CALL H2020-SC1-FA-DTS-2018-2020
Trusted digital solutions and Cybersecurity in Health and Care
TOPIC DT-TDS-01-2019
Smart and healthy living at home

SMART BEAR
"Smart Big Data Platform to Offer Evidence-based Personalised Support for Healthy and Independent Living at Home"

D57 – Communication, Dissemination, Impact Creation, Exploitation & Standardisation plan

Due date of deliverable: 31/12/2019
Actual submission date: 31/12/2019

Grant agreement number: 857172
Lead contractor: CNR
Start date of project: 01/09/2019
Duration: 48 months

Project funded by the European Commission within the EU Framework Programme for Research and Innovation HORIZON 2020

<table>
<thead>
<tr>
<th>Dissemination Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>PU = Public, fully open, e.g. web</td>
</tr>
<tr>
<td>CO = Confidential, restricted under conditions set out in Model Grant Agreement</td>
</tr>
<tr>
<td>CI = Classified, information as referred to in Commission Decision 2001/844/EC.</td>
</tr>
<tr>
<td>Int = Internal Working Document</td>
</tr>
</tbody>
</table>
D13.1 (D57) – Communication, Dissemination, Impact Creation, Exploitation & Standardisation plan

Editors
Maria Pateraki (FORTH)
Andreas Miaoudakis (FORTH)

Contributors
Ioannis Kouris (ICCS)
Eleftheria Vellidou (ICCS)
Vassilia Costarides (ICCS)
Marilena Tarousi (ICCS)
Marco Decandia (ARIA)
Daniele Crespi (ARIA)
Gianluca Carletti (ARIA)
Maria Pateraki (FORTH)
Andreas Miaoudakis (FORTH)

Reviewers
Carlos Lopes (NOVA)
Isabel García (QUIRON)
Rocío Díaz (QUIRON)
Idoia Muñoz (QUIRON)
Executive Summary

Widespread communication and dissemination is of paramount importance for SMART BEAR outcomes adoption and project’s sustainability. In this deliverable the SMART BEAR communication and dissemination plan is sketched with the purpose to organize the strategy that the consortium will undertake to that extent. The plan outlines several channels and tools that will be exploited throughout the whole lifetime of the project targeting the engagement of several groups spreading from specific scientific communities to various groups and stakeholders and, of course, the general public.

Dissemination activities target mainly groups with expertise in the domains of e-health and ICT and the related scientific community. Such activities and tools include:

- Scientific publications to national and international Journals and magazines
- Scientific publications to national and international Conferences and Symposia
- Organization of workshops
- Demonstration in Scientific events (e.g. in conferences)
- Participation in exhibitions and fairs
- Open call to engage external stakeholders

On the other hand, communication activities focus on diffusion of the project progress and outcomes on a wider target audience. Such activities utilise the following tools:

- Visual identity and brand
- Project website
- Social media
- Printed media (Brochures, banners etc.)
- Newsletters

Further to the above the SMART BEAR communication and dissemination activities include the collaboration building with Public-Private Partnerships and the liaison with other projects in related domains in e-health, and ICT.

Moreover, in this deliverable the impact that is expected to be created, based on seven main pillars, is presented and the exploitation plan of the project is explored. The exploitation strategy ensures the sustainability of SMART BEAR mainly after the project ends. This strategy includes the individual exploitation insight for every member of the SMART BEAR consortium outlining each members’ organizational background, foreseen exploitable results and individual exploitation strategy. Potential joint exploitation plans are also included in the SMART BEAR exploitation plan.

Finally, sustainability is further enhanced by the project’s standardization engagement where SMART BEAR aims to influence relevant groups, initiatives and standards and outcomes. The standardization approach of the project is defined as well as the standardization activities outline is documented. A list of identified initiatives, groups and standards that the project will target are documented as well.
Contents

List of acronyms ........................................................................................................ 4
List of tables ............................................................................................................. 5
List of figures ........................................................................................................... 6

1 Introduction .......................................................................................................... 7
  1.1 Purpose of the document ................................................................................ 7
  1.2 Intended Readership ...................................................................................... 7
  1.3 Relation with other SMART BEAR deliverables ......................................... 7

2 Communication and Dissemination .................................................................... 8
  2.1 Target Audience ............................................................................................ 8
  2.2 Dissemination Channels ................................................................................ 10
     2.2.1 Scientific publications ........................................................................... 10
     2.2.2 Participation in events ........................................................................... 12
     2.2.3 Open Access .......................................................................................... 14
     2.2.4 Open Call ............................................................................................... 15
  2.3 Communication channels ............................................................................... 15
     2.3.1 Visual Identity and brand ....................................................................... 15
     2.3.2 Project Website ....................................................................................... 18
     2.3.3 Social media platforms .......................................................................... 22
     2.3.4 Brochure ................................................................................................. 27
  2.4 Dissemination & Communication Activities per Target Audience ................ 27

3 Impact creation .................................................................................................... 36
  3.1 Impact KPIs .................................................................................................... 38

4 Exploitation ......................................................................................................... 40
  4.1 Exploitation overall aim ................................................................................. 40
  4.2 Exploitation framework ................................................................................. 40
  4.3 Methodology .................................................................................................. 41
  4.4 Exploitation Strategy ...................................................................................... 41
     4.4.1 Target Outcomes ...................................................................................... 41
     4.4.2 Stakeholder Matrix ................................................................................... 42
     4.4.3 Application fields ..................................................................................... 43
     4.4.4 Target Market sector ................................................................................. 43
     4.4.5 SWOT Analysis ........................................................................................ 44
  4.5 Potential Intellectual Property Rights and IPT Management Plan ............... 45
  4.6 Open source policy ......................................................................................... 45
  4.7 Individual Partner Exploitation plans .............................................................. 45
<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.7.1</td>
<td>CNR</td>
<td>45</td>
</tr>
<tr>
<td>4.7.2</td>
<td>ATOS</td>
<td>47</td>
</tr>
<tr>
<td>4.7.3</td>
<td>PHILIPS</td>
<td>48</td>
</tr>
<tr>
<td>4.7.4</td>
<td>IBM</td>
<td>49</td>
</tr>
<tr>
<td>4.7.5</td>
<td>ARIA</td>
<td>50</td>
</tr>
<tr>
<td>4.7.6</td>
<td>ROP</td>
<td>51</td>
</tr>
<tr>
<td>4.7.7</td>
<td>MPF</td>
<td>53</td>
</tr>
<tr>
<td>4.7.8</td>
<td>CSC</td>
<td>54</td>
</tr>
<tr>
<td>4.7.9</td>
<td>FCSR</td>
<td>54</td>
</tr>
<tr>
<td>4.7.10</td>
<td>CATEL</td>
<td>56</td>
</tr>
<tr>
<td>4.7.11</td>
<td>QUIRON</td>
<td>57</td>
</tr>
<tr>
<td>4.7.12</td>
<td>ANA</td>
<td>59</td>
</tr>
<tr>
<td>4.7.13</td>
<td>FORTH</td>
<td>60</td>
</tr>
<tr>
<td>4.7.14</td>
<td>NKUA</td>
<td>61</td>
</tr>
<tr>
<td>4.7.15</td>
<td>UOI</td>
<td>62</td>
</tr>
<tr>
<td>4.7.16</td>
<td>UMIL</td>
<td>63</td>
</tr>
<tr>
<td>4.7.17</td>
<td>UPV/EHU</td>
<td>65</td>
</tr>
<tr>
<td>4.7.18</td>
<td>CITY</td>
<td>66</td>
</tr>
<tr>
<td>4.7.19</td>
<td>ICSS</td>
<td>67</td>
</tr>
<tr>
<td>4.7.20</td>
<td>STS</td>
<td>68</td>
</tr>
<tr>
<td>4.7.21</td>
<td>SV</td>
<td>69</td>
</tr>
<tr>
<td>4.7.22</td>
<td>ITSS</td>
<td>70</td>
</tr>
<tr>
<td>4.7.23</td>
<td>INNOVATEC</td>
<td>71</td>
</tr>
<tr>
<td>4.7.24</td>
<td>ATC</td>
<td>72</td>
</tr>
<tr>
<td>4.7.25</td>
<td>Bird &amp; Bird</td>
<td>73</td>
</tr>
<tr>
<td>4.7.26</td>
<td>NOVA</td>
<td>74</td>
</tr>
<tr>
<td>4.7.27</td>
<td>SRS</td>
<td>74</td>
</tr>
<tr>
<td>4.8</td>
<td>Joint Potential Exploitation Plans</td>
<td>75</td>
</tr>
<tr>
<td>5</td>
<td>Standardization</td>
<td>77</td>
</tr>
<tr>
<td>5.1</td>
<td>Standardization Approach</td>
<td>77</td>
</tr>
<tr>
<td>5.2</td>
<td>Standardization activities overall aim</td>
<td>77</td>
</tr>
<tr>
<td>5.3</td>
<td>Standardization bodies, initiatives and working groups</td>
<td>78</td>
</tr>
<tr>
<td>6</td>
<td>Conclusion</td>
<td>80</td>
</tr>
<tr>
<td>7</td>
<td>References</td>
<td>81</td>
</tr>
</tbody>
</table>
### List of acronyms

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAL</td>
<td>Ambient Assisted Living</td>
</tr>
<tr>
<td>AHA</td>
<td>Active and Healthy Ageing</td>
</tr>
<tr>
<td>BDVA</td>
<td>Big Data Value Association</td>
</tr>
<tr>
<td>BSN</td>
<td>Body Sensor Network</td>
</tr>
<tr>
<td>DSS</td>
<td>Decision Support System</td>
</tr>
<tr>
<td>DSVM</td>
<td>Data Sharing Valorisation Model</td>
</tr>
<tr>
<td>EIP</td>
<td>European Innovation Partnership</td>
</tr>
<tr>
<td>SAE</td>
<td>Smart Anything Everywhere</td>
</tr>
<tr>
<td>SDO</td>
<td>Standards Developing Organization</td>
</tr>
<tr>
<td>WSN</td>
<td>Wireless Sensor Network</td>
</tr>
</tbody>
</table>
List of tables

Table 1: Indicative Journals for SMART BEAR dissemination ________________________________ 10
Table 2: Indicative Conferences for SMART BEAR dissemination ___________________________ 11
Table 3: identified events that can potentially host SMART BEAR workshops _______________ 12
Table 4: identified events for potential demonstration of SMART BEAR outcomes ____________ 14
Table 5: Dissemination & Communication Activities per Target Group. ______________________ 28
Table 6: Related projects with involved SMART BEAR partners ____________________________ 30
Table 7: Related projects without involved SMART BEAR partners ________________________ 33
Table 8: Dissemination & Communication KPIs ____________________________________________ 34
Table 9: Impact KPIs ____________________________________________________________________ 38
Table 10: SMART BEAR target outcome table _____________________________________________ 41
Table 11: SMART BEAR Stakeholder Matrix _________________________________ 42
Table 12: SMART BEAR target market groups ____________________________________________ 43
Table 13: SMART BEAR SWOT analysis ________________________________________________ 44
Table 15: Standardisation bodies/initiatives that SMART BEAR consortium members already participate ___________________________________________________________ 78
Table 16: Foreseen standards groups and initiatives where SMART BEAR can contribute _________ 79
List of figures

Figure 1: SMART BEAR dissemination, communication and exploitation strategy and timeline ___________ 8
Figure 2: Colour pallets used in SMART BEAR Visual identity ____________________________________________ 16
Figure 3: Typography of SMART BEAR website ___________________________________________________________ 17
Figure 4: SMART BEAR Logo design and options ____________________________________________________________ 17
Figure 5: Homepage ____________________________________________________________________________________________ 19
Figure 6: SMART BEAR Homepage scroll down ______________________________________________________________ 19
Figure 7: SMART BEAR project page ________________________________________________________________ 20
Figure 8: SMART BEAR Partners page _________________________________________________________________ 20
Figure 9: SMART BEAR individual partner page ______________________________________________________________ 21
Figure 10: SMART BEAR publications and deliverables page ____________________________________________ 21
Figure 11: SMART BEAR events page __________________________________________________________________________ 22
Figure 12: SMART BEAR social media and footer ____________________________________________________________ 22
Figure 13: Facebook Global Engagement _____________________________________________________________________ 23
Figure 14: SMART BEAR Facebook profile screenshot ______________________________________________________ 23
Figure 15: SMART BEAR Instagram profile screenshot ______________________________________________________ 24
Figure 16: Instagram Global Engagement _____________________________________________________________________ 24
Figure 17: SMART BEAR Twitter profile screenshot _________________________________________________________ 25
Figure 18: Twitter Global Engagement ________________________________________________________________________ 25
Figure 19: SMART BEAR Linkedin profile screenshot _______________________________________________________ 26
Figure 20: Linkedin Global Engagement ______________________________________________________________________ 26
Figure 21: SMART BEAR Business canvas ________________________________________________________________ 76
1 Introduction

1.1 Purpose of the document

SMART BEAR is a four-year project funded under the topic of DT-TDS-01-2019. It aims to provide an intelligent and personalised digital solution for sustaining and extending healthy and independent living. The offered solution will be an affordable, accountably secure and privacy-preserving innovative platform with off-the-shelf smart and medical devices, at TRL9, to support the healthy and independent living of elderly people with five prevalent health-related conditions; Hearing Loss, Cardio Vascular Diseases, Cognitive Impairments, Mental Health Issues and Balance Disorders, as well as Frailty.

The purpose of the deliverable D13.1-Communication, Dissemination, Impact Creation, Exploitation & Standardisation plan is to define a solid strategy and plan regarding the activities that SMART BEAR will engage in the context of work package 13 in order to raise awareness about the project concept, developments and findings to all key stakeholders and to ensure the exploitation and sustainability of the project after its lifetime.

1.2 Intended Readership

This deliverable is intended to provide an initial plan for communication, dissemination, impact creation, exploitation and standardisation strategy that SMART BEAR consortium will follow. This plan is intended to be read by all consortium members.

1.3 Relation with other SMART BEAR deliverables

This deliverable is related with D1.1-Initial Quality, Innovation and Data Management Plan where the data management plan will be documented and D1.3 - SMART BEAR OpenCall which will document the Open call requirements and procedures and the announcement of the open call respectively. Furthermore, this deliverable relates with all upcoming deliverables of work package 13.
Communication and Dissemination

The diffusion of SMART BEAR activities, progress and outcomes is of paramount importance for the consortium. The communication and dissemination strategy of the project has three main goals:

- Make sure that the vision, objectives, activities and outcomes of the project will be widespread and understood in both in the scientific and the related stakeholder’s communities.
- Promote clear and concise messages to stakeholders, policymakers and end-users.
- Promote the exploitation of project outcomes outside of the SMART BEAR consortium.

Whereas dissemination strategy of SMART BEAR is focused on the scientific and expert community, the communication strategy focuses mainly on the end-users and the general public.

Dissemination and communication for SMART BEAR is considered from the very beginning of the project. The dissemination and communication as well as the exploitation strategy for SMART BEAR is outlined in Figure 1.

2.1 Target Audience

One of the main purposes of SMART BEAR dissemination and communication strategy is the influencing of stakeholders’ view, so that they will become aware of the project’s new ideas, services and results and probably adopt and exploit them. The main strategic stakeholder groupings have been identified for the dissemination and communication of the project and are as follows:

- Scientific Communities
  - Ambient Assisted Living
  - Internet Of Things And Intelligent Systems
  - Service-Based Computing
  - Big Data Management And Analytics
  - Data Semantics And Web-Centric Systems
  - Process Mining
  - Grid And Cloud Computing
  - Social Sciences
  - Interoperability
  - Cyber And Information Security
  - Panhellenic ENT Community
  - Biomedical Engineering

---

Figure 1: SMART BEAR dissemination, communication and exploitation strategy and timeline
D57 - Communication, Dissemination, Impact Creation, Exploitation & Standardisation plan

- Persuasive Design
- Cybersecurity
- Medical -IoT

● Stakeholders
  - Mental Health Professionals
  - Practitioners
  - Hearing Loss And/Or Balance Training
  - Cardiologists
  - Caregivers
  - Medical Engineers
  - Social Workers
  - European Federation Of Nurses Associations, EFN
  - Senior Residence Managers
  - Officials
  - Researchers
  - General Practitioners / Family Doctors
  - Health Care Decision Makers
  - Private Health Care Providers
  - Patients Organizations

● Communities for Health Care and Ageing
  - EUROCARES, European Association Working For Careers (https://eurocarers.org/)
  - Health Provider Organizations
  - Caregivers Associations
  - Health Services Manager Associations
  - Social Assistance Agencies
  - Elderly People's Advocate Groups - AGE EUROPE- (https://www.age-platform.eu)
  - Covenant on Demographic Change (https://www.agefriendlyeurope.org) at European Level
  - Online Senior's Communities
  - European Seniors' Union
  - Panhellenic ENT Community
  - Quirónsalud (https://www.quironsalud.es/en)
  - General Council of Official Colleges of Physicians (https://www.cgcom.es/)
  - Spanish Society of Cardiology (https://secardiologia.es/)
  - Spanish Heart Foundation (http://www.secardiologia.es/)
  - Spanish Society of Health Informatics (SEIS - https://seis.es/)
  - Spanish National Health System
  - European University Hospital Alliance (EUHA) - Ospedale San Raffaele is member of EUHA
  - European Connected Health Alliance Members

● Biomedical communities
  - Biomedical Engineering Schools
  - National Groups in Bioengineering

● Policy Makers
  - National and EU Health Authorities
  - Ministries
  - Municipalities
  - Health Care Decision Makers
  - Region Government Officers
  - Region Health Authorities
  - Region Government Officers
  - EIP on AHA Action Groups
2.2 Dissemination Channels

2.2.1 Scientific publications

SMART BEAR partners (research/academic, technical and clinical) will carefully select its publication venues based on their scientific excellence and impact privileging where possible open access publishing. Potential conferences and journals that will be targeted for scientific dissemination are listed in the following table.

<table>
<thead>
<tr>
<th>Title</th>
<th>Publisher</th>
</tr>
</thead>
<tbody>
<tr>
<td>IEEE Transactions on Big Data</td>
<td>IEEE</td>
</tr>
<tr>
<td>IEEE Transactions on Knowledge and Data Engineering</td>
<td>IEEE</td>
</tr>
<tr>
<td>IEEE Transactions on Signal Processing</td>
<td>IEEE</td>
</tr>
<tr>
<td>IEEE Transactions on Image Processing</td>
<td>IEEE</td>
</tr>
<tr>
<td>IEEE Transactions on Intelligent Systems</td>
<td>IEEE</td>
</tr>
<tr>
<td>IEEE Transactions on Biomedical Engineering</td>
<td>IEEE</td>
</tr>
<tr>
<td>IEEE Journal of Biomedical and Health Informatics</td>
<td>IEEE</td>
</tr>
<tr>
<td>IEEE Journal of Multimedia</td>
<td>IEEE</td>
</tr>
<tr>
<td>IEEE Transaction on Service Computing</td>
<td>IEEE</td>
</tr>
<tr>
<td>International Journal on Data Semantics</td>
<td>Springer</td>
</tr>
<tr>
<td>Future Generation Computer Systems Journal</td>
<td>Elsevier</td>
</tr>
<tr>
<td>Universal Computer Science Journal</td>
<td>Technische Universität Graz</td>
</tr>
<tr>
<td>Conference</td>
<td>WebSite</td>
</tr>
<tr>
<td>---------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------</td>
</tr>
<tr>
<td>ACM Symposium on Spatial User Interaction</td>
<td><a href="http://sui.acm.org/2019/">http://sui.acm.org/2019/</a></td>
</tr>
<tr>
<td>Biomedical and Health Informatics conference</td>
<td><a href="https://waset.org/biomedical-and-health-informatics-conference">https://waset.org/biomedical-and-health-informatics-conference</a></td>
</tr>
<tr>
<td>IEEE International Conference on Big Data</td>
<td><a href="https://conferences.computer.org/bigdatacongress/2019/">https://conferences.computer.org/bigdatacongress/2019/</a></td>
</tr>
<tr>
<td>International Conference on Artificial Intelligence Apps and Innovations</td>
<td><a href="http://www.aiai2020.eu/">http://www.aiai2020.eu/</a></td>
</tr>
<tr>
<td>IEEE International Conference on E-Health and Bioengineering</td>
<td><a href="http://www.ehbconference.ro/">http://www.ehbconference.ro/</a></td>
</tr>
</tbody>
</table>

Table 2: Indicative Conferences for SMART BEAR dissemination
### 2.2.2 Participation in events

#### 2.2.2.1 Organization of international scientific events

The SMART BEAR consortium is planning to organize a minimum of two (2) workshops targeted to the relevant research communities, as well as the domain stakeholders. The consortium in order to target a better effect on the phase strategy is focusing also at different levels of promotion to approach the target audiences identified with an EU, international, micro-level focus. Table 3 includes possible events that can potentially host SMART BEAR workshops.

<table>
<thead>
<tr>
<th>Event</th>
<th>Website</th>
</tr>
</thead>
<tbody>
<tr>
<td>International Conference on SIGNAL IMAGE TECHNOLOGY &amp; INTERNET BASED SYSTEMS (SITIS)</td>
<td><a href="http://www.sitis-conf.org">http://www.sitis-conf.org</a></td>
</tr>
<tr>
<td>IEEE Biomedical and Health Informatics Conference (BHI) and Body Sensor Networks (BSN) Conferences</td>
<td><a href="https://www.bhi-bsn-2019.org/">https://www.bhi-bsn-2019.org/</a></td>
</tr>
<tr>
<td>International Conference on Social Networks Analysis, Management and Security (SNAMS)</td>
<td><a href="https://emergingtechnet.org/SNAMS2019/">https://emergingtechnet.org/SNAMS2019/</a></td>
</tr>
<tr>
<td>Event Title</td>
<td>URL</td>
</tr>
<tr>
<td>---------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>Advances in Databases and Information Systems (ADBIS)</td>
<td><a href="https://adbis2019.um.si/">https://adbis2019.um.si/</a></td>
</tr>
<tr>
<td>International Conference on Healthy and Active Aging (ICHAA)</td>
<td><a href="https://sagelink.ca/ICHAA_2019">https://sagelink.ca/ICHAA_2019</a></td>
</tr>
<tr>
<td>HIMSS Global Health Conference &amp; Exhibition</td>
<td><a href="https://www.himssconference.org/">https://www.himssconference.org/</a></td>
</tr>
<tr>
<td>HIMSS &amp; Health 2.0 European Conference 2020</td>
<td><a href="https://www.himssuropeconference.eu/">https://www.himssuropeconference.eu/</a></td>
</tr>
<tr>
<td>European Health Telematics Association (EHTEL) symposium</td>
<td><a href="https://www.ehtel.eu/activities/annual-ehtel-symposium.html">https://www.ehtel.eu/activities/annual-ehtel-symposium.html</a></td>
</tr>
<tr>
<td>International Conference on ICT for Ageing Well &amp; e-Health (ICT4AWE)</td>
<td><a href="http://www.ict4ageingwell.org/">http://www.ict4ageingwell.org/</a></td>
</tr>
<tr>
<td>World Congress on Public Health 2020</td>
<td><a href="https://ephconference.eu/">https://ephconference.eu/</a></td>
</tr>
<tr>
<td>The Panhellenic Congress on Economics and Health Policy</td>
<td><a href="https://www.healthpolicycongress.gr/english/">https://www.healthpolicycongress.gr/english/</a></td>
</tr>
<tr>
<td>World Congress on Patient Safety &amp; Quality Healthcare</td>
<td><a href="https://patientsafety.insightconferences.com/">https://patientsafety.insightconferences.com/</a></td>
</tr>
<tr>
<td>European event fostering innovation in the healthy ageing sector, AgeingFit</td>
<td><a href="https://www.ageingfit-event.com/">https://www.ageingfit-event.com/</a></td>
</tr>
<tr>
<td>International Conference on Information and Communication Technologies for Ageing Well and e-Health (ICT4AWE)</td>
<td><a href="http://www.ict4ageingwell.org/">http://www.ict4ageingwell.org/</a></td>
</tr>
<tr>
<td>Two high level international conferences in 2020 and 2022 in Athens under the auspices of the MoH and Ministry of Digital Policy</td>
<td></td>
</tr>
<tr>
<td>Pre-recruitment open events (world cafes) in 2020 to inform and pre-recruit citizens in SMART BEAR in MPF</td>
<td></td>
</tr>
<tr>
<td>Annual workshop organized by MPF per year for synergy creation</td>
<td></td>
</tr>
</tbody>
</table>
with other Greek partner organizations working in relevant H2020 and Health Program projects VIGOUR, GATEKEEPERS, VALUECARE

UPV/EHU Summer Courses 2020 “Nuevas tecnologías para medicina personalizada en personas mayores”

Haifa Security and Privacy Research Seminar - IBM

### 2.2.2.2 System-level demonstrations

**SMART BEAR** is planning to demonstrate project progress and outcomes in the scientific community, the relevant stakeholders as well as to the EU. To this extent **SMART BEAR** aims to:

- to seek to organize at least two demonstrations of the project technical results in major international conferences;
- to organize at least one demonstration of the project results in major international fairs and exhibitions;
- to seek to organize and at least two demonstrations of the project technical results in EU related events.

Table 4 presents identified events for potential demonstration of **SMART BEAR** outcomes

| Table 4: identified events for potential demonstration of **SMART BEAR** outcomes |
|---------------------------------|-----------------|
| SANTEXPO, 3 days dedicated to Health players | May 2020 |
| Open days with Bucharest Municipality | 2020 |
| IEEE Biomedical and Health Informatics (BHI) and Body Sensor Networks (BSN) Conferences | 2021, 2022, 2023 |
| HIMSS Global Health Conference & Exhibition | 2020, 2021 |
| HIMSS & Health 2.0 European Conference 2020 | 2020 |
| Researcher’s night | 2020, 2021, 2022, 2023 |
| Science week | 2020, 2021, 2022, 2023 |

### 2.2.3 Open Access

A central aim of **SMART BEAR** consortium is the benefit provision to the European community via sharing of knowledge on an open-access basis. Special emphasis will be placed on fostering open access of the project’s outcomes. The Consortium will fully address the European Commission requirements through the support of open access for published articles. All scientific publications of project’s results will be granted open access according to publisher and law regulations as set out in the **SMART BEAR** Grant Agreement [1] Article 29.

Depending on the nature of the publication, the articles will be made available immediately through open access publishing (‘gold’ open access) (e.g. by an open-access journal) or within a period of 6 months through self-archiving (‘green’ open access). To this extent **SMART BEAR** consortium will exploit online tools such as the Open Access Infrastructure for Research in Europe (OpenAIRE - [https://www.openaire.eu/](https://www.openaire.eu/)), the Registry of
A main activity of SMART BEAR project is the collection and analysis of data during its pilots execution. These data concern accessed personal and clinical data, captured and tracked sensor data, user-provided responses (e.g., feedback), and created data (such as fatigue estimation, etc.) as content within SMART BEAR or the secondary output from data analytics performed. Part of these data will be made available to the public, provided that privacy and security issues are addressed, adhering to legal and ethical guidance for handling personally identifying data (details on the procedures are described in the deliverable D1.1- Initial Quality, Innovation and Data Management Plan). SMART BEAR public dataset will be made e discoverable, accessible, assessable and intelligible, useable and interoperable using data sharing services such as OpenData (http://data.europa.eu/euodp/en/data/) or EUDAT (https://www.eudat.eu/) for open access.

2.2.4 Open Call

Besides the technical development, SMART BEAR project is dedicated to fostering the SMART BEAR solution through its promotion towards existing third parties. To create a sustainable solution, SMART BEAR will develop a Data Sharing and Valorisation Model (DSVM). This model will define ways, at a technical and organisational level, for extending the data collected in SMART BEAR. The goal is the integration of new data providers and sources and use the outcomes of data analysis to improve the platform performance, enhance further the personalisation of its relation with its end users, develop new services, and monetise data intensive services out of the platform. DSVM will be used to issue an Open Call for the inclusion of additional data sources and providers. The open call will enable new partners to leverage SMART BEAR, bringing new types of data and devices to the platform, and linking it to additional vertical domains and relevant piloting activities, towards the creation of a sustainable solution for the health and well-being of the elderly, with lasting impact. The details for the open call will be detailed in the deliverable D13.4 - Data Valorisation Model & Open Call Requirements. Deliverable D1.3 - SMART BEAR Open Call will document the announcement of the open call.

The Open Call for third parties will be published on the Horizon 2020 Programme page of the Funding & Tenders Portal and on the SMART BEAR project website, which will provide proposers with the full details. Information or facilities supplied to any proposer will be equally available to all.

2.3 Communication channels

2.3.1 Visual Identity and brand

The brand identity is the project’s look and feel. It includes features such as name, design, and so on. Our brand identity was created using physical and visual elements. Another important tool that made up our brand is the emotional connection the user feels while using SMART BEAR services. Brand identity is the first interaction with the users that leaves a lasting impression on them. We used various elements for building the visual identity of the brand as it is all the things that the user can see about the SMART BEAR project. The visual identity includes tools like: Logo, Colour scheme, Typography, Imagery Styles, etc. The important thing is to build a visual identity that resonates with the project’s goal and overall nature. We used the following elements in order to create SMART BEAR visual identity.

2.3.1.1 Colour palette

We picked colours that match our project’s nature and overall brand as can be seen at the screenshots in Figure 2.
The problem

Hearing loss, cardiovascular diseases, cognitive impairments, balance disorders and mental health conditions are amongst the ten most prevalent health challenges, which people over 65, a constantly increasing age sub-group of

- The total cost of cognitive dis
  was 240bn
- Estimated cost of falls in Euros
  annually and fall-related expen

Figure 2: Colour pallets used in SMART BEAR Visual identity
The colour we used for Primary Headline is #385f8c and for the Main Body text is #0c0c0c.

2.3.1.2 Typography
We selected the same font (Open Sans) that were used uniformly in all the visual elements as presented below.

![Figure 3: Typography of SMART BEAR website](image)

2.3.1.3 Imagery
The front page image in the website was a result of google image search with key works active, ageing and was filtered and selected as labelled for non-commercial use. Images in the events page are part of the template used.

2.3.1.4 Logo
It is the most important part of our brand’s visual identity. It matches with the project’s goal. It was designed to be simple, unique and memorable. The following set of logos are used for the dissemination activities of SMART BEAR. Multiple versions with and without the project title have been created, to meet any media type. Aspect ratio of the images should not be altered.

![Figure 4: SMART BEAR Logo design and options](image)
2.3.2  Project Website
The site is a key instrument for supporting the dissemination of the research results. A dedicated web site has been created for the SMART BEAR project sharing information regarding, objectives, results, partners and events. Furthermore, the website includes a portal for sustained longitudinal studies and participant engagement.

2.3.2.1  Website Creation Platform
The website was implemented using WordPress, an online, open-source content management system based on PHP and MySQL that is usually used with the MySQL or MariaDB database servers but can also use the SQLite database engine. Features include a plugin architecture and a template system, referred to inside WordPress [2] as Themes. WordPress relies on open standards to allow creators to take their data with them, and even comes with tools to seamlessly import from many popular sources. WordPress comes with an integrated core-update system, so patches are deployed at the click of a mouse. WordPress sanitizes all user input, restricts URL access, has an extensive user permissioning system, and never stores passwords in an unencrypted format. WordPress's core relies on its own extensive API interface which consequently allows developers to quickly and effectively customize the application to their unique needs. Many aspects of the essential WordPress experience can be overridden or modified by user-generated hooks and filters. These APIs help WordPress integrate seamlessly with existing systems, a necessity in a stove-pipe rich environments. WordPress is licensed under the GPLv2.

2.3.2.2  Platform
PHP 7.2 or greater and MySQL 5.6 or greater and mod_rewrite Apache module. WordPress comes with several built-in search optimization tools, including the ability to use htaccess to create apparently static URLs called permalinks, blogrolling, and pinging. There are also a number of third party plugins and hacks which can be used for search engine optimization (SEO).

2.3.2.3  Website Creation
For the theme, the Hestia Version 2.5.5 was used and Elementor as a freeware page builder. Several plugins were also used such as:

- Akismet Anti-Spam version 4.1.3
- Email Address Encoder, Version 1.0.19, a lightweight plugin that protects email addresses from email-harvesting robots by encoding them into decimal and hexadecimal entities.
- SSL Insecure Content Fixer, Version 2.7.2, a clean-up WordPress website HTTPS insecure content
- TablePress, Version 1.10, that embeds feature-rich tables into pages, without having to write code.
- WP Event Manager, Version 3.1.10, Lightweight, scalable and full-featured event listings & management plugin for managing event listings from the Frontend and Backend.

2.3.2.4  Pages
The homepage features the problem that SMART BEAR addresses, the impact it will have and its objectives.
The Project page, describes the program overall and how SMART BEAR will leverage big data analytics and learning capabilities, allowing for large scale analysis of the above mentioned collected data, to generate the evidence required for making decisions about personalised interventions.
The partners page displays all partners’ information.

Figure 7: SMART BEAR project page

Figure 8: SMART BEAR Partners page
A publications page was created in order to present the projects publications along with the project’s deliverables in a table formatted way.

The events page will demonstrate past and upcoming meetings and events related to the project, with information about the dates and the place.
2.3.3 Social media platforms

The social media platforms play an important role in disseminating the SMART BEAR results. There are lots of social media platforms available today, and they can play a major role in social media marketing success. The social media sector is changing almost daily, with new tools and utilities being rolled out, adding more ways to connect, track and maximize SMART BEAR online marketing performance.

One of the toughest challenges is to create an interesting visual content. A Venngage infographic showed 36.7% of marketers said their top struggle with creating visual content was doing so consistently. This shows how important highly-visual content is to marketers and the people they want to reach.

We consider our active presence and participation in the field of social media and networking streams (e.g. Facebook, Twitter, Instagram, LinkedIn) of fundamental importance for the success of the project. Through the communication of the progress and the results of, at least on a biweekly basis (with the goal being on a weekly basis), we aim at sharing its advancements and at steadily increasing the number of our followers, thus enhancing the impact of the project in the scientific world and business sector of health-care enterprises.

The extrovert character of our activity in the social networks is deemed as crucial especially if we take into account the large (geographical and content) diversity of the universities, SMEs and institutions which are the shareholders of SMART BEAR the optimal combination of these characteristics shall be the guarantee for its prosperity. Specifically, the dissemination actions that have taken place aim to grow the number of interested parties and demonstrate to SMEs in particular how they can also link with the platform and use it to develop
and commercialise their own products. In order to disseminate the results of SMART BEAR project, we have created Facebook, Instagram, LinkedIn and Twitter accounts from where public important information will be propagated:

2.3.3.1 Facebook account

Facebook is the most popular social network in the world with more than two billion users. As a result, you can find just about anyone on Facebook, provided they have access to the Internet. The key data points we found for the best times to post on Facebook are on Wednesday at 11 a.m. and 1 p.m. and the most consistent engagement is on Weekdays from 9 a.m.–3 p.m. as it is shown below. The Facebook account of the project is https://www.facebook.com/SMARTBEAREU

![Facebook Global Engagement](image)

*Figure 13: Facebook Global Engagement*

A screenshot from SMART BEAR Facebook profile is presented in Figure 14.

![SMART BEAR Facebook profile screenshot](image)

*Figure 14: SMART BEAR Facebook profile screenshot*
2.3.3.2 Instagram account

Facebook is leading the pack of social networking sites in the world with a huge margin in front of YouTube. Then there is another gap of similar size to Instagram on the third place. Subsequently, Instagram is one of the youngest social networks out there, with a majority of users under 25. That makes it the perfect social network for brands or companies that target young, hip demographics. Therefore, we created a profile as presented in Figure 15.

![SMART BEAR Instagram profile screenshot](image)

*Figure 15: SMART BEAR Instagram profile screenshot*

The key data points we found for the best times to post on Instagram [3] are on Wednesday at 11 a.m. and Friday at 10–11 a.m. and Most consistent engagement is becoming on Tuesday through Friday, 10 a.m.–3 p.m. as can be seen in figure Figure 16.

![Instagram Global Engagement](image)

*Figure 16: Instagram Global Engagement*
2.3.3.3 Twitter account

Twitter gives its users a steady stream of information and new content from all over the Internet. It has millions of engaged users every month, and practically every brand in the world has an account to update its customers. Twitter reported 336 million active monthly users in its last quarterly report. In the framework of SMART BEAR communication the account https://twitter.com/SmartBear_EU (@SMARTBEAR_EU) has been created as presented in Figure 17.

![Figure 17: SMART BEAR Twitter profile screenshot](image)

The key data points we found for the best times to post on Twitter [3] are on Wednesday at 9 a.m. and Friday at 9 a.m. and the most consistent engagement is performing on Monday through Friday from 8 a.m.–4 p.m. as presented in Figure 18:

![Figure 18: Twitter Global Engagement](image)
2.3.3.4 LinkedIn account

Finally, in terms of professionalism, no social network can beat LinkedIn. It's a thriving community of workers and business owners who share and connect on a professional level, making it much more formal than other social media platforms. As a consequence, we have created a profile on behalf of SMART BEAR project as shown in Figure 19. The SMART BEAR LinkedIn account is accessible on https://www.linkedin.com/in/SMARTBEAR-b538ba196.

![LinkedIn profile screenshot]

The key data points we found for the best times to post on LinkedIn [3] are on Wednesday at 9–10 a.m. and 12 p.m. and the most consistent engagement is performing on Tuesday through Friday from 8 a.m.–2 p.m at can be shown in Figure 20:

![LinkedIn Global Engagement]

![LinkedIn Global Engagement graph]
2.3.4 **Brochure**

Complementary to digital media, print media will also be used, giving more permanent record of the project’s concept and results. A high-quality colour-illustrated electronic brochure in English, enriched with the scientific approach and activities of **SMART BEAR**, will be developed, in order to serve as an essential tool for the dissemination at external events targeting academic and research institutes, industrial partners and clinical experts. Information on project achievements and results will be communicated via printed brochure also. The printed brochure will be translated and distributed to the general public, in order to invite them to participate in the project. This leaflet will be distributed by all project partners at the public events, such as conferences but also local events raising awareness amongst potential users.

2.3.5 **Newsletters**

Regular information will be provided in the SMART-BEAR electronic newsletter:

- reporting the news of project,
- information about the next project events and how to participate,
- presence on events,
- publication in journals,
- research advancement and results.

The first issue will present the full project, its aims and its WPs. This Newsletter will mainly be disseminated to:

- EU and Associated members states,
- the general research society,
- the general public,
- the policymakers.

It will be available for download both on the project website. A first dissemination list will be created from the project partners and their respective contacts having shown an interest in the project. This list will be enlarged during the project duration with, amongst others, people coming to workshops or met during events/conferences/exhibitions where the project will be presented.

The newsletter will be circulated twice a year for the duration of the project.

2.4 **Dissemination & Communication Activities per Target Audience**

Table 5 indicates a first draft of the dissemination and communication activities vs. the target audiences that can be reached. The usefulness of the table is to identify potential gaps in the reach-out of Communication and Dissemination (C&D) Activities to specific groups and the effort required for remedies. Some activities affect all audiences, whereas others apply to more specific groups.
Table 5: Dissemination & Communication Activities per Target Group.

<table>
<thead>
<tr>
<th>Dissemination &amp; Communication Activities</th>
<th>Scientific communities</th>
<th>Stakeholders</th>
<th>Communities Health Care &amp; Ageing</th>
<th>Policy Makers</th>
<th>Technology providers</th>
<th>Other</th>
<th>Technology Centres</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scientific publications</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organization of scientific event</td>
<td>●</td>
<td></td>
<td>●</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>System level demonstrations</td>
<td>●</td>
<td></td>
<td>●</td>
<td>●</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Website</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td></td>
</tr>
<tr>
<td>Social media accounts (Facebook, Twitter, LinkedIn)</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Video (YouTube channel)</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td></td>
</tr>
<tr>
<td>Non-electronic material (Leaflets, Brochures)</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Electronic Newsletters</td>
<td>●</td>
<td></td>
<td>●</td>
<td>●</td>
<td>●</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Magazines/newspapers</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td></td>
</tr>
<tr>
<td>Media TV/Radio</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td></td>
</tr>
<tr>
<td>Synergies with EU Projects</td>
<td>●</td>
<td></td>
<td>●</td>
<td>●</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
2.5 Building strong collaborations with other PPPs

SMART BEAR’s multi-disciplinary balance between privately and state-owned entities ensures that all possible collaborations with organisations and initiatives pertinent to healthy and independent living of the elderly will be exhaustively pursued. Identified Public-Private Partnerships that foresee to establish collaboration with are:

- **The European Innovation Partnership on Active and Healthy Ageing** (EIP-AHA - [https://ec.europa.eu/eip/ageing/home_en](https://ec.europa.eu/eip/ageing/home_en)) launched in 2012; SMART BEAR will actively contribute to five of its working groups (A1: Adherence to Prediction, A2: Falls Prevention, B3: Integrated Care, C2: Independent Living Solutions, D4: Age-friendly environments)

- **“More Years, Better Lives”** ([https://www.jp-demographic.eu](https://www.jp-demographic.eu)), the Joint Programming Initiative (JPI) which enhances coordination and collaboration between European and national research programmes related to demographic change; SMART BEAR partners from Italy (coordinator), France (pilot site), Israel (industry), Spain (pilot site, industry) will pursue collaboration with this joint programme through their national contact points.

- **Horizon 2020**, the EU Research and Innovation Framework Programme, in particular funding under Societal Challenge 1 for innovative ICT solutions for active and healthy ageing; SMART BEAR is a H2020 proposal and its members will participate in all relevant activities.

- **The Active and Assisted Living Programme** ([http://www.aal-europe.eu/](http://www.aal-europe.eu/)), where Member States in cooperation with the European Commission fund projects on applied research for innovative ICT-based products, services and systems for ageing well. SMART BEAR will seek participation in the yearly organised AAL forum in order to increase visibility of its progress and results.

- **The Big Data Value Association (BDVA)** ([http://www.bdva.eu](http://www.bdva.eu)), the industry-driven international not-for-profit organisation that aims to develop the innovation ecosystem to enable the data and AI-driven digital transformation in Europe delivering maximum economic and societal benefit. With ATOS and ATC already members of the BDVA SMART BEAR will seek to create awareness on the data-driven technologies and activities of the project.

- **Alliance for Internet of Things Innovation (AIOTI)** ([https://aioti.eu/](https://aioti.eu/)) aims to strengthen the dialogue and interaction among Internet of Things (IoT) players in Europe, and to contribute to the creation of a dynamic European IoT ecosystem to speed up the take-up of IoT. NOVA is a member of AIOTI.

- **The Networked European Software and Services Initiative (NESSI)** ([http://www.nessi-europe.com/](http://www.nessi-europe.com/)) is the European Technology Platform, for new Digital Information Society and Economy powered by software and services and data that will support to resolve European societal and economic challenges across all sectors, both private and public, such as manufacturing, transportation, energy, and healthcare.

2.6 Liaison with other EU projects

SMART BEAR is not an isolated project. Several partners in the consortium are already participating in related projects at a national and/or international level. Moreover, there are other projects running that are related in the domain and/or produce outcomes that may interest SMART BEAR and can be exploited. The project will actively pursue cross-fertilisation with relevant projects in terms of technologies, impact assessment outcomes and recommended policies for future directions. Table 6 contains related projects that in their consortium partners are involved.
Table 6: Related projects with involved SMART BEAR partners

<table>
<thead>
<tr>
<th>Project</th>
<th>Description</th>
<th>involved SMART BEAR partners</th>
</tr>
</thead>
<tbody>
<tr>
<td>EVOTION</td>
<td>EVOTION is about enabling seamless collection of big data from all actors and related to treatment of hearing loss to inform, support, and develop hearing health care policies. This will be achieved by developing a multi-stakeholder demonstrator platform that combines and analyses heterogeneous big data from clinical repositories and from patients’ everyday hearing aid use and clinical treatment. The subsequent big data analytics is expected to produce ecologically valid evidence for the formulation and validation of public health policies.</td>
<td>NKUA, ATC, CITY, UMIL, ICCS</td>
</tr>
<tr>
<td>I-BiDaaS</td>
<td>I-BiDaaS aims to empower users to easily utilize and interact with big data technologies, by designing, building, and demonstrating, a unified solution that: significantly increases the speed of data analysis while coping with the rate of data asset growth, and facilitates cross-domain data-flow towards a thriving data-driven EU economy.</td>
<td>FORTH, IBM, ATPS</td>
</tr>
<tr>
<td>sustAGE</td>
<td>sustAGE aims to develop a person-centred solution for promoting the concept of &quot;sustainable work&quot; for EU industries, thus support the well-being, wellness at work and productivity of ageing employees. The project aims to deliver a composite system integrated with the daily activities at work and outside, deployed in the industry domains of manufacturing and transportation &amp; logistics.</td>
<td>FORTH</td>
</tr>
<tr>
<td>HOLOBALANCE</td>
<td>HOLOBALANCE aims to develop a new personalized hologram coach platform for virtual coaching, motivation and empowerment of the ageing population with balance disorders. The coaching part will be realised by holograms and augmented reality games, along with easy to use sensors that can be customized to implement and coach the user with specific, individualized exercises, offering new forms of accessible user interaction</td>
<td>UOI, NKUA, ICCS, STS</td>
</tr>
<tr>
<td>SENSE-Cog</td>
<td>SENSE-Cog aims to promote mental well-being by understanding the inter-relationship of sensory impairments and cognitive and mental health function, identifying novel means of screening and detection for diagnostic and therapeutic purposes,</td>
<td>NKUA</td>
</tr>
<tr>
<td>Project</td>
<td>Description</td>
<td></td>
</tr>
<tr>
<td>---------</td>
<td>-------------</td>
<td></td>
</tr>
<tr>
<td>Sense-COG EU</td>
<td>and translating this knowledge into clinical applications to improve the mental well-being of EU citizens.</td>
<td></td>
</tr>
<tr>
<td>EM Balanc3</td>
<td>EMBALANCE aims to develop a data repository and decision support system (incorporating data mining) for the diagnosis of human balance problems.</td>
<td></td>
</tr>
<tr>
<td>CREATE-IoT</td>
<td>CREATE-IoT objective is to stimulate collaboration between IoT initiatives, foster the take up of IoT in Europe and support the development and growth of IoT ecosystems based on open technologies and platforms.</td>
<td></td>
</tr>
<tr>
<td>ALFRED</td>
<td>ALFRED allows older people to live longer at their own homes with the possibility to act independently and participate in society by providing the technological foundation.</td>
<td></td>
</tr>
<tr>
<td>ACTIVAGE</td>
<td>ACTIVAGE is a European Multi Centric Large Scale Pilot on Smart Living Environments. The main objective is to build the first European IoT ecosystem, reusing and scaling up underlying open and proprietary IoT platforms, technologies and standards, and integrating new interfaces needed to provide interoperability across these heterogeneous platforms, that will enable the deployment and operation at large scale of Active &amp; Healthy Ageing IoT based solutions and services, supporting and extending the independent living of older adults in their living environments, and responding to real needs of caregivers, service providers and public authorities.</td>
<td></td>
</tr>
<tr>
<td>iASiS</td>
<td>iASiS is an EU funded project that seeks to pave the way for precision medicine approaches by utilising insights from patient data. It aims to combine information from medical records, imaging databases and genomics data to enable more personalised diagnosis and treatment approaches in two disease areas – lung cancer and Alzheimer’s disease.</td>
<td></td>
</tr>
<tr>
<td>BigMedilitycs</td>
<td>BigMedilitycs aims to enhance patient outcomes and increase productivity in the health sector by applying big data technologies to complex datasets while ensuring security and privacy of personal data.</td>
<td></td>
</tr>
</tbody>
</table>
Smart4Health will develop, test and validate a platform prototype for the Smart4Health citizen-centred health record with integrated abilities for aggregation of data, for sharing and for data provision/donorship to the scientific community.

Carelink-AAL aims to deliver a low-cost, location and proximity monitoring system suitable for Dementia sufferers. Carelink aims to reduce stress for caregivers, dramatically increase the survival rates of wandering patients and promote low-cost community based caring.

The project will provide an intelligent platform able to monitor users’ behaviour and support personalized control of lights and appliances in their environment aiming to increase elderly autonomy, focusing on older adults affected by mild dementia, and assist them in carrying out activities of daily living.

Ella4Life is to help older people- healthy or with a chronic disease or mental condition – stay healthier and live a more pleasant life, independent and safe. At home on a tablet and ‘on the road’ on a smartphone or – watch via virtual assistant.

The main objective is enabling the creation of an open-source platform that connects healthcare providers, businesses, entrepreneurs, and elderly citizens and the communities they live in, in order to originate an open, trust-based arena for matching ideas, technologies, user needs and processes, aimed at ensuring healthier independent lives for the ageing populations.

Moreover, there are some other projects identified where none of the SMART BEAR partner is involved, however their aims and objectives are related to the project. Table 7 contains such projects.
<table>
<thead>
<tr>
<th>Table 7: Related projects without involved SMART BEAR partners</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GHOST</strong> aims to deploy a highly usable and effective security framework for smart home residents. The project will apply behavioural design principles for the elaboration of a novel reference architecture for user-centric cybersecurity in smart home environments. This architecture will stimulate security-friendly user behaviour enforced by an unobtrusive and user-comprehensible solution. At the core of the GHOST solution lies a smart home network gateway, supporting a wide range of wired and wireless technologies. <a href="https://www.ghost-iot.eu/">https://www.ghost-iot.eu/</a></td>
</tr>
<tr>
<td><strong>WellCO</strong> aim is to provide a novel ICT-based platform for a well-being and health oriented virtual coach for behaviour change. This platform would bring about change by means of adequate and personalized intervention techniques that drive people to successful behaviour changes necessary for a healthier lifestyle. The platform will cover three essential conditions that contribute toward improving the performance of I behaviour: capability and opportunity, supported by the continuous monitoring of user’s status and “Life Plan”, and motivation, provided by an affective-aware virtual coach and multi-disciplinary professionals. <a href="http://wellco-project.eu/">http://wellco-project.eu/</a></td>
</tr>
<tr>
<td><strong>BOUNCE</strong> aims to deliver a unified clinical model of modifiable factors associated with optimal disease outcomes and will deploy a prospective multi-centre clinical pilot at four major oncology centres (in Italy, Finland, Israel and Portugal), where a total of 660 women will be recruited in order to assess its clinical validity against crucial patient outcomes (illness progression, wellbeing, and functionality). <a href="https://www.bounce-project.eu/">https://www.bounce-project.eu/</a></td>
</tr>
<tr>
<td><strong>BEWELL</strong> project is about developing integration and manufacturing technologies needed for smart skin patch and wrist-device wearable electronics sensing and actuating products. BEWELL project is also about demonstrating three different application use cases. <a href="https://h2020bewell.eu/">https://h2020bewell.eu/</a></td>
</tr>
<tr>
<td><strong>PULSE</strong> will engage in a collaborative dialogue with a range of stakeholders across five global cities to transform public health from a reactive to a predictive system focused on both risk and resilience. Among others, PULSE aims to develop an integrated data ecosystem based on mobile devices (smartphones), sensor systems to enable large scale collection of citizen data within the smart city environment and to develop new approaches to data mining for public health outcomes. <a href="http://www.project-pulse.eu/">http://www.project-pulse.eu/</a></td>
</tr>
</tbody>
</table>
### 2.7 Dissemination & Communication Key Performance Indicators

Table 8 shows the different communication and dissemination activities that will be carried out throughout the SMART BEAR project’s operation and the measurable indicators set for each activity.

<table>
<thead>
<tr>
<th>Communication and dissemination activities</th>
<th>Measurable indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>International Conferences and Events:</strong> SMART BEAR partners will participate in European and international conferences that are considered as significant channels for presenting the results and innovative aspects to the healthcare and scientific community and also for creating awareness of the SMART BEAR project to the community of experts.</td>
<td>11 papers submitted in conferences, 1 workshop organized by the consortium (present novel guidelines and the platform)</td>
</tr>
<tr>
<td><strong>Exhibitions and Horizon 2020 events:</strong> The consortium, namely the scientific partners, will participate at Horizon 2020 events and exhibitions.</td>
<td>Participation in 1 exhibition and 1 Horizon 2020 event</td>
</tr>
<tr>
<td><strong>Publications in Scientific Journals:</strong> The submission and publication of SMART BEAR research work and consolidated results to scientific journals is a significant channel for reaching the scientific community. Selected journals to disseminate SMART BEAR concepts, tools and results include, but are not limited to, biomedical engineering, occupational medicine etc.</td>
<td>3 green open access publications</td>
</tr>
<tr>
<td><strong>Online dissemination through Internet:</strong> An advanced and up-to-date website will be released at month 3 of the project. In addition, electronic newsletters reporting on SMART BEAR deliverables, events and results will be issued stakeholders in English and in the local languages of the consortium on the project’s website allowing a wide community of potential.</td>
<td>1 website, 1 lay summary, 3 press releases and 3 promotional campaigns</td>
</tr>
<tr>
<td><strong>Biomedical Communities and Social Research Networks:</strong> Research Networks (i.e. Twitter, LinkedIn, BiomedTown, ResearchGate, BiomedExperts). The dissemination manager will be responsible for the SMART BEAR building into the BiomedTown where all the public information about the SMART BEAR ongoing activity will be published. Also, Twitter will be used to publish news, SMART BEAR achievements, etc. and stay connected to the worldwide scientific community. An account and a project group will be created to LinkedIn, ResearchGate and BiomedExperts.</td>
<td>5 accounts on social networks, over 50 followers on Twitter and over 50 connections on other networks</td>
</tr>
<tr>
<td><strong>SMART BEAR Presentation Material:</strong> SMART BEAR flyer, brochure and poster will be developed to serve as an essential tool for the dissemination at external events targeting academic and research</td>
<td>3 posters and 3 brochures that will be utilized in workshops and conferences</td>
</tr>
</tbody>
</table>
institutes, industrial partners and clinical experts. They will present the project results in an appealing and structured manner and will be updated and published at prefixed time intervals to provide the latest achievements of SMART BEAR.

| Traditional communication channels: The consortium will make use of the traditional channels including non-specialized magazines, newspapers and television (TV) to reach the general public and present the objectives, innovative aspects and benefits of the SMART BEAR project without emphasizing technical details. | 2 articles to national non-specialized magazines per participating country |
| Collaboration with other gender projects: SMART BEAR plans to network with other research groups and concentration activities with other Smart and Healthy Living at Home projects, in the same (DT-TDS-01-2019) as well as in other calls. | Establish synergies with at least two EC projects |
| Collaboration with policymakers: SMART BEAR platform and socio-economic analysis will be presented to the relevant health policymakers to discuss potential update of the SMART BEAR outcomes. | At least one meeting with health policymakers, in 1 of the 5 pilot site countries |
| Video to reach the general public and present the objectives, innovative aspects and benefits of the SMART BEAR project without emphasizing technical details | This video should be hosted in the SMART BEAR website and in Youtube |
3 Impact creation

In the context of SMART BEAR, the impact that is expected to be created is based on the following pillars in line with the European Societal Challenge strategy and targets under the Europe 2020 strategy.

**Pillar 1: European-led platform for smart and healthy and independent living at home.**

Considering the radical changes in EU industry and society over the last 10-15 years and the pressure to reduce age-related public expenditure in the EU, there is an undergoing transformation in health and care services towards empowering citizens to effectively manage their own health and diseases. The SMART BEAR care science approach aims to provide the basis for demonstrating a global scale-up of established ICT-based approaches for the benefit of society and ageing people through improved quality of life and significant, sustained efficiency gains in health and care delivery. The SMART BEAR ’s adaptive smart-living platform will include the following features: (i) continuous monitoring of the health and well-being of the elderly and environment sensing via the incorporation of heterogeneous devices; (ii) data analytics, smart decision making, and interventions for intelligent and personalised interventions enhancing the well-being and independent living of participants; (iii) platform security, privacy, and trustworthiness; and (iv) user-centric platform implementation and integration.

SMART BEAR’s European-led dimension is ensured by the structure of the consortium featuring key-European players of their respective fields, and the effort made to capitalize on European initiatives such as EIPAHA, AAL.

**Pillar 2: Increased competitiveness of the European ICT industry in the health and care domain with demonstrated added-value of underlying technologies, through enhanced interoperability, best practices for viable business and financing models and scalable markets.**

The SMART BEAR platform will be demonstrated and validated at TRL9, via five large scale pilots, involving 5.100 participants across six EU countries that will serve as a catalyst for demonstrating both the feasibility and the utility of the underlying approach to the EU health and delivery market. The SMART BEAR platform will reside on open APIs and will extend existing solutions for data analytics, decision making for generating evidence on personalized interventions through the underlying large scale analysis of data collected from all pilots and participants. It will further adopt existing interoperability standards and promote interoperability with existing smart home platforms, smart city applications, m-IoT and m-Health applications. Beyond the adoption of existing standards SMART BEAR project will actively contribute to the evolution or creation of new standards (Section 5).

**Pillar 3: Demonstrate links and build synergies with Member States and regional initiatives**

SMART BEAR ’s demonstration and validation itself is built around synergies within regions, countries and across Europe. Beyond supporting healthy and independent living interventions for individuals, the platform of SMART BEAR will also support the analysis of potential public health policies at regional, national and international levels regarding such interventions. Regular meetings to search for cross-business/initiatives synergies will be organized and will typically include related stakeholders where synergies could be expected. One of the core target audiences in this respect would be regional, national and EU health authorities, municipalities, regional government officers, health care decision-makers and the EIPAHA (Section 2.1). Engagement in a “receiver-based communication” style, allowing stakeholders to share information about their activities, and follow up as they see appropriate.

**Pillar 4: Improved quality of life, health status, feeling of independence for involved users, carers and professionals with demonstrated added-value of underlying technologies**

Improvement of quality of life and health status is obtained by developing mechanisms for the continuous monitoring of the health and well-being of the elderly via heterogeneous devices such as: (i) assistive medical devices; (ii) body sensors; (iii) smart/virtual assistants; (iv) environmental sensors and actuators of smart homes (IoT sensors); and (v) smartphones. The data analytics on the data collected along with smart decision making and interventions will support and enhance the well-being and independent living of participants.
customization or development of existing applications like those used for (i) screening potential participants for whom the platform will be useful, (ii) cognitive games, (iii) balance training, (iv) hearing aid management, (v) mental health profiling and monitoring, (vi) CVD risk factor assessment and correction, and (vii) social and physical activity enhancement will enable participant monitoring and delivery of the SMART BEAR interventions (D2.1. SMART BEAR Requirements).

Pillar 5: User accepted, validated innovative solutions addressing accessibility, privacy, security, vulnerability, liability, and trust in connected data spaces

SMART BEAR will develop privacy-preserving and secure by design data handling capabilities, covering data at rest, in processing, and in transit, and all components and connections, and follow a user-centric platform implementation and integration approach. SMART BEAR testing and validation carried out by the five large scale pilots will enable evaluation in the context of healthcare service delivery by private and public providers at regional, state and European level. SMART BEAR will offer a real-time healthcare monitoring framework, under which key functional, quality, usability, security and privacy conditions will be fulfilled to ensure the acceptability of the solution by its targeted users. SMART-BEAR will be built upon a security-driven design foundation, empowering it to become a standard basis for a secure and trustworthy, user-accepted healthcare solution. The benefits are not restricted to public and private organisations, but extend to citizens and the society at large, through the enhanced preparedness and thus increased protection of governmental, private-sector, and personal data, which strengthens citizens’ trust and engagement in the Healthcare sector.

Pillar 6: Tangible contributions from European industrial key players and SMEs to actively engage with the platform building and enhance innovation capacity

SMART BEAR’s consortium comprises key-European players such as CNR, ATOS, Philips, and IBM. The corresponding tangible contributions are on the SMART BEAR platform building: Healthcare services and applications, Security Assurance, Privacy Enhancing Technologies, Machine Learning, Big Data Analytics, Internet of Things, and Decision Support System. Furthermore, six SMEs (STS, SV, ITSS, INV, ATB, 2B) are directly related to technologies and services required for the SMART BEAR platform, which by itself places SMART BEAR in an advantageous position for creating and maintaining an ecosystem around its approach. The SME partners of SMART BEAR will enhance their competitiveness and increase their market share. The direct link between research activities and outcomes to the market which is expected to lead to a competitive spinoff company that will exploit the results of the project and mainly the delivered SMART BEAR platform and services. The dissemination actions planned will also aim to grow the number of interested parties and demonstrate to SMEs in particular how they can also link with the platform and use it to develop and commercialise their own product.

Pillar 7: Strengthen the role of the EU on the global scale, particularly in terms of standardisation activities and access to foreign markets

SMART BEAR will offer personalised monitoring and interventions to support the healthy and independent living of elderly people with five prevalent health-related conditions. The wide spreading of the pilots involved, the nature of the data acquired and their analysis leaves opportunities for SMART BEAR to contribute to standardisation activities. Towards this, initiatives will be undertaken targeting renewal of the CEN ISO 13606 EHR-communication standard. Contribution is also foreseen to the series of standards known as Concurrent-Use-Standards (CEN: EHR-communication, Health Information Service Architecture and System of Concepts for Continuity of Care). Health Informatics Interoperability standards will be used such as HL7 – FHIR, where contributions could be made towards special applications of non-invasive self-monitoring at home. In addition, behavioural changes identification standards related to the interaction with smart devices such as the SMART BEAR system will be proposed. To the consortium’s best knowledge such an integrated solution is missing from the market and the potential a validated platform would have is very interesting. The quality of the consortium that ensures the success of the project constitutes a market opportunity and can establish EU as the “big player” in the domain. The project’s impact will be maximised through innovation, exploitation and standardisation and through raising awareness of the project’s outcomes to healthcare stakeholders,
organisations and individuals (Section 2.1), whilst pursuing links and synergies with pertinent initiatives and piloting activities, opening therefore new paths in the global market regarding SMART BEAR.

### 3.1 Impact KPIs

To ensure impact creation along the 7 indicated Pillars and related iKPIs (Table 9) a three-stage assessment approach will be followed. According to it, impact assessments occur at: (i) the project level to ensure project partners deliver the required outputs to test the business case; (ii) the pilot level with involved local and national stakeholders to produce outcomes that test and refine the value proposition and improve the business case for SMART BEAR; and (iii) a European level encompassing wider society to aggregate and spread social and economic benefits that result from the business case. Of particular importance to (2) and (3) will be the engagement of the Advisory Board of the project as stated in the GA which will involve representatives of key stakeholders, external to the consortium, and liaising with related EU initiatives (see section 2.6).

<table>
<thead>
<tr>
<th>iKPI ID</th>
<th>Description and Target Value</th>
<th>Validation</th>
</tr>
</thead>
<tbody>
<tr>
<td>iKPI-1</td>
<td>Number of healthcare standards contributed by SMART BEAR. Targeted value: At least 2 standards</td>
<td>Reported in D13.5</td>
</tr>
<tr>
<td>iKPI-2</td>
<td>Number of external partnerships promoting the deployment of the final product in related markets. Targeted value: At least 2</td>
<td>Identified synergies and cross-collaborative side-projects. Reported in D13.5, D13.6.</td>
</tr>
<tr>
<td>iKPI-3</td>
<td>Number of meetings with relevant stakeholders. Targeted value: At least 6 per year</td>
<td>Reported in D13.6</td>
</tr>
<tr>
<td>iKPI-4</td>
<td>Decrease of total individualized cardiovascular risk score for users with non-established CVD as defined by the European Society of Cardiology [10] Targeted value:&lt;5%</td>
<td>Outcomes of final cross-pilot evaluation reported in D12.5</td>
</tr>
<tr>
<td>iKPI-5</td>
<td>Increase of prospective potential of evidence-based platform-agnostic technology in the healthcare industry. Targeted value: &gt;10%</td>
<td>Impact assessment and outcomes of pilots-based validation as reported in D12.5, D13.5</td>
</tr>
<tr>
<td>iKPI-6</td>
<td>Improved percentage of adherence in prescribed medical treatment [11]. Targeted value: Increase by 20%</td>
<td>Outcomes of final cross-pilot evaluation reported in D12.5</td>
</tr>
<tr>
<td>iKPI-7</td>
<td>Decrease in patient-to-doctor visits. Targeted value: 20% fewer visits annually</td>
<td>Outcomes of final cross-pilot evaluation reported in D12.5</td>
</tr>
<tr>
<td>iKPI-8</td>
<td>Decrease in disease related number of admittances and hospitalisation time for participants suffering from ischaemic heart disease and heart failure. Targeted value: 15%</td>
<td>Outcomes of final cross-pilot evaluation reported in D12.5</td>
</tr>
<tr>
<td>iKPI-9</td>
<td>Achievement and maintenance of hypertension treatment targets as defined by the European Society of Hypertension [12].</td>
<td>Outcomes of final cross-pilot evaluation reported in D12.5</td>
</tr>
<tr>
<td>iKPI-10</td>
<td>Achievement of increased and optimised hearing aid use through objective recordings and consequent analytics of the SMART BEAR platform. Targeted value: 25%</td>
<td>Outcomes of final cross-pilot evaluation reported in D12.5</td>
</tr>
<tr>
<td>iKPI-11</td>
<td>Improve users’ social well-being. Targeted value: &gt;20%</td>
<td>Outcomes of final cross-pilot evaluation reported in D12.5</td>
</tr>
<tr>
<td>iKPI-12</td>
<td>Participants will meet the following WHO guideline: Older adults should do at least 150 minutes of moderate-intensity aerobic physical activity throughout the week or do at least 75 minutes of vigorous intensity aerobic physical activity throughout the week or an equivalent combination of moderate- and vigorous-intensity activity</td>
<td>Outcomes of pilots-based validation reported in D8.4, D9.4, D10.4, D11.1, D12.5</td>
</tr>
<tr>
<td>--------</td>
<td>------------------------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td>iKPI-13</td>
<td>Increase in QALY index. Targeted value: &gt;0.5 SD (standard deviation) change [13].</td>
<td>Outcomes of final cross-pilot evaluation reported in D12.5</td>
</tr>
<tr>
<td>iKPI-14</td>
<td>Increase in user interaction satisfaction index (QUIS). Targeted value: &gt;75</td>
<td>Outcomes of final cross-pilot evaluation reported in D12.5</td>
</tr>
<tr>
<td>iKPI-15</td>
<td>Number of presentations at scientific events. Targeted value: &gt;20</td>
<td>Reported in D13.5</td>
</tr>
<tr>
<td>iKPI-16</td>
<td>Number of meetings with research institutions. Targeted value: &gt;20</td>
<td>Reported in D13.5, D13.6</td>
</tr>
<tr>
<td>iKPI-17</td>
<td>Increase the degree of usability of the platform. Targeted value: &gt;80 in SUS and &gt;80% in TAM</td>
<td>System Usability Scale (SUS) questionnaire and the Technology Assessment Methodology (TAM)</td>
</tr>
<tr>
<td>iKPI-18</td>
<td>Faster and smarter identification of exploitable errors and data breaches in a healthcare platform. Targeted value: Number of identified errors and breaches &lt;10%</td>
<td>Functional, Integrations and Penetration testing Reports, Integrity, Confidentiality and Availability, Security Assurance Reports (reported in D5.7)</td>
</tr>
</tbody>
</table>
4 Exploitation

The following section provides an overall methodology and fundamental generic knowledge to support the exploitation of research results generated by SMART BEAR. It does not intend to be exhaustive: instead, there is a stronger focus on the particular exploitation paths which are a-priori more relevant for SMART BEAR. In fact, Exploitation work will go on along all the project duration and will be refined in further deliverables including D13.2 Interim Communication, Dissemination, Impact Creation, Exploitation & Standardisation Report (M24) and D13.5 Final Communication, Dissemination, Impact Creation & Standardisation Report (M48).

Research and innovation have been placed at the centre of the Europe 2020 strategy to promote smart, sustainable and inclusive growth. While one can debate what constitutes a healthy relation of industry and basic research, there is no doubt that a knowledge-based society prospers with the innovativeness of its engineers and the skills of its scientists. In the Horizon 2020 funding program, EC puts a focus on closely linking basic research and application, and applied research with industry, SMEs and start-ups. The outputs of EU projects, being by nature strongly research-based, are usually not ready for commercial exploitation without further work; that’s why it is important to plan in advance the steps needed for making future exploitation easier.

The exploitation strategy defines application segments of the innovation, economic size of the target markets and their geographic coverage. It identifies potential users and stakeholders and sets objectives for addressing and involving them in the project. It compares their needs to the kind of problem the proposed solution solves and outlines why this solution is better than existing ones in terms of benefits to users and society at large. It talks about the knowledge (IPR) the project will generate compared to the state of the art or what is commercially available today. Finally, at the end of the project, it shall be clear which further actions shall be taken both in terms of scientific and commercial follow up. Options range from further internal research, collaborative research, internal product development, internal service creation, licensing, assignment, joint venture, to creating a spin-off, or supporting standardization activities.

4.1 Exploitation overall aim

Overall objectives of the exploitation task are fostering exploitation by ensuring contacts to stakeholders, identifying their needs, making sure the project outcomes provide answers to those needs identifying the potential competitive advantage of the product, finally developing an exploitation plan strategy that takes advantage of it.

The objective of this section is to provide an overview of the methodological approach for the development of the exploitation strategy throughout the project and to summarize the first exploitation activities that have taken place so far. It is basically the overall framework and basic tools to be used throughout the project to develop a sound exploitation plan.

4.2 Exploitation framework

The basic framework adopted is aimed at putting in connections projects outcomes with stakeholders needs to provide the ground for the business strategy. Ensuring that project’s outcomes answer specific needs of relevant stakeholders is necessary for success. Even though the methodology uses other tools, the basic framework is built on three pillars: project’s outcomes, stakeholders and business strategy.

<table>
<thead>
<tr>
<th>Exploitation framework pillars</th>
<th>Tools</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project outcomes</td>
<td>Target outcomes table</td>
<td>Identifies project’s outcomes, will evolve throughout the project.</td>
</tr>
</tbody>
</table>
D57 - Communication, Dissemination, Impact Creation, Exploitation & Standardisation plan

<table>
<thead>
<tr>
<th>Stakeholders</th>
<th>Stakeholder Matrix</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Lists stakeholders and their perceived needs. Each need is matched with the outcome answering the need.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Business strategy</th>
<th>Lean Business canvas</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Leveraging also on information about market, the Canvas is used to put together the different components upon which business strategy is built.</td>
</tr>
</tbody>
</table>

In the following paragraphs, we introduce with some more details the methodology which is then applied to SMART BEAR.

4.3 Methodology

Important exploitation approaches and tools typically evolve from proposal to the end of the project and often comprise:

- A target outcomes table describes the features of the method / material / product / service that are the outcome of the project. Performance indicators can be physical values, chemical/mechanical properties, efficiency measures, environmental savings and the like. Throughout the project the comparison to the state of the art or to commercial solutions shall be further refined and target values can be compared to validated results (see chapter 4.3.1 “The SMART BEAR (Target) Outcome Table”).

- A Stakeholder Matrix has become the standard tool for giving a comprehensive picture of the community of researchers, potential users, buyers and influencers in an application field. On top, this information is the basis for defining target groups in dissemination and communication planning.

- Application Fields shall be selected based on the above performance indicators. Selection criteria need to be disclosed and discussed. It may be recommendable to focus on two or three application areas and do a rather detailed analysis there (see chapter 4.3.2 “Application Fields”).

- Target Market Sectors to clarify the market to which project’s results are aimed.

- SWOT Analysis highlighting strengths and weaknesses of the solutions produced.

- Lean Business Canvas, to summarize the main elements of the business strategy.

4.4 Exploitation Strategy

4.4.1 Target Outcomes

The (target) outcome table (Table 10) describes the features of the method / model / simulation software / material / coating / process / product / service that are the (intended) outcome of SMART BEAR. Characteristics can be for instance for tangible results (material, coating): Technology Readiness Level (TRL), composition of alloy, grain size, stability measures, amount available.

<table>
<thead>
<tr>
<th>Outcome Characteristics</th>
<th>Innovation aspects</th>
<th>Comparison to other solutions available</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SMART BEAR @HOME HUB</strong></td>
<td>Interfacing with: · Smart home devices · Patient devices</td>
<td>The Home Hub will include a small computing platform which will allow data-processing and</td>
<td>-</td>
</tr>
</tbody>
</table>
Including:
- IoT enabler and platforms
- Medical devices
- Wearables
- Smarthome IoT
- Sensors
- Smart environments infrastructure

The system will also include Personalised Monitoring functionalities as well as model-driven data collection and local analytics.

This local computational unit will allow better integration of data coming from different sources.

**SMART BEAR Cloud**
- Model-driven data analytics
- Personalised and codecision making
- Interfacing with clinical experts

This module extends data analysis capabilities provided by the local computation unit and provides functionalities such as personalised monitoring as well as decision support.

Decision support systems are currently not available to caregivers through monitoring applications.

### 4.4.2 Stakeholder Matrix

Table 11 presents the main stakeholders identified with project outcomes in mind. For each of the we have started to identify their main needs and how project’s outcomes address those needs.

<table>
<thead>
<tr>
<th>Stakeholder</th>
<th>Stakeholder’s Needs</th>
<th>How <strong>SMART BEAR</strong> Addresses those needs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elderly people</td>
<td>Need for monitoring at home, provision of guidance, interaction with caregivers</td>
<td>Monitors specific parameters through sensors and at-home devices. Analyse data and patterns, store data.</td>
</tr>
<tr>
<td>Healthcare professionals</td>
<td>Collection of information relevant to provision of grounded advice</td>
<td>Store relevant data based on patient profile, allows professionals to interact with the system to get better vision of subject profile.</td>
</tr>
<tr>
<td>Elderly families</td>
<td>They need to know their</td>
<td>Can access to the intelligent personalized</td>
</tr>
</tbody>
</table>
relatives are monitored and supported | monitoring being update about person’ condition at home.

Industrial community | The value of monitoring tools increase as they can be part of a system which, by combining various data, multiply the value of single data alone. | SMART BEAR is a platform capable of integrating different sensors and monitoring tools. Producers find an opportunity for promoting the use of their own tools

Research and academic community | There is a need for quality data and combined data as a base for research and investigation | SMART BEAR enables collection of data from multiple sources as well as data analysis and aggregation.

4.4.3 Application fields
The main application fields for SMART BEAR are defined in the proposal:

- Monitoring of elderly people at home,
- Personalised suggestions for elderly people based on information gathered by personalised sensors,
- Provide recommendations to home management crew for improving life quality of the elderly.

4.4.4 Target Market sector
Table 12 summarizes the target market groups addressed.

<table>
<thead>
<tr>
<th>Target Market</th>
<th>Description</th>
<th>Characteristics, why it is interesting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assisted living</td>
<td>As the average age of population is raising, we have to avoid, or delay as much as possible hospitalization of elderly for assistance.</td>
<td>It is important to develop solutions for improving the quality of life of elderly at home, monitoring them and providing them with the support and advice they need.</td>
</tr>
<tr>
<td>Health Service Professionals</td>
<td>Professionals need information about their patients and they need information provided within the right framework, in a way which fits their working habits and constraints.</td>
<td>SMART BEAR is a flexible platform that can be used for monitoring different pathologies and provide professionals with an environment for monitoring patients easily.</td>
</tr>
<tr>
<td>Mental Health Professionals</td>
<td>Elderly are sometimes affected by mental issues in relation to their chronic conditions. Detecting these</td>
<td>Being able of monitoring the patient at home is important for mental health professionals. Providing a set of tools</td>
</tr>
</tbody>
</table>
issues and monitoring them when the person is at home is difficult. that enables that would open new market opportunities.

Elderly People

Elderly at home need to feel safe. On the other side, their families, need to know their beloved ones are safe and under control. SMART BEAR can fit the space provided by this need for safety.

4.4.5 SWOT Analysis
Exploring the business environment is an important part of any strategic planning process. Environmental factors, both internal to the project and external to it, are usually classified according to four labels:

- Strengths,
- Weaknesses,
- Opportunities and
- Threats

The goal of this analysis, which will be improved throughout the project, is to provide information helpful in matching consortium resources and capabilities to the competitive environment in which the project outcome will be exploited. Hence it is instrumental in strategy formulation.

The SWOT table (Table 13) is applied to project outcomes, considering the SMART BEAR platform as a whole.

<table>
<thead>
<tr>
<th>Strengths</th>
<th>The sources and capabilities that can be used as a basis for developing competitive advantage.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• The SMART BEAR platform is flexible enough to adapt to the specific needs of elderly with different health issues and lifestyles.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Weaknesses</th>
<th>The absence of strengths may be viewed as a weakness.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Require integration of multiple devices that may change based on the peculiar condition of the elderly.</td>
</tr>
<tr>
<td></td>
<td>• A framework at home has to be set-up for the SMART BEAR platform to be effective. As easy and simplified this may be, it is a barrier for the final user.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Opportunities</th>
<th>The external environmental analysis may reveal certain new opportunities for profit and growth.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Ongoing diffusion of smartphones and personal sensors throughout the population.</td>
</tr>
<tr>
<td></td>
<td>• People are becoming more and more accustomed to use smartphones and smart-watches to monitor themselves and being motivated.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Threats</th>
<th>Changes in the external environment also may present threats to exploitability</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Changes in privacy regulations may affect the usability of SMART BEAR tools</td>
</tr>
</tbody>
</table>
4.5 Potential Intellectual Property Rights and IPT Management Plan

The management of IPR is strictly ruled by the Consortium Agreement (CA Section 8, Results) which includes all provisions related to the management of IPR including ownership, protection and publication of knowledge, access rights to knowledge and pre-existing know-how as well as questions of confidentiality, liability and dispute settlement. In the CA the Partners have identified the background knowledge included and excluded.

The CA regulates the ownership of results according to Grant Agreement Article 26.2 with some additions:

“In case of joint ownership, the joint owners shall, as soon as possible and in any case within a six (6) months period as from the date of the generation of such Results, endeavour in good faith to establish a written separate joint ownership agreement regarding the a) action for filing application(s) for intellectual property rights in such joint Result, including the decision as to which Party is to be entrusted with the preparation, filing and prosecution of such application(s) and in which countries of the world such application(s) for intellectual property rights are to be filed, and b) the division of related costs, and c) exploitation and licensing of such jointly owned Results and the division between the joint owners of any royalties or other benefit derived therefrom on a case by case basis. As long as a separate joint ownership agreement has not been agreed upon or should the joint owners fail to reach an agreement within the above-stated six (6) months period, each of the joint owners shall be entitled to Exploit the joint Results as it sees fit, and to grant non-exclusive licenses, without obtaining any consent from, paying compensation to, or otherwise accounting to any other joint owner, unless otherwise agreed between the joint owners. It is understood between the Parties that the activity and the results of the Exploitation made before the signature of the joint ownership agreement shall not be relied on as against the other joint owners or limit the rights of the other Joint owners. The terms and conditions of the joint ownership agreement shall not be significantly harmed by the Exploitation activity of the joint owners [4].”

The CA also regulates the transfer of results ownership. Each Signatory Party may transfer ownership of its own Foreground following the procedures of the Grant Agreement (GA Art. 30). Each Signatory Party may identify specific third parties it intends to transfer the ownership of its Foreground to. The transferring Party shall, however, at the time of the transfer, inform the other Parties of such transfer and shall ensure that the rights of the other Parties will not be affected by such transfer.

Any addition after the signature of the CA requires a decision of the Coordination Board and the Steering Committee.

4.6 Open source policy

As clearly stated in the Grant Agreement, “SMART BEAR intends to enable commercial partners to build closed-source solutions based on open source components and to minimise the difficulty of the potential customer to understand a licence”.

Coming to results, the consortium commits to making as many outcomes as possible according to the Open Source framework.

4.7 Individual Partner Exploitation plans

4.7.1 CNR

4.7.1.1 Organizational Background

CNR-ICAR, Institute for high-performance computing and networking, is an Institute of the National Research Council, which belongs to the Department of Engineering, ICT and Technologies for Energy and Transport. CNR-ICAR is present on the national territory with three offices in Rende, Napoli and Palermo. CNR-ICAR offers
innovative solutions in terms of research, technology transfer and high education in the area of intelligent systems with complex functionality (cognitive systems and robotics, knowledge representation, extraction and reasoning, human-computer interface, optimisation) and high-performance computing (cloud computing, parallel and distributed environments and advanced technologies for the internet). Significant applications are developed in the areas of e-health, energy, security, bioinformatics, cultural heritage, smart cities.

It was founded in June 2002 by the union of the Institute for Systems and Computer Science of Cosenza, the Research Center for Parallel Computing and Supercomputers of Naples and the Study Center on the Computer Networks of Palermo. Today its research activity is focused on four thematic areas: cognitive systems, distributed systems and internet of things, knowledge and data and bioinformatics.

Although geographically distributed, today CNR-ICAR, thanks to an internal reorganisation process, is a single large institute, where each site has developed and developed its own scientific identity. Rende has as its objective the research and application of computer technology to improve the quality of life of urban areas (Urban computing); Naples produces research and develops technologies in the field of electronic health (E-health), Palermo is mainly engaged in developing ICT technologies for the maritime sector (Maritime). The theme of cultural heritage is transversal and involves the entire Institute.

The operative instrument with which the Institute carries out its research activity is represented by nine laboratories: Advanced Analytical on Complex Data; Translational Bioinformatics; Computational Intelligence; Cognitive Robotics and Social Sensing; Computational Sciences and Data; Cognitive Systems; Smart Data and Models; Smart Pervasive and Distributed Systems; Engineering Complex and Smart Systems.

CNR-ICAR is an institute in continuous numerical and qualitative growth. Today it has about 135 staff units with different kinds of contracts. Thanks to its growing reputation in the national and international scientific community and the efforts made in recent years in the internationalisation process of its activities, many professors and researchers coming from universities and research centres all over the world, require the status of the associate researcher. In the same way, CNR-ICAR promotes and encourages both the collaborations of individual researchers with other international research institutions and collaborations in more structured forms, involving the entire Institute, through memoranda of understanding on specific research topics.

CNR-ICAR is engaged, together with companies, institutions and other research institutions in prestigious national and international projects and annually produces numerous scientific publications published in the most important scientific journals. Its activity is disseminated through participation in the most prestigious international conferences.

4.7.1.2 Foreseen exploitable results

The main interest of CNR-ICAR in the SMART BEAR research activities is in the area of big data analytics techniques and infrastructures, also considering the strict privacy requirements to comply for use in the eHealth sector. Moreover, CNR-ICAR is interested in human-interaction aspects of the design of eHealth applications for the elderly.

4.7.1.3 Exploitation Strategies

CNR-ICAR will exploit the results of the SMART BEAR project in its active research activities and future projects focusing in the area of advanced ICT solutions for healthcare and will support its partners in the transition from research to exploitation. The results of the project will also be exploited in the large public-private consortia focused on eHealth solutions, such as eHealthNet, Continua Health Alliance, HL7 International and European Connected Health Alliance, in which CNR-ICAR is an active participant.
4.7.2 ATOS

4.7.2.1 Organizational Background
ATOS is an important player in the sector of Healthcare services. Investments in healthcare services are already a signal of identity of ATOS, with a special brand called ATOS Healthcare operating mainly in UK (and shortly as a worldwide brand), with services ranging from change management, procurement, hosting and software development, through to disability assessments and occupational health. ATOS Healthcare offers consulting and technology in the areas of business intelligence, lean transformation, Health IT, Patient safety and data quality. This is complemented by a wide spectrum of solutions in primary care or disability assessment, to name some examples (visit www.atoshealthcare.com for further information).

4.7.2.2 Foreseen exploitable results
ATOS has already started to obtain benefits directly associated to its participation in SMART BEAR project in two different ways:

- ATOS is improving its image and relationship with partners and this means a potential increase in its participation in other projects as well as new business opportunities. ATOS has a very strong business development for health orientated to consultancy and the participation in SMART BEAR allow our professionals to enlarge their offer to the final customers. This intangible part is however a direct economical factor derived from the work in the project and the success of our company on it.

- The other direct exploitable results are consequences of the tangible work in the project. They are Consultancy services and exploitation of the software results. Consultancy is related to the consultancy services as integrators and the know-how acquired in the integration process of SMART BEAR. We will explore our software results in the following ways: a) Integrating parts of project as components in new services and ad-hoc developments to fulfil specific clients’ necessities b) By maintaining the SMART BEAR platform for monitoring patients and citizens in very different situations.

4.7.2.3 Exploitation Strategies
The main aim is to integrate a platform which will be used by a health service to manages large numbers of patients with different requirements. ATOS is an IT company, not a healthcare provider. It is not our business to compete with hospitals or healthcare providers nor to treat patients, rather it is our business to equip healthcare providers with the tools and the systems they use in the treatment of patients. For that reason, ATOS is interested in providing resources, expertise and solutions, third party software and consultants to host, manage, integrate and maintain the IT solutions for our clients.

Under this model, it makes sense for ATOS to have a major role in integrating a platform for mass use by the healthcare sector through which multiple solutions can be used. Combining solutions for specific diseases, through common interfaces, databases, IT administration and so on makes it feasible for a healthcare provider, or National Health Service, to make a singular investment in patient focused ICT solutions and places ATOS with a compelling value proposition which plays to our strengths. Multiple solutions, both those proprietary to ATOS and third parties, will be incorporated into the SMART BEAR platform as per the needs of the specific healthcare provider.

ATOS foresees to exploit SMART BEAR in two ways:

- The integration of eHealth services and technologies into SMART BEAR platform: ATOS has identified that certain knowledge gained in SMART BEAR could be applied to existing ATOS solutions to enhance them. The skill and knowledge can easily be transferred to other projects and prototypes in which ATOS is working on. In addition, certain aspects of SMART BEAR design can be included in new services with different target groups. This business model is primarily intended for healthcare institutions which are interested in providing at-home treatment of patients, but can be extended to customers
using other systems, in which case it is the knowledge and expertise of SMART BEAR partners that would be commercialized.

- Use of the know-how generated by the project. ATOS will provide to our customers with the following services:
  - Technical Consultancy services. ATOS will offer consultancy services for the customization, integration, training and support of the SMART BEAR platform as well, system’s maintenance (updates, up-grades), etc.
  - Knowledge Consultancy services. With the expertise and knowledge acquired, ARI will also offer to the Business Units of ATOS in Spain, the Business Development Units of ATOS in Europe, and our existing and new customers the possibility of using the know-how acquired in integrating SMART BEAR platform.

4.7.3 PHILIPS

4.7.3.1 Organizational background

Royal Philips is a leading health technology company focused on improving people's health and enabling better outcomes across the health continuum from healthy living and prevention, to diagnosis, treatment and home care. Philips leverages advanced technology and deep clinical and consumer insights to deliver integrated solutions. Headquartered in the Netherlands, the company is a leader in diagnostic imaging, image-guided therapy, patient monitoring and health informatics, as well as in consumer health and home care. Philips generated 2018 sales of EUR 18.1 billion and employs approximately 77,000 employees with sales and services in more than 100 countries.

HealthTech Global resource constraints on health systems are driving a shift to value-based healthcare to reduce cost, increase access and improve outcomes. At the same time, ageing populations across the globe and the rise of chronic conditions are driving a shift of care to lower-cost settings and the home. In parallel, more and more people are looking for new ways to proactively monitor and manage their health. And the digitalization of healthcare is shifting value from devices to software and services. These challenges can only be met through new, more integrated forms of care delivery across the health continuum, with a shift away from today’s focus on acute care and late-stage interventions.

In an increasingly connected world, the convergence of Philips’ consumer technologies that facilitate healthy living, medical technologies that help clinicians to deliver better diagnosis and treatment, and cloud-based technologies that enable data sharing and analysis, will be a key enabler of more effective, lower-cost integrated health solutions. This fits very well with our core strengths in professional healthcare and in consumer health and well-being.

Philips have defined five priority areas: personal health, definitive diagnosis, minimally invasive guided therapy, population health management, and connected care delivery. More and more, we are teaming up with hospital and health systems to understand their needs, provide integrated solutions, and engage in multi-year cooperation to drive improvements in terms of patient outcomes, quality of care delivery and cost productivity.

Going forward, Philips will further drive the benefits of scale in our current businesses while delivering additional growth from continuing investments in innovation.

4.7.3.2 SMART-BEAR Foreseen Exploitable Results

Philips is interested in a wide-range of SMART-BEAR solutions and activities. Firstly, our main effort will focus on developing solutions for data integration and harmonization, for data quality assessment and improvement, and for analytics, decision-making and personalized interventions. The project is as well an opportunity to gather deep insights into the clinical requirements and the patients’ needs in the chosen domain. The project’s
objectives to develop digital care services focused on the specific needs of old adults, developing as well enabling IoT connectivity solutions, is of particular interest.

Finally, the SMART-BEAR end-to-end integration and the planned large scale pilots with end-users will offer a unique opportunity to validate the technology and the developed services, to refine our understanding of the real needs of the users (clinicians and patients), and to accurately measure the added value of the SMART-BEAR solutions.

4.7.3.3 Exploitation Strategies

Philips has set a strategic priority to deliver intelligent AI-driven solutions in healthcare, supporting our customers to deliver high quality and value-based care. Philips will exploit the results of the project in multiple ways. Firstly, we will as well leverage our technological results in distributed AI algorithm development, data harmonization and clinical decision support applications for our existing businesses in population health and chronic disease management, where the innovation can create significant additional value. The SMART-BEAR project is as well an opportunity to collaborate, learn, showcase our technology solutions, create partnerships, and reach new customers through demonstrations in key events. Finally, if the consortium activities will lead to the creation of a new entity (start-up) we will be open to license our relevant assets created in the project at a fair fee in the new entity, or we will explore participation in such an entity when aligned with our business strategy.

4.7.4 IBM

4.7.4.1 Organizational Background

No matter where discovery takes place, IBM researchers push the boundaries of science, technology and business to make the world work better. IBM holds a leadership position when it comes to the creation, development and manufacture of the industry’s most advanced information technologies, including computer systems, software, networking systems, storage devices and microelectronics. IBM participates in and contributes to the work of standards consortia, alliances, and formal national and international standards organizations. Where appropriate, IBM adopts consensus technologies in order to maintain openness, interoperability, and application portability. IBM Israel Science and Technology Limited, better known as IBM Research – Haifa (HRL), was first established in 1972. Since then, the lab has conducted decades of research vital to IBM’s success. The lab is one of 9 research laboratories located outside of the United States, and has close working relationships with IBM Israel and its twin research laboratory in Zurich. In Haifa, 75 per cent of the technical staff have MSc or PhD degrees in computer science, electrical engineering, mathematics, or related fields. Employees are actively involved in teaching at Israeli higher education institutions and in supervising post-graduate theses. R&D projects are being executed at IBM Research – Haifa today in areas such as cloud computing, Big Data analytics, cognitive computing, IoT and mobile platforms, healthcare informatics, security, quality and verification, object storage, and more. The lab has three departments: The Cognitive Analytics and Solutions department develops advanced cognitive computing analytics techniques, explores the human aspects of cognitive computing and develops innovative solutions for various industries. The department specializes in handling data of all types, ranging from traditional structured data to semi-structured data, such as logs, text data, social networks, audio, images and video. In particular, the department develops novel analytic solutions to extract insight from this data and to augment human cognition in a variety of domains including healthcare, life science, telco, commerce, and enterprise knowledge management. The Computing as a Service department targets the transformation of IT through cloud computing, while leveraging skills in quality, security, storage, systems, and software-defined environments. A key focus direction for the department is the emerging field of cloud computing and the areas of virtualization, networking, systems management, and storage. In support of this direction, we leverage Open Source projects such as OpenStack, Open DayLight and KVM. The department pioneered and lead several EU Cloud projects including Reservoir (Cloud Federation), VISION Cloud (Advanced Object Stores), and FI-WARE (Advanced OpenStack based Clouds). In the area of technologies and tools for software quality and code optimization, the team pioneered and led
related EU projects, including FITTEST, CloudWave and HIPEAC network of excellence. Another strategic direction of the department is the area of quality and security. The department applies various techniques in software analysis, constraint satisfaction, formal methods, machine learning, and knowledge representation to create a wide set of security and quality related solutions. In the domain of hardware verification, we develop advanced tools and technologies spanning the entire spectrum of dynamic and static functional verification, including solutions for high-end designs focusing on the verification of microprocessors, multiprocessor designs, and large systems. Lastly, we have significant activity in analogue and mixed-signal designs, targeting technologies such as E-Band communication and THz Imaging. The Mobile and Industry Solutions department focuses on thought leadership in product, solutions delivery, and strategy in the areas of mobile platforms and tools. Our activities include rapid application development tools, wearable computing, cloud middleware (availability and scale), IoT technologies, location services, operational decision management and event processing, spatiotemporal visual analytics, system engineering methods and tools, operations research (e.g., water management) across industries such as aerospace and defence, and healthcare.

IBM Research – Haifa (HRL) has led and participated in numerous milestone FP7 and H2020 projects, including the RESERVOIR project, which addressed the challenges of cloud-scale service deployment, the VISION Cloud (Virtualised Storage Services Foundation for the Future Internet), addressing an optimised Cloud infrastructure for storage intensive services, ENSURE, which addressed long term digital storage on the cloud, and CloudWave, on Agile Service Engineering for the Cloud. IBM is currently leading RestAssured, which deals with Cloud security.

HRL is a centre of competence in cloud computing and analytics, supporting IBM worldwide in this area. HRL works closely with other IBM-acquired security companies, such as Trusteer and Guardian and will bring its rich experience in applied research, project management and technical leadership to the project.

4.7.4.2 Foreseen exploitable results

The IBM Haifa Research Lab intends to adapt the SMART BEAR collaborative security framework to more cloud use cases where secure collaboration is required, e.g. micro services-based cloud offerings and cloud infrastructures for verticals such as health, automotive, education, etc. Project team will aim to commercially benefit IBM clients and partners across Europe and beyond by enhancing the IBM vision of strong bottom-up cloud security. In particular, IBM owned Cloud hosting company SoftLayer and cloud offerings such as Bluebox and IBM Cloud have the potential to benefit from the SMART BEAR framework. In addition, IBM will benefit from SMART BEAR by extending and specializing the CogNETive technology and service for the security use case.

4.7.4.3 Exploitation Strategies

IBM will target the dissemination of project results through publications in international cloud and security related academic and industrial conferences, and participation in industry events both outside and inside IBM. IBM Haifa Research Lab team will present regular internal updates on project development to corporate executives, IBM cloud solution owners and product groups, seeking for valuable feedback and engagements. IBM will strive to disseminate the project outcomes through interaction with open source communities, improving project visibility and awareness of the project results.

4.7.5 ARIA

4.7.5.1 Organizational Background

ARIA is an in-house company of Regione Lombardia, Lombardy region local government and is in charge for all IT activities required by Lombardy Region. Even though ARIA is responsible for the soundness and effectiveness of whole Regional Information System, Health-related IT is the company’s core business.
ARIA has designed, developed and is currently running the regional Health IT network, the “SISS”. The SISS is used by:

- roughly 9.9M citizens (99% of total population),
- 150k Health and Social Care Operators
- 2.6k Chemist’s shops
- 35 Public Hospitals
- 15 Local Health Units
- Over 2.5k private healthcare service providers

The outstanding experience of ARIA in the healthcare IT domain is representing an added value for exploiting some of the SMART BEAR results versus the healthcare information system.

Lombardia Informatica manages the citizens’ EHR (Electronic Health Record), a portal where citizens can access all their ECDs (Electronic Clinical Documents) including all discharge letters and lab examination results that have been published by authorised health care operators. Within this repository, citizens themselves may upload documents which they want to have in their EHR, making them available to authorised health care operators if they decide so. Upload to the EHR is not allowed to people minor of age.

4.7.5.2 Foreseen exploitable results

Beside knowledge generation, the main outcomes for ARIA will be:

- Exploration of opportunities for interfacing external apps with the eHealth Regional Network (considering all aspects including regulations, privacy and technical issues as well)
- Testing ways to enrich the citizen personal folder inside the Regional eHealth Network with data relevant to him and his caregivers.

4.7.5.3 Exploitation Strategies

ARIA is a Lombardy Region In House Company and the first and most important exploitation is that Lombardy Region may adopt Project’s results which become part of the cloud based Lombardy Region system.

To foster exploitation, stakeholders’ engagement is of utmost importance. ARIA officers, are in direct contact with officers in the Regional system and in several other institutions. Personal contacts happen on a regular basis and are an important channel for communicating project goals and results. Internal memorandums are also used to disseminate the project internally and are distributed using internal mailing lists as well as the Extranet. Moreover, specific meetings are organised at the appropriate moment with specific subjects (managers and executives) inside the Regional System.

Given the nature of ARIA and the fact that it has a captive market – Lombardy Region and public bodies – it is very unlikely that there will be commercial exploitation. In case of exploitation it will probably be for internal usage.

4.7.6 ROP

4.7.6.1 Organizational Background

The responsibilities of the Department of Public Health (DPH) are mainly the preservation, improvement of health and well-being of the population whether that is local, global, (non)-mobile through multiple collaborations and practices which aim to protect and promote the health and well-being of the individual so he is made competent to have control over his own health and improve it in a contemporary work environment. Other responsibilities include adjusting to changes, the control and protection of occupations and (the provision of) health services with the sole and clear purpose the (non)-patients quality of life and also the needs of vulnerable group populations.
Furthermore, there is constant development of preventive, protective and promotional health programs.

The branch divisions of the DPH are the following:

- The division of occupations and health services.
- The division of Public health.
- The Division of Prevention and Promotion of Health.

Programs which are being carried out by the DPH are:

- Protection against Mosquitoes.
- Precautionary measures against Malaria.
- Awareness and protection against animal related diseases (Rhinal Fever).
- Protection against West Nile Virus.
- Health Observation which observes public and environmental health (Morbidity evaluation/Preventive programs aiming the general population/Training programs for health-care practitioners).
- Hygienic controls for detection of potential hazards in drinking water and seawater.

Preventive Programs which are also being carried out are:

- Vaccinations for all age groups.
- Study of air pollution.
- “No smoking” campaign which provides information to primary and secondary students on the harmful effects of smoking to our health.
- Allergies of the upper Respiratory system – ENT.
- “Health for all” which provides health care and is accessible to vulnerable populations.

4.7.6.2 Foreseen exploitable results

SMART BEAR project can bring significant benefits on individuals and the community, contributing significantly to improving the accessibility and quality of health services provided to citizens in need. In addition, it contributes to the development of an anthropocentric-oriented national health system focusing on the effectiveness, efficiency and sustainability of the health sector by disseminating good practice and making best use of available resources, materials and human resources.

E-health is expected to increase the efficiency and effectiveness of the services provided by health professionals, thereby helping to streamline and reduce costs. The implementation of e-Health has an impact not only on the financial sector but also on the quality of services, as traditional forms of care do not fulfil the patient’s expectations.

4.7.6.3 Exploitation Strategies

Promoting e-health solutions will make it possible to provide better care to more patients by freeing up institutional resources (hospitals, clinics, health centres, regional clinics) and reducing medical expenditure. New technologies will provide a variety of opportunities, adjusting the types of care to suit the individual needs and expectations of each patient. Geographical distances will be eliminated and the range of health services available will be widen, providing equal access even to residents living in urban areas. At the same time, the quality of care will be upgraded, delivering fast and reliable results.

Finally, our cooperation with the Greek Ministry of Health and other public health organizations will enhance the objective of the program.
4.7.7 MPF

4.7.7.1 Organizational Background

The Municipality of Palaio Faliro (MPF) is a densely populated urban centre with nearly 110,000 inhabitants and has a vivid tourism and recreational industry sector, since it has a well-developed seafront. Since 2010, a new legislative framework (KALLIKRATIS) sets out the boundaries for health and social services at regional and municipality level. Public health, prevention, health promotion, health education and social services are gradually planned, provided, financed and monitored by Municipalities in Greece although full roll-out of services is delayed due to fiscal problems. At the moment, the department of health and social affairs of the municipality operates 3 Open Centers for The Elderly, one Municipal Health Center, one community centre and one Alzheimer’s disease Support centre. These structures will be the main pool from where recruitment of participants in the project will be recruited.

In addition to the above, organisational changes aiming to integrate care to cut down costs and improve continuity of care are also put in place. The strategic inclusion of ICT services in the newly introduced integrated care services result in care provision schemes that follow the current SoA patient-centred health and social care.

MPF since the beginning of 2013, took the strategic decision to support the introduction of innovative technologies (m-health and p–health) into everyday healthcare and social care delivery. In November 2011 a pilot project commenced where early diagnosis services and health monitoring indicators in the community are provided through telecare to all willing citizens in the municipality. The telehealth model is also used to educate patients and healthcare professionals in health promotion and health prevention activities. MPF has successfully piloted in the previous 7 years two similar to SMART BEAR EU funded projects, SMARTCARE (ICT – PSP FP7 Grant) and Like stin ygeia (ESF financing).

4.7.7.2 Foreseen exploitable results

MPF will primarily exploit the results and tools created by the SMART BEAR project for the benefit of its new-old, old and very old citizens.

From a policy point of view and based on the results of SMART BEAR, MPF authorities aim at engaging more and more citizens to a healthier and more active lifestyle, to promote health prevention (primary and secondary) and to create significant digital health literacy background across the municipality.

It is envisaged that SMART BEAR solutions and practices, with the appropriate change management strategy, will be adopted among the organization’s health and social care departments and services and that new and sustainable health prevention and social engagement services will be created for those at most need for these services. The success of the project will help to change attitudes and perceptions of health and social care professionals in relation to e-health facilitated integrated care solutions.

In addition, MPF envisages to connect the practices and tools from SMART BEAR to the planned Social Innovation Strategy for the next 5 years and to connect them to other health prevention, patient self-management projects currently planned by the municipality.

4.7.7.3 Exploitation Strategies

Beyond the municipality’s boundaries, the results of the SMART BEAR project and in particular from the cross–pilot evaluation (health service delivery cost, self-management of patients, resource use utilization, satisfaction with disruptive e-health services etc), will create a knowledge basis to serve as a starting point for developing new models of care organization and possibly, financing and reimbursement modes of patient-centred care, in collaboration with the Greek Ministry of Health and EOPYY (the largest health insurance fund in Greece). It is further planned to schedule a number of meetings with the General Secretariat of the MoH in
2020 in order to set out the requirements and work description of a Working Group including the SMART BEAR Greek partners but also other relevant H2020 Project Greek Participants.

4.7.8 CSC

4.7.8.1 Organizational Background
Comunità Sociale Cremasca is a special consortium company, established in 2006 by the 48 Municipalities of the Crema district, in order to support the planning and management of social and health and social services in the Crema area.

Due to its intrinsic characteristics and the mission entrusted to it, CSC represents today an important reference point in the Crema area, as it ensures:

- local calls for tender for outsourcing activities and accreditation of institutions/companies to which citizens may apply directly (elderly home care, educational assistance for the disabled, etc.);
- support to municipalities on using and reporting public financial resources;
- district social services direct management (as child protection and disadvantaged people job placement);
- district social services coordination (as disabled institutions management, elderly institutions management, social transport, health helpline);
- activation of projects involving local/national public and private social welfare institutions, fundraising activities.

The institution plays a role in the integration between the social-health services in the elderly area constantly evaluating, implementing and monitoring the actions in-home care support, such as helpline service for home care that will be integrated with the project monitoring infrastructure. The CSC personnel, in collaboration with other local network organizations, will support the SMART BEAR activities.

4.7.8.2 Foreseen exploitable results
SMART BEAR will allow to improve the social-health care of older people through well-defined projects based on actual data. Constant monitoring will allow the system to offer guarantees in medical and social care to patients. The re-designing of healthcare follow-up will also have social implications and will offer inputs for the definition of new social and health policies.

The continuous survey of the data, allowing the control of the socio-sanitary progress of the patient, will reduce the risk of irregular events and discomforts linked to social life.

4.7.8.3 Exploitation Strategies
The project will demonstrate the importance of communication between patients and clinicians and between social and health data, to implement true integration policies as indicated in the WHO guidelines. The project will highlight the current socio-health difficulties of the elderly in facing everyday life, on which to build individualized life projects.

CSC will be able to study innovative models for managing elderly services, possibly improving effectiveness and reducing costs of hospitalization and residential care.

The large-scale patient-centred approach will allow the definition of strong prevention strategies and social-health policies at national level and beyond.

4.7.9 FCSR

4.7.9.1 Organizational Background
Fondazione Centro San Raffaele (FCSR) is a non-profit entity whose mission is the enhancement of basic, translational and clinical research in the fields of biomedical sciences and health management. Specific aims
of FCSR are to expand the knowledge on the biology of diseases, to improve diagnostic techniques, to develop innovative therapeutic protocols and to advance health services. FCSR has developed, through a master agreement, an intensive and productive cooperation with San Raffaele Hospital (OSR), one of the leading private scientific institutes in Italy: they are affiliated entities.

OSR is a private institution, recognized by the Italian Ministry of Health as a Research Hospital (IRCCS). It comprises both clinical and research activities conducted by a highly specialized and qualified hospital with 1,357 beds and a research institute with around 1,600 basic, clinical and translational scientists. The premises also host the Vita-Salute San Raffaele University, with the faculties of medicine, psychology and philosophy, which provides specialized postgraduate courses, residency programs in various medical specialities and international PhD programs. OSR performs cutting-edge science and aims at advancing the knowledge about human diseases and novel therapies through translational research. OSR can count on 11 Clinical Department, 4 Research Divisions, 4 Research Institutes, 3 Research Centres and 3 Research Areas (http://www.hsr.it/research/). In particular, OSR excellence research fields are: oncology, neuroscience, metabolic and cardiovascular sciences, regenerative medicine, stem cells and gene therapy, immunology transplantation and infectious diseases, genetics and cell biology, genomics, bioinformatics and imaging technologies, advanced technology for Health and Wellbeing.

OSR is also part of a bigger health private group, the largest in Italy and one of the largest in Europe: San Donato Group (GSD). The Group consists of 18 hospitals of which 3 are IRCCS with 5,169 beds and an amount of 3.9 million patients per year.

Since 1997, FCSR added among its significant assets a specific unit oriented to Information Technology applications in health domain. Such unit, called Center for Advanced Technology in Health and Wellbeing, is specialized in the delivery of services internally to the hospital infrastructure (e.g. person identification systems, process re-engineering, prevention, continuity of care) as well as oriented to innovative domains and disciplines (e.g. educational games, physical activity monitoring). Currently, the unit focuses on the release of services to the citizens and on the management of personalized and constantly updated information.

FCSR has been actively involved in both coordination and participation to European funded Horizon 2020 projects:

- ISEE (https://cordis.europa.eu/project/id/720571)
- SILVERSTREAM (https://silverstream.automotive.oth-aw.de/)
- PAL (http://www.pal4u.eu/)
- SHIELD (https://www.project-shield.eu/)
- DITAS (https://www.ditas-project.eu/)

4.7.9.2 Forseen exploitable results

SMART BEAR will provide an intelligent and personalised digital solution for sustaining and extending healthy and independent living by implementing an affordable, accountably secure and privacy-preserving innovative platform.

This will offer to FCSR, and Center for Advanced Technology in Health and Wellbeing particularly, a great opportunity for designing and testing an innovative smart e-health solution specifically designed for the future older population on a large scale. Indeed, the unit strives to explore and push the boundaries of smart hospital, smart city and smart life concepts through the ideation and implementation of smart services. The research carried out within SMART BEAR project could help users through technologies to better manage their health and support them in making healthier lifestyle choices especially in reference to the most basic everyday needs: eating, drinking, taking medication and staying physically and mentally fit. Moreover, miniaturized and wearable technologies able to collect individuals’ biological data as well as personal devices such as smartphones, tablets and smartwatches are increasingly more common and therefore they are part of the
SMART BEAR platform. Hence, the interactions with such technologies combined with preventative medicine could allow users to become active contributors of their state of health and wellbeing by instilling consciousness and motivation towards a healthy and active life. Furthermore, through personalized profiles, as well as strategies for the pursuit of balanced physical activity and/or rehabilitation exercises, the SMART BEAR platform could represent a very meaningful and valuable service.

Lastly, the design process of such new generation devices according to users’ needs and an ethical model able to ensure users’ trust by protecting their privacy in order to tangibly sustain the users could be guaranteed by the collaborative and inter-disciplinary approach of SMART BEAR partners.

4.7.9.3 Exploitation Strategies

Results obtained during the SMART BEAR project will constitute a solid basis for continuing the process of design, development and integration of the connected technological solutions specifically designed for elderly population started between the definition of use cases and the daily life monitoring of the European elderly.

Project methodology and results will continue to be proposed following firstly an internal line of dissemination to the different clinical and technological units of FCSR. Inside the OSR there is the DIMER, a dedicated centre where three types of rehabilitation are performed: cardiological, neurological and motor. Evaluating the SMART BEAR platform in elderly patients belonging to this centre would allow the monitoring of a series of parameters even when the patient returns home once the rehabilitation process has been completed, providing them personalized advice regarding the new lifestyle, after the hospital stay.

Secondly, addressing an external one direct to other hospitals belonging to the network to which FCSR and OSR are afferent and relative end-user associations. Thanks to the experience gained during SMART BEAR lifetime the Center for Advanced Technology in Health and Wellbeing will work at evolving the assets developed also towards other fields of application of the healthcare domain where the mixture between the medical world and the “human” side (relational, educational, behavioural) is a key determinant to pursue the betterment of the old individual’s condition and his/her quality of life.

4.7.10 CATEL

4.7.10.1 Organizational Background

The scope of Catel’s intervention (connected health resource and skills centre) ranges from telemedicine and e-health up to the large areas of medical data, artificial intelligence, connected objects, ... For a digital world that is not an end in itself but at the service of quality and relevance of cares, medical deserts, prevention and efficiency of our medical organizations! After many years devoted to promoting e-health, launching experimentations and supporting project leaders, Catel is helping organizations and territories to develop digital uses for the widest possible audience, both professionals and patients, and thus improve their daily health and well-being. Catel is a Think Tank specialized in e-health who puts its know-how and experience at the service of this transformation thanks to its expertise, training and study trips as well as its events.

Catel’s priority actions are:

- Support the organizational and economic innovations of French territories and sectors supported by Regional Hospital Groups (GHT), local authorities, associations, ...;
- Set up collectives, focus groups to co-produce reference documents (maps, quality chart of best practice, etc.) and thus carry out lobbying actions to the public interest;
- Meet specific expertise needs (medical, technical, legal, economic, change management, evaluations, ...) with institutions, companies and other digital health players;
- Act as operator, coordinator of e-health cooperation programs particularly with French-speaking countries.
The diversity and quality of CATEL's added values are made possible thanks to a strategy of loyal and renewed partnerships, which, in order to be efficient, allows the easy gathering of skills and legitimacy.

4.7.10.2 Foreseen exploitable results
Catel’s aim is to make the best possible use of the results from the SMART BEAR project in line with its 20 year old motto: "let digital technology be used by the greatest number of healthcare professionals and patients for an improved health and a better well-being."

In this context, Catel will be interested in the results obtained for improving in particular the elderly users’ quality of life and health status as well as those of the carers involved. The implementation of innovative and accessible solutions validated and accepted by users, while respecting the conditions of security and confidentiality, will also be of major interest.

Furthermore, Catel will leverage on the methodologies deployed and validated to reinforce its solutions for a successful deployment of e-health on a large scale. To do so, Catel will rely both on the experience of interventions on the spot and the knowledge resulting from R&D works implemented. In particular, an interesting line of intervention has been identified on schemes of organization favouring a dynamic cooperation between stakeholders and dissemination of uses.

4.7.10.3 Exploitation Strategies
We believe that identifying and promoting e-health best practices can ease the long-term dissemination of these uses. And this can done in a few steps: first, identifying best practices done by players, second categorizing these best practices and finally self-evaluating them by the players themselves. This will be followed by an analysis of the results and lessons learned in order to correct what needs to be corrected.

We carried out a model for France that brought together 40 best practices grouped into 8 main categories (medical, technical, economic, legal, etc.). And these categories of best practices will guide us during the SMART BEAR project.

4 levels of activities are planned:

- **Level 1**: Formalizing the medical and social needs of senior users and health professionals targeted
- **Level 2**: Qualifying technical, organizational and existing partnership solutions as well as innovative solutions
- **Level 3**: Analysis of economic aspects (investments / returns on investment, operation / development of business models), legal and regulatory compliance according to the 3 identified patient paths
- **Level 4**: Definition of sustainability conditions, evaluation, change management and communication

CATEL will promote and broadcast SMART BEAR’s results during several events such as: SANTEXPO - Paris Healthcare Week, CATEL Visio best practices in e-health, Catel Paris e-Health Strategies and e-Health Congresses around the world as well as press articles of which SMART BEAR will be the object.

4.7.11 QUIRON

4.7.11.1 Organizational Background
Quirónsalud is Spain’s leading provider of health services. Although a young brand—merge between idcsalud and Quirón took place in 2013—we have over 60 years of experience caring for people’s health and well-being.

Quironsalud represents a network that comprises over 130 hospitals, institutes and other medical facilities, located in 13 regions of Spain. We also have international presence in Dubai, Lisbon, Lima and Medellin. Moreover, in 2016, four of the main occupational risk prevention companies joined Quironsalud, that provides us with more than 300 occupational health and safety specialized centres. This makes Quironsalud the lead company providing health services in Spain and, following its merger with Helios, owned by Fresenius in 2017, we have become the Europe’s number-one health-care provider.
Quirónsalud offers patient comprehensive health care that encompasses all medical specialities. We have a highly regarded professional **team over 40,000 professionals**, the latest technology, flourishing research and education programs, and a management model based on a solid commitment to quality. Expert care and a vision of medicine based on personalization, warmth, and connection with the patient—because we believe in person-to-person health.

At Quirónsalud, we know that research and education are crucial to our commitment to continuous improvement. Only by generating and disseminating new knowledge can we better respond to our patients’ needs. We have more than 1,200 research projects underway throughout Spain. At many of our centres, we carry out important scientific work that is opening up pioneering lines of research. We collaborate with 27 universities to provide training for future doctors and nurses. Our network currently includes 7 university hospitals as well as the only private research institute in Spain accredited by the Ministry of Science and Technology. We train approximately 400 health professionals each year.

### 4.7.11.2 Foreseen exploitable results

Quirónsalud has an internal IT department which develops and integrates IoT solutions related to the Patients Portal tool. And, furthermore, we have a high number of episodes in our hospitals of people older than 65: during the 2018 we had 282,930 episodes in our hospitals with people over 65 years old. An episode of healthcare means an act done with one patient, i.e., the patient comes to the urgency room, we provide care and we diagnose heart failure.

Therefore, exploitation opportunities for Quirónsalud could include:

- Transferring results and know-how into further EU projects.
- Transferring results and know-how into national or industrial research projects.
- Developing new services based on the prototypes, methods and tools.
- Exploiting the results and know-how into new services offered by Quirónsalud to our patients and professionals through our already developed internal platform CASIOPEA.
- Improving our patient’s healthcare follow-up and therefore avoid the adverse events and increase the quality of the services we offer them.

Another foreseeable result is to attract through SMART- BEAR dissemination a wider audience of new collaborators for continuation of research effort and through this, establishing Quirónsalud as a high-value partner in the respective fields. The collaborations created through successful projects might outlive the projects and migrate to a standard research core.

### 4.7.11.3 Exploitation Strategies

**SMART BEAR** project will provide Quirónsalud with new solutions to scale up to our own Patients Portal tool and to integrate within our technological platform CASIOPEA, offering new services and an added value to our patients and professionals.

Furthermore, Quirónsalud aims to develop a Living Lab in the framework of **SMART BEAR** project, to be certified by the European Network of Living Labs, ENoLL (https://enoll.org/) for user-centred co-creation, rapid prototyping and validation of products and advanced services like CASIOPEA, integrating research and innovation processes in real-life communities and settings. Our objective will be to scale the Living Lab up to other regions and even develop a specialization of the Living Labs into Hubs (CV, mental disorders, obesity, etc.). **SMART BEAR** project and the Living Lab will therefore be a great opportunity to generate and collect new data to identify new needs from end-users and professionals, and test and validate the usability and reliability of this data for our physicians and main stakeholders, as well as the ethical implications of it. As a Living Lab, Quirónsalud will aim to take part of the Accelerator program of the EIT Health.
Finally, Quirónsalud will look to new R&D projects, initiatives and possibly new alliances among the consortia partners to exploit the project’s results and Quirónsalud’s know-how.

4.7.12 ANA

4.7.12.1 Organizational Background

Ana Aslan International Foundation (ANA - www.anaaslanacademy.ro) is a non-profit Research, Education and high-profile medical services organization, with special expertise in Aging and Brain Aging. Its mission is to integrate scientific progress into the medical and social practice of elderly care. This is achieved through promoting the holistic, integrated and personalized approach of ageing, brain ageing and related pathologies. Furthermore, the ANA has expanded its expertise in the field of applied ICT technologies for frail and dependent elderly, so that it not only helps prevent the ageing-related pathologies but promotes an active and healthy ageing.

Between 2010-2013 more than 3,500 Specialists & Nurses graduated the Brain Aging Project – the largest educational program (national coverage) aimed at promoting a modern, integrated multidisciplinary and “doctor-nurse team” approach towards the correct evaluation and early interventions in the neurodegenerative diseases (a 5 mill Euro Operational Program financed project coordinated by ANA).

In the past 10 years, ANA has accumulated extensive research, management and innovative experience as Medical Partner and Pilot Site in EU Funded Project within FP6-IST-STREP (K4CARE and SHARE-it) and AAL-Active and Assisted Living frame (MobileSage, CONFIDENCE, Mobile.Old, CarerSupport, StayActive, MyMate, SeniorTV, TSBank, PETAL, IOANNA, Ella4Life, VirtuAAL SCP, POSITIVE, frAAgiLe). ANA has also been involved in important and prestigious networking, sharing best practices and patient’s support projects (Ageing Well, LivWell and E-No-Falls).

4.7.12.2 Foreseen exploitable results

The large amount of data that will be generated in the SMART BEAR project (from the big number of elderly end-users involved) provide important opportunities in several directions:

- validation (or invalidation) of current healthcare / clinical practice models,
- further research opportunities for PhD’s on the explored areas,
- educational material for larger groups/categories of medical doctors and
- also, for elderly patients and their caregivers,
- sound assessment of the elderly’s acceptance of technological solutions in the real-life setting.

4.7.12.3 Exploitation Strategies

SMART BEAR offers ANA a unique opportunity:

- for extending to a much larger scale the experience already acquired in previous projects using technologies to the benefit of elderly patients and their caregivers,
- to contribute to the creation of new guidelines and algorithms that improve their healthcare status, decrease the burden on their caregivers and also improve the communication between patients and clinicians.
- Furthermore, the outcomes of SMART BEAR project can be exploited by ANA in order to provide the basis for building better prevention strategies and public health policies in the future in Romania.
- Another direction will be represented by the integrated medical education on the benefits of using technological solutions towards the network of GP’s and specialists already attending courses provided by ANA.
• Also, the project will provide a sound basis for various further research topics in the area of Gerontechnology for the PhD’s and postdoc researchers from ANA and other Romanian entities interested in this research area.

4.7.13 FORTH

4.7.13.1 Organizational Background

Established in 1983, FORTH is the largest Greek State R&D Centre. FORTH hosts eight major Research Institutes. FORTH, besides its pioneering contributions in the sector of Information and Telecommunications Technologies in Greece, cooperates, in the context of European and international collaborative R&D programmes, with universities, research centres and other organisations at national and international level, thus contributing to the exchange of scientific ideas and the creation and transfer of new technologies. FORTH brings in expertise related to IoT security, environment monitoring and user personalization. The strong involvement in both research- and industry-focused projects, as well as the pertinent services provided by FORTH provide thorough and up-to-date knowledge on current and emerging privacy and security issues faced by ICT systems including the Healthcare domain. In SMART BEAR is mainly involved in WP5 with the cybersecurity aspect of the SMART BEAR platform both in the design (security by design) and run time (Cyber Security controls).

4.7.13.2 Foreseen exploitable results

FORTH as a research and academic institution aims to perform high-quality research, to promote education and training, and to contribute to the development of the Information Society, at a regional, national, and European level. FORTH will incorporate SMART BEAR results and tools, within their advanced educational activities. Both PhD students and researchers will have the opportunity to work collaboratively with external stakeholders as well as to interact with state of the art cybersecurity solutions and tools. Moreover, the data that will be gathered throughout the project’s duration, after sanitization and anonymization, will be available to the research staff of FORTH for further exploitation. Furthermore, FORTH intends to publish the research achievements and innovations obtained within the project, to the scientific community through peer-reviewed publications in high quality journals and international conferences during the lifetime of the SMART BEAR. Thus, FORTH will ensure that the project will be aligned with PPP (Public-Private Partnership) activities like the Strategic Research and Innovation Agenda (SRIA), ensuring the viability of the SMART BEAR solution. Finally, the knowledge, the technologies and the network gained through SMART BEAR will be exploited in the future strategy of FORTH for applying to consequent EU-funded projects calls.

4.7.13.3 Exploitation Strategies

FORTH has adopted an evolving strategy towards promoting the commercial exploitation of R&D results by providing services, licensing specific products to industrial partners, contracting with industrial partners to jointly develop new products, and participating in start-up spin-off companies and joint ventures. The established mechanisms of FORTH will exploit the results of the SMART BEAR project. Those include the PRAXI network [S] and the Science and Technology Park of Crete [6] (STEP-C). PRAXI Network is an established technology transfer organization with long-standing experience in assisting SMEs and research organizations throughout Greece. Through PRAXI Network benefits and technologies produced by the project can be exploited by SMEs. The other initiative of FORTH, STEP-C, offers, in addition to incubating facilities and services to start-up companies with new and emerging technologies, specialized professional services that are difficult to find under one roof. Such services and facilities are geared in assisting and guiding companies in various aspects such as transfer of technological advancements into the manufacturing of innovative products and services and unleashing their potential through innovation.
4.7.14 NKUA

4.7.14.1 Organizational Background

The National and Kapodistrian University of Athens (https://en.uoa.gr/) was founded in 1837. It is the largest public institution of higher education in Greece. It is a legal entity of public law with 43 Departments and 183 Postgraduate programs of all disciplines, 158 Laboratories, 69 Clinics (included in 4 University Hospitals), 6 Central Libraries. With a student body of about 125000 undergraduate and postgraduate students, over 2000 members of academic staff and approximately 1300 administrative and secretarial staff and specialized personnel, the University of Athens is one of the largest universities in Europe.

The 1st University Department of Otolaryngology (AORL, https://entuoa.gr/) was established in 1939 at the Hippokrateio Hospital in Athens, and is the largest Otolaryngology Department in the country. It provides clinical services for all major subspecialties including Otology & Neurotologic surgery, Audiology, Head & Neck Oncology, Lateral Skull Base Surgery, Rhinology and Laryngology. It is also one of the Cochlear Implant Centers in Athens. In particular, the Audio-Vestibular Laboratory is one of the most prestigious in the country and is focused in the assessment of hearing and balance using the latest technology in audiological and vestibular research, including posturography, videonystagmography, psychoacoustic tuning curves, electrophysiological testing of hearing, otoacoustic emissions for assessment of the cochlear function and vestibular evoked myogenic potentials for the assessment of the balance organ. Multidisciplinary approach is provided, including vestibular rehabilitation. More than 1,000 patients are examined annually.

The AORL department has one of the most competitive postgraduate surgical training programs, with 15 surgical Residents. It is responsible for the undergraduate training program of Medical and Dental Students of the National & Kapodistrian University of Athens (http://eclass.uoa.gr/courses/MED332/).

The AORL department is actively involved in clinical and basic science research and has published over 130 scientific papers in international peer-reviewed journals over the last 5 years. Moreover, it is actively involved in two FP7 and four Horizon 2020 research programs:

- REGAIN (EU funded Horizon 2020 project): http://www.regainyourhearing.eu/
- UNITI (EU funded Horizon 2020 project): https://www.unity-project.eu/
- HOLOBALANCE (EU funded Horizon 2020 project): https://holobalance.eu
- EVOTION (EU funded Horizon 2020 project): http://h2020evotion.eu
- SIFEM (EU funded FP7 project): http://www.sifemproject.eu/
- EMBalance (EU funded FP7 project): http://www.embalance.eu/
- TINNET (EU funded COST action): http://tinnet.tinnitusresearch.net

4.7.14.2 Foreseen exploitable results

From a clinical point of view, SMART BEAR will provide an excellent opportunity for identifying possible correlations among varied factors. Factors that have already been studied in clinical studies of varied scale, such as medication and blood pressure, change of medication and deterioration of mental disorders, physiotherapy or serious games and balance / CVD / weight, Auditory Training or serious games and hearing or cognitive disorders, time of the year and incidence of specific medical conditions, prediction of weather (weather forecast) / actual weather and changes in behaviour / mood and social life, dietary habits and CVDs, frailty, mental or cognitive changes will be all studied among others in a large scale project providing supplementary valuable evidence.

SMART BEAR will also target a common issue for HA users, the need to revisit Audiologist for fine tuning. SMART BEAR Hearing Aids (Has) and platform will serve as a large scale implication ground for remote fine tuning, a principal feature of state of the art Tele-Audiology. The impact of remote fine tuning on user’s compliance and overall HA benefit and experience is enormous. In a higher level, knowledge and experience
Another issue targeted by SMART BEAR is the unnecessary visits to health care providers. For example, in the case of hypertension, insight on whether a patient is covered by current medication and physiological measurements are evidently within normal limits can reduce the number of unnecessary follow-up visits eg. instead of seeing a patient every 3 months, see him only in 6 months and if an irregular event occurs. This re-designing of healthcare follow-up schedule will not only create the best and most individualized healthcare to SMART BEAR users but will serve as basis on creating new medical guidelines and health policies.

Creating an online medical diary that users can use every day for describing (with the help of scroll-down predefined by clinical experts answers) specific matters of their everyday life and health challenges is an innovative way of creating patient security and privacy respecting individualized – personalized patient profiles. Further analysis of these data could also lead to the discovery of correlations with other physiological, social or environmental parameters and events.

Finally, the collection of dietary data and the creation of individualized healthy menu suggestions, along with its correlation to other epidemiological, environmental or physiological factors like sex, social status, living alone / with carer, weight, blood pressure, time of the year, physical activity etc will create an important impact on everyday routine and the overall well-being of the elderly. Additionally, long – term evidence-based health solutions could be created and provided first to SMART BEAR users and then to general population.

4.7.14.3 Exploitation Strategies

SMART BEAR project and analysis of the collected data will give insight on the use of connected technological solutions and how they can improve both self-management of everyday health challenges and communication between patients and clinician / carer. Creating new guidelines and algorithms that decrease unnecessary visits to health care providers and related structures, identifying gaps in the current way elderly’s health matters are addressed and enhancing the impact of each of the used technologies by integrating them into one unique health solution will be time and cost saving for both users and health systems. Moreover, pioneer hearing aid manufacturers will be involved so that innovative hearing aid features such as remote fine tuning are integrated in SMART BEAR project. The implication of this innovative tele-audiology feature on a large scale population study such as SMART BEAR will provide invaluable knowledge and experience on the matter. Integrating state of the art physiotherapy and serious gaming strategies in one personalized management solution according to user’s profile will help improving users’ compliance to it and enhance thus its effect. Besides the benefits in individual level, the knowledge gained through this large scale patient-centred approach could serve as the basis for building better prevention strategies and public health policies in the future.

Through our contribution to SMART BEAR design, deployment and analysis, NKUA aims to achieve important information and tools for the management of the targeted medical entities and to communicate SMART BEAR useful results and knowledge to the academic and scientific community (conferences, publications). Goal is the creation and publication of useful evidence-based material which will be applicable to the everyday clinical practice, future research and public health policies.

4.7.15 UOI

4.7.15.1 Organizational Background

The University of Ioannina (www.uoi.gr/en) was founded in 1964 in Ioannina, Epirus, in the northwestern part of Greece. Today the University has 17 departments with over 500 faculty members, 13,500 undergraduate students and more than 3,000 graduate students (MSc and PhD). The University of Ioannina has established a quality management system that is in conformance with the International Management System Standard ISO 9001:2000, as well as the Greek Management Efficiency Standard, with a scope of “Project Management of Research and Development of Technological and Other Related Programs and Activities”. 

Page 62
The work in the SMART BEAR project will be undertaken by the Unit of Medical Technology & Intelligent Information Systems (MedLab). MedLab is a highly innovative and self-contained research unit strongly activated in the fields of Biomedical Engineering and development of Intelligent Information systems. It has an internationally acknowledged excellence in conducting high quality scientific research and developing innovative Information Technology (IT) applications, products and services. Most of the Unit activities are based on international collaborations in the framework of European and nationally funded projects (FP5, FP6, FP7, Horizon 2020). MedLab’s research activities cover a variety of subjects and they are classified into the following domains: Biomedical Research, Automated Diagnosis – Processing of Biomedical Signals/Images, Development of Wearable Devices, Decision Support Systems, Bioinformatics, Multi-scale Predictive modelling, Data mining, and Big Data.

4.7.15.2 Foreseen exploitable results
UOI is responsible for developing the SMART BEAR’s Smart Home/IoT infrastructure and federation of e-Health devices. UOI will encompass all activities required to seamlessly integrate off-the-shelf smart consumer and medical devices, as well as the smart city and relevant sources into the SMART BEAR Home ecosystem, interfacing them with the SMART BEAR Hub that will be deployed for that purpose and which will be used, along with innovative applications, to relay the aggregated data to the SMART BEAR infrastructures. The SMART BEAR @Home ecosystem will be tailored to be unobtrusive and trouble-free to the extent possible, with secure out of the box configuration, and with minimal effort required to add additional devices. The device integration will be done so as to ensure the platform is interoperable with existing smart home platforms (in particular the Open Connectivity Foundation home platform and/or FIWARE), smart city infrastructures; actually by taking into account the state-of-the-art relative standards and protocols.

4.7.15.3 Exploitation Strategies
As UOI is a beneficiary from the academic sector, primarily focuses to exploit the SMART BEAR project results into a number of graduate and postgraduate (MSc courses taught by researchers involved in the project. Further exploitation will be attained by publishing the project’s result to scientific journals and participating in scientific conferences. To ensure the proper execution of the necessary steps to optimize the exploitation of the project’s results, UOI will be in close collaboration with all partners.

UOI participates into many ongoing H2020 EU projects (e.x. HOLOBALANCE), which share similar technological advancements to different parts of the SMART BEAR project. UOI has also been successfully involved to a number of other relevant EU Commission projects (H2020, CT/FP7). This long standing experience will facilitate the engagement of stakeholders involved with relevant horizontal piloting activities within pertinent EC initiatives, as well as create liaisons and synergies with other projects with complementarities to SMART BEAR.

Finally, in collaboration with the Science and Technology Park of Epirus Region, the new knowledge and technical know-how produced during the SMART BEAR project will be disseminated in both private and public sectors.

4.7.16 UMIL

4.7.16.1 Organizational Background
Founded in 1924, the University of Milan (UMIL) is a research-intensive university, offering high-quality teaching at all levels in a broad spectrum of fields. Over the years, it has succeeded in maintaining a skilful blend of tradition and innovation, adjusting to the requirements of a fast-growing society without putting aside its distinctive traits.
The university’s interdisciplinary vocation and connections between a wide range of fields result in a highly stimulating and rich offer of undergraduate, graduate, doctoral and specialization courses with Italian being the main language of teaching. There is also a wide offering of degree programs available in English.

As one of the top international institutions in terms of scientific productivity, the University of Milan’s wide range of educational and research competencies and its relationships with the business world also make it an important resource for its socio-economic context. The University of Milan is the top Italian university in most international rankings and is the only Italian university among the 21 prestigious institutions that belong to the League of European Research Universities (LERU).

As a public institution concerned with the development and progress of knowledge, the University has always been committed to research projects that influence the quality of life of citizens. Research at the University of Milan is mostly conducted in the departments and the many specialised structures, favouring the creation and growth of networks of collaboration locally, nationally and internationally.

The scientific activity involves the whole academic community from professors, researchers, doctoral students, fellowship-holders and fellows to undergraduates, in an ideal quest for new ideas.

The UMIL unit includes Fondazione IRCCS Ca’ Granda Ospedale Maggiore Policlinico (IRCCS Policlinico), as a third party. IRCCS Policlinico is a reference centre within National and International networks of Research and treatment. The hospital is also home to the Nord Italia Transplant program (NITp), that coordinates transplants for an area with over 20 million citizens and that, from 1972 to date, has made possible over 32 thousand organ transplants, with success rates at one year from transplant that exceed 90%. Together with Haematology, Neurology represents IRCCS Policlinico’s number one department in terms of Impact Factor and the intensity of clinical and pre-clinical research activity. Among the leading research topics in this area are Alzheimer disease and degenerative and neuromuscular diseases, including congenital and acquired syndromes.

4.7.16.2 Foreseen exploitable results

The SMART BEAR platform will be tested and validated through five large scale pilots, spanning five different countries and 5,000 individuals: France, Greece, Italy, Spain, and Romania. This will offer to UMIL a great opportunity for testing innovative smart e-health solutions on a large scale, studying the convergence of clinical and engineering requirements.

UMIL will learn from this project on about up to date smart solutions for evolving to improve the health and well-being of older populations and to propose evidence-based recommendations for health care professionals. This will impact both on the quality of the research outcomes achieved both in the medical and computer science areas and on the opportunities of professionalization offered in the teaching programs promoted by UMIL.

The results of the project are also positive in terms of the public engagements achievements UMIL will be able to address as the diffusion of smart health and well-being services is today a key factor for ageing societies that want to move closer to the achievement of universal health coverage keeping under control the costs of their welfare services.

4.7.16.3 Exploitation Strategies

The experimental data obtained by SMART BEAR allow UMIL to test its methodologies in a large experimental setting, including performance and stability tests, acceptance tests, and perceived quality tests. These results will also support the definition of recommendations and guidelines to be used in training activities addressed to master or Ph.D. students of multiple disciplines, and to industry.
In particular, the activities of the project will be connected to teaching activities at the UMIL master on Data science and economics and at the Ph.D. School in Computer Science at the Postgraduate School of Geriatric Medicine.

The results of the project will be exploited to foster the events and publications at the scientific and industrial levels and to contribute to WHO groups on Geriatric Medicine and to develop reports about benchmarks of IoT devices in the e-Health contest.

4.7.17 UPV/EHU

4.7.17.1 Organizational Background

The University of the Basque Country (UPV/EHU) is an integrating institution willing to produce knowledge, experience and research in order to forward them to the general public. We believe in education as a means to arouse our students’ awareness of the world and develop precious skills both for career and life. The University seeks to promote international cooperation to carry out projects that not only help the population but also provide knowledge to its participants.

As an example of the international and cooperative nature of the University, we have “EUSKAMPUS”: This private-public inter-institutional initiative was wet up with the legal standing of a foundation as it is the one that best adapts to achieving the goals of the Campus of International Excellence Euskampus project. Thus, Euskampus Fundazioa aspires to become a key element to drive Basque R&D&I and its internationalisation, with a clear vocation of social responsibility and integration with its territory. The mission of Euskampus Fundazioa is therefore to design, coordinate and executive measures that, with the collaboration of all its partners, consolidate and accelerate this internationalisation and modernisation process of the University of the Basque Country - Euskal Herriko Unibertsitatea by means of the implementation of the Euskampus project.

Moreover, we seek to extend our international influence working on a 'brain-gain' basis and establishing cross-border campuses. With a view to reinforce our services and boost technological platforms, our General Research Services Unit (SGiker) commands the acquisition and handling of all research-structures.

4.7.17.2 Foreseen exploitable results

UPV will analyse the European and national legislation and jurisprudence to be able to respond to legal and ethical problems that may appear during the project. The security, privacy and confidentiality of the SMART BEAR platform will be explored, investigating the implementation of privacy and security controls that protect all connections and accessories of the platform. These integrated mechanisms will have a design based on privacy and security. So that, the SMART BEAR platform, as it seeks to be a security and privacy model at all times, requires a continuous legal evaluation of the security and privacy measures of the platform through dynamic evidence.

In short, during the 4th pilot, we are going to:

- Identify the needs of the SMART BEAR project
- Analyse the European and national legislation and jurisprudence
- Make a legal analysis of health data
- Create the informed consent form
- Create personal data pseudonymisation process
- Cooperate with other partners
- Create a thesis of protection of personal data in health
4.7.17.3 Exploitation Strategies

Resources have been allocated to contract through public contest a researcher (Personal Investigador Contratado, PIC), Idoia Landa, which will be addressing ethical and legal issues on the SMART BEAR project in her doctoral thesis. The three-year contract will provide her with transferable skills on frail and vulnerable population health data protection. The thesis aims to provide different protocols and control rules for health data circulation within Europe in the light of the new Regolament and local rules. Furthermore, a Summer Course on frailty and data protection will be organized and which has already been accepted in the 2020 UPV/EHU Summer Course. This Summer Course will address main technical as well as legal challenges posed by the SMART BEAR project. Invited participants will be members of Pilot and other SMART BEAR project researchers, as well as Spanish data protection authorities. Furthermore, in month 48 of the project, a Doctoral Thesis will be produced on IoT for home treatment data protection issues. Results will be published in Spanish and English both at domestic as well as international specialized Reviews.

4.7.18 CITY

4.7.18.1 Organizational Background

City, University of London was founded in 1894 and is based in the City of London, hosting more than 17,000 students and more than 2,000 staff, from more than 150 countries. CITY is in the top 5% of world universities (Times Higher Education World University Rankings 2012). More than 80% of the research activity of CITY in the fields of Computer Science and Informatics was assessed as being of internationally excellent or world-leading level by the last national research assessment (REF 2014) in the UK. CITY participates in SMART BEAR, through the Research Centre of Adaptive Computing Systems (CeNACS). CeNACS was formed in 2014 bringing together the Software Engineering Group (2000-2013) of the Department of Computer Science, the Information Security Group of the Department of Electrical and Computer Engineering, and newly recruited faculty. The Centre has around 35 members (2 full professors, 2 associate professors, and 2 assistant professors; 5 research fellows/assistants and 26 PhD students) and conducts research on adaptive cyber systems covering all layers in the implementation of such systems and with a special focus on the preservation of security and quality properties in system adaptation. Key areas of competence of CITY, which relate to the objectives and work-programme of SMART BEAR, include cyber systems monitoring and adaptation, cyber-certification, security service-level agreements, cyber-insurance, security-by-design, static and runtime system verification techniques and mechanisms, machine-learning, knowledge extraction, and big-data analytics.

4.7.18.2 Foreseen exploitable results

CITY’s main interests in the SMART BEAR project is around the technological knowledge and advances with respect to designing and operating eHealth systems (e.g., requirements, designs), security & privacy (e.g., techniques and mechanisms for supporting GDPR in a cost-effective manner), and big-data analysis techniques and improved infrastructure designs for optimizing those while increasing support for the strict security & privacy requirements that exist in this sector.

4.7.18.3 Exploitation Strategies

CITY is interested in exploiting the results of the project in its taught postgraduate (MSc) courses on cybersecurity, big data science, health informatics, and software engineering, where students will be able to see advanced case studies and solutions for a domain as important as healthcare, as well through its doctoral (PhD/MPhil) program. CITY is also interested in consulting services to SMEs and other companies that would want to enter the market, as well as in exploring other ways of monetizing the results of the project (e.g., forming start-ups around specific project outcomes).
4.7.19 ICSS

4.7.19.1 Organizational Background

The Institute of Communications and Computer Systems (ICCS) is associated with the School of Electrical and Computer Engineering (SECE) of the National Technical University of Athens (NTUA) and is being supervised by the Hellenic Ministry of Education. ICCS is a non-profit Academic Research Body established in 1989 by the Ministry of Education in order to carry out research and development activities in the fields of all the diverse aspects of telecommunications, computer systems and techniques and the application of ICT technologies in a variety of areas such as transceivers, radar and generally electromagnetic sensors, satellite and wireless communications, neural networks, software and hardware engineering, telematics and multimedia applications, transport applications, control systems, robotics, biomedical engineering and medical informatics, electric power, renewable energy sources, and distributed generation and management systems. The personnel of ICCS consist of a number of research scientists and more than 500 Associate scientists (including Ph.D. students). The research carried out in ICCS is substantially supported by SECE University Professors. There are 13 research units and 28 laboratories presently active in ICCS. ICCS is very active in European co-funded research activities and has been the project manager of many National and EU projects in various programs (e.g. EC, ISIS, RACE II, ESPRIT, IES, ACTS, INFOSEC, BRITE-EURAM, STRIDE, MIP-Informatics, Telematics Applications, IST, GROWTH, QoL, JOULE, ENERGIE, AAL, FP6, RISE etc.) in all of the above-mentioned research areas.

The Biomedical Engineering Laboratory (BEL), which is established in the School of Electrical and Computer Engineering of NTUA, complete in 2020 thirty years of scientific activity. BEL had the presidency of E-Health Forum 2014, which was organized under the auspices of the Greek EU Presidency in cooperation with the European Commission, and was one of the founders of HL7 Hellas, as well as in its presidency for 10 years. BEL was a founding member of the Greek Biomedical Technology Company and a member of the International Federation of Medical and Biological Engineering (IFMBE). These activities cover a wide range of Basic and Applied Research in specialized Biomedical Engineering and Medical Informatics fields, focusing on the development of applicable end-products. The main research areas of BEL’s expertise include: Medical Data Management Systems, Medical Informatics, Health Informatics, AI base Health solutions, data analytics and Health care, Big data in Healthcare, Telemedicine, Biorheology - Clinical Hemorheology, Neural Networks in Medicine Biosensors, Virtual Reality in Medicine and Healthcare, Radiation-Tissue Interaction, Ultrasound Technology as well as Biosignal and Medical Image Processing. BEL also has sound experience in using chaotic algorithms and Decision Support Systems based on Neural Networks, signal processing and data fusion algorithms, but also SOA Architecture, Web services and Interoperability Standards. Other R&D activity of the lab is in the areas of Health data security, Medical Image Processing, Bio-signal Processing, Home Care Systems and Services and e-Health Applications and smart home for AAL.

4.7.19.2 Foreseen exploitable results

The SMART BEAR individual Exploitation approach, that will be adapted throughout the project lifecycle, will attempt an in-depth investigation of the full spectrum of exploitation opportunities – not just product development. Although exploitation evolves in parallel with the technical work, it should offer a different view of the project results, namely support to us to think about the results and identify exactly what we have to offer as well as find and reveal the value of the results for our scientific expertise. Exploitation is not the same as commercialisation and the exploitable results from European projects such as SMART-BEAR may arise in many forms. Such exploitation opportunities could include:

- Transferring results and know-how into further EU projects.
- Transferring results and know-how into national or industrial research projects.
- Developing new services based on the prototypes, methods and tools.
• Exploit the knowledge acquired throughout the project’s lifetime in order to support the educational process at both graduate and post-graduate level through transfer of knowledge activities as well as exposing students to international scientific events where SMART BEAR is presented.

• Exploit the knowledge and the new technologies and products that are to emerge from SMART BEAR in order to possibly establish spin-off companies and be part of centres of excellence and participate as sponsors in incubator opportunities as start-up companies lack many resources, experience and networks and incubators provide services which helps them get through initial hurdles in starting up a business.

Another foreseeable result is to attract through SMART- BEAR exposure a wider audience of new collaborators for continuation of research effort and through this, establish BEL-NTUA as a high value partner in the respective fields. The collaborations formed through successful projects might outlive the projects and migrate to a standard research core.

4.7.19.3 Exploitation Strategies

ICCS intends to exploit the research effort allocated to SMART- BEAR as a means of creating additional teaching material for both graduate and post-graduate courses offered within the school of electrical and computer engineering and specifically the Biomedical Engineering Laboratory.

As an acclaimed academic and research institution ICCS considers its PhD candidates as its major assets in terms of fresh ideas and passion in research. Large number of publications and new PhD candidates with material to elaborate upon create a tradition in the respective field where ICCS can also thrive.

4.7.20 STS

4.7.20.1 Organizational Background

Sphynx Technology Solutions AG is based at Zug, Switzerland and has also offices in Cyprus. The company offers products and solutions, and consulting services, in the areas of cyber intelligence, analytics, incident response, assurance and certification. Sphynx has developed a security and privacy assurance platform to enable customised and continuous assessment of the security and privacy of your enterprise and comprehensive risk management based on automated vulnerability analysis, threat analysis, penetration testing, continuous monitoring and hybrid assessment models. Its platform incorporates also intrusion detection, fraud management, and incident response. Sphynx offers customised services for enterprise security assurance. These enable its clients to set up security assessments, based on industrial and international standards (e.g., cloud, network, smart metering standards). The assessments are based and leverage on outcomes of the built-in analytic capabilities of the Sphynx’s security and privacy assurance platforms. The Sphynx security and privacy assurance platform enables the configuration of security assessment, reporting and certification to the needs of different stakeholders ranging from senior management to external auditors and regulators. The consulting services offered by the company support its customers in setting up and security and privacy assurance program covering the specific needs for their enterprise, establish the connectivity required with their enterprise systems in order to obtain the evidence required for the different types of assessment, configure the reporting of the platform to customer needs, and train the personnel of its customers in overseeing the assurance program using the SPHYN’S platform.

4.7.20.2 Foreseen exploitable results

SPHYNX is particularly interested in the two types of solutions that SMART BEAR will develop and/or integrate. The first includes the solutions that will be developed and/or integrated to support IoT connectivity in the domain of smart digital care services for the elderly. The second is the data analytics and decision marking solutions that will be developed and/or integrated to offer personalised interventions for the participants of the pilots of the project. The particular perspective of its interest in these two types of solutions is the development of assessment models and related event emission and control mechanisms that will be necessary for ensuring the end to end security of the solutions.
4.7.20.3 Exploitation Strategies

SPHYNX will use the outcomes of SMART BEAR for strengthening its service and product portfolio. Its plan is to augment the capabilities of its security assurance and certification platform in ways that allow it to support the delivery of precise and trustworthy digital healthcare services realised through wearables and medical devices, smart home environments and backend cloud infrastructures. From a technical perspective, the strategy of SPHYNX for achieving this is to develop assurance models for continuous and hybrid assessment of the security and privacy of digital healthcare services, and appropriate event emission capabilities for the components (e.g., wearables, medical devices, smart home components) that realise such services which could communicate to its security assurance and certification platform the information required for executing the necessary security and privacy monitoring/testing checks. From a business perspective, SPHYNX’s strategy is to promote its security assurance and certification platform to different stakeholders in the digital healthcare services provision chain, including for example healthcare service providers, public regulators and insurers, and offer consultancy and customisation services required for using it as a comprehensive framework for establishing and executing continuous security and privacy assurance programmes.

4.7.21 SV

4.7.21.1 Organizational Background

Created in 2003 by Dr. M. Rebiai, STREAMVISION S.A.S is a key enabler in the emerging market of digital video broadcast and rich media applications in proposing to audiovisual, educational and hospitality markets very performing and evolving interactive offers and products. STREAMVISION is also specialized in the design and implementation of quick medical diagnosis systems enabling the capture of body information and medical analysis via non-invasive sensors. Combining the mastering of the complete signal processing chain with the evolving needs of the silver economy, STREAMVISION has developed a quick medical diagnosis support armchair, called Check@flash, enabling the quick capture of body information and medical analysis via non-invasive sensors. Check@flash armchair’s triple aim is first to provide a performing and quick answer to medical regional deserts by bridging the gap between the remote location and the nearest medical centre, second to reassure or avoid the possible health problems of a dynamic and always more autonomous population and third to provide a convenient medical data capturing tool of elderly people in nursing homes for an easier medical follow-up. Placing the e-health armchair in nursing homes or in emergency department will allow medical helpers to spend less but more qualitative time on patient. The complete chain of care and medical follow-up will also be optimized. It also gives freedom thanks the remote accessibility of medical data from the patient to the doctor. The STREAMVISION Company was awarded in July 2014 by the Worldwide Innovation Challenge for its e-health armchair, by European Commission in March 2015 of SME Instrument phase 1 and with 3 Seals of Excellence for phase 2. More info on www.streamvision.com.

4.7.21.2 Foreseen exploitable results

SMART BEAR Project is dealing with patients, clinicians, health connected objects and data processing systems. This is similar to what STREAMVISION is doing with its e-health armchair prototype. It impacts the same targeted audience and covers the same fields. Moreover, the issues that could face SMART BEAR Project will also be faced by STREAMVISION when operating its e-health armchair product and deploying it throughout Europe. The SMART BEAR project is a wonderful testing ground for STREAMVISION, who will thus be fully prepared to launch its e-health armchair avoiding the traps that e-health objects use by patients and health professionals could encounter when deployed. STREAMVISION will learn from this project on how patients perceived connected tools and how practicians are ready to integrate this new medical approach in their traditional way of acting. STREAMVISION expects to identify the best ways of handling health connected objects with the various audiences so as to re-use these practices for its own health products. Beyond the best practices learnings, STREAMVISION will enrich its contacts with lots of future prospects, with the national health authority and organisms, with many key partners dealing in the same health field. This will give the company a very good visibility and reference that STREAMVISION intend to leverage.
4.7.21.3 Exploitation Strategies

SMART BEAR’s experimentation and data analysis will allow STREAMVISION to better understand the use of connected objects for the patient, the doctor and the family. This analysis will highlight the acceptability or not of the health connected objects by the patient, the reliability and the practicality for the physician and the ethical side of the project. On the social level, SMART BEAR will enable STREAMVISION to measure the adaptation and the rationale of connected tools with health disorders and well-being requirements. The correlation between these different elements will allow STREAMVISION to identify possible recommendations for the use of these connected objects with a population similar to the one STREAMVISION faces with his e-chair. The company’s e-health strategy developed will leverage SMART BEAR’s results and analysis allowing STREAMVISION to bring credit and references in its own e-health dissemination and deliverables. These results will also be beneficial for STREAMVISION to make it more visible in the medical and health trade community.

4.7.22 ITSS

4.7.22.1 Organizational Background

IT Support Solutions is a company founded in 2013 in Romania with the objective to provide integrated IT services (server administration, IT consulting, WEB administration) to companies that have chosen to outsource their IT department. We provide support for companies that are located all over the world with our remote support solutions. We implemented professional back-up solutions so critical business data is safe all the time. ITSS provides support for implementing new technologies for more than 5 years:

- Wireless communications between relay tower and fixed locations;
- VPN configurations between locations or mobile users (encrypted tunnels, certificate authentication);
- Servers security services;
- Web security implementations and back-up;
- Custom web applications;

4.7.22.2 Foreseen exploitable results

The SMART-BEAR individual Exploitation approach, that will be adapted throughout the project lifecycle, will attempt an in-depth investigation of the full spectrum of exploitation opportunities – not just product development.

We are considering the following strategies:

- Transferring results and know-how into further EU projects.
- Developing services based on methods and tools.
- Exploit the knowledge and the new technologies and products that are to emerge from SMART-BEAR in order to possibly develop web applications of e-health.

Another foreseeable result is to attract through SMART- BEAR an increase in the company awareness.

4.7.22.3 Exploitation Strategies

The results of the project will be exploited to serve as basis for the future online applications in the e-health area.
4.7.23 INNOVATEC

4.7.23.1 Organizational Background
Innovatec Sensing & Communication S.L. is an engineering SME focused on Research and Development of ICT-related devices, systems, and services. Innovatec was founded in 2006 by a group of engineers coming from an extensive R&D background, including activities at National and International levels for many years.

Since then, the company has established itself as a major player internationally in its provision of top value technologies, working either for private companies or for the public sector. It has successfully expanded its activities to a wide range of sectors: industrial control & automation, medical devices, advanced textiles, wearable monitoring, environmental monitoring, visual interfaces, and ambient assisted living, among others.

These activities involve custom hardware and software/firmware development, from a role as a consultancy or project manager, up to providing built-in complete systems and devices, as well as undertaking any project from conception to completion. Innovatec is a member of the International Bluetooth SIG. Innovatec has participated in FP7 (REPLAY, SolarDesign), AAL (MyMate), SME Instrument (t-Clinic) and Eurostars projects (HAIOPS, iLight), being currently the coordinator of two of them. Innovatec has also participated in other international projects (Eureka, Iberoeka, ISIP India). At a Spanish national level, Innovatec has been a partner in projects such as Prometeo, Preventic, On-Time, Hesperia, Sagaz, and many more related to emergencies. Innovatec staff also participates in other FP7 and H2020 projects, assisting in their conception, preparation, coordination, or management, such as SmartSet, ElderGames, Effels, etc. Before Innovatec was established, most of its current managers and senior researchers had already experience on FP6 and FP7 projects, even at project coordinator level. Innovatec was awarded a prize by the Spanish Ministry of Innovation for its project Scutum, a collaborative project with India to develop a product to reduce the Malaria infection. This system was tested by the Vicente Ferrer NGO. Innovatec Sensing & Communication S.L. is ISO13485 and ISO9001 certified. This demonstrates how Innovatec strives to reach the highest quality standards on a daily basis. Innovatec will act as the partner responsible for the technical part of the pilot in Spain monitoring and assisting on the use and outcomes of the project devices.

4.7.23.2 Foreseen exploitable results
Innovatec has extensive experience in the development and implementation of e-health solutions, having collaborated with both hospitals and technology providers in pursuit of improving the quality of life of citizens.

Having said that, SMART BEAR would bring the possibility to strengthen the cooperation with a great number of key actors in the e-Health sector. That means, rubbing shoulders with some of the big hitters in the care industry in Europe while enabling the company to increase its visibility at a European level.

On the other hand, the involvement of Innovatec in the Spanish pilot enables to work with an important network of hospitals such as QuironSalud while delving into the implementation of a large scale pilot with such an important number of users. This will definitely mean a great networking opportunity for the future.

As mentioned above, Innovatec develops its own range of e-health solutions. Participating in SMART BEAR can become a priceless experience on how to successfully bring this type of complex solutions into the market. E-health market is one of the most competitive and complex to access, having important entry barriers and numberless of legislation and certification procedures to fulfil, that’s why SMART BEAR could take the lead and become an amazing example which Innovatec could learn from.

This pilot will provide Innovatec with an insight about the difficulties of implementing this type of tools in real conditions and to know first-hand the end-user perception about this type of solutions as well as the problems users have to face. Introducing this type of innovations in traditional work routines or lifestyles will require of some dose of persuasion in front of both reluctant medical experts and end-users.

Last but not least, Innovatec expects to identify the best practice of handling integrated e-health devices with the different types of users so as to reuse the know-how acquired for its own health products.
4.7.23.3 Exploitation Strategies

This massive piloting will serve as an acid test for finding out the level of acceptability by the general public in front of the eHealth solutions provided by SMART BEAR as well as its level of usability and the reliability and the practicality for physicians and the ethical implications of the data collected within the project.

During the collaboration with hospitals from QuironSalud network implementing SMART BEAR, Innovatec will be able to identify new needs both for users and hospitals and probably new technological opportunities beyond the project, giving the company the opportunity to develop new solutions that can meet these needs. After the project, it is expected that new R&D projects, initiatives and maybe new alliances among the consortia partners may arise.

From all this collaboration with Quirón and this project, Innovatec will be able to offer SMART BEAR to more hospitals and implement this solution, optimizing the process thanks to all the knowledge acquired within the project.

In addition, Maintenance and support services can be offered by Innovatec to Quiron during the exploitation of the results, once the project comes to an end.

4.7.24 ATC

4.7.24.1 Organizational Background

Founded in 1987, ATC is an Information Technology Company (SME) offering solutions and services targeting specific sectors incl. the Media, Banking and Retail Sectors, Utilities and Public Sector Organisations as well as horizontal solutions focusing on Content Management, Enterprise Software, Web Applications, Human Capital Resource Management and eLearning, and Mobile Applications. The activities of the Company span among several countries in EU, Eastern Europe and CIS countries, as well as the Balkans.

Having acquired ISO 9001 certification since 2000, the company provides a broad spectrum of value-added products and services such as consulting, customer training, installation and maintenance, warranty and post-warranty services, SLA projects, project management, and professional support. ATC has also been certified with ISO 27001:2005 for our Information Security Management system applicable to Design, Development, Implementation and Support of ICT solutions and digital services, as well as for Technical, Business, Consulting and Project Management Services in the ICT domain.

Central to the Company’s strategy is the conduction of vivid Research and Development, focusing both in improving current Products and Solutions, as well as in exploring new technologies for future growth. All ATC own products and services are based on early prototypes and/or “proof of concept” obtained through R&D Projects, whether funded by the Company, the Greek State or the European Commission. The ATC Innovation Lab (http://ilab.atc.gr/) carries more than 25 years of expertise in Research and Development. The focus is on innovation aspects, which are often overshadowed by research concerns, and on turning promising ideas into concrete and robust products, in a cost and time-efficient manner. Having incubated most of the current commercially oriented ATC business units we are committed to continue along this successful path: Discover or conceptualize Innovation first, then turn it into working systems through intense and continuous involvement in cutting-edge research projects. The focus is primarily given in areas that can offer the next big advance to ATC’s commercial offerings, but also in discovering new domains and create the next company targets.

4.7.24.2 Foreseen exploitable results

ATC will focus on the development of the SMART BEAR mobile application, an endeavour which will give the company significant insights into the smart IoT as well as digital healthcare ecosystems. Moreover, the user-centered approach followed in the project will allow the company to gain important insights on user acceptance and usability aspects from a large number of participants. These will allow the company to exploit the knowledge to enter the above mentioned new markets and improve its product portfolio as a whole.
4.7.24.3 Exploitation Strategies
ATC will benefit from the results by consolidating key knowledge in mobile development, smart IoT as well as digital healthcare ecosystems, thus improving and differentiating its commercial offering by adding novel functionalities. ATC intends to use and adapt the project results in its commercial projects, improving existing and new products. Beyond that, ATC will explore the opportunities to deploy commercial tools in the health sector, possibly in coordination with the consortium partners.

4.7.25 Bird & Bird

4.7.25.1 Organizational Background
Bird & Bird (2B) is an international legal practice with over 1,350 lawyers and legal practitioners worldwide. 2B specialises in combining leading-edge expertise across a full range of legal services including advice in specific sectors and legal practices, including on information technology and in the fields of security, privacy, and data protection.

2B has 30 offices in key business centres across Europe, the Middle East and Asia, and is strategically well placed to offer local expertise within a global context.

As an international firm 2B excels in providing global advice. The 2B lawyers deliver expertise based on its in-depth local knowledge, excellent understanding of the law and cross-border experience.

2B’s expertise in the field of information technology is driven by its deep industrial knowledge of business processes and innovation. Universally recognised as market leaders in the information technology sectors, the Chambers Global legal directory currently ranks 2B as the leading technology law firm in Europe and Asia amongst an elite group of five globally. It is trusted advisor to many of the most valuable tech companies in the world.

4.7.25.2 Foreseen exploitable results
2B has a high number of clients involved with disruptive technologies, both on the provider side and on the customer side, including in relation to the life sciences and health sectors.

Several international leading companies have been assisted by the firm on issues relating to connected health, including on privacy-related issues, on judicial and extrajudicial matters, and more general with their aim of providing novel, yet legally compliant, products and services on the EU market.

In the context of its work within the SMART BEAR project, 2B will be able to keep abreast of the many legal and regulatory changes. It is also able to position itself (or strengthen itself) on the legal market as a market leader by researching the most innovative legal issues and providing legal advice in relation thereto, with a practical and business mind. Not only does this provide to 2B a competitive advantage and enables it to position itself towards its international clients, but it also gives it the ability to showcase its first-hand knowledge and expertise and to get involved in EU policy-making and further advise its international clients.

It follows from the foregoing that 2B expects its legal reasonings and advices based on and derived from the work performed in the SMART BEAR project to be exploitable.

4.7.25.3 Exploitation Strategies
Business development opportunities are expected by leveraging on the results and the practical know-how gained during the project. This should hopefully allow enlarging 2B’s current work in relation to its targets and reduce investments in relation to the research of novel legal issues. For instance, in relation to privacy in the connected health sector, the research performed on the application of new obligations (and in particular under the GDPR) could be re-used in other contexts and for an array of targets.
4.7.26 NOVA

4.7.26.1 Organizational Background
The UNINOVA Research Institute (www.uninova.pt) is a multidisciplinary, independent, and non-profit research institute employing around 180 persons, located in the metropolitan area of Lisbon. It was formed in 1986 by the Faculty of S&T of the University Nova de Lisboa (NOVA FCT - www.fct.unl.pt), a group of industrial associations, a financial holding, and up to 30 companies. It is an active partner of Madan Parque (www.madanparque.pt), a business facilitator and accelerator, incubating Micro and SME’s through several layers of support to entrepreneurial activity. The main aim of UNINOVA is to pursue excellence in scientific research, technical development, advanced training and education. By working closely with industry and universities, technological innovations are transferred into profitable business concepts and existing products are further developed to match new industrial requirements. Due to its tight connection with the University and Madan Parque since UNINOVA foundation, it has hosted and supported the development of several PhD thesis, as well as the creation of several successful spin-offs. UNINOVA’s areas of expertise can be summarized as follows: microelectronics, materials & processes, telecommunications and reconfigurable and embedded systems; energy efficiency (including renewable energies, modern electric energy processing, intelligent buildings and Smart Grids), industrial and intelligent control and decision support systems; collaborative networks, interoperability (including strategies for interoperability and information integration using standards, standards’ reuse and harmonization) and intelligent decision-based systems.

4.7.26.2 Foreseen exploitable results
UNINOVA will exploit SMART BEAR project results in different perspectives: academia, education material, research and knowledge transfer to the industry (Interoperability, easy and efficient integration of new platforms in the area of eHealth and wellbeing). UNINOVA will integrate the project results in the Doctoral and Master Science Programs in Electrical and Computer Engineering. This allows having these advance research programs not only in the edge of the state of the art, but also with a strong component of technological knowledge related with the eHealth market and EU strategy.

4.7.26.3 Exploitation Strategies
Knowledge transfer to the industry is one of the main challenges that UNINOVA takes as a basis for its exploitation in the industrial market. SMART BEAR results, namely the ones related with the interoperability, sensor technology, balance disorder and home monitoring applications, will bring novel approaches and technology suitable to be exploited through consultancy/partnership in the areas of eHealth, health, wellbeing interoperability and industrial markets. Additionally, due to its membership at the university technology park (Madan Parque) and to its direct industrial partners’ network, UNINOVA intends to exploit the project’s results through these channels. The objective is to motivate some SME’s to establish partnerships with UNINOVA for new research projects and/or consultancy activities, hence benefiting from advanced developments in the area of SMART BEAR project. When the User Scenarios are more developed it will be possible to indicate in an operational point of view, our exploitation strategy for the particular applications to be developed.

4.7.27 SRS

4.7.27.1 Organizational Background
Secretaria Regional da Saúde – SRS - (Regional Secretary of Health)’s mission is to define Madeira regional policy in the health sector and exercise the corresponding normative tasks, promote its implementation and evaluate the results. The Regional Government of Madeira (Governo Regional da Madeira) is constituted by the Presidency, the Vice-presidency and the regional secretaries (equivalent to ministries).

SRS has been involved in several health projects: National Health Survey with Physical Examination (INSEF), in cooperation with Instituto Ricardo Jorge; National Serological Survey (ISN), in cooperation with Instituto
Ricardo Jorge; Childhood Obesity Surveillance Initiative (COSI Portugal); Vector Monitoring Network (REVIVE), which aims to monitor the presence / absence of vector species in Portugal (particularly in Madeira region); Smart4Health EU project via the Madeira Regional Government, that encompasses the Regional Secretary of Health and the Regional Secretary of Tourism (that together with UNINOVA are partners of Smart4Health. These participations are of special relevance to the Regional Government towards the development of innovation in the area of Health in Madeira.

4.7.27.2  Foreseen exploitable results
SRS will exploit SMART BEAR project results in different perspectives: clinical, healthcare and health policy.

4.7.27.3  Exploitation Strategies
Bridging the health sector in Madeira with the most advanced health innovation, and in this way supporting the implementation in the field of innovation is one of the strategies that can be exploited by the results generated in the project.

SMART BEAR results, namely the ones related with the balance disorder condition, home monitoring applications, and technology innovation to support the patient will bring novel approaches to be exploited through partnerships in the areas of health and wellbeing. When the User Scenarios are more developed it will be possible to indicate in an operational point of view, our exploitation strategy for the particular applications to be developed.

4.8  Joint Potential Exploitation Plans
In this section we use the standard “Lean Canvas” in order to demonstrate the joint business plan for the SMART-BEAR project. This canvas is a variation of the traditional “Business Model Canvas” [7] that has been already applied to the project and is available in the Technical Annex of SMART BEAR GA [1]. The lean version used here, is more focussed on customer needs and will provide a grounding for future exploitation work. The overall idea is to start looking at SMART-BEAR platform as a whole, built around specific needs. This approach should help defining the best possible exploitation strategy and will evolve along the project. The Business Model Canvas for SMART-BEAR is presented in Figure 21.
**Lean Canvas – SMART-BEAR**

<table>
<thead>
<tr>
<th>Problem</th>
<th>Solution</th>
<th>Unique Value Prop.</th>
<th>Unfair Advantage</th>
<th>Customer Segments</th>
</tr>
</thead>
<tbody>
<tr>
<td>For improving the quality of life of the elderly, it is important the development of monitoring systems at home (Ambient Assisted Living with technology enabled care systems). The development of these systems still lag behind because of several reasons: technology issues, economic aspects, integration standards and so on.</td>
<td>SMART-BEAR will bring about a complete system leveraging on existing technologies and components, targeting the most relevant physical issues affecting the elderly that are related to the following areas: Hearing Loss, Cardiovascular Diseases, Cognitive Impairments, Mental Health Issues and Balance Disorders.</td>
<td>Use monitoring sensors in order to observe and identify working and health conditions of elderly at home. Personalised suggestions for elderly's health improvement based on their personalised sensors and historical data and home conditions sensors data. Provide recommendations to home management crew in order to improve the conditions of the elderly.</td>
<td>Use of already existing components and intelligence available on the local hub to provide immediate feedback and response to specific events.</td>
<td>Smart home living assistance sector management, Elderly, Health Services professionals and scientists, Companies and organizations providing assistance at home</td>
</tr>
<tr>
<td>Key Metrics</td>
<td>High Level Concept</td>
<td>Channels</td>
<td>Early Adopters</td>
<td></td>
</tr>
<tr>
<td>We are currently defining them during requirements analysis and functional architecture definition.</td>
<td>The SMART-BEAR platform will allow technology providers the opportunity to increase the value of their components which will become more usable thanks to a platform which put together domain experts, health care providers and data providers to offer their services assisting elderly people.</td>
<td>Direct collaborations with key stakeholders in the related domains</td>
<td>To be defined</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cost Structure</th>
<th>Revenue Streams</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mainly: development, infrastructure management, research and customisation.</td>
<td>Training on framework. Licence to use the platform. Consulting</td>
</tr>
</tbody>
</table>

*Figure 21: SMART BEAR Business canvas*
5 Standardization

Standardization is an important aspect of SMART BEAR project. Standardization activities of SMART BEAR include both the adoption of existing standards in the relevant domains, as well as follow up on such standards and actively contribute to the evolution or creation of new ones. This is of paramount importance since standardization offers systematic and organised approach to deal with project execution, as well as a reference terminology that often stems from the consensus of different stakeholders, thus helping us to use concepts that are commonly understood by the community both within and outside the project consortium. On the other hand, the wide spreading of the expertise included in the consortium, the nature of the data that will be acquired as well as their analysis leaves opportunities for SMART BEAR to contribute to standardisation activities. Several consortium members are engaged in standardization processes and have the intention to communicate SMART BEAR outcomes to standardization initiatives and communities (a list of foreseen initiatives and communities is provided later on in Section 5.3). This will be accomplished through concept papers, deliverables, and use cases results, through the respective information channels and standardization representatives from the partners involved in the project.

5.1 Standardization Approach

The ability to communicate and transfer project outcomes into standardization bodies and initiatives is a great opportunity to disseminate the results of the project. This kind of dissemination supports to anchor the project achievements in the research, and industry community as well as to provide new business opportunities. To achieve this there is a long process to walk thought until a contribution to a standard comes true. Most of the standardization bodies do not accept results, advice, and recommendations from research and innovation projects. Results can only be feed through the well-established channels. The standardization process consists of several steps:

- **Step 1:** results and recommendations will be manifested in deliverables, white papers, and publications.
- **Step 2:** These documents can be offered to the respective standardization representatives and delegates by delivering white papers and deliverables. In this step the exploitation of the External Advisory Board members and consulting of other international organizations needs to be done. This should be a role for respective Standards Developing Organizations (SDO) members and delegates (which are not necessarily participants of the project) of the participating companies.
- **Step 3:** external interest and possibly support will be needed to support the SDO involvements. Project results should be discussed in a brother and wider group within the SDO.
- **Step 4:** concludes the process. The specifications are done based on embedding the results into existing and new specifications.

Step 2 and 3 are crucial since in those steps a lot of effort is required to bring a critical mass of interested parties together and start the discussion within the SDO, and get a reasonable number of supporters to finalize the specification and/or standard contribution.

5.2 Standardization activities overall aim

Standardization involvement is one of the most important elements towards a high project impact as well as demonstrating the technical achievement of the project. SMART BEAR aims to have a continuous involvement in various standardization activities in the widest possible sense, being aware of the new standardization mechanisms offered by the open-source paradigm, by both using open source software for the project development and the further distribution of project results. The standardization involvement in SMART BEAR is classified in three categories:
• **Direct contribution**: SMART BEAR team members are directly involved in the working group of a standardization body/initiative as a delegate and project’s results are directly contributed to the relevant standardization activity by the involved team member. Normally this is very seldom. In big companies the delegates are not involved in research projects but have intensive information exchange.

• **Indirect contribution**: SMART BEAR team members are not directly involved but the partner’s organization has delegates in the respective and relevant working group of a standardization body. Relevant results can be contributed to standardization by using the partner’s established processes through the delegates.

• **Observing**: Some standardization bodies are working on topics that are not in the core of SMART BEAR but nevertheless of relevance. In that case the consortium will monitor and observe standardization progress.

### 5.3 Standardization bodies, initiatives and working groups

SMART BEAR consortium is already involved in standardization bodies and initiatives. Table 15 identifies standardisation bodies/initiatives that SMART BEAR consortium members already participate.

#### Table 14: Standardisation bodies/initiatives that SMART BEAR consortium members already participate

<table>
<thead>
<tr>
<th>Body/group/initiative</th>
<th>Consortium Partner</th>
</tr>
</thead>
<tbody>
<tr>
<td>IEEE Engineering in Medicine and Biology (EMBS)</td>
<td>UOI</td>
</tr>
<tr>
<td>European Alliance for Medical and Biological Engineering &amp; Science (EAMBES)</td>
<td>UOI</td>
</tr>
<tr>
<td>International Federation for Medical and Biological Engineering (IAMBE)</td>
<td>UOI</td>
</tr>
<tr>
<td>Technical Committee of Information Technology in Healthcare</td>
<td>UOI</td>
</tr>
<tr>
<td>Editor in Chief of IEEE Journal of Biomedical and Health Informatics</td>
<td>UOI</td>
</tr>
<tr>
<td>Associate Editor for Computers in Biology and Medicine</td>
<td>UOI</td>
</tr>
<tr>
<td>Member of the ECHAlliance (European Connected Health Alliance - the Global Connector for Digital Health)</td>
<td>ANA</td>
</tr>
<tr>
<td>Ro-Health Cluster (Romanian Health Cluster)</td>
<td>ANA</td>
</tr>
<tr>
<td>European Alzheimer's Disease Consortium (EADC)</td>
<td>ANA</td>
</tr>
<tr>
<td>European Association for Predictive Preventive &amp; Personalized Medicine (EPMA)</td>
<td>ANA</td>
</tr>
<tr>
<td>B3 Action Group on EIP on AHA</td>
<td>MPF</td>
</tr>
<tr>
<td>HL7 Italy, affiliated to HL7 Europe and HL7 International</td>
<td>CNR</td>
</tr>
<tr>
<td>UNINFO Commission of Medical Informatics, federated to UNI-CEN-ISO</td>
<td>CNR</td>
</tr>
</tbody>
</table>

The wide spreading of the involved sources and expertise, the nature of the data acquired and their analysis leaves opportunities for SMART BEAR to contribute to standardisation activities. The following table includes foreseen standards groups and initiatives where SMART BEAR can contribute.
Table 15: Foreseen standards groups and initiatives where SMART BEAR can contribute

<table>
<thead>
<tr>
<th>Standard</th>
<th>Weblink</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEN ISO 13606 standard for Electronic Health Record Communication</td>
<td><a href="http://www.en13606.org/">http://www.en13606.org/</a></td>
</tr>
<tr>
<td>ETSI TR 102 764 eHEALTH; Architecture; Analysis of user service models, technologies and applications supporting eHealth</td>
<td><a href="https://www.etsi.org/deliver/etsi_tr/102700_102799/102764/01.01.01_60/tr_102764v010101p.pdf">https://www.etsi.org/deliver/etsi_tr/102700_102799/102764/01.01.01_60/tr_102764v010101p.pdf</a></td>
</tr>
<tr>
<td>ETSI SR 002 564 Applicability of existing ETSI and ETSI/3GPP deliverables to eHealth</td>
<td><a href="https://www.etsi.org/deliver/etsi_tr/102700_102799/102764/01.01.01_60/tr_102764v010101p.pdf">https://www.etsi.org/deliver/etsi_tr/102700_102799/102764/01.01.01_60/tr_102764v010101p.pdf</a></td>
</tr>
<tr>
<td>eHealth Standardization Coordination Group (eHSCG).</td>
<td><a href="https://www.itu.int/en/ITU-T/studygroups/com16/ehscg/Pages/default.aspx">https://www.itu.int/en/ITU-T/studygroups/com16/ehscg/Pages/default.aspx</a></td>
</tr>
<tr>
<td>The ISO/TC 215 Technical Committee</td>
<td><a href="https://www.iso.org/committee/54960.html">https://www.iso.org/committee/54960.html</a></td>
</tr>
</tbody>
</table>

Moreover, during the project lifetime, SMART BEAR will monitor standardization bodies and EU directives and specific contributions will be considered. The following bodies have been identified so far by the consortium:

- The eHealth Standardization Coordination Group (eHSCG) [8], supported by ITU-T Study Group 16, maintains a list of standards in both technical and non-technical areas of eHealth on the WHO website, with the main initiatives summarized in the ITU-T standards report. SMART BEAR will investigate all standards and initiatives identified and related to the envisioned intervention services based on IoT-enabled decision support systems.
- The ISO/TC 215 Technical Committee [9]: ISO’s Technical Committee 215 addresses health informatics. ISO/TC 215 focuses primarily on electronic health records. Various Working Groups (WGs) within TC 215 address topics such as data structure, messaging and communication, security, pharmacy and medication, devices, and business requirements for electronic health records.
6 Conclusion

The current deliverable is the first deliverable of WP13 and presents the dissemination and communication strategy and plan to raise awareness about the project concept, developments and findings to all key stakeholders. The project’s website, the presence in social media (Twitter), the distribution of Newsletters, publications to high-impact journals and conferences, workshop participation and organization are some of the key dissemination activities described in this document. Furthermore, the impact creation in the main pillars of the project are presented, the exploitation strategy as well as the standardization activities foreseen during the project duration.
7 References