	Public
Type of deliverable	Report
Contractual Date of Delivery	M18
Actual Date of Delivery	M18
Deliverable Number	D3.2a
Deliverable Name	Regular reports on stakeholder concerns and demonstrator sessions
Workpackage / Task	WP3 / Task 3.2
Work package responsible / Task responsible	EXYS / EXYS
Number of Pages	11
Contributors	CITST, EXYS, UPB, IZRIIS, WUT, STOCZNIA, BZN, SOFTIC
Version	8

Abstract

The aim of this report is to present the communication and demonstrator sessions which have been organized or which have been used for the presentation and demonstration of the INCARE project and the INCARE solution. These events have been kept updated both on the INCARE webpage at www.aal-incare.eu and on the LinkedIn page.¹

¹ <https://www.linkedin.com/showcase/incare-project/>

Table of Contents

1 Executive summary4

2 Introduction.....4

3 Project overview.....4

4 Tertiary stakeholder involvement6

5 Primary and secondary stakeholder involvement9

ABBREVIATIONS

AAL	Active Assisted Living
INCARE	Integrated Solution for Innovative Elderly Care

LIST OF FIGURES

Figure 1. INCARE user level functionalities.5

Figure 2. Use of health-related therapies in Romania. 10

LIST OF TABLES

Table 1. Stakeholder involvement events.....6

1 Executive summary

The aim of the tasks presented in this deliverable is to develop a communication and marketing plan on an international and national level, which will identify outlets for professionals and industry as well as media outlets for user groups. Demonstrator sessions were organized and presented during fairs, AAL forums/workshops and to institutional stakeholders. The website for the project² has been kept updated with core events at which the consortium members have participated and presented or demonstrated the INCARE results and solution.

2 Introduction

This document is presenting two aspects of stakeholder involvement:

- The first part reports on the initial result, during the project first 18 months of the work done in the INCARE project (Integrated Solution for Innovative Elderly Care) with different tertiary stakeholders that are involved in the area of elderly care, business, providers of relevant technologies (including robotics), service providers, insurance and banking, etc. Their continuous involvement is fundamental to the success of the project.
- The second part focuses on involvement of primary and secondary users in the development of the INCARE solution and the INCARE exploitation plan.

All partners have participated to obtaining feedback through networking with tertiary stakeholders while the involvement of the primary and secondary users has been mainly coordinated by the end-user organizations.

3 Project overview

Motivated by the aging European population and by the need to support elderly through integrate the technological solutions the “Integrated Solution for Innovative Elderly Care” – INCARE project is building upon two successful platforms (AAL-NITICS and FP7-RAPP) a new readily available AAL product. Its seamless operability and modularity will be demonstrated in multinational end-user pilots designed to help its fast uptake by the market:

- NITICS (Networked InfrasTructure for Innovative home Care Solutions) funded within the AAL 2012 call ([NITICS webpage](#))
- RAPP (Robotic Applications for Delivering Smart User Empowering Applications) funded 2013-2016 by the EC through the 7th Framework Programme FP7 ([RAPP on cordis](#))

The selected platforms offer complementary functionalities and services to elderly and their caregivers. However, the fully integrated solution, *i.e.* the INCARE platform, will go beyond concatenation of functionalities by providing a seamless access of its users to interconnected services with added functionality. INCARE functionalities and associated services will be flexible, scalable and autonomous (*i.e.* without continuous human intervention).

Motivated by the excellent outcome of the NITICS project which was selected as one of the AAL success stories, we propose to exploit NITICS innovation and extend the platform with new technologies and services for both indoor and outdoor support. In addition, integration with RAPP will confer autonomous, intelligent and adaptable features along with support from

² Website of the INCARE project at <http://www.aal-incare.eu/>

robotic platforms. In particular, the [TIAGO robot](#) developed by Pal Robotics will be used for the integration in the INCARE platform and subsequent testing with target users. Two test sites, one in Poland and one in Romania, will evaluate the acceptance of elderly and informal caregivers towards a robotic assistant. Following RAPPs positive results, we expect that the INCARE pilots will be able to prove that older people are willing and able to adopt modern technologies and applications through the interaction of assistive robots.

The AAL NITICS platform offers fully integrated and validated solutions for health monitoring, home automation, indoor fall detection, personal agenda with reminders, alerts, caregiver administrative tools (e.g. administrative tools for several users, sensor settings, user profiles). Modular and based on a classic client-server architecture supporting several communication protocols (see section 2.1), NITICS is easy expandable and adaptable.

The **RAPP platform** has been designed aiming towards a cloud-based integrated approach that enables developers to seamlessly deploy robotic applications. While suitable to run on different kinds of robots, these applications can be deployed on any platform (even a PC) installed with the Robotic Operating System (ROS). In addition, RAPP brings along various interaction capabilities through speech recognition and human/gesture detection along with a series of RApps offered through a web-based store (see Figure 1).

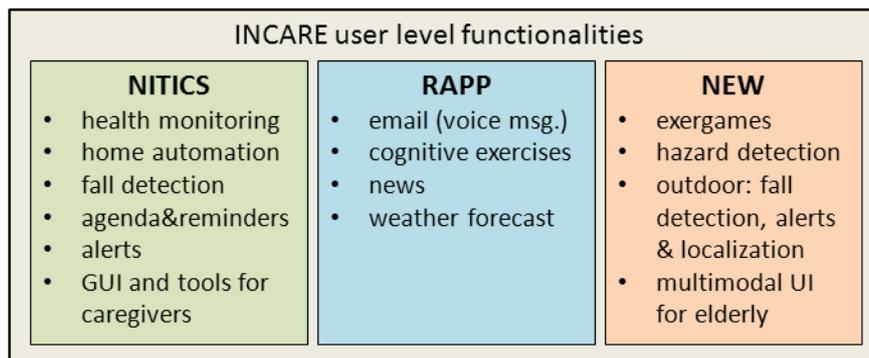


Figure 1. INCARE user level functionalities.

We will extend the integrated platform by adding functionalities that help elderly remain physically active and socially connected. These are (a) multimodal and seamless interface tuned to elderly users; (b) indoor hazard detection RAPP; (c) machine supervised and personalized exergames; (d) fall detection, alerts, localization in outdoor environment (see **Error! Reference source not found.**). The latter will confer elderly increased confidence for outdoor activities (including socializing), thus improving their sense of confidence and autonomy.

The resulting INCARE platform will be **modular, highly configurable and adaptable**. A multimodal interface (touch, voice, gesture) developed within the project will allow a seamless access of the user to all INCARE functionalities and associated services. The development will be based on a co-creation approach which will involve different categories of users in all phases of project planning, project implementation and, very importantly, in the business modeling and market uptake. Last but not least, pilot studies with users from 3 different countries complemented with smaller scale testing in Romania will help both INCARE development and its market strategy to take into account **various backgrounds and cultures**. The target for system integration is TRL 7.

4 Tertiary stakeholder involvement

This section presents activities undertaken in the INCARE project in order to involve tertiary stakeholders in the evaluation of the INCARE vision, solution and market approach.

Stakeholders were approached by the consortium members during various events to which they participated or which were organized for this purpose. Table 1 is presenting a list of these events for the period 01.10.2018 - 30.06.2020. The stakeholders involved through this approach have spanned a wide range of areas including, but not restricted to elderly care, academics, robotics (manufacturing, applications, services), business, etc.

Table 1. Stakeholder involvement events.

Partners	Activity	Date	Medium and reference	Indicative coverage
CITST, UPB	Conferinta Nationala de Alzheimer, 20-23 February, Bucharest, Romania. Link: https://ralcom.eventsair.com/cnalz2019/	20-23/02/2019	Leaflet distribution during the networking sessions	150
CITST, UPB	Presentation of the INCARE project and partial results at the 3th annual International Technology, Education and Development Conference, (INTED2019), 11-13 March, 2019, Valencia, Spain.	11-13/03/2019	Virtual presentation	200
CITST	European Robotics forum, 20-22 March, Bucharest, Romania. Link: https://www.eu-robotics.net/robotics_forum/	20-22/03/2019	Leaflet distribution, discussions with tertiary stakeholders	1000
CITST, UPB	Meeting and demo session with tertiary stakeholders: Pal Robotics team visit in Bucharest on 19th of March	19/03/2019	Discussions and demo session	10
CITST, UPB	Presentation at the 3rd IET International Conference on Technologies for Active and Assisted Living (TechAAL 2019), that took place in London, United Kingdom on the 25 of March 2019.	25/03/2019	Presentation	75
CITST, UPB	Demo session with INCARE devices (including robotic platforms) at the exhibition organized for the 65th meeting of the Bologna Follow-Up Group (BFUG) which took place in Bucharest 4-5 April.	4-5/04/2019	Demo session	50
BZN	Web press release, http://www.bayzoltan.hu/hu/2018/12/03/aal-incare-integralt-megoldas-innovativ-idosellatas-szamara/	04/2019	Web Press release	NA
CITST, UPB	Meeting with the president and vice-president of the Romanian Association of the directors of elderly care facilities	5/04/2019	Presentation of the INCARE project and	6

	(www.adiv.ro)		discussions	
CITST, UPB	Distributing flyers and discussions about INCARE and robotics at the TechWeek https://techweek.ro/ in Bucharest (24-26 May).	24-26/05/2019	Flyers and discussions with tertiary stakeholders	100
EXYS	Presentation of INCARE to the emergency services of Southern Switzerland in Bellinzona	11/06/2019	Presentation	18
EXYS	Presentation of INCARE to the emergency services of Southern Switzerland in Locamo	19/06/2019	Presentation	17
CITST	Distributing flyers and discussions at the European Digital Assembly 2019: a forum for stakeholders to take stock of the achievements of the Digital Single Market Strategy, draw lessons and to exchange views on the contours of a future digital policy	14/06/2019	Flyers and discussions with tertiary stakeholders	200
CITST	Romanian Blockchain Summit, one of the most important conferences dedicated to innovative technologies in the South-Eastern European region, bringing together the public sector, political decision-makers, developers, researchers, global entrepreneurs, leaders and innovators	21-22/06/2019	Flyers and discussions with tertiary stakeholders	400
WUT	Presentation of the INCARE results at the RoMoCo '19 conference	8-10/07/2019	Presentation	75
EXYS	Presentation of INCARE to a selected team of medical doctors of Clinica San Carlo in Milano	5/09/2019	Presentation and demo of existing functionalities	18
SOFTIC	Active Silver Life Programme - Beyond IT systems. This is how we want to support the elderly to lead an active life.	15/09/2019	Blog post	NA
ALL	Poster and poster presentation at the AAL forum in Aarhus, Denmark	23-25/09/2019	Poster presentation, flyers, discussions with stakeholders	150
IZRIIS	the Festival of the Third Age from 1 to 3 October 2019 in Cankarjev dom Cultural and Congress Centre in Ljubljana.	1-3/10/2019	Flyers and discussions with tertiary stakeholders	300
IZRIIS	Co-creating, experience sharing, demo with a group of experts, organizations and elderly	4/12/2019	Co-creation, demo	20-30
IZRIIS, CITST,	Presentation at the International Conference on Digital Health	9-11/12/2019	Presentation	120

UPB, WUT	Technologies (ICDHT 2019) Hammamet, Tunisia December 9-11, 2019	9		
BZN, SOFTIC	Type C Information Board: In the first phase, the consortium partners have been placed, the C-type information board at the implementation sites, which contains all the information determined by the Hungarian funding agency in dissemination manual	June-December	dissemination board at implementation sites	NA
ESYS	“Cyber-incognite e cyber-potenze”, Southern Switzerland official radio, live event, 21.1.2020.		The radio broadcasting allowed to diffuse information about the ehealth cybersecurity implications for platforms like INCARE and how they can be solved	800
CITST	AAL Info day, Vienna	30/01/2020	Demo with the cognitive games to various participants, discussions	100
CITST, UPB	European Robotic Forum, Malaga, Spain	2/03/2020 - 5/03/2020	Demos, flyers, focus groups	800

Feedback been obtained during the events presented was subsequently discussed and considered for the business and exploitation plan or for the steering the technical implementation. Some examples of feedback are given below:

- A robot like TIAGo should aid the elderly with daily activities only when he might be in danger of hurting himself. Otherwise, the elderly should continue their activities as much as possible in an independent way. One such scenario is bringing a glass of water/tea/milk. When carrying the recipient with liquid, the elderly person will pay attention to not spill it and thus she/he will not pay attention at the floor. This constitutes a high risk of falling. On the contrary, if the elderly carries a book, then the risk is substantially diminished. We took into account this advice and the result is a simulation and a demo with Tiago. We will use this during the next demonstration sessions.
- The characters in the cognitive games are boring. As a result, we replaced the initial characters with the elephant which had a lot of positive feedback at the AAL info day.

- The cost of robotics is too high for individual users. With the onset of the COVID-19 pandemics we have considered using TIAGo in hospitals and nursing homes. WUT has been involved in negotiations with a local hospital to use TIAGo for disinfection.
- Concerns about the weight, speed and safety of the TIAGo robot were often expressed as were those about the price.
- New ideas for cognitive games were provided by various stakeholders who appreciated that the gamification for elderly is an expanding and interesting field. We tried to find out about competitive products on the market but, apparently, these are largely absent.

Another strategy to gather stakeholder opinion was the selection and invitation of experts from relevant activity domains to the INCARE external advisory board (see D4.1). As can be seen from D4.1, we have gathered relevant experts in the field of business, robotic manufacturers, academics, solution providers, elderly care.

Advisory board members:

- Francesco Fero – robotics specialist (CEO Pal Robotics);
- Monika Caracuda – elderly care;
- Simona Lohan – academics;
- Tiberiu Seceleanu – both academics and industry (ABB Sweden);
- Liviu Enache (business expert in Romania where the INCARE commercialization will start);
- Arturo Nicora (business expert)

The INCARE consortium will expand its advisory board with more relevant experts from the fields of service providers, insurance, etc. The selected experts commit to:

- Offer advice on a reasonably basis when requested by the consortium members from time to time.
- Participate remotely in the consortium meeting held after the midterm review in order to steer the project according to the AAL CMU recommendations.
- Participate remotely in the closing meeting of the INCARE project which will evaluate the project results and will define the actions to be taken after the project.
- Participate in the EAB in complete independence and without conflict of interest.
- Not to divulge any information given in the context of the work of the AB and to respect the confidentiality requirements.

One feedback obtained from Mr. Enache has concerned the organization of the spin-off which is considered in the current business plan. He explained to us the advantages and disadvantages of having as share owners private individuals versus companies.

5 Primary and secondary stakeholder involvement

Primary and secondary stakeholders will be involved mainly during the INCARE pilots. The first pilot report is due in M29 and will be used as the basis of reporting and primary and secondary stakeholders. Within the current deliverable, we have conducted a survey among primary and secondary users with the aim of gathering feedback for the INCARE commercialization.

For more depth, we conducted an online survey which collected anonymous information on the health and technology-related spending habits of people aged 40 to 60 with at least one living

parent, with or without health problems. This survey allowed us to better understand the current state of the market in order to decide if the market conditions are met. The survey was conducted 15 April – 7 May 2020 with 63 participants, both primary and secondary users. All users were Romanian users. 77.1% of the participants are living in urban areas, the rest live in rural areas.

The survey revealed that, in Romania, the average spending is 64 euros per month, which is significantly higher than in other eastern European countries. We also asked participants if they use any health devices or services (e.g. physiotherapy, massage) and what is the monthly budget they allocate for it. We found out that 44% of the respondents use regularly some kind of therapy and that the average monthly spending is 61 Euro. In addition, a similar amount is spent on private medical services.

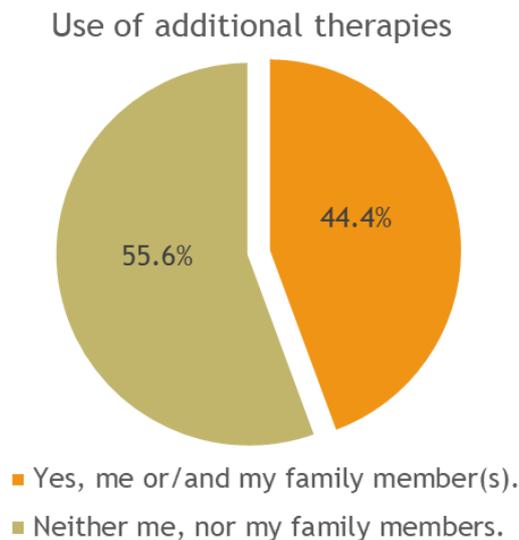


Figure 2. Use of health-related therapies in Romania.

These are an initial good indication that the Romanian market (and more specifically Bucharest with its high standard of living) is an appropriate market for the launch of INCARE, *i.e.* the average monthly spending is higher than other eastern European countries as well as the additional investment in monthly therapy. While this might appear as an unexpected result, we believe that the underlying cause is the poor support received through the public system and the underdeveloped private health insurance system. Both aspects contribute to the fact that Romanians are willing to invest and pay themselves for their own health and wellbeing.

6 Conclusions and future work

The above outlined involvement of the tertiary stakeholders needs to be expanded with a clear strategy of gathering stakeholder feedback in a consistent manner. Unfortunately, this is becoming increasingly difficult because of the pandemic situation. Also, the advisory board will be expanded with experts from new, not yet included, fields. Their feedback will be collected in a common meeting which will be organized after the midterm. The aim of this meeting is to evaluate the midterm review and to decide on the best way to address its points.

7 Document history

Date	Changes	Version	Author
January 2019	ToC initiated	1	CITST
February 2019	addition of new events and feedback	2	CITST
April 2019	addition of new events and feedback	3	UPB
June 2019	addition of new events and feedback	4	CITST
September 2019	addition of new events and feedback	5	UPB
January 2020	addition of new events and feedback	6	CITST
March 2020	revision by CITST and UPB	7,8	CITST, UPB