ICT Policy Support Programme
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inCASA

Integrated Network for Completely Assisted Senior citizen's Autonomy

<u>D8.5 Final Plan for the</u> <u>Dissemination of Knowledge</u>

Author(s)
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1 Introduction

1.1 Purpose and Content of this Deliverable

The objective of this deliverable is to present dissemination and exploitation activities for the inCASA project that have taken place as well as those that are planned beyond the end of the official project's period. All presented activities are classified into the respective categories Events, Marketing and Papers, articles, mail shots and chronologically organized according to the project periods.
Dissemination and exploitation activities have been planned and targeted at different associated communities, namely, health, social, technical, research and scientific communities.

In addition, within the framework of the inCASA project, a great deal of knowledge has been generated and this deliverable aims at summarizing the distinct outcomes and the way partners foresee to exploit them.

1.2 Outline of this Deliverable

This document is structured into the following chapters:

The first chapter of this document provides an introduction to the scope and structure of this deliverable.
The second chapter of this document provides an overview of the various dissemination activities that have taken place during the project as well as those that are planned.

The third chapter of the document is designed to describe the main exploitable knowledge and routes of its exploitation.

The fourth chapter provides a publishable summary of each exploitable result (taken from the previous chapter) that the project has generated. Only those results that the consortium is ready to publicise and have taken the appropriate measures to protect their IPR will be made public.

These results will then be entered in the CORDIS Results database which is open to the public and may be used by the Commission in its own promotional material.

2 Dissemination of Knowledge

Dissemination of results aims to promote knowledge sharing, greater public awareness, transparency and education. It also provides tangible proof that inCASA not only exists as a project, but also pays dividends in terms of medical and clinical excellence, industrial competitiveness, employment opportunities, and enhanced quality of life for all. At the same time, the communication of successes and the announcement of exploitable developments are of direct value to the consortium, not the least as an icebreaker for commercial exploitation.

Suitably framed messages can help by:

- Drawing the attention of national governments, regional health authorities and other public and private funding sources to the needs and eventual benefits of the results of inCASA;

- Attracting the interest of potential partners and/or customers;

- Encouraging talented students and scientists to join the partner institutes and enterprises;

- Enhancing the reputation of participants, at local, national and international level;

- Where appropriate, aiding the search for financial backers, licensees or industrial implementers to exploit the results; and

- Generating market demand for the developed products or services.

The inCASA plans for using and dissemination of knowledge have been defined with these aims in mind.

2.1 Approach and objectives

The dissemination programme for inCASA was driven from both the European and individual partner country perspectives and was applied within each partner country, and across the European community and beyond. inCASA's dissemination objectives were specifically aimed to:

- Put in place a programme of activities and supporting materials that will promote it to a wide-ranging pan-European audience encompassing potential customers and service providers, the wider research community and the public at large;
- Inform the target audiences of the existence of the project, and its benefits, use and applicability, illustrating its competitive advantages and the benefits derived, which are applicable to potential customers;
- Identify potential customers and partnerships;
- Prepare potential customers, users and collaborators for commercial deployment as inCASA's commercial exploitation plans are finalised.

A comprehensive dissemination programme was undertaken in order to achieve these objectives. This ensured that the project engaged with actors within and without the research community and with the public as a whole.

The overall objective of the dissemination programme was to provide an active and professional dissemination of the project results according to the adopted dissemination strategy. This was articulated into two different directions, one to support the widest diffusion of the project results fostering as much as possible the business deployment, the other to assure a proper awareness raising to national and European policy makers, so to promote an international forum on sustainable healthcare monitoring platform. Such strategy would

ensure that the results of the project are properly disseminated, covering the following aspects:

- Capturing, management and re-use the knowledge created in the project;

- Disseminate the knowledge created in the project to the appropriate places;

- Ensure the best possible foundation for an appropriate commercial and non-commercial exploitation of the project results (after the project has finished);

- Arranging national events in partner countries to identify opportunities and enhance the established transferability models.

2.2 Dissemination strategy

The inCASA dissemination strategy has a two-fold approach and thus has a corresponding vision and plan: to support awareness rising to policy makers on one side and at the same time to support exploitation/business deployment. Given the inCASA work plan, the prerequisite is to progressively increase the dissemination effort as project results are obtained, in order to assure a wide awareness of the inCASA framework and establish a favourable context and proper conditions to facilitate the inCASA solution replication after the end of project. The dissemination strategy is intended to optimise dissemination of pilot results to public entities, companies and organisations, which share a common vision or have similar interests in the obtained results and applications, representing potential end users or service providers of inCASA.

2.3 Overview Table – Dissemination Activities

A total of 49 dissemination activities have been performed or are planned to be performed by the inCASA partners during the project's life cycle, proving the focus of the partners on engaging the target stakeholders and on disseminating and exploiting the generated knowledge. Forums, conferences, workshops, business or round-table meetings were used by the inCASA partners as a means to raise awareness of the project and promote its unique advantages.

The activities were performed under a common dissemination strategy supported by common dissemination tools, like the inCASA poster, leaflet etc. The dissemination messages were also homogeneous and were focused mainly either on the innovative aspect of the inCASA service integrating Health and Social Care or on the usage of standards and widely adopted guidelines in order to build an integrated Telecare and Telehealth platform from a technical point of view.

Special attention was paid to the last year's national exploitation events organized in each country participating in the project. These events were organized in a period where inCASA results were already produced and the gained knowledge had become mature. Carefully selected stakeholders, preferably engaged to the deployment of Telehealth or Telecare services, were invited to these events which were proven to be an ideal place for promoting the inCASA knowledge, outcomes and advantages while at the same time they offered the opportunity to the partners to receive valuable feedback concerning the exploitation of the project. Even more, the national exploitation events allowed the industrial partners to enlarge their business network and attract new potential partners or customers interested in the exploitation of the inCASA solution. inCASA Pilot sites had also a core role in these events and the audience was very enthusiastic to see results related to the usage of the service from the monitored patients or frail people. These evaluation results were presented by the Pilot Professionals who were daily involved in the continuous monitoring of the patients included in the inCASA trial. The dissemination of Pilot results was also a key factor for attracting local or national healthcare policy makers in these events and engaging them to support the continuation of inCASA or similar Telehealth and Telecare solutions. A full presentation on the organization and outcomes of these national exploitation events can be found at the inCASA Deliverable 8.4 under the relevant section of the inCASA web site.[1]

Additionally, a number of events will be attended by the inCASA partners to further promote the exploitable results of the project. Beyond the project's lifetime some of the partners will participate in 4 different conferences that will take place in UK, Greece and Italy. Also, IN-JET will host a special session during a conference in Denmark (Dec. 2013) to demonstrate to Danish regional authorities and to SMEs in the health industry the results obtained during the Skive transferability study.

The following table summarizes all dissemination events where the inCASA partners participated in (or it is planned to attend in the near future), while in the next sections a more detailed description will follow.

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[1] inCASA deliverables: http://incasa-project.eu/viewpage.php?page_id=4

#	Date	Type	Type of audience	Sector	Countries addressed	Size of audience	Partner involved
1	10/09/10	Conference	Health Care, Technical	All	Greece	100 +	KGHNI / NTUA
2	16/09/10	Forum	General Practitioners	Health	UK	25 +	CHC
3	26/10/10	Forum	Commissioning Groups	Health	UK	15 +	CHC
4	16/11/10	Conference Exhibition Workshop	Health Care, Commissioners, Industry, Researchers, End Users	ALL	UK	800 +	CHC
5	13/12/10	Conference Workshop	Health Care, Commissioners, Industry, Researchers, End Users	ALL	UK	150 +	CHC
6	18/01/11	Workshop	Industry, Researchers. Technical	ALL	Denmark	25 +	CNET
7	11/02/11	Conference Exhibition Workshop	Academia, industry, healthcare professionals	All	France	50	INSERM
8	03/03/11	Webinar	Technical / Industry / Researchers	Technical	Online	15 +	CNET
9	09/03/11	Training	Industry	Technical	Rome	15 +	CNET
10	08/04/11	Forum	Health Care	Health	UK	15 +	CHC
11	11/04/11	Conference	Health Care,	Health	Spain	75 +	FHC
12	21/04/11	Meeting	Health Care, Commissioners, IT Specialists	Health	UK	15 +	CHC
13	21/04/11	Conference	Health Professionals	Health	Spain	100+	FHC
14	28/05/11	Forum	Health, Industry, Commissioners, Researchers, IT	ALL	UK	50 +	CHC
15	14/06/11	Conference Exhibition Workshop	Health, Industry, Commissioners, Researchers, IT	ALL	Italy	300 +	INVENT
16	07/06/11	Meeting	Health, Industry, Researchers, IT	ALL		30 +	INVENT
17	15/09/11	Conference	Industry, Researchers, IT	Scientific Technical	Czech Republic	250 +	SIG
18	26/09/11	Forum	Health, Industry, Commissioners, Researchers, IT	Health	Italy	50 +	NTUA / TID
19	27/09/11	Conference Exhibit	Technical / Industry / Researchers	Technical Scientific	Germany	300 +	SIG
20	03/10/11	Conference	National research institutions	Medical, Scientific	France	30	INSERM
21	07/10/11	Conference	Industry, Researchers, IT	Scientific Technical	Greece	300 +	CNET. NTUA
22	06/10/11	Seminar	Academy of Technologies of France	Medical, Scientific, Technical	France	30	INSERM
23	07/10/11	Meeting	Health, Social	Health Social	Italy	25 +	Reply, ATC
24	27/10/11	Seminar	Health, Social	Health Social	Italy	25 +	Reply
25	13/12/11	Conference	Health, Industry, Social, Commissioners, Researchers, IT	Health Social Scientific Research	Austria	50 +	INVENT
26	13/12/11	Conference	Health, Industry, Social, Commissioners, Researchers, IT	Health Social Scientific Research	Sweden	50+	CNET
27	02/02/12	Seminar	Healthcare and social care professionals	Medical, social	France	20	INSERM

28	02/03/12	Consortium	Health	Health	France	39 +	NSERM
29	2012	Meeting	Industry, Technical	Technical	Italy	15 +	TID
30	06/03/12	Conference Exhibition Workshop	Health, Industry, Social, Commissioners, Researchers, IT	Health Social Scientific Research	UK	800+	NTUA
31	25/04/12	Workshop	Regions, municipalities, healthcare providers, industry, citizens	Health Social Scientific Research	Denmark	100	IN-JET
32	25/04/12	Consortium	Health, Industry, Social, Commissioners, Researchers, IT	Health Social Scientific Research	UK	30 +	INVENT
33	02/06/12	Conference	Researchers, healthcare professionals	Medical	International	100	INSERM
34	07/06/12	National Event	Health, Industry, Social, Commissioners, Researchers, IT	Health Social Scientific Research	Italy	100 +	INVENT / REPLY / ATC
35	16-17/06/12	Conference workshop	Ministers, political parties, regions, municipalities, unions, organisations, citizens, industry	All	Denmark	1000 +	IN-JET
36	01/10/12	Conference	Health, Industry, Social, Commissioners, Researchers, IT	ALL	Italy	250 +	INVENT / REPLY
37	30/10/12	Exhibition	Health, Industry, Social, Commissioners, Researchers, IT	ALL	Italy	30 +	REPLY
38	29/11/12	Seminar	Health, Industry, Social, Commissioners, Researchers, IT	ALL	UK	25 +	CHC
39	06/12/12	Symposium	Health, Industry, Social, Commissioners, Researchers, IT	ALL	Belgium	25 +	CHC
40	2012	Meeting	IT, Research	Technical, Scientific	Germany	15 +	SIG
41	08/02/13	National Event	Health, Industry, Social, Commissioners, Researchers, IT	ALL	Greece	150+	NTUA / KGHNI
42	07/03/12	Conference	Health, Social	Health Social	Spain	100 +	FHC
43	26/03/13	National Event Round Table Conference	Academia, industry, regions	All	France	20	INSERM
44	29/03/13	National Event Workshop Exhibition	Health, Industry, Social, Commissioners, Researchers, IT	ALL	UK	100 +	CHC
45	10/04/13	National Event Round Table Conference	Academia, Health	ALL	France	20	INSERM
46	16/04/13	National Event Healthcare Exhibition & Congress Centre	IT, Health, Industry, Commissioners, Researchers	ALL	Sweden	100 +	CNET
47	28/05/13	National Event eHealth Forum	Health, Industry, Commissioners, Researchers, IT	ALL	Italy	40 +	REPLY / INVENT / ATC
48	13/06/13	National Event eHealth Forum	Health, Industry, Commissioners, Researchers, IT	ALL	Finland / Germany	100 +	SIG
49	20/06/13	National Event	Health, Industry, Social, Commissioners,	ALL	Spain	25 +	FHC / TID
50	01/07/13	Conference	Health, Industry, Social, Commissioners, Researchers, IT	ALL	UK	800 +	CHC, NTUA, KGHNI,

							Brunel
51	02/07/13	Conference	Health, Industry, Social, Commissioners, Researchers, IT	ALL	UK	800 +	CHC, Brunel
52	26/09/13	Conference	Health, Industry, Social, Commissioners, Researchers, IT	ALL	Greece	100 +	CHC, Brunel
53	15/10/13	Conference	Health, Industry, Social, Researchers, IT	ALL	Italy	100 +	REPLY
54	2-3/12/13	National Event Conference workshop exhibition	Ministry of Health, Regions, municipalities, policy makers, healthcare professionals (primary, secondary and tertiary), healthcare and social care administrators, industry, academia, IT providers/developers, citizens	All	Denmark	100-200	IN-JET

Table 1 - Overview Table – Dissemination Activities

2.4 Dissemination activities

In the next sections, we present the various activities occurred per inCASA period. The following inCASA events have already been summarized in the Table 1 of this document.

2.4.1 Activities undertaken in the first period (M1-M12)

2.4.1.1 Events

1. **14th Panhellenic Conference on Informatics (PCI2010),** Submitted and presented the paper "*An Integrated Architecture for Remote Healthcare Monitoring*" to PCI2010 – written by G. Lamprinakos, E. Kosmatos, D. Kaklamani, I.S. Venieris (NTUA). The paper was included in the proceedings and published on IEEE Xplore digital library, Tripoli, Greece, on 10 - 12 September 2010.

2. **Royal Society of Medicine: GP Forum**. Dr Russell Jones presented a discussion on the aims of inCASA to General Practitioners within the UK, London 16/09/2010

3. **East Midlands Clinical Commissioning Group**, Dr Russell Jones presented a discussion on the aims of inCASA to Commissioning Groups within the UK, Nottingham 26/10/2010

4. **The Telecare Services Association (TSA) 2010** Conference The TSA is the industry body for telecare and telehealth, and the largest industry specific network in Europe. The TSA Conference is the largest industry specific Conference relating to telecare and telehealth in Europe. Dr Russell Jones held a workshop to present the inCASA Project, http://www.telecare.org.uk/conference, UK, 16/11/2010

5. **Telemedicine and eHealth 2010,** Royal Society of Medicine, Dr Russell Jones presented early inCASA. London 13/12/2010

6. **Continua European workshop** on personal health monitoring, Members of CNET participated to a Continua European workshop on personal health, Denmark 18/01/2011

7. **Conference on «Domomedicine», Entretiens Telecom Paristech**, Paris. INSERM introduced the inCASA solution to broad audiences by giving a tutorial: **"**Technologies applicatives d'interaction et de coordination des intervenants au domicile – Domomédecine, Paris 11/02/2011

8. **Continua Webinar**, CNET Presented the inCASA project during the Continua Webinar, 03/03/2011, Online, Global

9. **FASTWEB Training Session** CNET undertook a FASTWEB training session in which they presented inCASA results to a large Italian telecommunications company, Rome 09-10/03/2011

2.4.1.2 Marketing

inCASA Web site

In May 2010, 1 month after the beginning of the project, the inCASA web site was deployed at the address: http://incasa-project.eu/. Partner IN-JET was responsible for the hosting and the initial deployment while NTUA, IN-JET and the rest of the consortium constantly updated the inCASA web site content during the next years. The web site was our major means of disseminating partners' activities and promoting the inCASA outcomes and perspectives.

2.4.1.3 Papers, Articles, press releases and mail shots

Press Releases by KGHNI

KGHNI prepared numerous press releases in the preliminary phase (1st year) of the project in order to raise awareness to the target stakeholders and announce future activities.

KGHNI released these announcements in various types of web sites:

- Wide audience media, like the Greek national newspaper "Proto Thema". The relevant web link (in Greek language) is: http://www.protothema.gr/health-and-life/article/101412/shmantikh-symmetoxh-se-ereynhtiko-programma-gia-to-nosokomeio-agia-olga-/
- Media focused on the healthcare sector, like EUmedline which is a well-known Greek portal. The relevant web link (in Greek language) is: http://www.eumedline.eu/post/TO-KWNSTANTOPOYLEIO-STO-EYRWPAIKO-PROGRAMMA-inCASA/
- Political news and analysis media like the website elzoni.gr. In this release, the inCASA project is presented as an innovative EU project combining Medicine with modern ICT technologies. The relevant web link (in Greek language) is: http://www.elzoni.gr/html/ent/933/ent.5933.asp

2.4.2 Activities undertaken in the second period (M13-M24)

2.4.2.1 Events

10. **Didcott Health Centre Clinician Forum**. CHC presented the inCASA project at a clinician forum in Oxford. The aim of the presentation was to share and encourage uptake of telehealth within the Oxfordshire area. UK, 08/04/2011

11. **Open meeting for Spanish healthcare professionals focused on Patients' Risks Management** (http://fhcalahorra.com/noticias-fhc/2846-ii-jornadas-de-seguridad-de-los-pacientes-en-fhc), at Calahorra. FHC presented the inCASA project and its current status to health professionals, La Rioja, Spain, 11-13/04/2011,

12. **Diabetology Specialist Group** CHC presented the project at the Diabetology Group in Churchill Hospital, Oxford to engage and promote remote health care monitoring within the Oxfordshire area, UK, 21/04/2011

13. **Congreso Nacional Hospitales - 2011** Presentation to 17th Congreso Nacional Hospitales -2011, FHC Explained experience as part of inCASA project and how it can help chronic patients to improve their quality life in the "17th Spanish National Hospitals Conference, focused on innovation activities within the healthcare sector" (http://www.17congresohospitales.org/), Madrid, Spain 26-29/04/2011

14. **(TSA) Standards Forum** - CHC presented to The Telecare Services Association (TSA) Standards Forum, 28/05/2011, http://www.telecare.org.uk/forum

15. **SANIT 2011 http://www.sanit.org/,** INVENT contributed to dissemination of inCASA results by attending to SANIT is the biggest institutional Italian event and a meeting point for all the "Healthcare Stakeholders". During that event INVENT took the chance to disseminate inCASA initiative, distribute the official leaflet and exchange opinions and experiences to health professionals, big enterprises, SME and public authorities representatives., Rome (Italy) 14-16/06/2011, INVENT

16. **Moving life project Kick-off-Meeting**, INVENT presented the inCASA project and reported its current achievements to the Movinglife (http://www.moving-life.eu/news.php) consortium, during the Movinglife project Kick-off-Meeting. Movinglife is a FP7 Support Action, that delivers roadmaps for technological research, implementation practice and policy support with the aim of accelerating the establishment, acceptance and wide use of mobile eHealth solutions that will support lifestyle changes among citizens and improve disease management globally, Madrid, 07/09/2011

17. **6th IEEE International Conference on Intelligent Data Acquisition and Advanced Computing Systems: Technology and Applications (IDAACS'20116th).** SIG Presented the paper entitled "Wireless Network and Gateway Architectures for Home Care Applications" which was accepted for publication in the IDAACS Conference (http://idaacs.net/2011/), Prague, Czech Republic, 15-17/09/2011

18. **AAL forum 2011**, Poster Presentation Represented inCASA project in the AAL forum 2011 (http://www.aalforum.eu/2011-2), an event that attracted many healthcare specialists. The inCASA poster was visited by relevantly many people and the inCASA representatives handed out 100+ fliers, Lecce, Italy 26-28/09/2011

19. **Presentation to BMT**, inCASA project result have been presented within the BMT 2011- http://www.nncn.uni-freiburg.de/termine-en/bmt2011/view?set_language=en (German National Conference on health technology).SIG prepared also an inCASA poster presentation for this purpose, Freiburg, 27-30/09/2011

20. **Presentation to conference of the Multi-organism Thematic Institute for Health Technologies,** Presented the project to the yearly conference of the Multi-organism Thematic Institute for Health Technologies, the main public organization in this area,

which gathers all the national research institutions (INSERM, CNRS, INRIA,…), Tours, France, 03-04/10/2011

21. **2ⁿᵈ International ICST Conference on Wireless Mobile Communication and Healthcare - MobiHealth 2011**, Presented the scientific technical paper: *Using SOA for a Combined Telecare and Telehealth Platform for Monitoring of Elderly People*, Written by: *G. Lamprinakos, S. Asanin, P. Rosengren, D Kaklamani, I. Venieris,* which was published in the proceedings of the MobiHealth 2011 conference (http://mobihealth.name/2011/) and which promotes the advantages of the inCASA technical architecture from a Service Oriented point of view (SOA-based middleware). Kos Island, Greece 5-7/10/ 2011

22. **Presentation to Domomedicine seminar**, INSERM presented inCASA project to the Domomedicine seminar which Francis Levi organized on behalf of the Academy of Technologies of France, Paris, France 6-7/10/2011

23. **Presentation to GP meeting**, Reply presented the inCASA project at a General Practitioner's meeting, Cagliari, Italy, 07/10/2011

24. **Presentation to Innovabilità event**, Reply presented the inCASA project on an Italian Event called "Innovabilità" http://www.provincia.milano.it/export/sites/default/affari_sociali/Eventi/innovabilita4.html). This is a cycle of seminaries on various topics related to elderly and disabilities organized by a Local Public Authority: The Province of Milano, Milan, Italy, 27/10/2011

25. **Presentation to Austrian Academy of Sciences – Institute for Technology Assessment (OAW),** within Value Ageing project. Andrea Guarise, a senior consultant from INVENT, has been intern at the OAW, as a seconded within the project Value Ageing, a Marie Curie Industry-Academia Partnerships and Pathways Action funded within the scope of the Seventh Framework Programme (FP7) of the European Commission (http://www.valueageing.eu/). He presented inCASA project, objectives and achievements to OAW audience, including researchers, professors and some students with interest in e-health domain. The presentation has aroused much curiosity and interest to that audience. , Vienna 13/12/2011

26. **Presentation to a National Sweden Conference**, CNET presented the inCASA approach on a national Conference in Sweden, resulting in an invitation to three national workshops addressing "Technology for Independent Life"., 2011

27. **Presentation to Paul Brousse hospital**, INSERM presented the inCASA project and its innovative characteristics in local audience in France. INSERM presented the project at a dissemination conference held at the Medical Oncology Department, Paul Brousse hospital, Villejuif, within the framework of "Domomedicine".Villejuif, France, 02/02/2012

28. **Presentation to PICADO consortium**, INSERM presented the project to the PICADO consortium, within the framework of "Domomedicine". Villejuif, France, 02/03/2012

29. **Presentation of an inCASA video to Telefonica business units**, TID prepared a video of inCASA presenting the project to the different business units within the

company. The whole company is quite interested in the concept of combining Telehealth and Telecare data. Spain 2012

30. **International Congress on Telehealth and Telecare 2012**, NTUA presented inCASA perspective in the "International Congress on Telehealth and Telecare 2012" held in London through a poster presentation, entitled "The inCASA project: improving the quality of life and social care for the ageing population". The Congress had a wide audience and is considered among the most appreciated Telehealth/Telecare events in Europe. London, UK, 06/03/2012

2.4.2.2 Marketing

ATC Video
ATC prepared a video presentation of the inCASA project, in which there are demonstrated the goals, the organization, the target users, the technology used and the involved human resources of the Italian pilot.

The produced video about the ATC pilot was a very useful tool for the dissemination of the project - aiming at facilitating the acceptance of the technological solution.
ATC provided merchandising material (Mug, pen, T-shirt and block-notes with inCASA Logo) for free to elderly people involved in the video production.

The video can be viewed at youtube: http://www.youtube.com/watch?v=MrdT6KkIaK8

2.4.2.3 Papers, Articles, press releases and mail shots

None

2.4.3 Activities undertaken in the third period (M25-M39)

2.4.3.1 Events

31. **Welfare Technology Day ("Velfærdsteknologidag") 25 April 2012**
Website: http://www.innovationfur.dk/index.php/da/presse-2/135-velfaerdsteknologi

Meeting and workshop in Fur, Denmark, regarding welfare technologies, i.e. assisted living and healthcare technologies, aimed at the elderly and nursing home. At this meeting, IN-JET were able to create awareness and interest in the inCASA project. In particular, a good contact with Skive municipality (in particular the healthcare and social care authorities in Skive) was established; Skive is looking at implementing combined telecare and telehealth solutions for the elderly. Based on the contact established at this meeting, SKIVE agreed to test the transferability of the inCASA solution in 2013 as part of WP7.

32. **Value Ageing initiative**, INVENT presented inCASA project at QUEEN'S UNIVERSITY OF BELFAST (QUB) within Value Ageing initiative, an IAPP Marie Curie Action, in May 2012. According to Value Ageing plan, a INVENT researcher has been seconded for some months to QUB, and he had the chance to present inCASA solution to QUB audience, including professors and PhD students, QUEEN'S UNIVERSITY OF BELFAST, May 2012

33. **ASCO annual meeting**, inCASA Poster presentation by INSERM at the annual meeting of the American Society for Clinical Oncology., Chicago, U.S.A, 02/06/2012

34. **Italian ICT & Active Ageing event,** INVENT, together with Reply, organized the participation and the presentation of inCASA project to the Italian event "ICT&Active Ageing: progetti e nuove tecnologie per il sostegno dell'invecchiamento attivo", held in Rome on 7th of June 2012, Rome, Italy, 07/06/2012.

35. **People's   Meeting"   (Folkemødet)   16-17   June   2012** http://www.brk.dk/folkemoedet/Sider/Folkemoedet.aspx In June, IN-JET gave a presentation at a "People's Meeting" (Folkemødet) in Allinge, on the island of Bornholm, Denmark. The meeting attracted representatives various domains, including different government parties (various ministers participated including the prime minister), regions, municipalities, industry, unions and organisations and represented a unique opportunity to discuss the many challenges and opportunities for the future of the Danish welfare society, including assisted living technologies, telehealth and telecare for the elderly. The meeting generated a lot of interest in the Danish media.

36. **TeleMediCare 2012 conference**, A paper describing the inCASA project in terms of objectives, architecture (functional, physical and software), interoperability between its main blocks and results achieved has been submitted and presented in the TeleMediCare 2012 conference by REPLY. The conference, was organized by PTUD (Desio University Technological Center) and IITM (International Institute of TeleMedicine), Desio Hospital, Italy, 01/10/2012

37. **Smart City Exhibition**. Presentation of the inCASA Project at the Smart City Exhibition by the coordinator Massimo Caprino. Bologna, Italy, 30/10/2012 http://www.youtube.com/watch?v=AeVT28GFvPA

38. **eHealth Services: The inCASA program**, Organization of a seminar by CHC for the inCASA pilot presentation, focusing on: Developing integrated health and social services, Adopting standards driven technology, Telemedicine Programme. Key invited stakeholders included Primary Care Trusts, Hospital Trusts, Social Services, General Practitioners and SMEs. Green College, Oxford, England, 29/11/2012

39. **EHTEL 2012 Symposium Fact not Fiction: The future of eHealth is already here**, CHC participated towards the dissemination of the inCASA project. EESC, Rue Van Maerlant 2, Brussels, Belgium, 06-07/12/2012

40. **Technical and Academic Meeting,** SIG has invited to an information meeting about the inCASA architecture within the Offenburg University of Applied Sciences. Prof. Dr. Hoppe, Deputy Director of Peter Osypka Institute, and some students of him participated in the meeting. In the meeting, Prof. Sikora from the partner SIG presented the various aspects of the inCASA project at Offenburg University, Germany. 13/02/2013

41. **Greek National Event – "e-Health Services: The inCASA project**", The Greek national exploitation event, a Stand-alone event entitled "e-Health Services: The inCASA project" was co-organized by NTUA and KGHNI at the KGHNI premises on the 8th of February, 2013 under the auspices of the Greek Ministry of Health and the 1st Regional Health Authority of Attiki. Participators included Municipal (local)

authorities, Health Care Authorities, SMEs providing services in the Health sector, Professors, Doctors, ICT researchers, Social workers, Psychologists. Moreover, a significant number of local elderly people attended the event. A total number of 163 persons were registered to the event which finally had a great impact on the audience, on the hospital, on the local society and on the involved authorities.

As a post event action, KGHNI invited local/national media to cover the event, something that led to various inCASA related press releases, mainly in healthcare related Greek web sites, and even general purpose media mentioned also the Greek event. KGHNI premises, Athens, Greece, 08/02/2013

42. **Annual meeting of the Spanish Internal Medicine Society**, Jesús Castiella, FHC Medical Coordinator, has been in charge of the dissemination of the inCASA project in the COPD group of the annual meeting of the Spanish Internal Medicine Society, held on March, 7th and 8th, 2013 at Zaragoza (Spain), Zaragoza, Spain, 07-08/03/2013

43. **French National Event: "Systems Medicine for improving patient care"** INSERM participated in the first French event by leading a round table in the framework of the European project CASyM organised in Lyon Biovision on March 26th. The round table title was "Systems Medicine for improving patient care". The state of the art of the inCASA project and the activities of the French Pilot were presented. The participants found the project quite innovative and posed many questions about patient education, patient perception and satisfaction and economic aspects. The second part of the round table allowed defining priority issues and actions to be implemented for improving patient care in a short, mid or long term and with a low, middle or high impact, Lyon, France 26/03/2013

44. **UK National Event: "Co-ordinated Care: Meeting the Needs of Patients, Driving Better Integration"** CHC and Brunel University organized an inCASA Master class, under the subject: "Delivering integrated Care for the frail elderly using interoperable technology platforms and collaborative health and social care services". The event was attended by over 150 delegates. The event was undertaken within a Public Service Event - "Co-ordinated Care: Meeting the Needs of Patients, Driving Better Integration" - http://www.publicserviceevents.co.uk/overview/256/co-ordinated-care which was held on the 29th of March 2013, in Birmingham. The event was chosen as a place to present the inCASA project as it was specifically focused on showcasing real life examples, initiatives and best practice case studies in order for delegates to explore how to turn the integration rhetoric into a reality

45. **French National Event: "Technological Innovations for Health: is there a place for the user?"**: INSERM participated in a round table during the annual meeting of ITMO TS (Thematic Institute Technologies for Health) in Bordeaux on April 10th 2013. This meeting brought together actors contributing to a high level of academic research and carrying valuable innovations. The main topic was the technological innovations for health. Dr. Francis Lévi presented the inCASA project, the context and preliminary results of the French pilot and the INSERM recent activities in Domomedicine domain. The participants were very enthusiastic regarding the prospects of the inCASA services as the pilot was one of the first successful Domomedicine experiments.

46. **Swedish National Event – "The Vitalis Conference"**. The Swedish event took place at the Vitalis exhibition and conference at The Swedish Exhibition Centre in Gothenburg, Sweden 16th-18th April. As the Vitalis has the focus on eHealth issues, CNet participated with an inCASA exhibition as foundation for visitors to inspire and get inspired. Vitalis is a place to meet colleagues and partners from Sweden and the

Nordic region where the health care sector is currently faced by great challenges and there's a need to invest in competence, know-how and new tools such as the inCASA platform. Vitalis is by far the largest eHealth event in Scandinavia and it broke the record on the number of visitors from previous years. The number of people visiting the conference went up with 32% to a total of 4027 unique visitors!

47. **Italian National Event – "e-Health Forum".** The Italian national exploitation event was co-organized by Santer Reply, Invent and ATC Torino during the e-Health Forum (http://www.ehealthforum.it/node/4736) in Rome at the ATA Hotel Villa Pamphili premises on the 28th of May, 2013 in Rome. The event has more than 1,000 members, 560 participants including 28 speakers. Numbers of great importance than those recorded by the 5th edition of the eHealth Conference, which was held at the ATA Hotel Villa Pamphili in Rome on Tuesday 28th May. In a stand staged for inCASA all day, REPLY, INVENT and ATC had met different stakeholders, interested to the inCASA solution within a specific stand dedicated to the demo of the solution. In the afternoon the partners presented details of the inCASA approach within a dedicated workshop: http://www.ehealthforum.it/node/4823

48. **German national event – "German–Finnish Health Care and E-Health Forum".** The German national exploitation event was co-organized by the state organisation Baden-Württemberg International in its series of international events. In this case, the event took place in the German–Finnish Health Care and E-Health Forum June 13th and 14th in Oulu (Finland). A large delegation from the Finnish side participated, so that around 150 participants were at the forum. Generally, the feedback from the participants of the presentation of Prof. Sikora from SIG was very positive and many stakeholders showed good interest in the inCASA project, its experiences and outcomes. It was interesting to see that Finnish participants were even more concerned about the telehealth, as their major concern is the even faster demographic change of Finland in comparison with most other European countries.

49. **Spanish national event.** The Spanish national exploitation event which took place at FHC in Calahorra (La Rioja) on 20th of June, 2013, was organised by Pelayo Benito, Coordinator of the pilot at Fundación Hospital de Calahorra (FHC). Health care authorities, diverse health professionals (Doctors, nurses, nursing assistants, etc.), social workers and external SMEs providing services in the health sector participated in the event, which can be considered a great success not only for the number of people taking part but also for the quality of the information exposed. Telefónica also participated actively during the event with Jordi Rovira, representative of the inCASA project, and Unai Gómez, representative of the commercial unit of Telefónica, which is starting a pre-commercial pilot in this region. Jordi Rovira gave a presentation highlighting why the current chronic care model is failing and how systems such as inCASA could help to find efficiencies in the Healthcare system and improve quality of life of patients. This, in fact, has been shown in Calahorra's pilot, by demonstrating that rehabilitation could be carried out at patients' homes with the same level of quality than in Hospitals. That means taking off some burden of the system and avoiding patients to move to the care centre by using ambulances or taxi depending on their state of health.

2.4.3.2 Marketing

inCASA Video from TID
TID has elaborated a video to disseminate the value of the inCASA SARA platform. The video (in Spanish) is also uploaded in youtube:

http://www.youtube.com/watch?v=Jioq50grsWU. Moreover, the same video was also produced in English in order to target the UK market too. It can be found at: http://bcove.me/6l2m5p97

Twitter account from FHC
FHC has created a **Twitter** account[2] to support initially the national event organization but it can now be used as a means for further dissemination of the inCASA project results and of FHC activities.

inCASA UK Pilot Flyer
A flyer describing inCASA and the UK pilot was developed for the American Telemedicine Association Meeting and Trade Show in Austin, Texas 5th – 7th May 2013.

2.4.3.3 Papers, Articles, press releases and mail shots

Le Figaro publication, 23/02/2013, France
An article on the inCASA French pilot progress and perspective was published in the French widely known national newspaper "Le Figaro" on February 23th, written by Francis Levi, INSERM pilot coordinator and director of the INSERM's unit «Rythmes biologiques et cancers». In this article, it is explained the idea of domomedicine and how inCASA platform has already achieved to make more efficient the remote monitoring of INSERM patients suffering from cancer

KGHNI press releases
KGHNI invited local/national media to cover the Greek national event, which led to various inCASA related press releases, mainly in healthcare related Greek web sites, even if general purpose media mentioned also the Greek event that was hosted in KGHNI and co-organized by the hospital and NTUA. Some indicative links are stated below (in Greek):
- xtypos.eu[3] website
- frontpages.gr[4] website

Article for the Telemedicare conference, by REPLY
A paper describing the inCASA project in terms of objectives, architecture (functional, physical and software), interoperability between its main blocks and results achieved till now.
http://incasa-project.eu/downloads/papers/Santer%20Reply-Telemedicare%202012-inCASA%20project.pdf

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[2]   https://twitter.com/incasa_spain
[3]   http://www.xtypos.eu/xt/index.php?option=com_content&view=article&id=22016:2013-02-15-09-46-00&catid=63:2011-01-12-11-22-27&Itemid=136

[4]

    http://www.frontpages.gr/d/20130225/200/%CE%A3%CF%85%CE%BD%CE%B5%CE%AF%CE%B4%CE%B7%CF%83%CE%B7

2.5 Planned Activities after the completion of the project

2.5.1 Events

50. **Third Annual International Congress on Telehealth and Telecare, 2013**, CHC co-authored with NTUA and KGHNI an inCASA paper that was accepted for presentation at the [Third Annual International Congress on Telehealth and Telecare](), entitled "*Presenting evaluation results from the usage of the inCASA Remote Healthcare Monitoring Platform*" July 1st 2013

51. **Third Annual International Congress on Telehealth and Telecare, 2013**, CHC co-authored with Brunel University an inCASA paper that was accepted for presentation at the [Third Annual International Congress on Telehealth and Telecare](), entitles " Monitoring Habits and Physiological data in the frail elderly". The results were presented at the conference on July 2nd 2013

52. **Ambient Intelligence Advanced Technologies in Support of Healthcare and Assisted Living", on 26-27th September, 2013**
CHC and Brunel University will present the inCASA project at a clustering event in Heraklion, Crete. The event is supported by the EU Commission and will include presentations from 26 European funded projects.

53. **ICT Innovation Pole, 15 October 2013**
Santer Reply will participate in ICT Innovation Pole of the Piedmont Region. In this context, October 15, 2013 in Turin, the team will present the project INCASA and future scenarios of international importance within the conference entitled "Aging society: technological challenges and market opportunities."

54. **The eHealth Observatory 2-3 December 2013**
Website: http://2013.e-sundhedsobservatoriet.dk/In-JeT plans to participate in a large annual national event, The eHealth Observatory (in Danish "E-sundhedsobservatoriet") with the intention of presenting the inCASA solution for exploitation purposes on the Danish market.   The eHealth Observatory is a part of the Danish Centre for Health Informatics at Aalborg University in Denmark. The Danish Centre for Health Informatics contributes to research and understanding of the interrelationship between health problems, the organisation of the health system and information technology. The basic research fields within the network are:

- user interface and usability
- technology assessment and implementation
- decision support systems
- clinical information systems, and EHR
- telemedicine
- organisation and management
- quality development and assurance
- user driven innovation
- ambient assisted living
- clinical work practice
- eHealth technologies.

The eHealth Observatory is aimed at both primary and secondary healthcare providers, e.g. the municipalities and regions (including hospitals), as well as patients, relatives, healthcare professionals and decision makers on various levels. As such, the conference represents a unique opportunity to reach all stakeholders within the Danish health and social care system and, as the title suggests, particularly stakeholders involved in eHealth.

2.5.2 Marketing

inCASA Web site

The inCASA website and the domain name will be maintained by IN-JET for a minimum of two years after the project ends: http://incasa-project.eu/news.php

2.5.3 Papers, Articles, press releases and mail shots

Joint TID / FHC Press Release

A press release announcing the next phase of the Spanish inCASA pilot is planned to be released to Spanish TV News.

Joint Journal Publications

Joint publications for presenting the results of inCASA are planned. There will be joint submission in the autumn of 2013 to the following journals:
- "BMJ (British Medical Journal)"
- "Plus Medicine"
- "Health Services Journal"
- "Telemedicine and eHealth"

These publications will seek to summarize the inCASA Pilot evaluation results, provide the lessons learnt from the testing of our well promising platform and discuss the recommendations for future deployment of similar eHealth, Telehealth and/or Telecare solutions.

2.5.4 inCASA public knowledge base update

The inCASA web site will continue to be the main place where the project's gained knowledge is offered to the public.
After the project ends, all public deliverables will be available for downloading through the relevant section of the web site[5]. Summarizing the offered public information contained in the inCASA deliverables, we could highlight the following per work package:
1. The Deliverable 1.6 – inCASA Final Report will include the overall achievement and final results of the project as well as description of the inCASA solution, the Pilot evaluation and the public aspects of the inCASA business plan.
2. Deliverables 2.1, 2.2, 2.4 and 2.6 present the progressive and iterative development of the User Requirements for the inCASA service. The Deliverable 2.3 gives an overview of the inCASA Ethical Guidelines with respect to the European Ethical Framework while 2.5 includes the Pilot Blue Prints.
3. The Deliverable 3.1 maps the User Requirements to System and Functional Specifications and provides a high level architectural view of the inCASA platform.

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[5]inCASA deliverables: http://incasa-project.eu/viewpage.php?page_id=4

The Deliverable 3.4 depicts the final inCASA Reference Architecture providing details on the way the inCASA solution's components are interfacing.

4. Deliverables 4.1, 4.2 and 4.3 reflect the technical implementation activities in all the fields of the platform, from the Remote Monitoring Gateway to the Server Side Intelligent System and Web Application.

5. The Deliverable 5.4 summarizes how the inCASA reference architecture was customized per Pilot and explains how the inCASA components can be configured and installed in order to deploy the overall solution.

6. The Deliverable 6.1 presents the inCASA Pilot evaluation methodology. The Deliverable 6.3 contains all Pilot installation reports while 6.4 includes the pilots' completion of the Ethical Guideline Check List. At a Pilot level, Deliverable 6.6 is the main outcome of the project evaluating the inCASA Pilot trial, highlighting the outstanding achievements of the project as well as the challenges faced during the Pilot life and finally providing recommendations towards a future deployment based on the lessons learnt and on the collected feedback by the target stakeholders.

7. Deliverable 7.1 discusses the status of the art of the inCASA target market.

8. Deliverable 8.2 is a fact sheet of the project, 8.4 reports on the well appreciated inCASA national exploitation events and 8.5 is the current document summarizing the knowledge that has been generated by the project, the way partners have already disseminated it and the plan for its future dissemination as well as exploitation.

Moreover, one can download various inCASA related presentations[6] or scientific papers[7] from our web site; these sections will be constantly updated informing on the latest achievements of the consortium.

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[6] inCASA downloadable presentations: http://www.incasa-project.eu/downloads.php?cat_id=2

[7] inCASA scientific papers: http://www.incasa-project.eu/downloads.php?cat_id=3

3   Exploitable Knowledge and its use

This section presents exploitable results, defined as knowledge. These include those that:

- have a potential for commercial application in research activities
- have potential for developing, creating or marketing a product or process
- have potential for creating or providing a service

It provides an overview, per exploitable result, of how the knowledge produced within the project could be exploited or used in further research. It contains an overview table accompanied by a short text, per exploitable result, including a description of the result and a plan for its use or exploitation.

3.1 Overview Table – Exploitable Knowledge

	Exploitable Knowledge (description)	Exploitable product(s) or measure(s)	Sector(s) of application	Timetable for commercial use	Patents or other IPR protection	Owner & Other Partner(s) involved
1	Design and functional requirements for a patient information management system	Combined clinical and habits patient information system	1. Medical 2. Social 3. Scientific 4. Technical	2013	Managed by RSDO at Brunel University	CHC / Brunel University
2	inCASA clinician portal	Software application to manage patients and patient data from physiological and environmental sensors	1. Medical 2. Social 3. Scientific 4. Technical	2013	Managed by RSDO at Brunel University	Brunel University
3	Environmental sensors based on ZigBee health care profile (interoperable with physiological)	Embedded software IP	1. Medical 2. Social 3. Scientific 4. Technical	2013	Managed by RSDO at Brunel University	Brunel University
4	Habits data analysis algorithms	Algorithms and software IP	1. Medical 2. Social 3. Scientific	2013	Managed by RSDO at Brunel University	Brunel University
5	Habits data presentation	Software IP	1. Medical 2. Social 3. Scientific	2013	Managed by RSDO at Brunel University	Brunel University
6	Environmental sensors based on ZigBee	Embedded software IP	1. Medical 2. Social 3. Technical	2014	Not Indicated	SIG
7	Environmental sensors based on EnOcean	Embedded software IP	1. Medical 2. Social 3. Technical	2014	Not Indicated	SIG
8	Activity Hub	Embedded hardware & software IP	1. Medical 2. Social 3. Technical	2014	Not Indicated	SIG
9	Set-up and deployment	Consultation, "software as service"	1. Medical	2013-2014	Not Indicated	IN-JET

	of eHealth services	delivery, service platform set-up	2. Social 3. Technical			
10	User requirements for the customisation of inCASA & LIVA platform and the Consumer Application	Consultation, "software as service" delivery, service platform set-up	1. Medical 2. Social 3. Technical	2013-2014	Not Indicated	IN-JET
11	Home Gateway	Communication between adjacent embedded solutions (e.g. Activity Hub) or directly with Continua and non-Continua certified devices to Device Observing Receiver, i.e. SPP. Includes HL7Parser. Software IP based on the LinkSmart middleware.	1. Scientific 2. Technical	2013	Open Source	CNET
12	GUI integration service	Software that features communication with SARA and LIVA GUIs. Fulfils national guidelines when it comes to how data is being pushed to the Device Observation Receiver, i.e. SPP, in different EU member states and pilots. Available via consultation.	Technical	2013	Not Indicated	CNET
13	Backend functionalities	In large scale deployment the LinkSmart as backend the Network Manager provides extended functionalities (e.g. remote control, debugging, etc.) to configure and manage huge amounts of home gateways.	Technical	2013-2014	Open Source	CNET
14	Actigraph Web application	Web application as tool for the clinician to quickly access and view downloaded Actigraph data. Otherwise bound to proprietary program. Available via consultation.	Technical	2013	Not Indicated	CNET
15	inCASA patient's interface: SARA Gateway, version 2	Patient interface to take measures, give feedback and set appointments	Technical	2013	Managed by Telefónica Research and Development	Telefonica, Consejería de Salud y asuntos sociales La Rioja
16	inCASA clinician portal : SARA Consumer	Doctor's interface to follow up patients	Technical	2013	Managed by Telefónica Research	Telefonica, Consejería de

	Application, version 2				and Development	Salud y asuntos sociales La Rioja
17	Set-up and deployment of eHealth services	Implementation and reorganisation of medical services to integrate eHealth in a different chronic care model	1. Medical 2. social 3. technical	2013-2014	Managed by Telefónica Research and Development	Telefonica, Consejería de Salud y asuntos sociales La Rioja
18	Web Portal - Consumer Applications	Developed to be the single point of Web access to the inCASA platform for the professional inCASA Pilot stakeholders. NTUA, as an academic entity, targets to exploit this knowledge on future Research or Pilot projects.	1. Medical 2. Social 3. Scientific 4. Technical	N/A	N/A	NTUA
19	Combined monitoring	The monitoring combines health, behavioural and depression monitoring analysis.	1. Medical 2. Social	N/A	N/A	KGHNI

Table 2 - Overview Table – Exploitable Knowledge

3.2 Summary description per exploitable result

3.2.1 Result 1 - Design and functional requirements for a patient information management system

As part of the inCASA project, CHC produced functional requirements and design specifications for the development of a patient information management system that integrated data from health and environmental sensors. Brunel University implemented the requirements.

Work will continue to improve the functionality of the clinical portal in order to support the continuation of inCASA at CHC.
Further work will include:

- Improved layout and design
- Notification algorithms
- Improved visualisation of clinical and environmental data
- Advanced analysis of data

The patient information system has been demonstrated to a number of commercial entities within the UK. There are discussions with a major pharma company in the UK to undertake a pilot using the development to support a commercial business case.
The patient information system will also be used within other research projects.

3.2.2 Result 2 - inCASA clinician portal

The inCasa clinician portal is used as part of the inCasa platform in use in CHC to support the physiological and environmental sensors. It will be further developed as a generic clinician portal to support any clinical condition that is required to be monitored. This includes extensions to support future research projects and commercialisation, which would include adding support for environmental sensors to the clinician portal currently in use in the inCASA project, which is looking at management of patients with diabetes. The portal has proven satisfactory with users, and feedback continues to be sought to improve use.

3.2.3 Result 3 - Environmental sensors based on ZigBee health care profile (interoperable with physiological)

A range of seven devices has been brought into the inCasa project from a previous UK funded project to provide a platform to support interoperable environmental and physiological monitoring based on IEEE 11073 standards and Continua Alliance guidelines. In order to have all sensors on one radio, all have been provided with a ZigBee wireless module that complies with the ZigBee Health Care Profile. The sensors complement use of the home gateway also brought into the project. We are seeking commercial partners to bring the platform to market

3.2.4 Result 4 - Habits data analysis algorithms

We have started preliminary development and evaluation of algorithms for automatic analysis of data to characterise normal behaviour and how to determine departure from normal behaviour and create alerts. Algorithms will be incorporated into the clinician portal. Development remains at a preliminary stage.

3.2.5 Result 5 – Habits data presentation

We have started preliminary development and evaluation of methods to present habits data to the clinician to allow rapid assimilation of data patterns and perform deep level presentation of detail. Methods will be incorporated into the clinician portal. Development remains at a preliminary stage.

3.2.6 Result 6 - Environmental sensors based on ZigBee

Experience was collected with regard to the system integration of Commercial Of-The Shelf sensors. Special knowledge could be achieved with regard to the integration into an existing security architecture. Future development will include the integration of additional sensors from different suppliers, enabling real multi-vendor environments.

3.2.7 Result 6 - Environmental sensors based on EnOcean

After SIG has collected deep inside knowledge from some direct project with EnOcean, experience was now collected with regard to the system integration of Commercial Of-The Shelf sensors. Additional knowledge could be achieved with regard to the integration into existing tool infrastructure. Future work will include the optimization of the EnOcean Radio Protocol (ERP) and its seamless integration into commissioning and monitoring tools

3.2.8 Result 8 - Activity Hub

SIG has collected development and operational experience around the Activity Hub, opening its interface for new devices and protocols. Future development will include the extension to additional functionality and a new, more powerful platform under Embedded Linux.

3.2.9 Result 9 - Set-up and deployment of eHealth services

IN-JET is a provider of telehealth installations and services in Denmark and acts as a supplier of front-end solutions to health care systems for data collection and patient end-points. IN-JET will use the Lessons Learned and knowledge gained from setting up and deploying the Skive Transferability Model. The Skive Transferability Model was designed in careful cooperation with representatives from Skive Municipality in order to define their needs and requirements. In the defining process, best practice from the inCASA pilots was used to define use cases and technical requirements. Professional end-users included social care and healthcare personnel thus representing both the social and the healthcare sector.

Customers are healthcare providers such as regional healthcare authorities, local and municipal authorities responsible for home care and social care, and care centres and private service providers in Denmark, all dealing with chronically ill patients or citizens in need of monitoring.

3.2.10 Result 10 - User requirements for the customisation of inCASA & LIVA platform and the Consumer Application

The experience in defining combined social care and healthcare user requirements (for telecare and telehealth applications) will be used for the future customisation of IN-JET's existing LIVA platform to work with the inCASA platform and in particular the Consumer Application

Professional social care and healthcare users must be involved with the aim to enable better integration of existing workflows and cooperation with other professionals across sectors. Based on the work and experiences with deploying the inCASA platform in Skive, a

Transferability Toolkit was created. This Toolkit will form the basis for all the necessary preparations prior to deployment if IN-JET combined solutions

3.2.1 Result 11 - Home Gateway

The LinkSmart middleware was extended to include communication with adjacent embedded solutions such as the Activity Hub but also directly to Continua as well as non-Continua certified commercial devices. This makes the inCASA Home Gateway competitively flexible and extendable for future deployments.

The Home Gateway has since the start of the inCASA project been included in two national eHealth projects in Denmark and the aim is to enhance the gateway with more functionality by addressing the technology for future project proposals. It is also being exploited as a Connected Health kit in Sweden where developers are free to contribute by adding more devices and other embedded solutions into its handling. The HL7Parser is transparent for any known device specialisation supported by the IEEE 11073 nomenclature and is accessible for vendors seeking to extend their existing solutions into HL7 compatibility.

3.2.2 Result 12 - GUI integration service

The development behind the features that enables communication with subsiding GUI applications such as SARA and LIVA has resulted in the knowledge on how to quickly and safe adopt it to fit national guidelines on how data is to be pushed throughout an E2E model. In the future we will reuse this knowledge to quickly include new countries' policies and new deployments.

3.2.3 Result 13 - Backend functionalities

The results is that the new version of Network Manager (.Net based) and Event Manager from the LinkSmart middleware maintainers has led us to design a future LinkSmart based P2P communication over a massive distributed network. This will enable the inCASA solution to comprise extended functionalities such as remote control of devices (both telecare and telehealth), debugging, etc. all to be available as services in the SPP.

3.2.4 Result 14 - Actigraph Web application

The result of developing a web application that works as a tool is that the clinician at INSERM can quickly access and look at Actigraph data without the need to open proprietary programs. This solution will be available as a service for any future inCASA solution adopter that includes the Actigraph motion logger device.

3.2.5 Result 15 – SARA Gateway v2.0

As part of the inCASA project, TID produced new functional requirements and design specifications for the development of a new patient information management system. These requirements has been used to implement a second version of the patient's interface that is intended to be used in the final deployment in La Rioja and other target regions/countries such as Valencia, Catalonia, or countries like UK or Brasil.

3.2.6 Result 16 – SARA Consumer App v2.0

As part of the inCASA project, TID produced new functional requirements and design specifications for the development of a new clinician information management system. These requirements has been used to implement a second version of the clinician's interface that is intended to be used in the final deployment in La Rioja and other target regions/countries such as Valencia, Catalonia, or countries like UK or Brasil.

3.2.7 Result 17 – Set-up and deployment of eHealth services

Together FHC and Telefónica, as part of the inCASA project, have design new processes to introduce eHealth technologies in an integrated approach involving different medical specialists, nurses, social care organisations, logistic and IT companies. Based on this knowledge, we want to exploited in the pre-commercial pilot Telefónica is rolling out in La Rioja.

3.2.8 Result 18 – Web Portal - Consumer Applications

NTUA developed a Consumer Application Web Portal within the inCASA project that was used in the KGHNI, ATC Pilot trials and the Skive transferability case. The inCASA Consumer Application (CA) stands as the single point of access to the inCASA platform for the professional inCASA Pilot stakeholders (clinicians, operators, social workers, psychologists, etc.). inCASA Consumer Application is a Web Portal where operators can view patient's socio-medical data and alerts, store notes to the system under a patient, add patient questionnaires' scores and perform also various other actions that are customized in each Pilot site using the application according to their requirements. It is important to note that a Role-Based Access Control (RBAC) is being applied in order to distinguish the views and the allowed actions among the various Professional Stakeholders.
The exploitable knowledge includes the following:

- Development of the Professional Web Interface with respect to the actor profiles provided by IHE.
- Integration with the inCASA master repository via the medical information exchange protocol HL7.
- Design and development in accordance with the Alert Modelling Specifications produced in the inCASA project by REPLY and the rest of technical partners.

3.2.9 Result 19 – KGHNI combined monitoring

KGHNI developed a patient monitoring flow targeting to CHF patients. The monitoring combines health, behavioural and depression monitoring analysis. Starting from the existing knowledge in the pertinent literature, KGHNI proceeded with the psychological analysis of CHF patients and put emphasis on the signs of depression that these patients have after an episode. A specific depression monitoring process was applied and added value to the inCASA common healthcare monitoring.
This knowledge can be exploited by KGHNI after the project's end in the internal procedures of the KGHNI Cardiology Clinic in cooperation with the Psychiatric Clinic of the hospital.

4 Publishable Results

The inCASA Platform

The InCASA platform is made up of a number of different software systems.   Market and technical cooperation may be necessary[8] to deploy the platform in to the market. Technical cooperation is also important since the installation of the different parts of the platform and the running of services may involve the different experts within the consortium.

Individual components and knowledge as described in Table 1 may also be taken to market or used in further research and development projects.

The following table provides an overview of the different InCASA hardware and software components and related owners.

Owner Organisation	inCASA components	Home Base Station	Remote Service provider	User's Applications
Santer Reply	SPP (Reasoner)		X	
	SPP (Mediator)		X	
	SPP (EPR)		X	
Telefónica I+D	Sara Client	X		
CNet	LinkSmart Client	X		
	LinkSmart Server		X	
In-JeT	LinkWatch Front-end for Skive Transferability Model	X		X
SIG	Activity Hub	X		
NTUA	Consumer application			X

Table 3 – inCASA main components and ownership

The inCASA technology solutions and expertise are distributed among six partners:

- Telefonica I+D is the owner of the Sara Client and Sara Service solutions respectively used in the home base station and the remote service provider applications;;
- CNet and In-JeT are the co-owners of LinksSmart, developed in the framework of the EU Hydra project, used to make data interoperable among the different platform components
- In-JeT is the owner of the LinkWatch patient front-end which was used together with the inCASA solutions in the Skive Transferability Model.
- Santer is the owner of the Smart Personal Platform used in the Remote Service Provider applications
- SIG will provide the home devices and sensors technologies although similar technologies may be purchased by other vendors.
- NTUA has developed the so-called Consumer Applications which stand as the single point of Web access to the inCASA platform by the Professional stakeholders. NTUA

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[8] See D7.4 InCASA IPR Management Report.

Consumer Applications have been used in the KGHNI, ATC Pilot trials and the Skive transferability case and can be reused in commercial installations.

Below is a summary of those results that have been developed within the inCASA project that partners would like exploit further, not only in terms of commercial exploitation but also for future R&D development.

These results will be entered in the CORDIS Results database which is open to the public and may be used by the Commission in its own promotional material.

Each partner has been asked to provide the following information per result.
- The market applications (sectors, type of use)
- how they might be used in further research
- Stage of development (laboratory prototype, demonstrator, industrial product...)
- Collaboration sought or offered (manufacturing agreement, financial support or investment, information exchange, training, consultancy, other)
- Collaborator details (type of partner sought and task to be performed)
- Intellectual property rights granted or published
- Contact details

Publishable Result 1 - Design and functional requirements for a patient information management system

- **Result Description:**. CHC has produced functional requirements and design specifications for the development of a patient information management system. The patient management system has been developed to manage incoming data from integrated health and environmental sensors, automatically analyse the data using intelligent personalised algorithms and rules and present the data to clinicians in order to support clinical and social care decision making. The system also provides administration functionality to manage patient and technical data as well as enabling data to be exported into other external systems.
- **Possible Markets applications**: The system can be used to support many different scenarios in both health and social care settings. Including: supporting patients with Chronic disease, monitoring of frail elderly or the vulnerable, enabling early discharge from acute care and prevention of acute deterioration of patients who are at risk. The system can also be used by commercial entities for managing private pay patients.
- **Stage of development**: In use in a clinical setting and in Development
- **Collaboration sought**: Research and Development, Research Projects, Service providers
- **Collaboration details**: Health and Social Care Authorities, Telehealth and or Telecare service providers, other. Can be offered on a license basis with full integration and customisation support.
- **Intellectual property rights**: Managed by RSDO at Brunel University
- **Contact details**: Jo Fursse, j.fursse@gmail.com, +44 7876 787109 and Malcolm Clarke, malcolm.clarke@brunel.ac.uk

Publishable Result 2 - SARA Gateway:
- Result Description: The main function of the SARA Gateway, is to capture different kinds of patients' measures including blood pressure, oxygen saturation in blood, blood glucose, weight, etc… and to act as a gateway with the platform. It is very

friendly in the way on how it provides a nice user interface adapted to elderlies' necessities.
- Possible Markets applications: AAL and Chronic diseases market
- Stage of development: Industrial product
- Collaboration sought: No needed
- Collaboration details: No needed
- Intellectual property rights: No
- Contact details: Jordi Rovira Simón, Telefónica I+D, jordirs@tid.es, +34 609026658

Publishable Result 3 - SARA Consumer App – Clinician application:
- Result Description: The main function of the SARA Consumer App is to provide a tool for clinicians to follow up patients evolutions and assisting patients' alerts.
- Possible Markets applications: AAL and Chronic diseases market
- Stage of development: Industrial product
- Collaboration sought: None required
- Collaboration details: None required
- Intellectual property rights: No
- Contact details: Jordi Rovira Simón, Telefónica I+D, jordirs@tid.es, +34 609026658

Publishable Result 4 – SPP (Smart Personal Platform):
- Result Description: Smart Personal Platform is a back end component developed in order to collect and analyse data coming from home gateway (human and environment monitoring), store them within an Electronic Patient Record and present them through web services to external "consumer applications". It's composed by three components: data storage (EPR), data analysis (reasoner) and a mediator.
- Possible Markets applications: AAL and Chronic diseases market
- Stage of development: Complete.
- Collaboration sought: Service providers
- Collaboration details: Telehealth service providers, Telecare service providers, AAL organizations
- Intellectual property rights: No
- Contact details: Massimo Caprino, Santer Reply, m.caprino@reply.eu, +39 02535761

Publishable Result 5 - Web Portal – Consumer Applications, developed by the National Technical University of Athens
- Result Description: NTUA developed within the project's life cycle a Consumer Application Clinician Web Portal. The inCASA Consumer Applications (**CA**) stands as the single point of access to the inCASA platform for the professional inCASA Pilot stakeholders (clinicians, operators, social workers, psychologists, etc.). inCASA CA is a Web Portal where operators can view patient's socio-medical data and alerts, store notes to the system under a patient, add patient questionnaires' scores and perform also various other actions that are customized in each Pilot site using the application according to their requirements. It is important to note that a Role-Based Access Control (RBAC) is being applied in order to distinguish the views and the allowed actions among the various Professional Stakeholders. The application is integrated with the Smart Personal Platform (SPP), developed by REPLY, and it is worth to note that all interchanged messages between CA and SPP are compatible with the HL7 protocol while the interfacing design of these two components follow the IHE and Continua guidelines
- Possible Markets applications: NTUA is not a business organisation therefore the knowhow and the developed Consumer Application within the inCASA project will be

reused in other R&D and Pilot projects. The application can by re-used by the inCASA industrial partners in commercial installations. Possible market applications include AAL and Chronic diseases management.

- Stage of development: Complete
- Collaboration sought: N/A
- Collaboration details: N/A
- Intellectual property rights: No
- Contact details: Intelligent Communications and Broadband Networks Laboratory, National Technical University of Athens. http://www.icbnet.ntua.gr/website/en

Publishable Result 6 - LinkWatch Front-end

- *Description:* The LinkWatch™ Telemonitoring front-end platform provides easy-to-use and secure collection of medical data from patients' location. The LinkWatch solutions are intelligent and user-friendly applications adapted to the patient's environment and designed for flexibility and ease of use. It allows collection and validation of data from patients and transmission of data to any type of observation server, i.e. Electronic Patient Record (EPR), Personal Health Record (PHR) or other Health Information System (HIS). In context of the Continua© Alliance Reference Architecture, LinkWatch establishes the WAN Observation Sender (with PAN/LAN devices) and WAN interfaces to the WAN Observation Receiver.

- *Market applications:* Telemedicine solutions support patients in managing their chronic diseases efficiently and help healthcare professionals provide better care with more frequent, reliable and relevant data about health status. The platform is essential for establishing patient empowerment and for allowing patients to better manage their disease. The LinkWatch patient front-end can be used for any telemedicine installation and can be customised to serve any need for data collection, validation, patient reminders and compliance, data presentation and optional video conferencing with professional carers.

- *Stage of development:* The LinkWatch front-end platform is fully developed and tested in commercial settings.

- *Collaboration sought or offered:* LinkWatch is typically used by suppliers of backend health or care information systems to enable telecare and telehealth solutions for existing platforms.

- *Collaborator details:* LinkWatch is offered on a license basis with full integration and customisation support.

- *Contact details:* Website: www.in-jet.dk email: jth@in-jet.dk

Publishable Result 7 – Activity Hub

- *Description:* The Activity Hub is a generic and flexible, albeit cost- and energy-efficient platform to connect various wired and wireless local and personal area networks to an IP-based backend system. To the backend system, web- and HL7-based services can be offered.

- *Market applications:* Today's telemedicine solutions still are very heterogeneous. Therefore, a generic gateway is needed in all cases, where devices from more than one supplier running more than one protocol are used – which is the case in basically

all   applications   ….

- *Stage of development:* The Activity Hub is in product status, running stably in the NTUA installation. A more powerful and even more flexible Linux-based version is under development.

- *Collaboration sought or offered:* After having a recent agreement with a module manufacturer, the Activity Hub can be directly produced and purchased. It is a big advantage that is can be freely configured and extended on a per project basis.

- *Collaborator details:* Activity Hub can be directly produced and purchased. Also, licencing models are well possible.

- *Contact details:* Website: www.stzedn.de email: info@stzedn.de

Publishable Result 8 – Home Gateway (LinkSmart Client):
- Result Description: The main function of the inCASA home gateway is to combine the services needed to make telecare and telehealth work in the elderly's/patient's smart home settings. The base is an Open Source middleware for developing Internet of Things applications. It includes HL7 conversion from any known IEEE specialisation and features the remote control of home appliances and software throughout a distributed network using the middleware. The inCASA home gateway contains a toolkit that is flexible in the sense that it can be adopted as gateway in the scenarios where customised GUI application is needed or where device and sensor communication is requested without the need of third party hardware solution.
- Possible Markets applications: Smart home deployments for telecare and telehealth domains.
- Stage of development: Open source
- Collaboration sought: The InCasa Home Gateway is typically used by system integrators of health or care information systems to enable telecare and telehealth solutions for existing platforms. It has been used together with LinkWatch Frontend.
- Collaboration details: None required.
- Intellectual property rights: No.
- Contact details: Peter Rosengren, peter.rosengren@cnet.se, Website:www.cnet.se

Publishable Result 9 – Backend Server (LinkSmart Server):
- Result Description: The main function of the backend server is to collect incoming data and observations and forward it to the correct recipients for instance the SPP. The server is based on the LinkSmart Open Source middleware for developing Internet of Things applications. It features a P2P Network Manager (.Net based), Rule Engine and an Event Manager. This will enable the inCASA solution to comprise extended functionalities such as remote control of devices (both telecare and telehealth), debugging, etc.
- Possible Markets applications: Smart home deployments for telecare and telehealth domains.
- Stage of development: Open source
- Collaboration sought: The Backend Server is typically used by system integrators of health or care information systems to enable telecare and telehealth solutions for existing platforms. It has been used together with SPP, LinkWatch Frontend and the Sara Client.
- Collaboration details: None required.
- Intellectual property rights: No.

Contact details: Peter Rosengren, peter.rosengren@cnet.se, Website:www.cnet.se

5 Conclusion

This deliverable summarized the breadth and depth of the numerous activities that took place during inCASA to support the dissemination of the acquired knowledge and know-how, as the project progressed and delivered concrete results. A number of publications have been presented to scientific conferences and workshops, press releases and articles have been published in the traditional and the new media, national events have spearheaded the dissemination of the projects knowledge to national / regional authorities and the health industry, while also providing important venues for discussing future applications of the inCASA technologies.

Equally important, during the inCASA project a number of exploitable results have been consolidated, a fact that can largely be attributed to the open and standards-based nature of the inCASA platform and the combined socio-health care model that it introduces. The majority of the projects' partners will continue to pursue wider adoption of the inCASA technologies and will see an expansion of the current services deployment on the regional level and beyond pilot installations. A number of opportunities have already been identified for exploiting the wealth of the developed technologies and for building an inCASA ecosystem. The excellent research produced during inCASA is expected to seed a new market for care services throughout Europe.