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AAL PROGRAMME

December, 2016

Impact Assessment Information Gathering for the Ambient Assisted Living Joint Programme

Analysis of survey responses

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1 Executive summary

European Member States founded the Ambient Assisted Living Joint Programme (AAL JP) at the end of 2007. Currently 22 countries constitute the AAL JP. These countries provide an annual contribution of approximately €35 million to fund projects in the AAL domain. The AAL JP also leverages additional public and private investment. Call 1-5 provided grant funding for a total number of 131 projects that involved on average 8 project partners. Project partners comprise of SMEs, larger enterprises, universities, end-user organisations, and research and technology development (RTD) organisations.

The types of AAL solutions or components that project participants developed or contributed to is wide ranging. AAL solutions are identified as a combination of products and/or services that are bundled in order to deliver a real solution to enhance the quality of life of older people. AAL components can be combined with other existing products and services to deliver innovative AAL solutions. A component can be any discrete device or software module of a system that can be used, re-used and adapted to the specific requirements of multiple AAL solutions. Moreover, AAL solutions and components may have a range of functionalities; for example, they can cover reliability/security, flexibility, personalisation, interoperability, and accessibility.

The aim of this report is to summarise the socio-economic impact of the AAL JP funded projects, as reported by project participants. Impact is assessed against a set of key impact indicators: collaboration with end-users and with enterprise and research organisations, partnerships in value chains, commercialisation of AAL solutions and components, provision of AAL solutions and components to end-users, follow-on investment for innovation activities, revenue generated from new AAL solutions or components, protection of intellectual property, and the creation of spin-offs and start-ups. A survey of participants with completed AAL JP funded projects was conducted between November 2015 and-February 2016, and 91 responses were collected about 50 AAL JP funded projects out of the targeted 63 projects. We analysed the survey responses as a sample of funded projects and corresponding participants. Note that the following headline results are presented at participant level and hence these should be considered as 'lower-bound' estimates for funded AAL JP projects.

- 75% of AAL JP funded project participants continued to collaborate with primary, secondary and/or tertiary end-users while testing, implementing or improving the AAL solution or component that was developed in the funded project
- 68% of AAL JP funded project participants continued to collaborate with enterprises and RTD organisations in the development or market launch of AAL solutions or components after the end of the funded project
- 32% of AAL JP funded project participants are members in a new value chain and/or joined an existing value chain
- 40% of AAL JP funded project participants commercially launched an AAL solution or component and/or plan to launch an AAL solution or component in the next two years
- 29% of AAL JP funded project participants provide AAL solutions or components to end-users
- 35% of AAL JP funded project participants received financial investment from public or private third parties for follow-on innovation activities
- 41% of AAL JP funded project participants generated revenue from AAL solutions and components and/or expect revenue growth
- 17% of AAL JP funded project participants have actions to legally protect the AAL solution or component
- 12% of AAL JP funded project participants created a spin-off as a result of the AAL project

Survey respondents have an overall positive opinion on the degree to which the AAL JP is achieving the three high-level objectives of the programme:

- **Better quality of life for older persons: individual and family**. More than 60% regarded the following either as highly effective or as effective: increasing connectedness, maximising autonomy, enhancing well-being, increasing comfort, and minimising health and safety risk. A smaller percentage of respondents, around 30%, considered that the solutions/components were effective in minimising pain and discomfort.
- **Increased efficiency and sustainability of the care systems**. A majority of respondents find that the AAL solution or component contributes to the sustainability of support and care systems in terms of cost reductions, coordination of care, and by reducing the number of visits of older people to healthcare providers.
- **Strengthening the industrial base in Europe in ICT products and services for ageing well**. Close to 50% of the respondents found that, to a large extent, they were able to form new relations with other organisations and benefitted from greater awareness of AAL solutions as a result of project participation. More than 50% of the respondents indicated that, to a large/moderate extent, they were able to build closer relation with other organisations, benefitted from access to know-how and from reputational benefits and community building as a result of project participation. Close to 50% of the respondents suggested that they benefitted, at least to a small extent, from reduced time-to-market and first mover advantages as a result of AAL JP funded project participation.
- Finally, a number of AAL JP project participants suggested that through the funded AAL JP project, they contributed to the development of EU/international common approaches such as guidelines, standardisation, interoperability, work practices, and certification, which also falls within the AAL JP objectives.

2 Background

2.1 Background to the AAL JP

In June 2007 the European Commission proposed the action plan "*Ageing Well in the Information Society*"[1] with the aim of promoting and coordinating the development of ICTs associated with services for older people in the European Union, enabling them to prolong their working life, stay socially active and age well at home. As a direct response to this action plan 14 European Member States founded the Ambient Assisted Living Joint Programme (AAL JP) at the end of 2007. The programme responded to the continuing challenge of ageing population by translating it to an opportunity to innovate.

The AAL JP, a European Union Initiative co-funded by EU Member and Associated States and the European Commission (an Article 185 initiative[2]), was established to help create a better quality of life for older people and to strengthen the industrial opportunities in Europe through the use of information and communication technologies (ICTs). It carries out its mandate through funding of multinational projects with the participation of small and medium enterprises (SME), research organisations and end-users. The aim of AAL JP is to foster the emergence of ICT-based products, services and systems for ageing well at home, in the community and at work in order to increase the quality of life, autonomy, participation in society, skills and employability of older adults and reduce the costs of health and social care. The first phase of the programme covered the period 2007 to 2013, and has been extended to run until 2020 to continue applied and close-to-market research for ageing well with ICT (the name of the Programme having changed into "Active and Assisted living" for the 2014-2020 period). During its extension, the programme seeks to support industry, particularly SMEs to bring digital innovative products, services and solutions for ageing well to the European market. The high-level objectives are:

- A better quality of life for older persons: individual and family;
- Increased efficiency and sustainability of the care systems;
- Strengthening the industrial base in Europe in ICT products and services for ageing well.

The AAL JP aims to combine social, technological and business aspects to deliver[3]:

- New models of service delivery and care that contribute to greater self-reliance for older adults and greater support for informal carers;
- Adapted living spaces that can improve the quality of their everyday lives;
- New ways for older people to remain active, including contributing as volunteers or providing mutual support;
- New ways of mobilising active and trusted networks, both formal and informal, professional and in kind, to provide all types of support.

Funded projects meet the following requirements:

- Aim to produce concrete solutions for independent living or 'ageing well' of older people using ICT;
- Solution should reach the market within 2-3 years after the project ends;
- At the end of the project there should be a realistic trial set-up;
- Have a clearly defined focus on a specific market segment;
- Involve at least three EU countries participating in the programme;
- The national criteria in place (different for each participating country);

[1] Ageing well in the Information Society: Action Plan on Information and Communication Technologies and Ageing, European Union, 2014. Available at: http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=URISERV:l24292

[2] Article 185 of the Treaty on the Functioning of the European Union (ex Article 169) enables the EU to participate in research programmes undertaken jointly by several Member States.

[3] Website of AAL JP: http://www.aal-europe.eu/

- The consortium must include at least:
  - One business partner;
  - One SME partner, which may be the business partner;
  - One organisation representing the end users.

The following table shows some basic characteristics of each of the first five calls for proposals.

Table 1 AAL JP statistics for the first five calls for proposals

Call	Call topic	Average partners per proposal	Total available funding budget	Average total budget per proposal	Average funding request per proposal	# of applications		# of granted projects
						Submitted	Ranked	
1	Prevention and Management of Chronic Conditions of Elderly People (2008)	8	€57.7 m	€3.31 m	€2.06 m	118	56	23
2	Advancement of Social Interaction of Elderly People (2009)	8	€60.9 m	€2.87	€1.68 m	104	41	32
3	Advancement of Older Person's Independence and Participation in the "Self-Serve Society" (2010)	8	€54.6 m	€2.64	€1.46 m	91	30	22
4	Advancement of Older Person's Mobility (2011)	8	€52.2 m	€2.81	€1.67 m	107	55	25
5	(Self-) Management of Daily Life Activities of Older Adults at Home (2012)	8	€51.55 m	€2.81 m	€1.7 m	151	80	29

Source: Call for proposal statistics available through the website of AAL JP (2014). See also http://www.aal-europe.eu/wp-content/uploads/2015/05/Overall-statistics-on-calls.pdf

At the start of AAL JP the goal was to have a total investment for projects of at least €700 million between 2008 and 2013, of which 50% is public funding. This public funding consists of contribution by the European Commission and the AAL partner countries. The programme participants (SMEs, larger enterprises, end-user organisations, universities and research organisations) should at least contribute to the remaining 50% of the overall budget. For an individual project the AAL JP is aiming at a total budget of €1-7 million. The average budget per proposal is around €3m for call 1-5, with average funding requests per proposal of around €1.7m, see Table 1. The maximum amount of public funding per project is €3 million. Call 1-5 granted funding for a total number of 131 projects.

Currently 22 countries constitute the AAL JP. These countries provide an annual contribution of approximately €35 million, which is an average of €1.5 million per participating country. The biggest contributors in terms of budget are Germany, France, Spain, Austria, Finland, Hungary and Italy. The AAL JP also leverages additional public and private investment.

The AAL JP is continued under the new Horizon 2020 research framework programme and has been brought fully in line with the European Innovation Partnership on Active and Healthy Ageing (EIP AHA)[4,5] It is thought that this alignment could further boost the deployment of ambient assisted living solutions at the European level. For the new AAL JP this means that while the focus is still on 'ageing well' there will be more specific attention for industry support, especially aiming at SMEs, and

[4] Website AAL JP: http://www.aal-europe.eu/

[5] More information about the European Innovation Partnership on Active and Healthy Ageing can be found at: http://ec.europa.eu/research/innovation-union/index_en.cfm?section=active-healthy-ageing/

innovative products. This increases the need for a monitoring system that also focuses on the integration of innovation impacts.

2.2 Monitoring strategy and assessing socio-economic impact

The AAL Central Management Unit continuously monitors projects during their funded period. This monitoring strategy consists of three stages[6]:

- Annual reports of the funded projects, submitted by the coordinator two months after the end of the calendar year. The elements covered in the annual reports mainly focus on factual information.
- Midterm review reports are provided as a result of midterm review conducted by independent experts half way through the project. The review provides the consortium of participants with recommendations for the future of the project.
- Final reports of the projects are supplied by the coordinators of all projects (both successful and unsuccessful) and cover a publishable summary of the projects' results. The report contains detailed information on the project's results related to scientific/technical progress, the applied business model, the end-users targeted and economic results obtained (IPR, jobs created, dissemination activities, etc.).

The AAL Programme recognised the need to monitor and assess the impact of its portfolio of projects in the period after the end of the funded period. Indicators were devised[7] and a survey was implemented to measure the impacts of the AAL products and services that had been developed in the projects. The survey results, subject of the current analytical report, represents the first impact assessment of AAL JP funded projects after the completion of the projects. It aimed at measuring direct outcomes for project participants as well as broader socio-economic impacts of the funded projects and the programme overall.

This report assesses impact against the abovementioned high-level objectives; i.e. a better quality of life for older persons, increased efficiency and sustainability of the care systems, and strengthening the industrial base in Europe in ICT products and services for ageing well.

Moreover, the following specific objectives were also taken into account:

- Degree to which end-users are involved from the start of all funded projects (e.g. through iterative design and development approaches);
- Degree to which there is a continued cooperation and collaboration between the AAL JP stakeholders, at enterprise and research organisations
- Degree to which the AAL JP contributed to build supply/value chains across the public, private and third sector

Finally, the projects were also assessed against their success towards:

- Commercialisation of AAL solutions and components
- Provision of AAL solutions and components to end-users
- Investment received for follow-on innovation activities
- Revenue generated from new AAL solutions/components
- The protection of intellectual property
- Creation of spin-offs, start-ups and high-growth SMEs

[6] Information on the monitoring strategy, including the templates for the different progress reports can be found on the website of AAL JP: http://www.aal-europe.eu/documents-ressources/resources-for-project-coordinators

[7] Methodology to undertake innovation impact assessment of AAL Programme projects. Technopolis Group 2014. Available at: http://www.aal-europe.eu/wp-content/uploads/2017/02/AAL-innovation-impact-assessment-methodology_Technopolis-Group_FINAL-REPORT.pdf

3 Overview of AAL projects and participants from the survey

The first AAL Innovation Impact Survey was sent to AAL JP funded project participants of all projects completed before October 2014. A total number of 454 project participants were contacted in November 2015 and a total of 91 AAL JP funded project participants responded to the survey questionnaire until February 2016, which represents a response rate of 20%. The 91 survey respondents completed at least part of the survey questionnaire. In some cases, survey questionnaires were not applicable to all (types of) respondents and in some cases some questions were left unanswered. Note that this survey to AAL JP funded project participants collected self-assessed responses, and there was no attempt to verify the accuracy of the data obtained by the AAL CMU or any other third party.

The survey sought to collect data about 63 AAL JP funded projects. Data was collected for 50 AAL JP funded projects, representing 78% of the targeted projects. On average, about 7 organisations were contacted per completed AAL JP funded project, see Table 2. Based on the response rate, on average, close to two respondents provided data on their involvement and perception of the impacts of their AAL JP funded project.

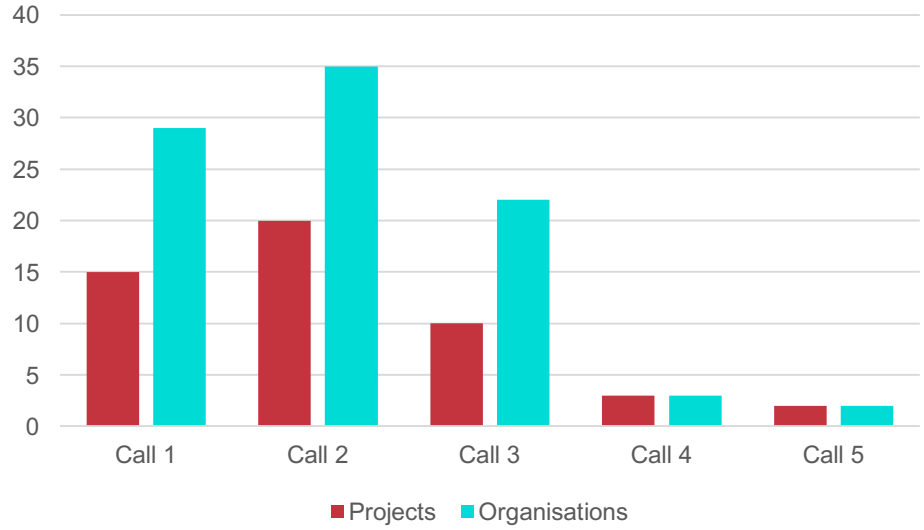
Figure 1 provides an overview of the number of AAL JP funded projects and number of organisations that participated in AAL JP funded projects for data was collected, by AAL call. Most data is collected for projects from Call 1 (15), Call 2 (20) and Call 3 (10). Only few projects from Call 4 and 5 were completed at the time of data collection and for this reason data was obtained only for three projects from Call 4 and two projects from Call 5. Data was collected for 29 respondents from Call 1, 35 respondents from Call 2, 22 respondents from Call 3, and three respondents from Call 4 and two respondents from Call 5.

Table 2 Number of organisations contacted per AAL JP funded project and overview of respondents per AAL JP funded project

	Organisations contacted	**Respondents**
Average	6.9	1.8
Median	7.0	2.0
Max	14	5
Min	1	1
Organisation count	442	91
Project count	64	50

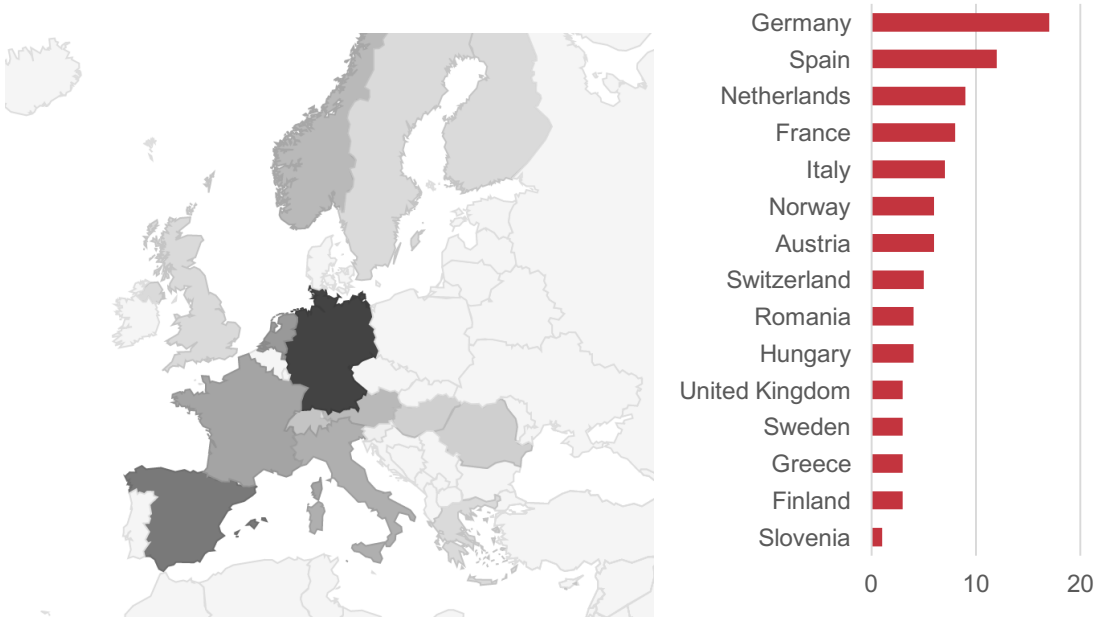
Figure 2 provides an overview of the country where the respondents' organisation was based, in the context of the AAL project. The highest number, 17, of the participating organisations are based in Germany, followed by Spain (12). In between 5-10 respondents are located in Netherlands, France, Italy, Norway, Austria, and Switzerland. A relatively smaller number of respondents were Romania, Hungary, UK, Sweden, Greece, Finland, and Slovenia.

Figure 1 Overview of the number of projects and number of respondents (organisations), by call



The total number of projects is 50; total number of organisations is 91.

Figure 2 Countries where respondents are located



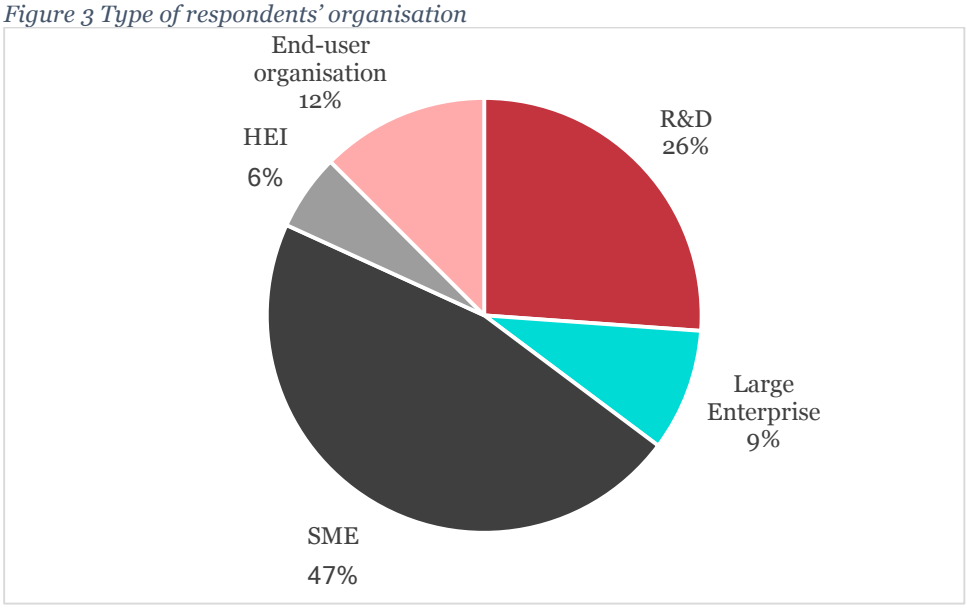
The number of respondents is 91.

A large percentage of respondents were SMEs (47%). Larger enterprise comprises of 9% of the total population; 26% of respondents were R&D organisations, 12% were end-user organisations and 6% were HEIs – see Figure 3. Three of 81 (4%) survey respondents reported they were a start-up, i.e. an enterprise that exists for less than five years; 10 survey respondents did not respond to this question.

Survey respondents were asked to indicate what had been their role in the AAL JP funded project, i.e., Performing Research & Development, Developing the business case and/or commercialisation, End-user perspective, and/or other roles. 36% of the respondent organisations indicated that they had multiple roles. As illustrated in Figure 4, in total, 74% of respondents' role include performing R&D, 39% of respondents' role included the end-user perspective, and 23% indicated they were involved in

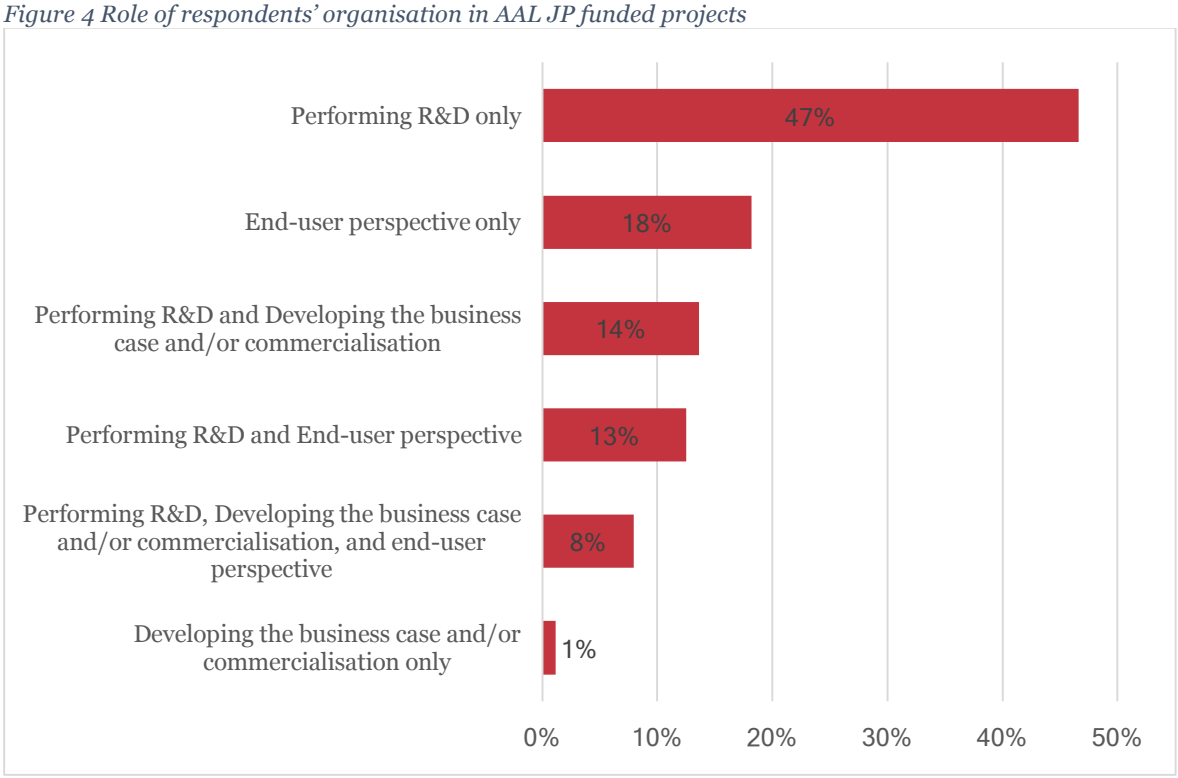
developing the business case and/or commercialisation. An additional 3 respondents indicated that their role was dealing with project management, coordination, and/or financial issues and did not extent to any of the other roles identified in the above.

Figure 3 Type of respondents' organisation



The number of respondents that are identified by type is 88.

Figure 4 Role of respondents' organisation in AAL JP funded projects



The number of respondents is 88.

The types of AAL solutions or components that organisations developed/contributed to is fairly broad. AAL solutions are identified as a combination of products and/or services that are bundled in order to

deliver a real solution to enhance the quality of life of older people. AAL components can be combined with other existing products and services to deliver innovative AAL solutions. A component can be any discrete device or software module of a system that can be used, re-used and adapted to the specific requirements of multiple AAL solutions. An overview of examples of solutions and components is presented in the table below.

AAL solutions and component have a range of functionalities: e.g. reliability/security, flexibility, personalisation, interoperability, and accessibility. Table 4 illustrates examples of innovation types that are produced as part of the AAL JP funded projects and provides an indication of some of the relevant functionalities. It should be noted that an AAL solution and component can have multiple functionalities. The AAL project places specific importance on personalisation and seeks to, amongst other, contribute to the following outcomes:[8]

- Products, systems and services that can be tailored to the needs and desires of each user
- Products, systems and services that can be customised to meet the varying social preferences and regulatory aspects across and beyond Europe

Table 3 Examples of solutions and components

Examples of solutions	**Examples of components**
Route planning and safe guidance for personal and public transport location data and schedules	Ambient display and tangible interaction components
Information and Communication Technology (ICT) environments	Headset and software
Integrated smart platform	Smart software for the early detection of neurodegenerative symptomes
Sensor network and gateway	Software platform and integration of components
Robot which aims at improving the level of comfort and independence	Spoken Dialogue System for languages and integration in the Cloud that is accessible from a SmartPhone, a IPPhone and/or a TV terminal
Innovative Social Community network (SoCo-net), integrating different mobile wireless ICT based services addressing the elderly social interaction context categories of Care & Wellness, Guidance and Mobility monitoring	Server components and integrations with databases
Gateway for data transmission concerning health data	Accessible video components for social media application
Networking site	Integration of sensors and other hardware technologies already available on the market in a pervasive intelligent system
Wearable wireless sensors for motion sensing	Emergency Service application based on VoIP
	Mobile application

Table 4 Examples of innovations of the AAL solution or component in terms of functionalities

Functionalities	**Examples**
Reliability/security	• Collection of patient data • Algorithm • Storing of personal information e.g. of a social networking platform

[8] Ibid.

Functionalities	Examples
Flexibility	• Integration of sensors and other hardware technologies already available on the market allowing a flexible combination with the users' needs
Personalisation	• Assistance in products for online courses • Tool to interact with digital services • End-user oriented algorithms • Diet and activity monitoring solution • Medicine intake • Service personalisation • Sensor thresholds • Social networking platform
Interoperability	• Gateway for transmitting any health data from/to various providers • Remote services for different access channels • Digital cable TV platform
Accessibility	• Social innovation concept in local communities • Mobile phones/Smart TVs • Social networking platform

Survey respondents were asked if their original business plan developed in the AAL project was successful or if a new business approach was developed after the project; for results see Figure 5. 17% of survey respondents indicated that their business plan had been successful. One respondent indicated that the platform could be reused in follow-up projects. Another respondent commented that there had been a mixed success in the project consortium and the business plan had been successful for some, not for others.

Another 41 % of respondents indicated that a new business plan was developed, suggesting continuity of development efforts despite need for changes. One respondent noted that there was a change of focus from the commercialisation of a solution to the commercialisation of components, because the commercialisation of components is seen as more viable. Other respondents noted that the business plan was adapted to recent market trends/technological developments. In one instance it was elaborated that the technology had changed a lot since the project was completed and for this reason the business plan had to be adapted. Other changes introduced to the revised business plan include the following:

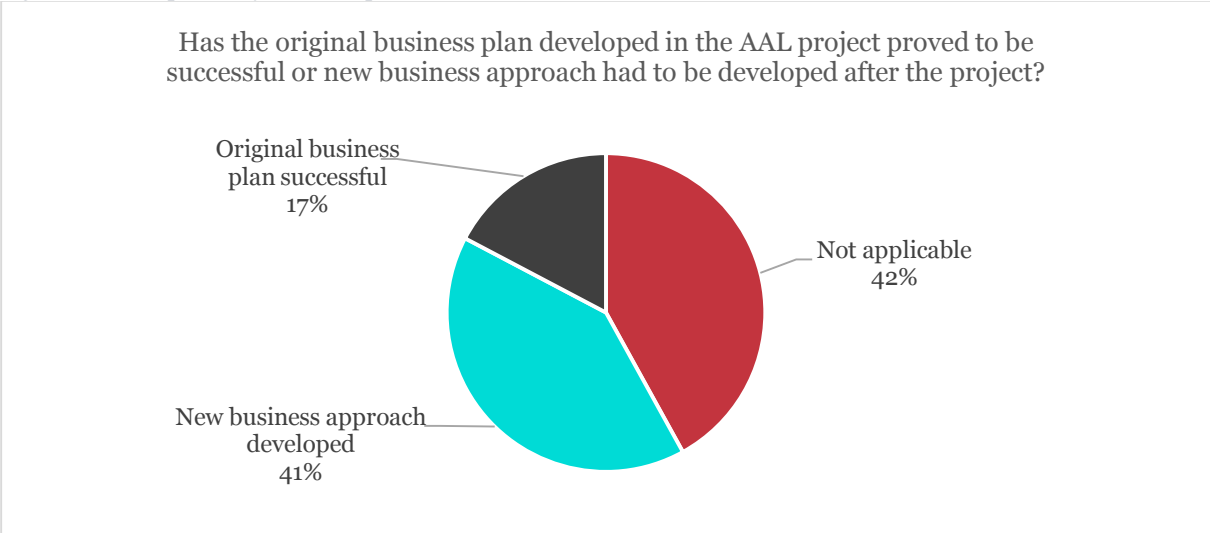
- Change to a broader consumer market target
- The business plan has been refocused from B2C to B2B
- A new project partner joined, making the previous plan obsolete
- The plan was adapted to specific organisational constraints

A large percentage (42%) responded that their business plan had not been successful and a new business plan was not developed. Some note the challenge between finding the right time to go to market. On the one hand, participants may not have been successful because, during the duration of the project, the technology evolved and the solution/components became outdated. On the other hand, some respondents noted that the partners were unable to identify a market/end-user willing to pay for the solution developed in the project, and in one case it was explained that this was because the consumer market will not be ready for the solution/component for another 10 years.

Other reasons why business plans were not seen as successful (and no other plans were proposed) include the following:

- It was too early to judge the success of the project against the business plan
- The consortium did not find ways to continue
- The project was successful but political decisions were needed to secure commercialisation
- A project partner went bankrupt shortly after the project finished, which made it impossible to complete the business plan
- The project failed due to incompetent project management

Figure 5 Development of business plans



The number of respondents is 81.

4 Overview of impact of the AAL programme

Table 5 provides an overview of the performance of AAL JP funded project participants on a series of key impact indicators. The table also provides a lower bound[9] indication of impact indicators at the project level. For example, based on the survey results, 35% of AAL JP funded project participants received financial investment from public or private third parties for follow-on innovation activities. This correspoonds to at least 48% of AAL JP funded projects receiving public and/or private third parties.

Table 5 Overview of impact of the AAL programme

Key impact indicator	AAL JP project participant level impact *	Project level impact**
 **Collaboration with end-users** Percentage that continued to collaborate with primary, secondary and/or tertiary end-users while testing, implementing or improving the AAL solution or component that was developed in the project	75% [67 of 89]	90% [45 of 50]
 **Collaboration with enterprises and research organisations** Percentage that continued to collaborate with enterprises and RTD organisations in the development or market launch of AAL solutions or components after the end of the project	68% [57 of 84]	89% [41 of 46]
 **Partnerships in value chains** Percentage that are members in a new value chain and/or joined an existing value chain	32% [27 of 84]	47% [26 of 46]
 **Commercialisation of solutions & components** Percentage that commercially launched an AAL solution or component and/or plan to launch an AAL solution or component in the next two years	40% [33 of 82]	59% [27 of 46]
 **Users of new AAL solutions** Percentage that provide AAL solutions or components to end-users	29% [23 of 79]	44% [20 of 45]
 **Follow-on investment** Percentage that received financial investment from public or private third parties for follow-on innovation activities	35% [22 of 62]	48% [19 of 40]
 **Revenues from new AAL solutions/components**	41% [26 of 64]	54% [22 of 41]

[9] Project level impact is considered a 'lower bound estimate' because non-respondents may also have had positive impacts, which would accrue to the project level indicators, but the input of non-respondents is not accounted for. It is likely that there are several other projects that would likewise achieve positive results in these key impact indicators if more organisations had contributed to the survey.

Key impact indicator	AAL JP project participant level impact *	Project level impact**
Percentage that generated revenue from AAL solutions and components and/or expect revenue growth		
Protection of Intellectual Property Percentage that have actions to legally protect the AAL solution or component	17% [14 of 81]	31% [14 of 45]
Creation of new companies Percentage that created a spin-off as a result of the AAL project	12% [10 of 81]	20% [9 of 45]

* best estimate; ** lower bound estimate

Based on the data collected, three projects score positively on all of the above listed key impact indicators, these are:

- ROSETTA - Call 1, based on 3 survey respondents (two SMEs and one HEI)

The objective of ROSETTA was to help provide support to people with "progressive chronic disabilities, such as Alzheimer's Disease, to retain their autonomy and quality of life as much as possible and to support their (in)formal carers by developing and providing an ICT system that offers activity guidance and awareness services for independent living"[10]. The ROSETTA project involved 12 partner organisations. The total project budget was estimated at €3.3m and total public contribution amounted to €2.2m[11]. The ROSETTA system aimed to have the following functionalities:

- Monitoring of the activities of elderly persons with sensors.
- Generating alarms when unexpected/deviant (in) activities are predicted or detected (for example a fall).
- Generating warning when longer term deviations from the personal behaviour are detected.
- Supporting the elderly in carrying out daily and recreational activities.

The result of the product includes a system that increases efficiency in the provision of care, the system, as illustrated by means of Figure 6, uses sensors that communicate via an application.

Figure 6 The Dutch domotics product, supported by the AAL JP funded project ROSETTA

Source: http://dutchdomotics.nl/product/

- TRAINUTRI - Call 2, based on 3 survey respondents (two SMEs and one R&D organisation)

[10] http://www.aal-europe.eu/projects/rosetta/ see also website at http://www.aal-europe.eu/wp-content/uploads/2015/04/AALSuccessCASES__NO_CROPS.pdf

[11] http://www.aal-europe.eu/projects/rosetta/

The TRAINUTRI AAL project sought to "raise consciousness about self-wellness, enabling the exchange of knowledge related to physical and nutritional healthy habits"[12]. The project aims to support older people to develop healthy habits and to enable people to "share and exchange healthy habits related activities, experiences and knowledge allowing them to keep and enrich their social relationships while they age in their preferred environments". The TRAINUTRI project involved 7 partner organisations. The total project budget was estimated at €3.4m and total public contribution amounted to €1.8m[13]. As part of the project, and Activity Level estimator and smartphone application was launched that is able to estimate the activity of the user.

- HOST - Call 3, based on 2 survey respondents (both end-user organisations)

The HOST project was set out to develop a digital infrastructure of social housing and a gateway to their services. The projects' solution is to "provide easy-to-use technologies and services in social housing flats to allow a better quality of communication and a better access to package services from the elders"[14]. The HOST project involved 10 partner organisations. The total project budget was estimated at €4.8m and total public contribution amounted to €2.3m[15].

[12] http://www.aal-europe.eu/projects/trainutri/

[13] http://www.aal-europe.eu/projects/trainutri/

[14] http://www.aal-europe.eu/projects/host/

[15] http://www.aal-europe.eu/projects/host/

5 Impact of the AAL projects on participating organisations

5.1 Collaboration with end-users

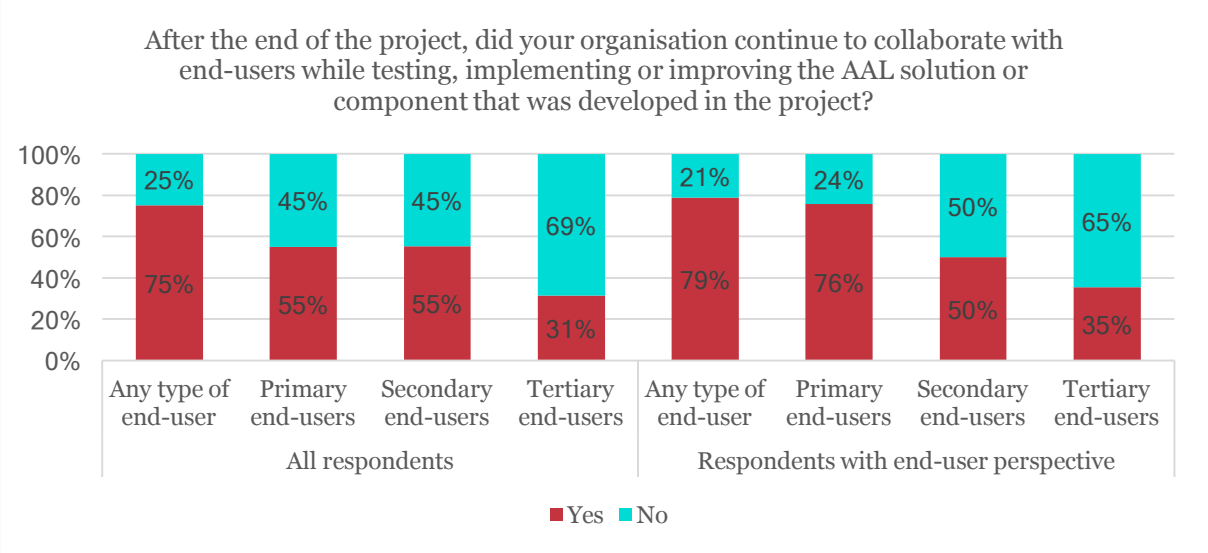
Involvement of end-users is one of the priorities of the AAL JP programme. The AAL Programme differentiates between three types of end-users:

- A primary end-user is the person who is actually using an AAL product or service, a single individual, "the well-being person". This group directly benefits from the AAL solution by increased quality of life. This group can be represented by, for example, senior organisations that contribute their expertise to projects and that assist in identifying end-users that are willing to participate in pilots.
- Secondary end-users are persons or organisations directly being in contact with a primary end-user, such as formal and informal care persons, family members, friends, neighbours, care organisations and their representatives. This group benefits directly when using AAL solutions (at a primary end-user's home or at a remote location) and indirectly when the care needs of primary end-users are reduced.
- Tertiary end-users are private or public organisations not directly in contact with AAL products and services, but who somehow contribute in organising, paying or enabling them. This group includes public sector service organisations, social security systems, insurance companies. Common to these is that their benefits from AAL solutions come from increased efficiency and effectiveness, which results in savings or by not having to increase expenses in the mid/long term.

75% (67) of AAL JP funded project participants continued to collaborate with primary, secondary and/or tertiary end-users while testing, implementing or improving the AAL solution or component that was developed in the project. 39% (26) of these organisations indicated that their role in the project involved an end-user perspective. 79% of the organisations with an end-user perspective suggested that they continued to collaborate with primary, secondary and/or tertiary end-users.

A majority of the respondents indicated that they continued collaborating with primary and secondary end-users. A smaller proportion, 31%, continued collaborating with tertiary end-users. It is notable that, amongst those respondents that have taken on an end-user perspective role, around 76% continued collaborating with primary end-users, which is substantially higher than the proportion of respondents that do not have an end-user perspective (43%).

Figure 7 Collaboration with end-users



The number of respondents for each sub-question are: 89 (primary), 87 (secondary) and 86 (tertiary).

Survey respondents were asked to estimate the number of end-users/end-user organisations that AAL JP project participants collaborated with, after the project (provided that they continued collaborating with end-users). As reported in the table below, organisations collaborated with as little as 2 and as many as 400,000 primary end-users (median 30). Organisations collaborated with a range of 1-500 (median 5) secondary end-users. As expected, organisations collaborated with a smaller average number of tertiary end-users, six, with a range of 1-30.

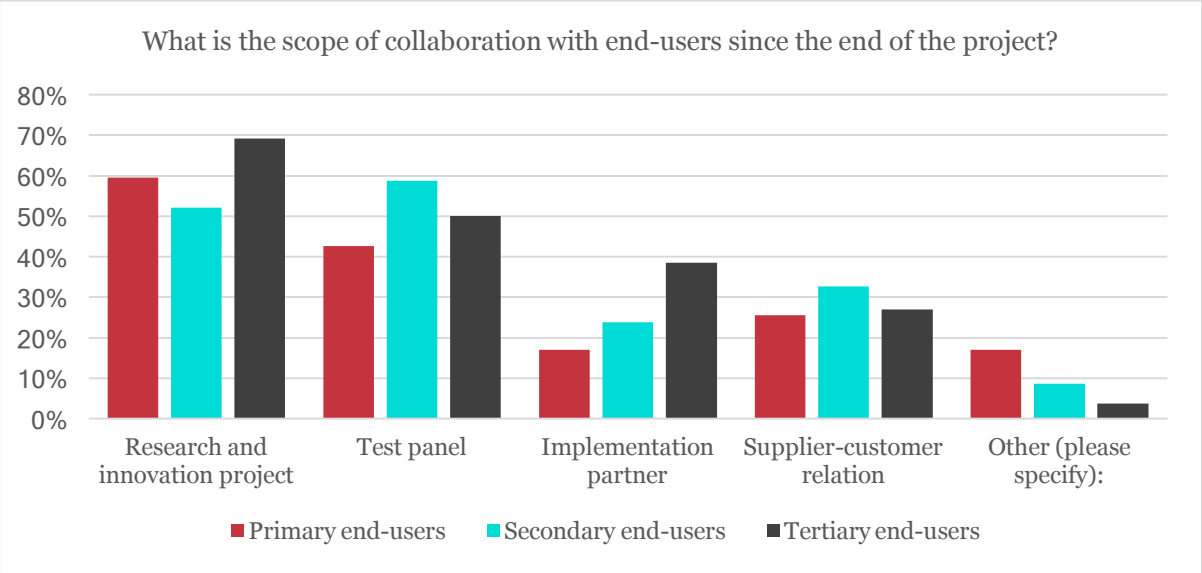
Table 6 Estimation of the number of end-users/end-user organisations that AAL JP project participants collaborated with, after the project

	Primary end-users	**Secondary end-users**	**Tertiary end-users**
Average	9,865	19	6
Median	30	5	3
Min	2	1	1
Max	400,000	500	30
Number of observations	43	44	23

Survey respondents that continued collaborating with end-users (while testing, implementing or improving the AAL solution or component that was developed in the project) provided an indication of the scope(s) of the collaboration. As illustrated in the figure below, the majority of collaborations with primary, secondary and tertiary end-users regarded a research and innovation project. Moreover, close to 50% of collaborations involved setting up a test panel. Tertiary end-users were in 38% of collaborations used as an implementation partner, relatively more often than primary and secondary end-users. In between 26% and 33% of collaborations facilitated a supplier-customer relation.

End-users were also used with different (other) scopes. For example, one respondent indicated that primary end-user collaboration was a randomized controlled clinical trial, another suggested that primary end-user collaboration involved the implementation of a "seniors for seniors" blended learning programme and another suggested the scope was solution deployment. Collaboration with secondary end-users, for example, involved the creation of links to users and potential customers. One respondent commented that he/she had engaged in collaboration with a tertiary end-user with regards to clinical and health economic analysis of a clinical trial.

Figure 8 Scope of collaboration with end-users

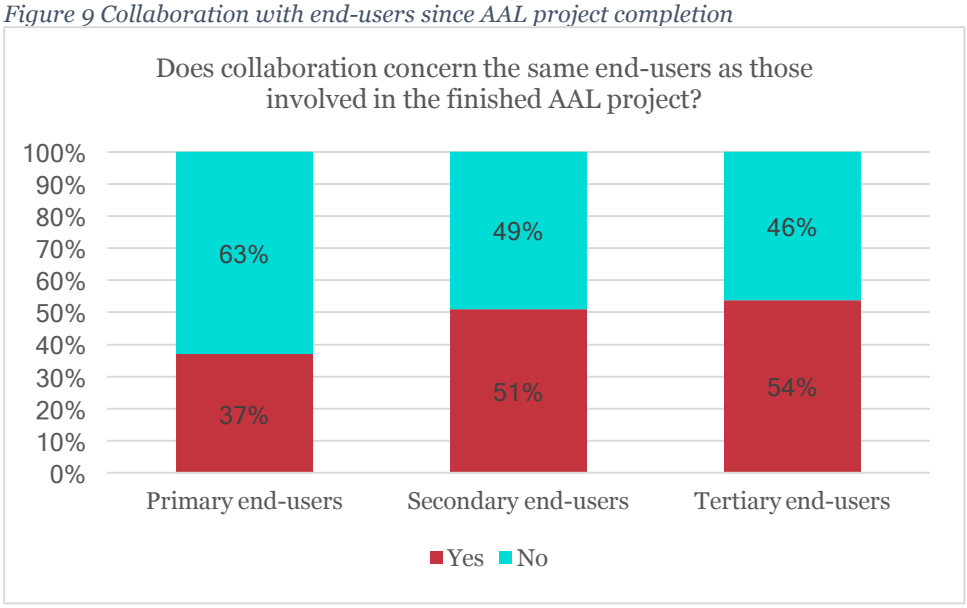


The number of respondents for each sub-question are: 47 (primary), 46 (secondary) and 26 (tertiary).

Survey respondents commented on the degree to which they had continued to collaborate with the same end-users as those that had been involved in the completed AAL project. 37% of collaborations with primary end-users continued to involve the same group of individuals and the remaining percentage (63%) started collaborating with new primary end-users. Some respondents (that responded both yes and no) commented that although the group/centre with which they collaborated was the same, collaboration involved an additional set of individuals. Amongst the set of respondents that had begun new collaborations, some respondents clarified that they had begun collaborating/recruiting new older persons, collaborated with other communities, local organisations, new customers, and older people homes.

Fewer new collaborations were started with secondary end-users (49%) and tertiary end-users (46%). Some of the respondents that indicated they has started new collaborations commented that they also continued collaborations with the end-users that had been involved in the AAL JP funded project. Others commented that they had begun new collaborations with e.g. residential informal and formal care providers, emergency call providers, older people organisations, and companies. Examples of new collaborations with tertiary end-users includes, commissioners of social care and healthcare, public sector service organisations, national organisations and health insurance companies.

Figure 9 Collaboration with end-users since AAL project completion



The number of respondents for each sub-question are: 46 (primary), 47 (secondary) and 26 (tertiary)

5.2 Collaboration with enterprises and research organisations

Partners of AAL JP funded projects include SMEs, research and end-user organisations, universities and larger enterprise. On average, the number of total partners per proposal for Call 1-5 was 7.5[16].

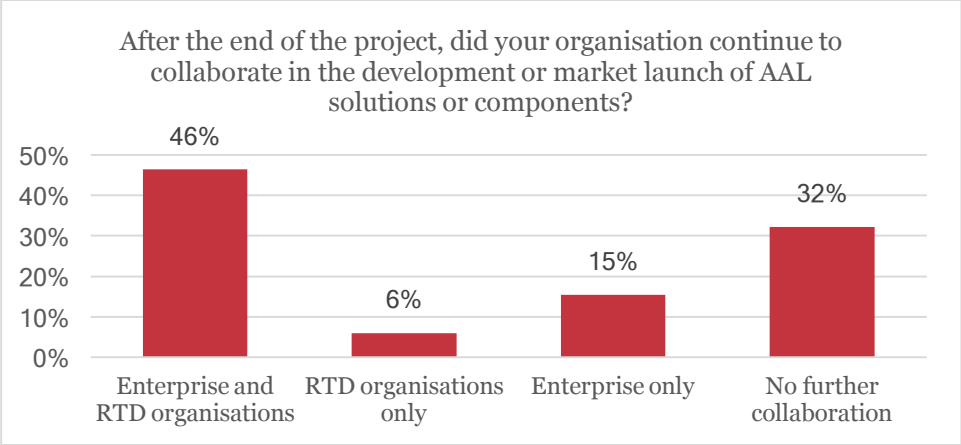
68% (57 of 84) of respondents suggested that they continued to collaborate with enterprises and RTD organisations *in the development or market launch* of AAL solutions or components after the end of the project. As illustrated in the figure below, 46% continued to collaborate with both enterprise and RTD organisations, 6% continued to collaborate with RTD organisations only and 15% continued to collaborate with enterprise only. Amongst the AAL JP funded project participants that continued

[16] Final Evaluation of the Ambient Assisted Living Joint Programme (2013) http://www.aal-europe.eu/wp-content/uploads/2015/05/Final-report-of-the-AAL-Busquin-2013.pdf

collaborating with RTD organisations and/or enterprise in the development or market launch of AAL solutions or components, the majority (66% and 71%) collaborated on AAL project solutions or components that were developed as part of the project as well as other subsequent solutions or components in the AAL domain. 11% of respondents collaborated with RTD organisations on AAL JP funded project solutions or components only and 23% collaborated on other AAL solutions or components (see Figure 11). 20% of respondents collaborated with enterprises on AAL JP funded project solutions or components only and 8% collaborated on other AAL solutions or components.

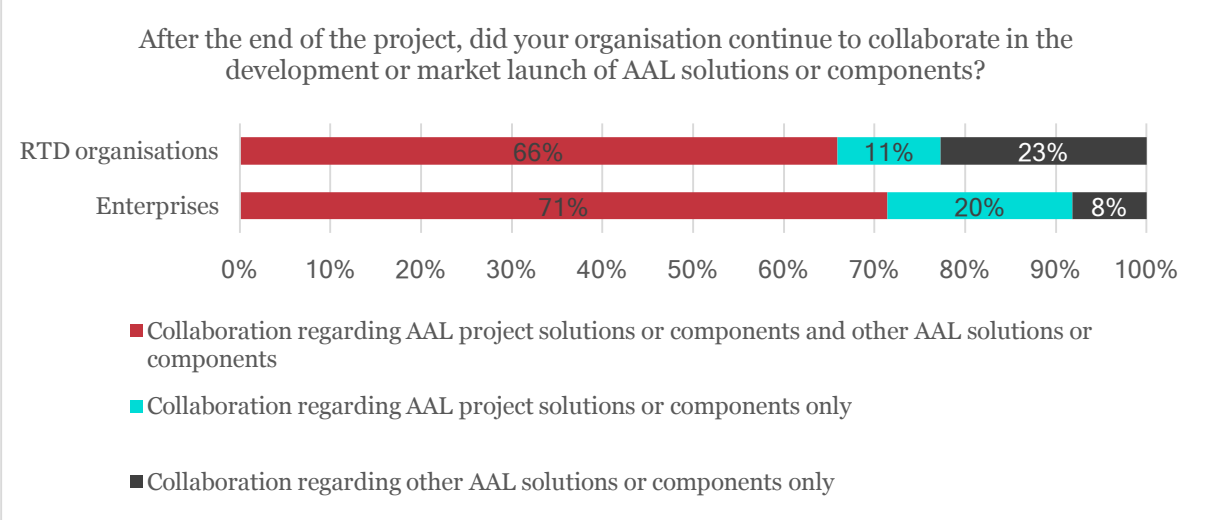
32% of AAL JP funded project participants did not continue to collaborate with enterprises and RTD organisations in the development or market launch of AAL solutions or components after the end of the project. However, a number of these project participants (including R&D and end-user organisations, HEIs, larger companies and SMEs) did continue with other forms of collaborations, including e.g. research and innovation. 89% of AAL JP funded project participants continued to interact with former project partners (enterprise and/or RTD organisations) in the same way as in the project. Continued interaction with RTD organisations was slightly less frequent than with enterprise organisations (64% vs 83%).

Figure 10 Collaboration with enterprises and RTD organisations



The number of respondents for each sub-question is 84.

Figure 11 Collaboration with enterprises and RTD organisations, by type



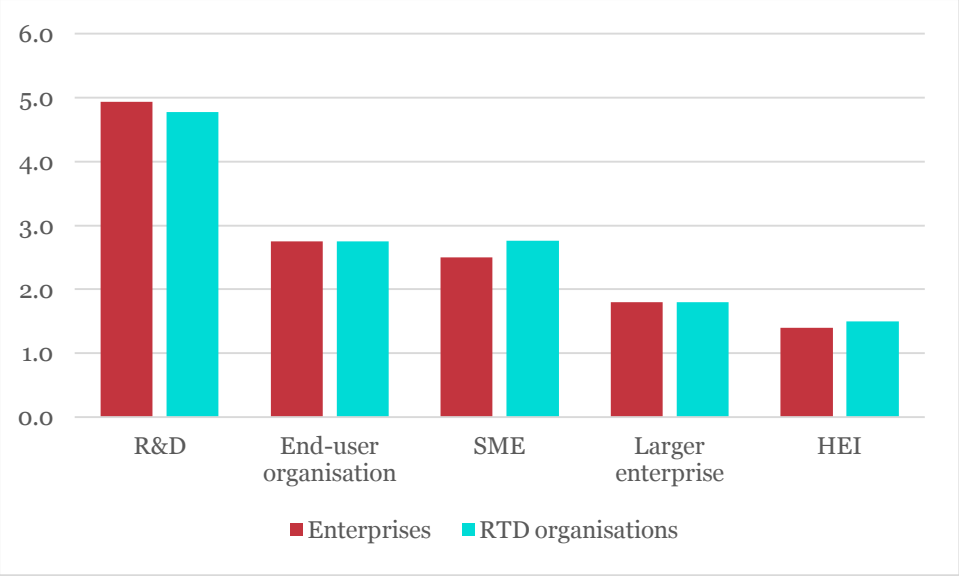
The number of respondents for each sub-question is 84.

Table 2 provides an overview of the number of continued interactions with former project partners' organisations. On average, AAL JP funded project participants continued to interact with close to 5 former enterprise and/or RTD partners. In one instance, an organisation continued to interact with 40 enterprises and RTD organisations. The average number of interactions with RTD organisations is at a similar level than that of enterprise organisations. However, as illustrated in Figure 12, R&D AAL JP funded project participants, on average, continued to interact with more project partners (close to 5 collaborations) than larger enterprises and HEIs (less than 2 collaborations), suggesting that these types of organisations have a wider network.

Table 7 Estimation of the number of continued interactions with former project partners organisations

	Average	Median	Min	Max	Number of observations
Enterprises	3.0	2.0	1	24	58
RTD organisations	3.1	2.0	1	25	45
Enterprise and/or RTD organisations	4.8	3.0	1	40	66

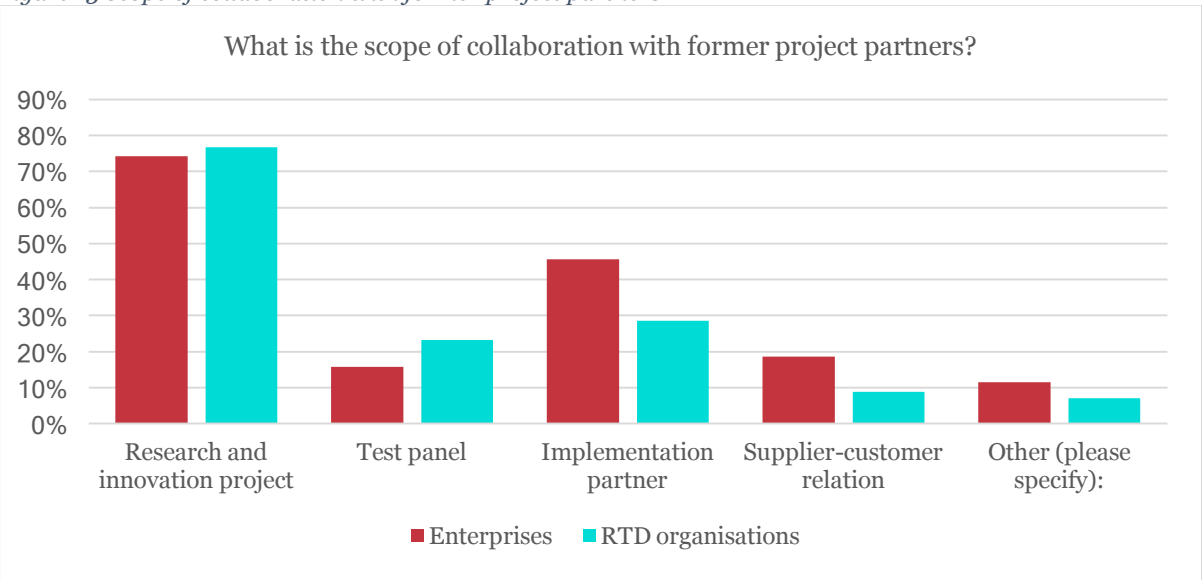
Figure 12 Number of continued interactions with former project partners (average), by participant type



The number of respondents for each sub-question are: 58 (enterprises) and 45 (RTD organisations)

Respondents identified all scopes of collaboration with enterprise/RTD organisations since the end of the project, see Figure 13. The majority of collaborations with enterprise (74%) and RTD organisations (77%) involve a research and innovation project. Enterprise are more frequently used as implementation partners than RTD organisations (46% vs 29%) and are also (relatively) more frequently part of the supplier-customer relation (19% vs 9%). RTD organisations are more frequently used for setting up a test panel than enterprise (23% vs 16%). Other scopes of collaboration with enterprises and RTD organisations includes the development of a commercial consortium, identifying (potential) investors, and knowledge exchange and knowledge transfer activities.

Figure 13 Scope of collaboration with former project partners

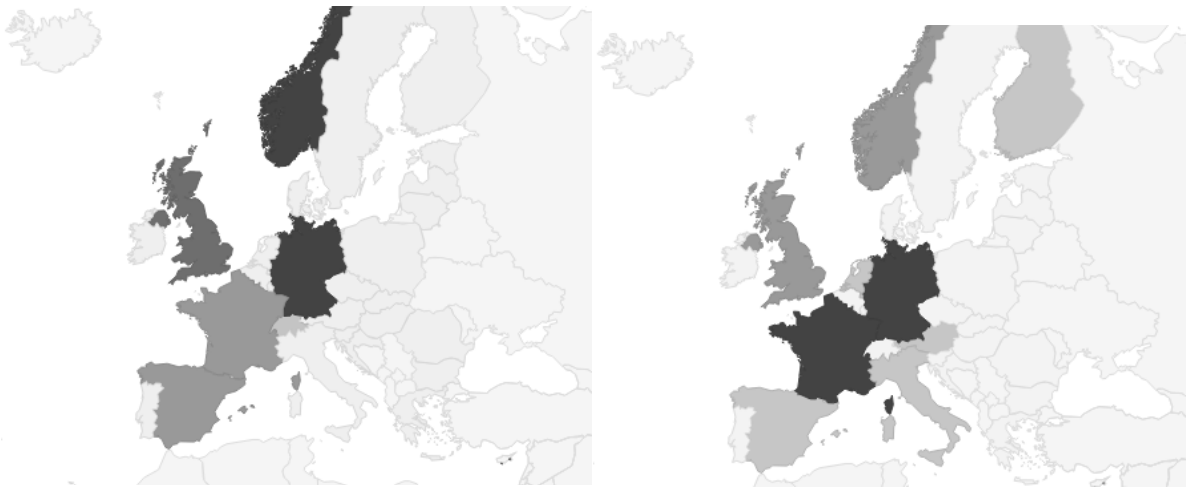


The number of respondents for each sub-question are: 70 (enterprises) and 56 (RTD organisations)

5.3 Partnerships to build value chains

The AAL Programme aims at creating new networks of organisations that develop and commercialise or deploy AAL solutions or components. A value chain represents consecutive steps of activities that transform inputs, organise processes and include logistics, operations, marketing and sales of products and services.

32% (27 of 84) of AAL project members are members in a new value chain and/or joined an existing value chain with the objective to launch the AAL solution or component (developed in the project) on the market. As illustrated in Figure 15 Overview of countries from which former AAL project partners are part of a new value chain (left) and existing value chains (right)



The number of responses is 18 (new value chain) and 17 (existing value chain)

21% of the survey respondents answered that they have a dedicated business partner, outside the project consortium, that commercialises the AAL project's results. Some respondents may not be aware that one of their project partners has such type of organisation in place. For 38% (13 out of 47) projects at least

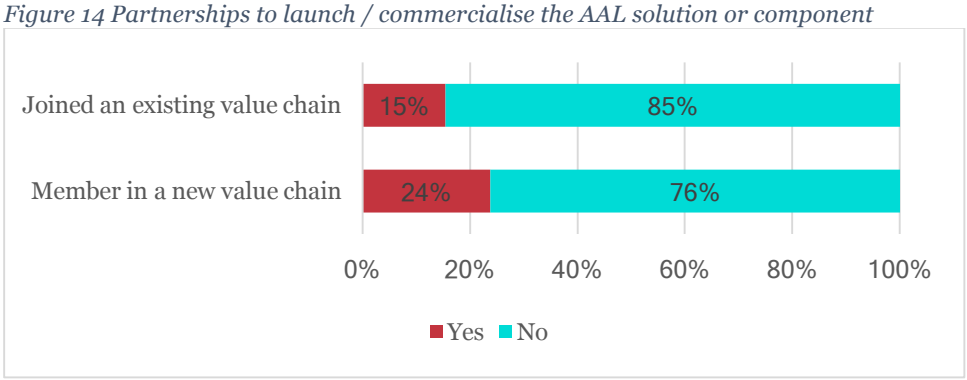
one AAL JP funded project participant responded that they had such dedicated business partner in place.

Business partners of this type include, for example, an organisation specializing in technology commercialisation, an organisation which sells and develops robots for several use contexts, an organisation that sells health apps, and an organisation promoting human creativity in a changing technological context.

this includes 24% of organisations that are members in a new value chain and 15% of organisations that joined a new value chain.

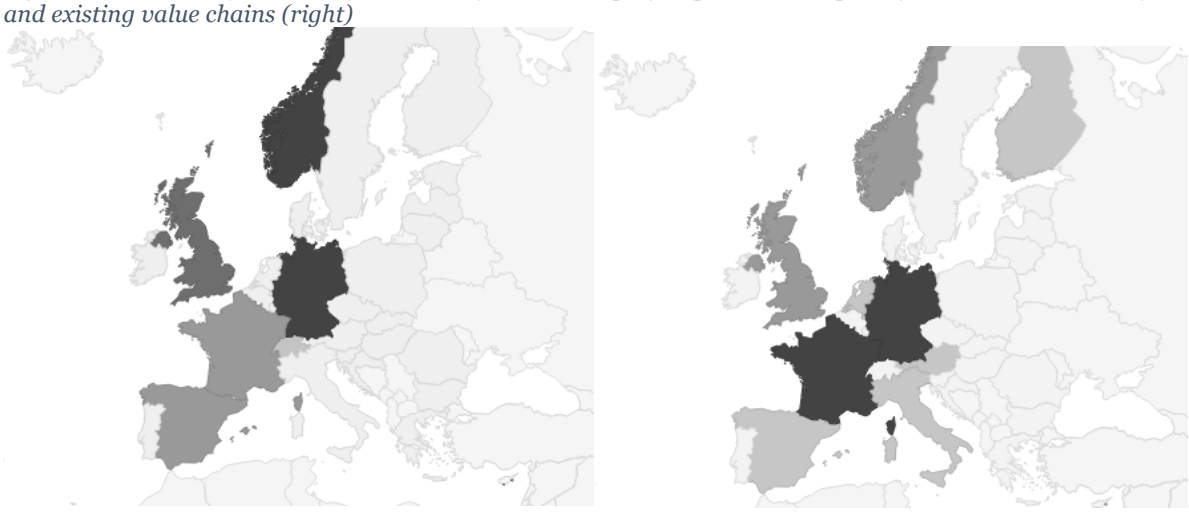
Respondents that are members in a new value chain and/or joined an existing value chain were asked how many former AAL project partners are part of this value chain. Around 70% (14 out of 20) suggested that former project partners are part of a new value chain and around 73% (8 out of 11) suggested that former project partners are part of an existing value chain. One respondent suggested that as many as 20 former project partners are part of a value chain although more commonly it was suggested that 1, 2 or 3 former project partners are part of a new/existing value chain. Countries from which former AAL project partners are part of a new/existing value chain include Germany (with 4 respondents suggesting German former AAL project partners are part of a new value chain and 4 respondents suggesting German former AAL project partners are part of an existing value chain), the Netherlands, Norway, and the UK. For a graphical overview, see Figure 15.

Figure 14 Partnerships to launch / commercialise the AAL solution or component



The number of respondents for each sub-question are: 84 (Member in a new value chain) and 84 (Joined an existing value chain)

Figure 15 Overview of countries from which former AAL project partners are part of a new value chain (left) and existing value chains (right)



The number of responses is 18 (new value chain) and 17 (existing value chain)

21% of the survey respondents answered that they have a dedicated business partner, outside the project consortium, that commercialises the AAL project's results. Some respondents may not be aware that one of their project partners has such type of organisation in place. For 38% (13 out of 47) projects at least one AAL JP funded project participant responded that they had such dedicated business partner in place.

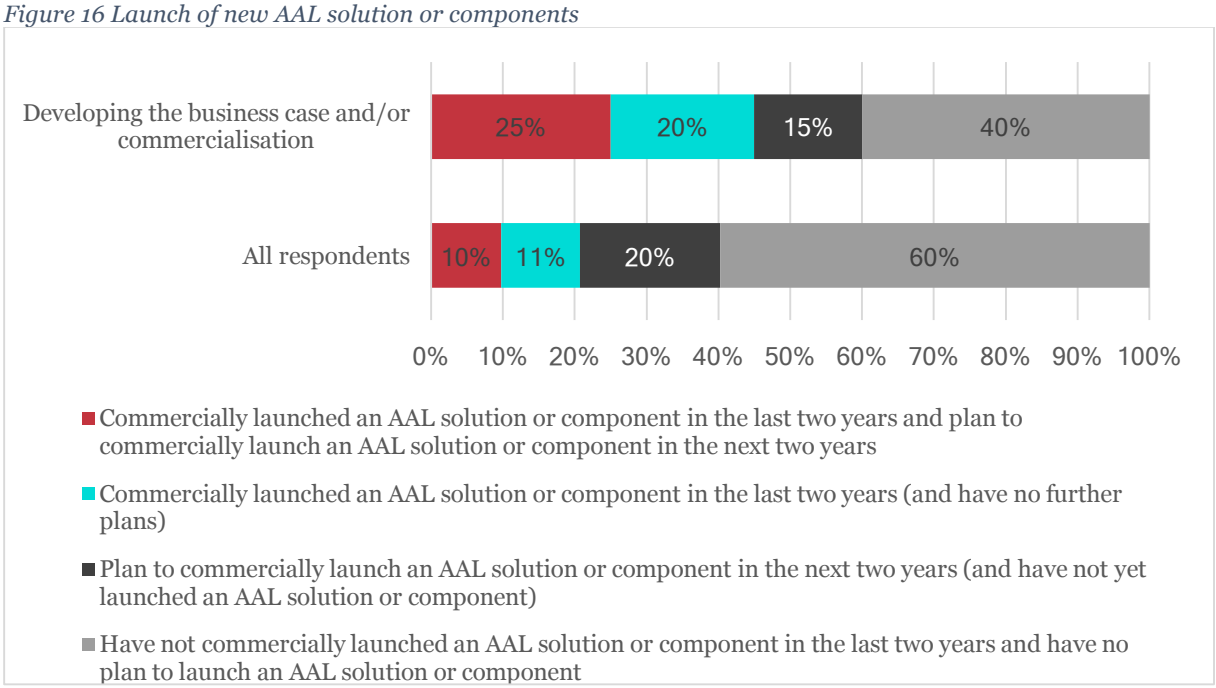
Business partners of this type include, for example, an organisation specializing in technology commercialisation, an organisation which sells and develops robots for several use contexts, an organisation that sells health apps, and an organisation promoting human creativity in a changing technological context.

5.4 Commercialisation of new solutions or components

The ultimate goal of the AAL Programme is the commercialisation or deployment of the AAL solution or components. This is referred to as commercial launch. The innovative solution may enter the market as a commercial proposition within 2 years after the end of the AAL project funding period. The real benefit to end-users and the impact of the solution can only be assessed when the solution is launched and adopted by the consumers.

40% (32 out of 82) of AAL JP funded project participants commercially launched an AAL solution or component in the last two years and/or plan to launch an AAL solution or component in the next two years. As illustrated in Figure 16, 10% of these respondents have already launched an AAL solution or component and plan to launch another AAL solution or component. Another 11% have already launched an AAL solution but have no further plans to launch another AAL solution or component. Another 20% plan to commercially launch an AAL solution or component. When considering the proportion of respondents that have as role developing the business case and/or commercialisation, 60% (12 out of 20) commercially launched an AAL solution or component in the last two years and/or plan to launch an AAL solution or component in the next two years. The remaining 40% that have not commercially launched an AAL solution or component and have no future plans includes SMEs, larger enterprise and R&D organisations. In a few instances, respondents noted financial issues or issues with market localisation and the project was stopped, which explains why no project was launched.

Figure 16 Launch of new AAL solution or components



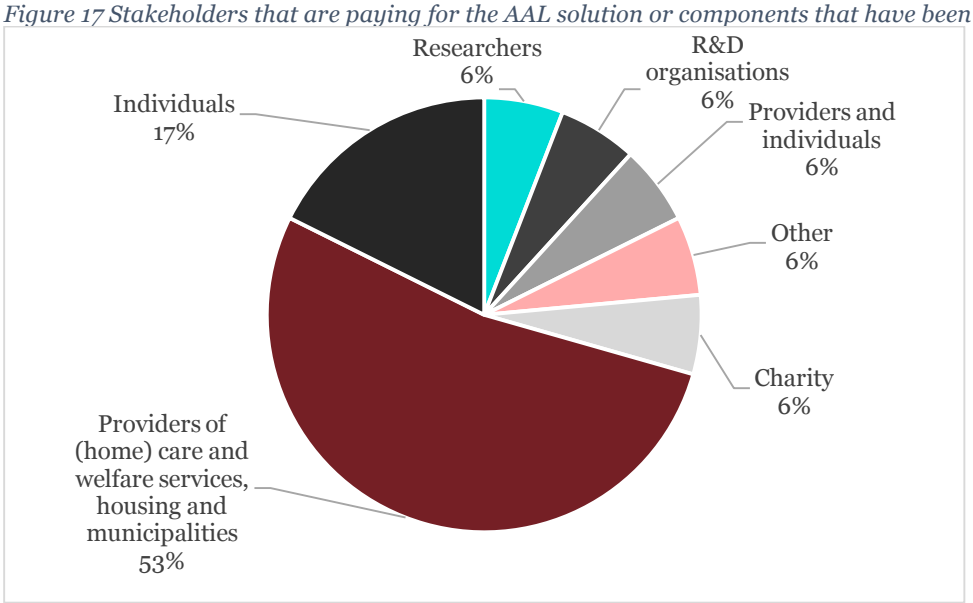
The number of responses is 82 for all respondents and 20 or the subset that is developing the business case and/or involved in commercialisation.

Most organisations that have launched AAL solutions or components in the last two years have launched one solution or component (71%), several other organisations have launched two solutions or components and one organisations has launched ten solutions or components.

Of the organisations that plan to commercially launch new solutions or components within the next two years, 75% plans to launch one solution or component. Some other organisations that plan to launch two or three AAL solutions or components, one organisation aims to launch 50 AAL solutions or components and another aims to launch 100 AAL solutions or components.

Organisations that have launched AAL solutions or components were asked to indicate the stakeholders that are paying for the AAL solution or components. Figure 17 shows that in approximately half of the cases providers of care and welfare services, housing and municipalities pay for the AAL solution or components that have been launched. The various other types of stakeholders that are paying for AAL solution or components include individuals (e.g. older people), researchers (for research on the development of AAL solutions), R&D organisations, providers and individuals, and charity organisations.

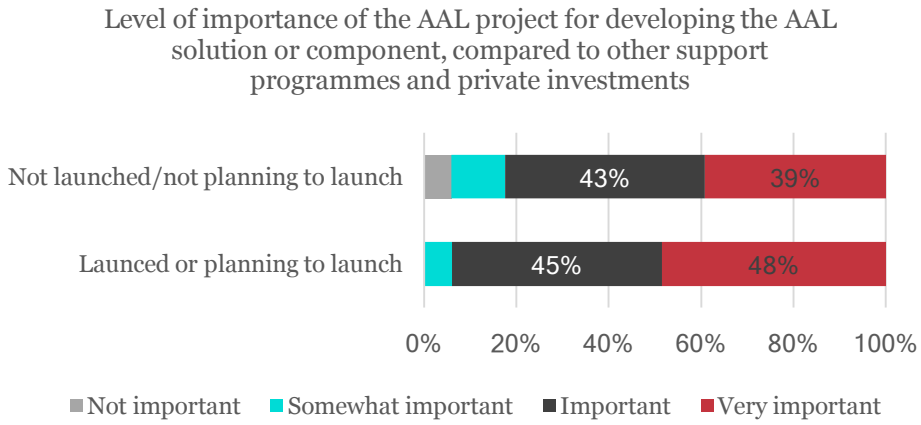
Figure 17 Stakeholders that are paying for the AAL solution or components that have been launched



The number of respondents is 17

Survey respondents were asked to assess the importance of the AAL JP funded project for developing this AAL solution or component in comparison to other support programmes and private investments. 87% suggested that the AAL project has been important or very important in comparison to other support programmes and private investments. Amongst the selection of respondents that have already launched or are planning to launch an AAL solution or component, up to 94% find that the AAL project is either important or very important and a remaining 6% suggest that the AAL project is only somewhat important. As illustrated in Figure 18, amongst the set of respondents that have not launched an AAL solution or component and are not planning to launch an AAL solution or component, the vast majority (82%) likewise find that the AAL JP funded project is either important or very important.

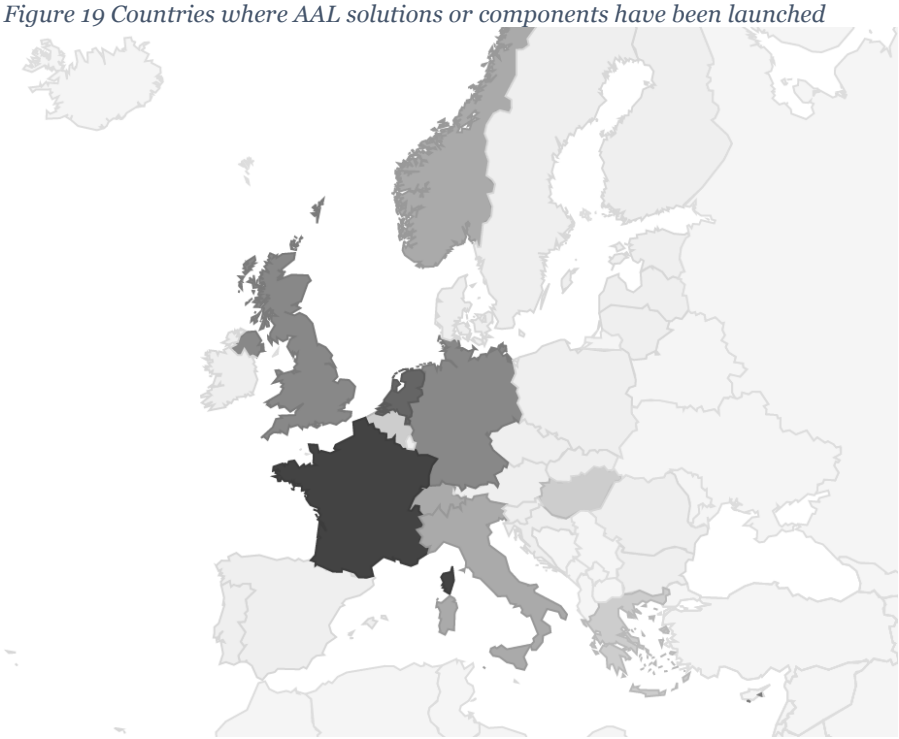
Figure 18 Importance of the AAL project



The number of respondents that have launched or are planning to launch an AAL solution or component is 33 and the number of respondents that have not launched and are not planning to launch an AAL solution or component is 51 (total set of respondents is 84).

Solutions and/or components that benefitted from the support of AAL JP funded projects have been launched worldwide although the majority of solutions and/or components that have already been launched are launched within the EU. Figure 19 provides an overview of the EU countries where solutions/components are launched based on the data collected via the survey. In 11 EU countries one or more AAL solutions or components have been launched, e.g. 5 in France, 4 in the Netherlands, and 3 in the UK and Germany.

Figure 19 Countries where AAL solutions or components have been launched

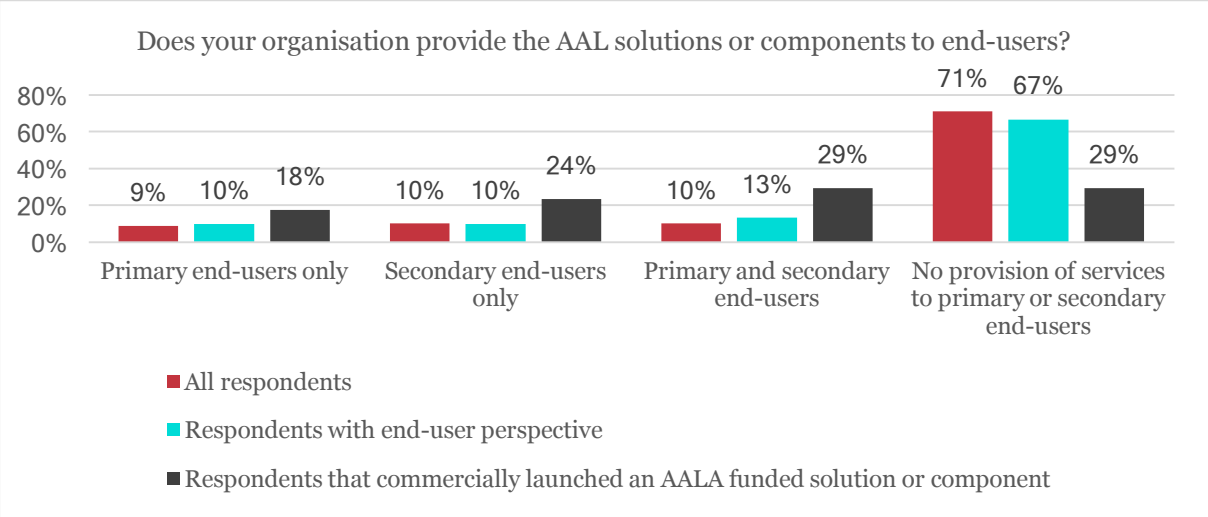


The number of responses is 25

5.5 Users of new solutions

The percentage of survey respondents that indicate they provide AAL solutions or components to end-users is 29%, out of which 9% only provide the solutions or components to primary end-users (older persons whose quality of life is addressed), 10% only provide the solutions or components to secondary end-users (e.g. formal and informal care organisations) and 10% provide the solutions or components to primary and secondary end-users. As illustrated in Figure 20, this picture is quite similar when considering only the subset of respondents that have an end-user perspective role within the AAL JP funded project. The figure also shows that, for the subset of respondents that have already commercially launched an AAL JP funded solution or components, 71% percent of the respondent provide solutions or components to primary and/or secondary end-users.

Figure 20 Provision of solutions or components to end-users



The number of respondents for each sub-question is 79 (all respondents), 30 (respondents with end-user perspective), and 17 (respondents that commercially launched an AAL JP funded solution or component)

Survey respondents that indicated they provide the AAL solutions or components to end-users provided an indication of the total number of primary end-users benefitting from the AAL solution or component. As illustrated in Table 8, on average, the number of end-users benefitting from the provision of solutions or components is 446 for primary end-users and 31 for secondary end-users. A few respondents indicate a relatively large population, e.g. 3,000 end-users, and hence the medians fall substantially below the average. Figure 21 provides a summary overview of the total number of end-users provided by these respondents, which adds up to 6,250 primary end-users and 500 secondary end-users.

Table 8 Number of end-users benefitting from the provision of solutions or components

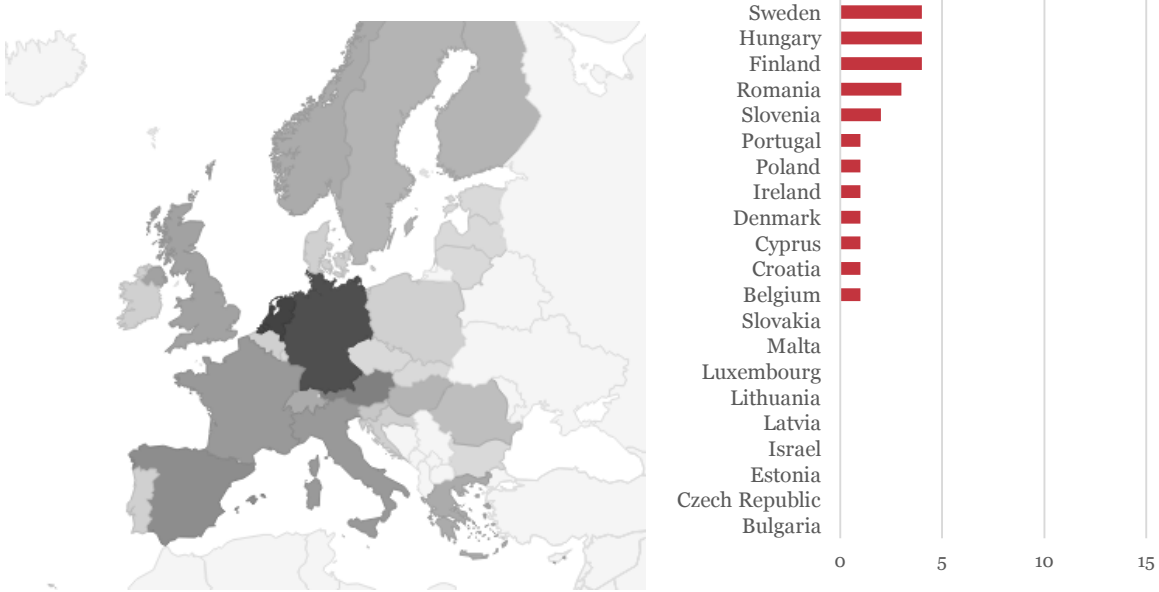
	Average	Median	Min	Max	Number of observations
Primary end-users	446	100	10	3,000	14
Secondary end-users	31	3	1	300	16

Figure 21 Number of end-users benefitting from the provision of solutions or components (sum)

The number of respondents for each sub-question are: 15 (Primary end-users) and 16 (Secondary end-users)

Respondents also indicated the countries where (potential) end-users are located, which includes, more prominently, the Netherlands, Germany, Austria, Spain, Italy, France, and the UK – see Figure 22. However, end-users are also located further away in countries such as Croatia, Cyprus, Poland, Slovenia, and Romania.

Figure 22 Countries where end-users are located

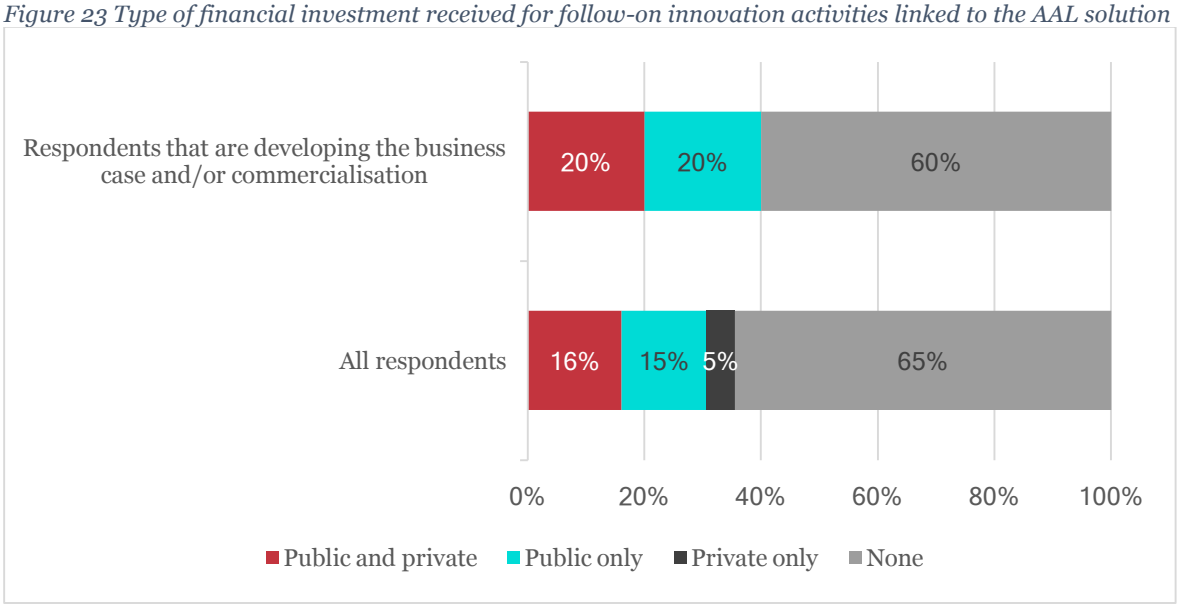


The number of responses is 103

5.6 Follow-on investment

35% of AAL project participants received financial investment from public (e.g. loans, grants and investments) or private third parties (e.g. investments by venture capitalists, banks, business angels and incubators) for follow-on innovation activities. As illustrated in Figure 23, when considering the subset of respondents that have as role developing the business case and/or commercialisation, 40% have received financial investment. All of these companies that were able to attract investment, attracted both public and private investment or attracted only public investment. The remaining 60%/65% may not require additional investment. Perhaps investment from the AAL JP and other sources prior and during the project phase was sufficient to launch the AAL solution or component. In some cases, projects were not successful and were abandoned.

Figure 23 Type of financial investment received for follow-on innovation activities linked to the AAL solution



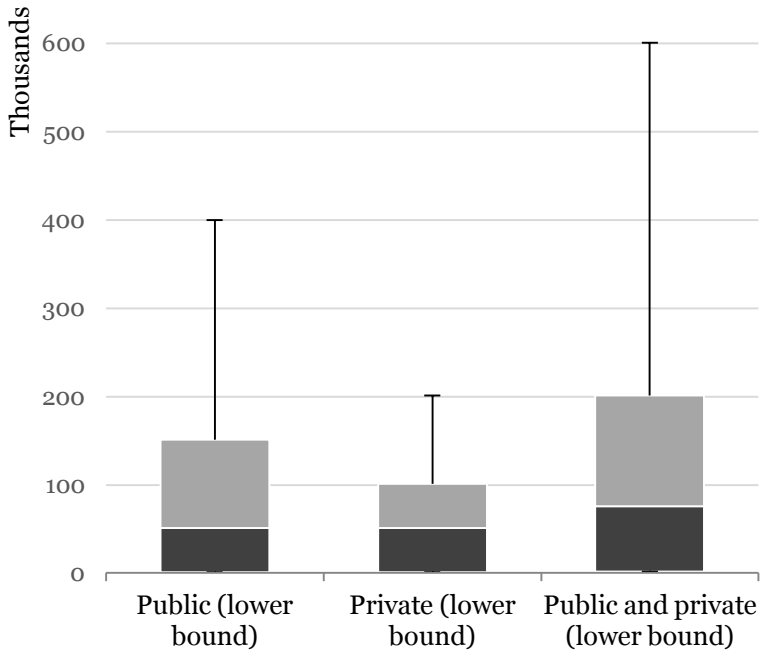
The number of respondents is 62 (all respondents) and 15 (respondents that are developing the business case and/or commercialisation)

The total value of financial investment received from public and/or private third parties for follow-on innovation activities linked to the AAL solution ranges from €1k-€601k (using respondents' lower bound of the range[17] as estimate), see also Figure 24 and Table 9. Average public and private investment is €138k. Average private investment amounts to €66k (median €51k) and average public investment amounts to €114k (median €51k).

The total value of financial investment received for the 22 AAL JP funded project participants receiving such investment is estimated to fall in the range €3m-€5.5m. €3m represents the lower bound estimate and €5.5m represents a tentative upper bound (three organisations noted they received more than €400k in public investment and estimates are capped at €400k).

[17] These are lower bound estimates because survey respondents were asked to indicate the size of investment received in the form of brackets, e.g. €1k-€50k, €50k-€100k, €101k-€200k, €201k-€400k, or more than €400k and the lower bounds are used in the calculation of ranges, averages, medians and quartiles.

Figure 24 Estimated value of financial investment received (if larger than zero), per participant



The number of respondents are 19 (public), 13 (private) and public and private (22)

Table 9 Values of financial investment, in thousands

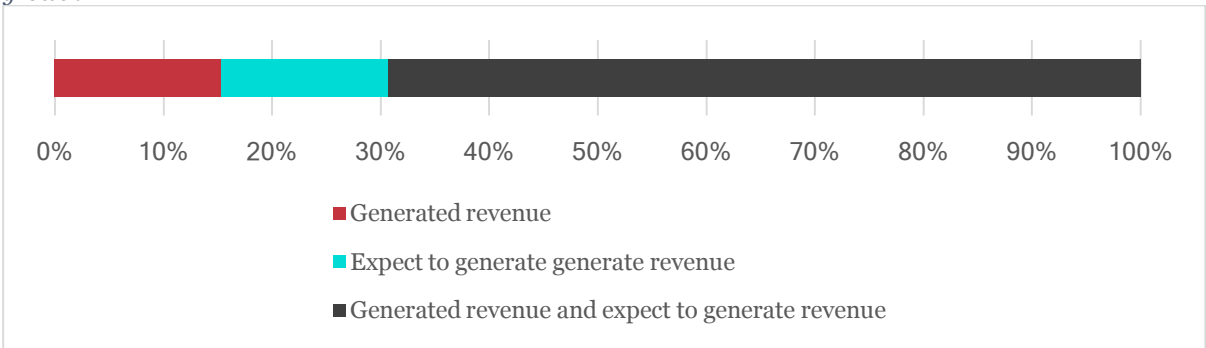
	Public (lower bound)	**Private (lower bound)**	**Public and private (lower bound)**
Average	€ 114k	€ 66k	€ 138k
Median	€ 51k	€ 51k	€ 76k
Min	€ 1k	€ 1k	€ 1k
Max	€ 400k	€ 201k	€ 601k
Sum	€ 2,166k	€ 863k	€ 3,029k
Number of organisations	19	13	22

5.7 Revenues from new AAL solutions or components

41% of the respondents generated revenue from AAL solutions and components and/or expect revenue growth. Figure 25 shows that this group of respondents mostly consists of organisations that have already generated revenue and also expect to generate revenue in the next two years. Most of the revenue earning organisations are SMEs (the largest proportion of respondents) and others are R&D and end-user organisation and larger enterprise. The group of revenue earning organisations does not include HEIs. The remaining 59% of respondents indicate that they have not generated revenue from AAL solutions and components and do not expect revenue growth[18].

[18] Around 30% of those that did contribute to the survey did not reply to this survey question. It is unclear if these organisations generated revenue from AAL solutions and components and/or expect revenue growth.

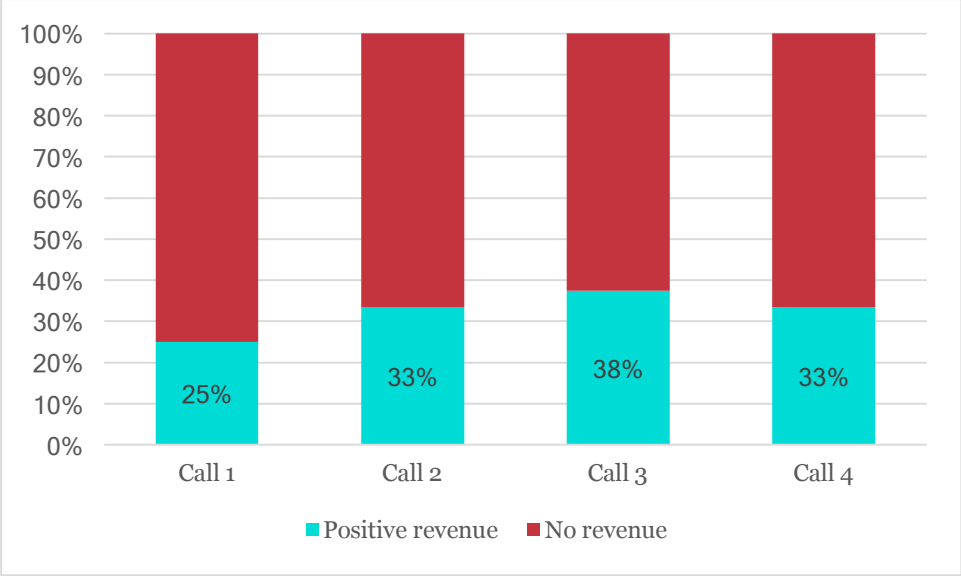
Figure 25 Organisations that generated revenue from AAL solutions and components and/or expect revenue growth



The number of respondents is 64, out of which 26 generated revenue and/or expect to generate revenue; 36 have not generated revenue and do not expect to generate revenue

There is some variation in the proportion of organisations that have generated revenue across Call 1-4 and a slightly larger proportion of organisations (38%) from Call 3 (ICT-based Solutions for Advancement of Older Persons' Independence and Participation in the "Self-Serve Society") generated revenue from AAL solutions and components. Overall the proportion of revenue generating organisations lies around 33%, see Figure 26.

Figure 26 Percentage of organisations that generated revenue from AAL solutions and components that were (partly) developed in the AAL project, by call



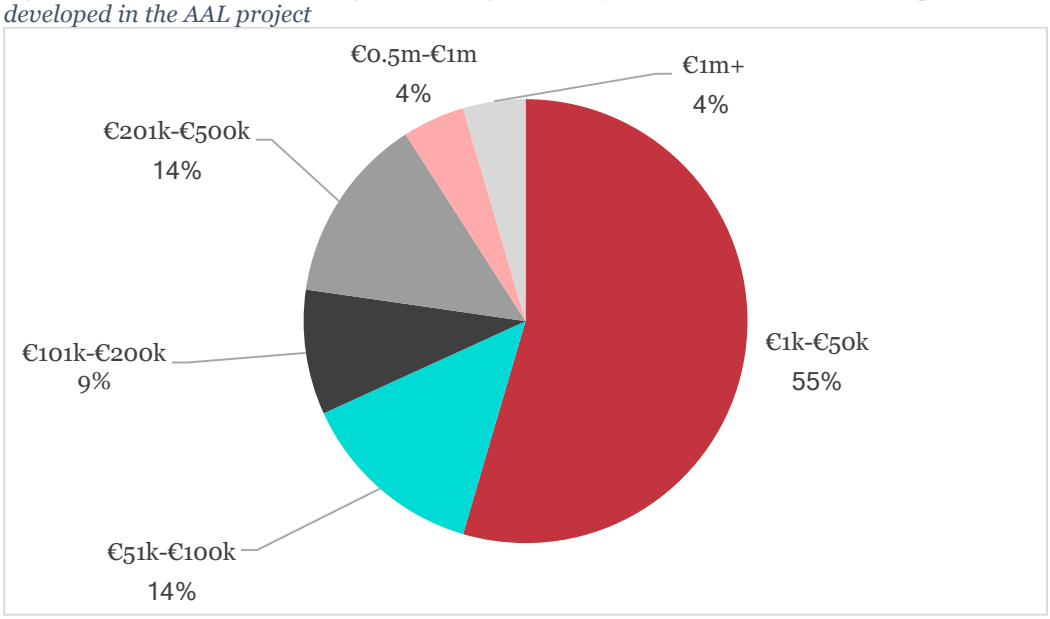
The number of respondents is 67 (which excludes one respondent from call 5)

Figure 27 presents an overview of the total value of the revenue, organisations generated from AAL solutions and components that have been developed (partly) in the AAL project. Around 55% of revenue earning organisations generated between €1k-€50k and close to 25% generated between €51k-€200k. The remaining organisations generated revenues higher than €201k. Only four of these 22 revenue earning organisations (18%) received revenue from the licensing of patents, trademarks, copyright, etc.

As already shown, most of the organisations that have already generated revenue from AAL solutions and components likewise expect positive revenue in the next year. Expected revenue growth from these and other organisations with positive outlook ranges from 1-20% to more than 100%, with the majority

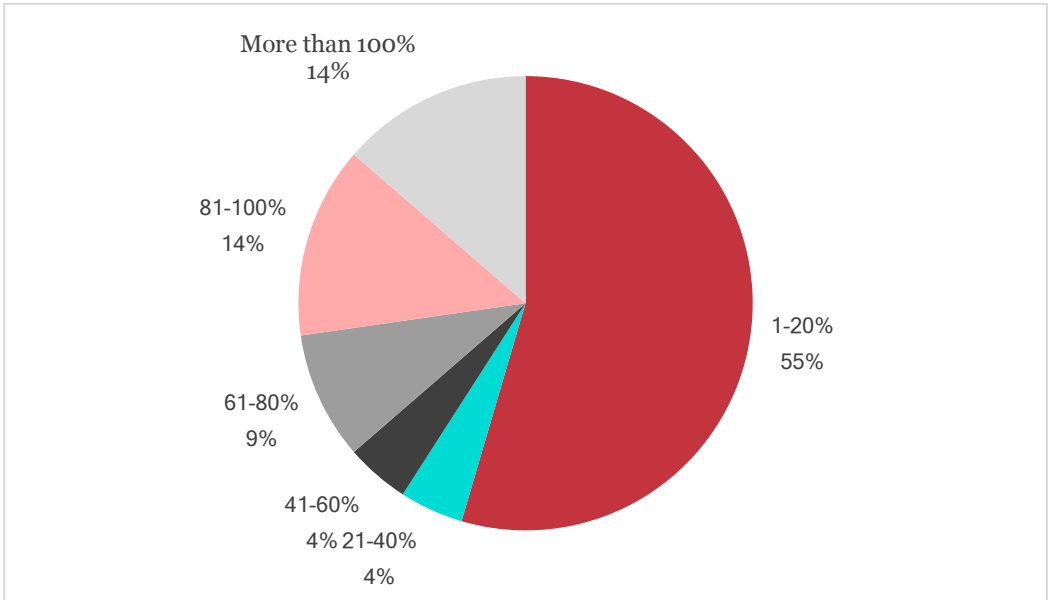
expecting 1-20% revenue growth. Around 30% of organisations expect revenue growth close to or more than 100%, see Figure 28.

Figure 27 Estimated revenue organisations generated from AAL solutions and components that were (partly) developed in the AAL project



The number of respondents is 22

Figure 28 Expected revenue growth over the next year for AAL solutions and components



The number of respondents is 22

As presented in the table below, the average revenue from AAL solutions and components was €112k (lower bound estimate) and average expected revenue next year is estimated at €191k[19]. The median

[19] Lower bound expected revenue estimates represent the survey respondents' indicated revenue earned multiplied by the expected growth rate. Because revenue earned and expected growth rates were provided within a range (e.g. €1k-€50k revenue and 21%-

estimates are considerably lower, around €1k-€2k, suggesting that (in the short-term) many organisations only earn and expect modest revenues from AAL solutions and components. One organisation (an end-user organisation) suggested more than €1m revenue was earned and is expecting a growth rate higher than 100% in the next year (yielding a conservative expected revenue for next year of €2m).

The sum of total revenue earned (for the 22 organisations) amounts to around €2.5m (lower bound estimate) but could also be as high as €4.8m (tentative upper bound estimate)[20]. Expected revenue for next year are estimated in the range of €4.2m - €7.8m (lower and tentative upper bound estimates).

Table 10 Past revenue and expected revenue (lower bound estimates) from AAL solutions and components

	Past revenue (lower bound)	**Expected revenue next year (lower bound)**
Average	€ 112k	€ 191k
Median	€ 1k	€ 2k
Min	€ 1k	€ 1k
Max	€ 1,000k	€ 2,000k
Sum	€ 2,471k	€ 4,191k
Number of organisations	22	22

5.8 Creation of new companies

10 of 81 participants (12%) reported that, as a result of the AAL project, their organisation created a spin-off. Associated growth rates of the spin-offs are estimated to range from 0% for some organisations to 60% for other organisations over the previous year. One example of such spin-off is the organisation MYlifeproducts which offers a memory assistant via a user tablet. This company was launched having benefitted from support of the AAL project MY LIFE[21].

5.9 Protection of Intellectual Property

14 out of 81 organisations (17%) reported to have made actions to legally protect the AAL solution or component, e.g. through patents, trademarks and other formal legal protection.

Although this percentage is fairly low, it is not uncommon that e.g. SMEs, universities and other organizations find it difficult to navigate the IPR protection landscape and apply for the most relevant IP scheme. Also, in some cases it may be difficult to build a case for a patent.

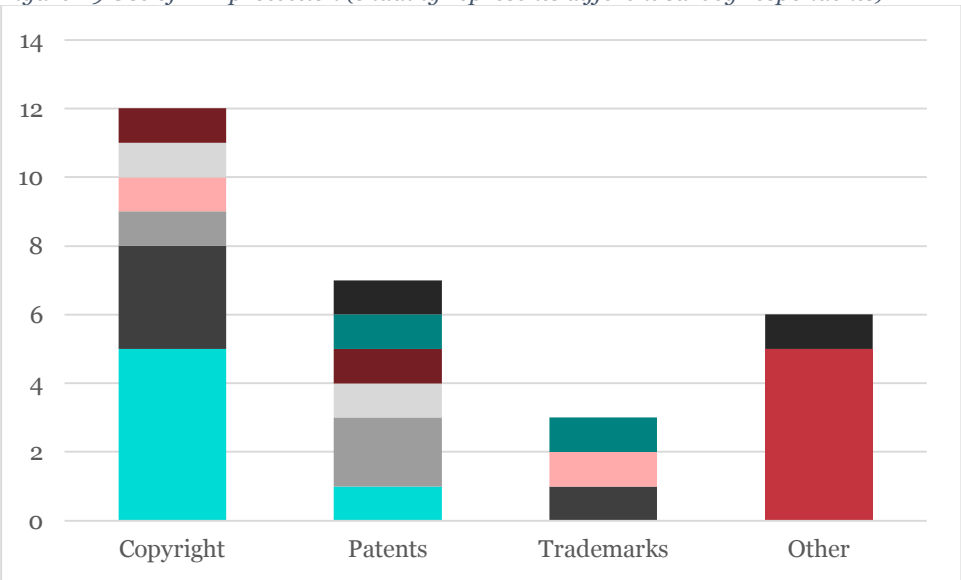
Figure 29 and Table 11 provide an overview of the use of IPR protection amongst survey respondents, to protect AAL solutions and components. The most common source of legal protection are copyrights and patents (used by 6 of the organisations or 7 % of all respondents). Trademarks are used by 3 of the survey respondents and two organisations also use Business Concepts and non-disclosure agreements (NDAs). The types of organisations that have implemented IPRs are R&D and end-user organisations, and SMEs.

40% growth) the lower end of the ranges were used to produce the lower bound estimate for the calculation of ranges, averages, medians and quartiles.

[20] Upper bound estimates are capped.

[21] https://www.mylifeproducts.no/en/2015/06/12/norwegians-hailed-as-a-success-by-aal/

Figure 29 Use of IPR protection (shading represents different survey respondents)



The number of respondents is 12 from 12 different AAL projects.

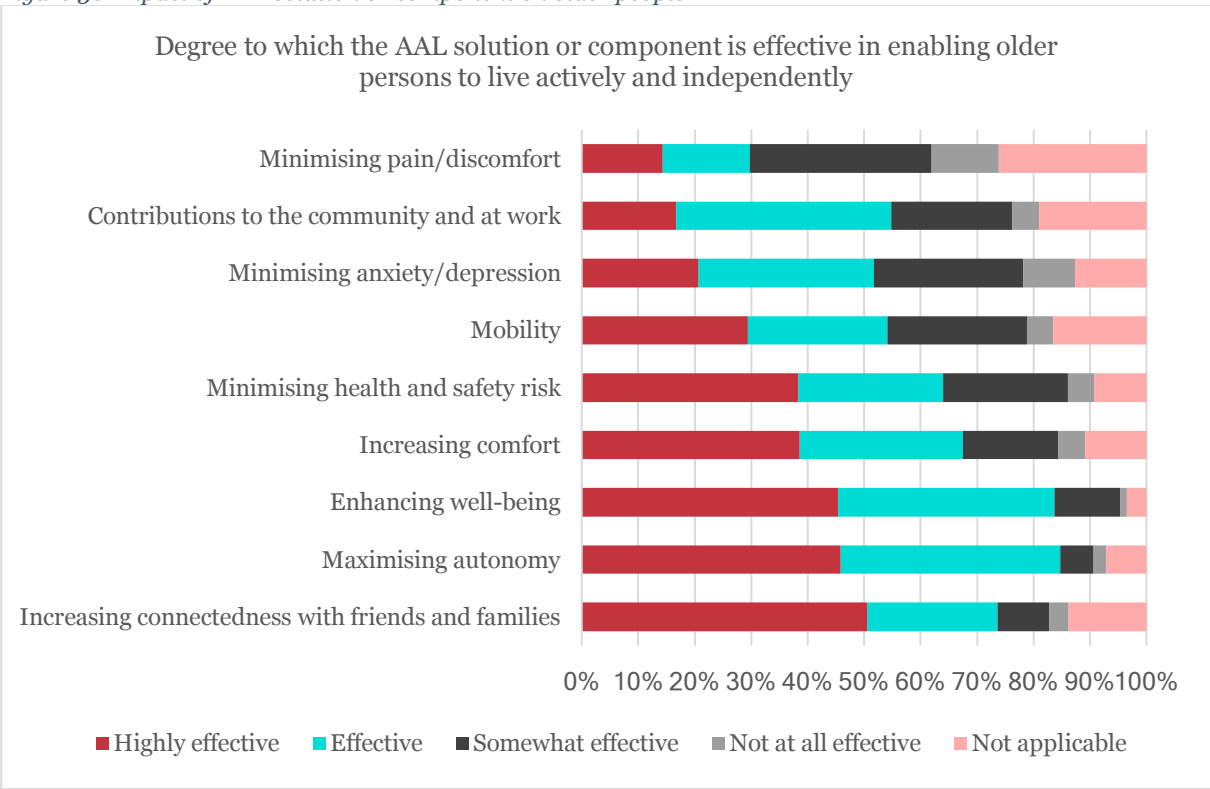
Table 11 Frequency of use of IPR protection

	Copyright	**Patents**	**Trademarks**	**Other**
Average	2.0	1.2	1.0	3.0
Range	[1-5]	[1-2]	1	[1-5]

5.10 Wider socioeconomic impact of the AAL projects

Survey respondents were asked to rate the extent to which the AAL solution or component developed in the AAL JP funded project are effective in enabling older persons to live actively and independently along a set of dimensions, as presented in Figure 30. The AAL solutions or components were seen as effective or highly effective in most of the dimensions by a substantial proportion of the respondents. In particular, more than 60% viewed the following either as highly effective or as effective: increasing connectedness, maximising autonomy, enhancing well-being, increasing comfort, and minimising health and safety risk. A smaller percentage of respondents, around 30%, view that the solutions/components were effective in minimising pain and discomfort. At most 30% of respondents suggest that these types of benefits to older people are not applicable to the solutions/components proposed.

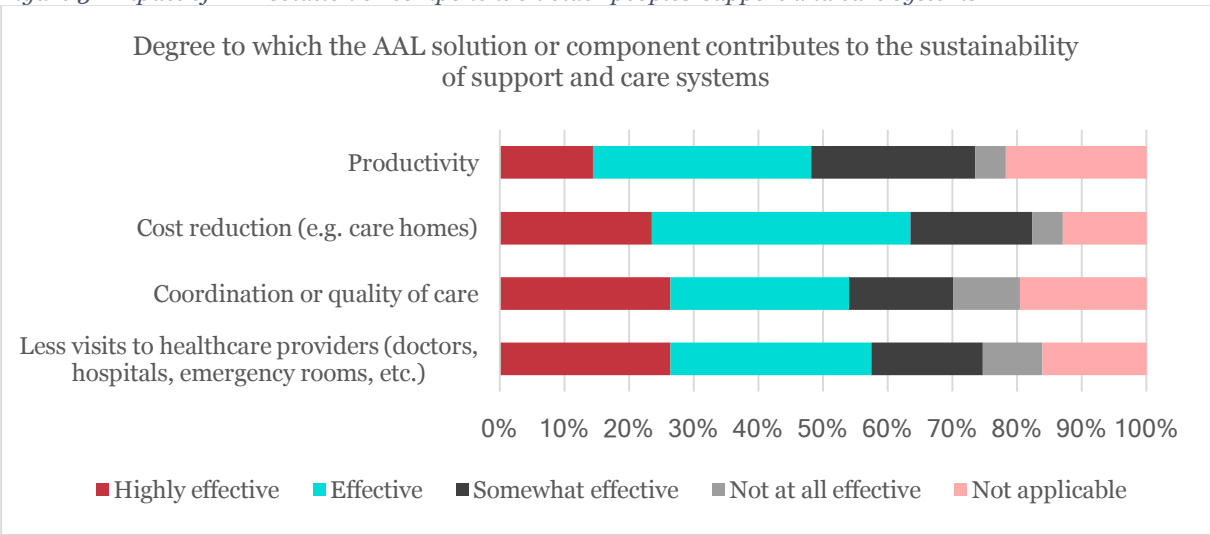
Figure 30 Impact of AAL solution or component on older people



The number of respondents is 85 (Mobility), 84 (Contributions to the community and at work), 86 (Minimising health and safety risk), 84 (Minimising pain/discomfort), 87 (Minimising anxiety/depression), 85 (Maximising autonomy), 83(Increasing comfort Increasing connectedness with friends and families), and 87 (Enhancing well-being)

A majority of respondents, see Figure 31, find that the AAL solution or component contributes to the sustainability of support and care systems in terms of cost reductions, coordination of care, and by reducing the number of visits of older people to healthcare providers. Just below 50% find that the AAL solution or component contributes to increase productivity, although over 70% would argue that it would *at least* have some positive effect on productivity. Overall, these results suggest that the AAL JP contributes to increase efficiency and sustainability of the care systems of older people.

Figure 31 Impact of AAL solution or component on older peoples' support and care systems

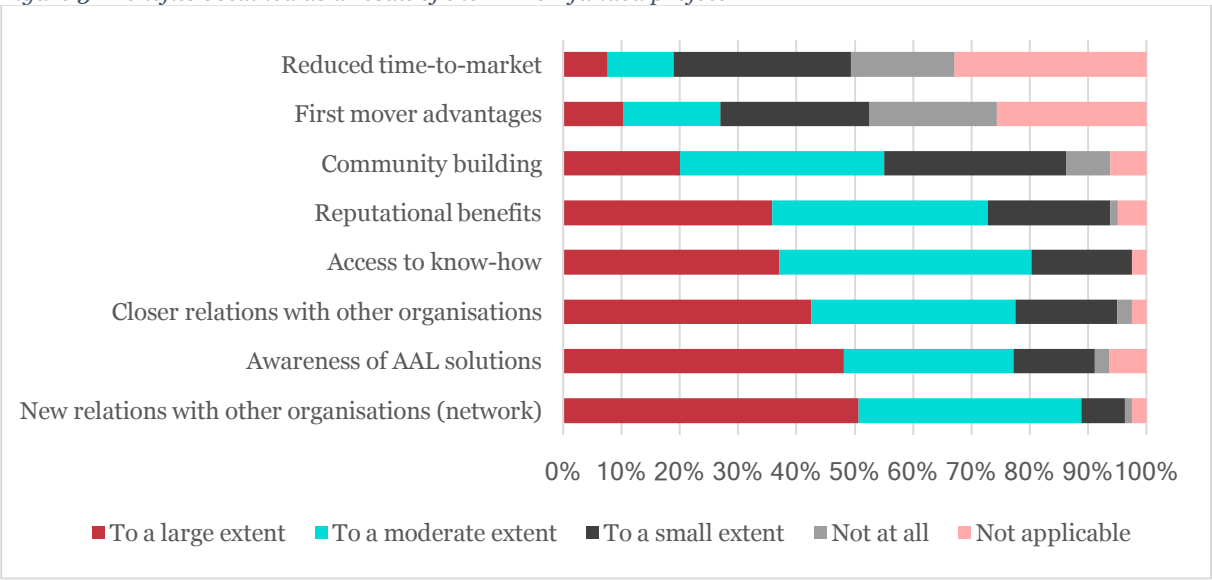


The number of respondents is 83 (Productivity), 85 (Cost reduction), 87 (Less visits to healthcare providers), and 87 (Coordination or quality of care)

Survey respondents rated a list of potential benefits that they may have obtained as a result of the AAL JP funded project. The results are presented in the figure below. Close to 50% of the respondents find that, to a large extent, they were able to form new relations with other organisations and benefitted from greater awareness of AAL solutions as a result of project participation. More than 50% of the respondents indicated that, to a large/moderate extent, they were able to build closer relation with other organisations, benefitted from access to know-how and from reputational benefits and community building as a result of project participation. Close to 50% of the respondents suggested that they benefitted, at least to a small extent, from reduced time-to-market and first mover advantages as a result of AAL JP funded project participation.

Some of the respondents also listed a number of other benefits. One respondent indicated that that he/she experienced an increased confidence and support to take the AAL product and service to a new level. Another respondent suggested that the AAL JP funded project contributed to an increased international visibility, with a positive impact on the development of new partnerships and business growth. Overall, these benefits to industry and other organisations contribute to strengthening the industrial base in Europe in ICT products and services for ageing well.

Figure 32 Benefits obtained as a result of the AAL JP funded project



The number of respondents is 81 (New relations with other organisations), 80 (Closer relations with other organisations), 80 (Community building), 81 (Reputational benefits), 81 (Access to know-how), 79 (Reduced time-to-market), 78 (First mover advantages), and 79 (Awareness of AAL solutions)

20 organisations (representing 16 AAL projects) reported to have contributed in one or more ways to European or international common approaches, partly as a result of participation in the AAL project. 11 respondents reported to have contributed to the development of guidelines. The types of guidelines contributed to included ethical guidelines, end-user guidelines, guidelines for the design of user interfaces for older people, guidelines for designing graphical and voice user interfaces for older people, guidelines for the setup and management of online communities of older adults, Human Computer Interaction (HCI) design principles. This also includes some more practical guidance on user-centred development for older people and/or solutions in the field of AAL and new practices to track physical activity.

Six survey respondents identified contributions to standardisation. For example, AAL JP funded project participants made the following contributions to standardisation:

- Standardization of gesture control and AAL system
- Standardization of a communication framework,
- Proposals to ISO Committee for healthcare robots
- NFC (Near Field Communication)
- Collaboration for new standards in medical displays

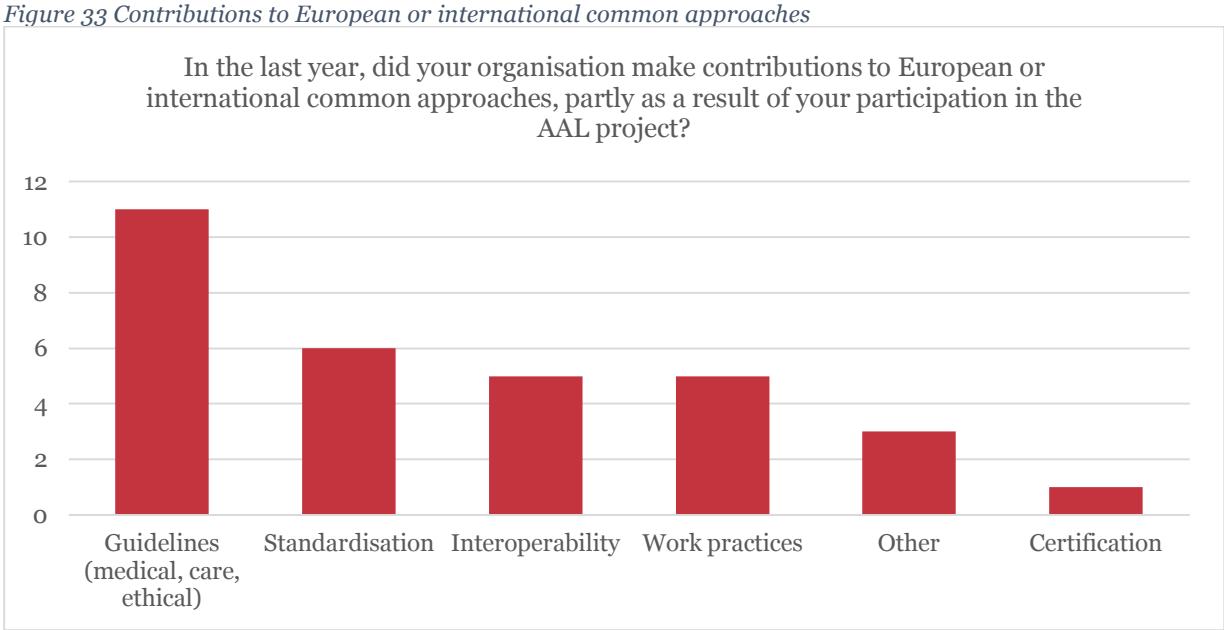
5 AAL JP funded project participants contributed to the development of interoperable common approaches with regards to e.g.:

- Communications between different systems
- UNIVERSAL protocol
- Internet of Things
- Mobil handsets and Smart Phones
- Integration of different ambient devices.

Another five survey respondents suggested they contribute to the development of common work practices. Examples of contributions include work on the development of e-learning projects and contributions to workshops on how to deal with user requirements in AAL projects.

Other examples of ways in which project participants contributed to develop European or international common approaches include via participation in conferences and workshops and the dissemination best practices.

Figure 33 Contributions to European or international common approaches



The number of respondents is 20 (from 16 projects).

6 Conclusion

The aim of the first post-project impact assessment of AAL JP funded projects was to measure the direct outcomes for project participants as well as broader socio-economic impacts of the funded projects and the programme overall. The survey included detailed questions to understand how the programme's high-level objectives; ie a better quality of life for older persons, increased efficiency and sustainability of the care systems, and strengthening the industrial base in Europe in ICT products and services for ageing well was achieved by the ensemble of project results.

The 20% response rate of participants that received funding years before the survey was deemed good, providing information about 50 completed projects, close to 80% coverage of all targeted projects. In future, a similar assessment might incorporate some more streamlined survey questions, accompanied by an intensive campaign to motivate project participants to respond to post-project surveys.

Impact was assessed against a set of key impact indicators that highlight the achievements of the AAL Programme:

1. **Collaboration with end-users**: the vast majority of participants (75%) indicated sustained collaboration with primary, secondary and/or tertiary end-users while developing an AAL solution or component, covering a minimum of 45 projects.
2. **Collaboration with enterprises and research organisations**: over two third of participants (68%) continued to collaborate with enterprises and RTD organisations after the end of the project, indicating that strong and sustainable partnerships were formed during the funded period.

3. **Partnerships in value chains**: one third of participants (linked to half of the funded projects) are part of a value chain to further develop, commercialise or deploy AAL solutions or components.
4. **Commercialisation of solutions & components**: Over 40% of participants (linked to 27 funded projects) either commercially launched an AAL solution or component or plan to launch an AAL solution in the next two years.
5. **Users of new AAL solutions**: 29% of participants (linked to 20 funded projects) indicated that they provide their AAL solutions to over 6,000 end users across over 20 EU member states.
6. **Follow-on investment**: more than one third of participants (linked to 19 projects) received financial investment mostly from public but some from private third parties for follow-on innovation activities. The total value of financial investment received is estimated to be in the range €3m-€5.5m.
7. **Revenue generated**: 41% of participants generated revenue from AAL solutions and components funded by the programme and/or expect revenue growth. Those that have already generated revenues expect to continue to generate revenue next year. The average revenue from AAL solutions and components was €112k with expected revenue the next year at €191k. The sum of total revenue earned (for the 22 organisations) amounts to between €2.5m-€4.8m with expected revenue for the next year in the range of €4.2m-€7.8m.
8. **Intellectual property protection**: only 17% of participants indicated that they took actions to legally protect the AAL JP funded project's results, with mostly copyrights.
9. **Creation of new company**: only 12% of participants indicated that they created a spin-off as a result of the AAL JP funded project

Project participants that have responded to the survey had an overall positive opinion on the degree to which the AAL JP is achieving the high-level objectives of the programme:

- **Better quality of life for older persons.** More than 60% regarded the following dimensions of their AAL solution or component either as highly effective or as effective: increasing connectedness, maximising autonomy, enhancing well-being, increasing comfort, and minimising health and safety risk. A smaller percentage of respondents, around 30%, considered that the solutions/components were effective in minimising pain and discomfort.
- **Increased efficiency and sustainability of the care systems**. A majority of respondents find that their AAL solution or component effective or highly effective in contributing to the sustainability of support and care systems in terms of cost reductions, coordination of care, and by reducing the number of visits of older people to healthcare providers. Just below 50% found that the AAL solution or component is effective or highly effective in contributing to increased productivity.
- **Strengthening the industrial base in Europe in ICT products and services for ageing well**. Close to 50% of the respondents found that, to a large extent, they were able to form new relations with other organisations and benefitted from greater awareness of AAL solutions as a result of project participation. More than 50% of the respondents indicated that, to a large/moderate extent, they were able to build closer relation with other organisations, benefitted from access to know-how and from reputational benefits and community building as a result of project participation. Close to 50% of the respondents suggested that they benefitted, at least to a small extent, from reduced time-to-market and first mover advantages as a result of AAL JP funded project participation. Overall, the survey provides evidence that the AAL programme contributes to strengthening the industrial base in Europe in ICT products and services for ageing well.
- **Development of EU/international common approaches.** AAL JP project participants (20) suggested that through the funded AAL JP project, they contributed to the development of guidelines, standardisation, interoperability, and certification.

Finally, the vast majority of survey respondents (87%) suggested that the AAL JP funded project has been important or very important in comparison to other support programmes and private

investments for developing their AAL solution or component. This provides a resounding appreciation of the AAL programme from the funded participants even when they are no longer actively supported by the programme itself.

Appendix A Survey questionnaire

AAL Innovation Impact Assessment Questionnaire

Introduction

The objective of the Ambient Assisted Living (AAL) Programme is " **to enhance the quality of life of older people and strengthen the industrial base in Europe through the use of Information and Communication Technologies (ICT)**". The Management Unit (CMU and National Contact Persons) of the AAL Programme monitors progress, outputs and results during the lifetime of its projects.

It was decided to launch post-project monitoring of the social and economic impacts of its projects in order to follow up on the implementation of AAL Programme projects and evaluate the corresponding successes and challenges at the Call and Programme level. This analysis ('innovation impact assessment') will contribute to accountability and advocacy of the AAL Programme and provide a new platform for past AAL Programme participants to showcase and promote their AAL solutions as well as feedback on their achievements and experiences.

This questionnaire serves as the platform of collecting the information necessary to perform innovation impact assessment. AAL Programme projects involve a large number of participants from different types of organisations that all play crucial but different roles in the process of developing AAL solutions for the older people. Therefore, **all individual project participants** are asked for their contribution in providing information about their continued roles and achievements in the period following the end of the formal AAL Programme project funding.

The success of the overall AAL Programme will contribute to its sustainability and enable future researchers, developers and entrepreneurs to meet the challenges of the ageing demographics.

The collected data is primarily for the use of the AAL Programme and as such will be kept strictly confidential. The AAL Programme may however aggregate the results to publish overall achievements. Any specific information linked to the original AAL project that could be used for case studies on the AAL website will go through a preliminary approval by the project participants. If you have any questions related to this survey, please contact us at impact@aal-europe.eu.

We thank you in advance for your collaboration!

Before you begin, please make sure that your browser is maximised. It is easy to navigate through the questionnaire: just click on your answer or answers for each question. You may need to use the scroll bar to see the next question. To continue, click on the next button at the bottom of each page. While your browser is open you may go backward and forward in the survey but you will not be able to return to your survey once you have submitted the survey.

Please click 'Next page' to enter the survey.

AAL Innovation Impact Assessment Questionnaire

Introduction

* 1. Select the name (acronym) of the AAL project to which your survey answers apply:

* 2. What has been the role of your organisation in the AAL project? Tick all that apply:

- [ ] Performing Research & Development
- [ ] Developing the business case and/or commercialisation
- [ ] End-user perspective
- [ ] Other (please specify)

* 3. In which country is your organisation based (for the context of the AAL project)?

AAL Innovation Impact Assessment Questionnaire

AAL solution or components developed in the project

AAL projects may develop specific devices, products and/or services but more often a combination of these are bundled in order to deliver a real solution to enhance the quality of life of older people. Therefore the survey addresses any type of such solutions under the category of ‘solutions’.
AAL projects recognise the relevance of components that can be combined with other existing products and services to deliver innovative AAL solutions. A component can be any discrete device or software module of a system that can be used, re-used and adapted to the specific requirements of multiple AAL solutions.

4. Please summarise the AAL solution or component that your organisation developed/contributed to in the project.

5. Please describe the main innovations of the AAL solution or component in terms of functionalities (reliability, flexibility, personalisation, interoperability, etc.)?

6. Please rate the extent to which your AAL solution or component is effective in enabling older persons to live actively and independently along the following dimensions:

	Not at all effective	Somewhat effective	Effective	Highly effective	Not applicable
Mobility	○	○	○	○	○
Contributions to the community and at work	○	○	○	○	○
Minimising health and safety risk	○	○	○	○	○
Minimising pain/discomfort	○	○	○	○	○
Minimising anxiety/depression	○	○	○	○	○
Maximising autonomy	○	○	○	○	○
Increasing comfort	○	○	○	○	○
Increasing connectedness with friends and families	○	○	○	○	○
Enhancing well-being	○	○	○	○	○
Other	○	○	○	○	○

Other (please specify):

7. Please rate the extent to which your AAL solution or component contributes to the sustainability of support and care systems.

	Not at all effective	Somewhat effective	Effective	Highly effective	Not applicable
Productivity	○	○	○	○	○
Cost reduction (e.g. care homes)	○	○	○	○	○
Less visits to healthcare providers (doctors, hospitals, emergency rooms, etc.)	○	○	○	○	○
Coordination or quality of care	○	○	○	○	○
Other	○	○	○	○	○

Other (please specify):

AAL Innovation Impact Assessment Questionnaire

Collaboration with end-users

The AAL Programme differentiates between three types of end-users:

- **A primary end-user** is the person who is actually using an AAL product or service, a single individual, “the well-being person”. This group directly benefits from AAL by increased quality of life. This group can be represented by, for example, senior organisations that contribute their expertise to projects and that assist in identifying end-users that are willing to participate in pilots.
- **Secondary end-users** are persons or organisations directly being in contact with a primary end-user, such as formal and informal care persons, family members, friends, neighbours, care organisations and their representatives. This group benefits from AAL directly when using AAL products and services (at a primary end- user home or at a remote location) and indirectly when the care needs of primary end-users are reduced.
- **Tertiary end-users** are private or public organisations not directly in contact with AAL products and services, but who somehow contribute in organising, paying or enabling them. This group includes public sector service organisations, social security systems, insurance companies. Common to these is that their benefits from AAL solutions come from increased efficiency and effectiveness, which result in savings or by not having to increase expenses in the mid/long term.

* 8. After the end of the project, did your organisation continue to collaborate with primary end-users (older persons whose quality of life is addressed) while testing, implementing or improving the AAL solution or component that was developed in the project?

- ◯ Yes
- ◯ No

AAL Innovation Impact Assessment Questionnaire

Collaboration with primary end-users

9. Please provide an estimation of the number of primary end-users that your organisation collaborates with, since the end of the project.

10. What is the scope of collaboration with primary end-users since the end of the project? Tick all that apply:

- [ ] Research and innovation project
- [ ] Implementation partner
- [ ] Test panel
- [ ] Supplier-customer relation
- [ ] Other (please specify):

11. Does this concern the same primary end-users (individuals) as those involved in the finished AAL project?

- ( ) Yes
- ( ) No

If no, please specify which other primary end-users are involved:

AAL Innovation Impact Assessment Questionnaire

Collaboration with secondary end-users

* 12. After the end of the project, did your organisation start or continue to collaborate with secondary end-users (such as formal and informal care organisations) while testing, implementing, and improving the AAL solution or component that was developed in the project?

- ◯ Yes
- ◯ No

AAL Innovation Impact Assessment Questionnaire

Collaboration with secondary end-users

13. Does this concern the same secondary users (such as formal and informal care organisations) as those involved in the finished AAL project?

- ◯ Yes
- ◯ No

If no, please specify which other secondary end-users are involved:

14. Please provide an estimation of the number of secondary end-users (organisations) that your organisation collaborates with, since the end of the project.

15. What is the scope of collaboration with secondary end-users since the end of the project? Tick all that apply:

- ☐ Research and innovation project
- ☐ Implementation partner
- ☐ Pilot site
- ☐ Supplier-customer relation
- ☐ Other (please specify):

AAL Innovation Impact Assessment Questionnaire

Collaboration with tertiary end-users

* 16. After the end of the project, did your organisation start or continue to collaborate with tertiary end-users (such as public sector service organisations, social security systems and insurance companies) while testing, implementing or improving the AAL solution or component that was developed in the project?

- ◯ Yes
- ◯ No

AAL Innovation Impact Assessment Questionnaire

Collaboration with tertiary end-users

17. Does this concern the same tertiary end-user organisations as those involved in the finished AAL project?

- ◯ Yes
- ◯ No

If no, please specify which other tertiary end-users are involved:

18. Please provide an estimation of the number of tertiary end-user organisations (such as public sector service organisations, social security systems and insurance companies) that your organisation collaborates with.

19. What is the scope of collaboration with tertiary end-user organisations (such as public sector service organisations, social security systems and insurance companies) since the end of the project? Tick all that apply:

- ☐ Research and innovation project
- ☐ Implementation partner
- ☐ Pilot site
- ☐ Supplier-customer relation
- ☐ Other (please specify):

AAL Innovation Impact Assessment Questionnaire

Collaboration with enterprises

* 20. After the end of the project, did your organisation continue to collaborate with enterprises (former project partners) in the development or market launch of the AAL solution or component that was developed in the project?

- ◯ Yes
- ◯ No

* 21. After the end of the project, did your organisation continue to collaborate with enterprises (former project partners) in the development or market launch of other, subsequent solutions or components in the AAL domain?

- ◯ Yes
- ◯ No

22. How many enterprises (former project partners) does your organisation continue to interact with in the same way as in the project?

23. What is the scope of collaboration with these enterprises since the end of the project? Tick all that apply:

- ☐ Research and innovation project
- ☐ Implementation partner
- ☐ Test panel
- ☐ Supplier-customer relation
- ☐ Other (please specify):

AAL Innovation Impact Assessment Questionnaire

Collaboration with research and technological development (RTD) organisations

* 24. After the end of the project, did your organisation continue to collaborate with research and technological development (RTD) organisations (former project partners) in the development or market launch of the AAL solution or component that was developed in the project?

- ◯ Yes
- ◯ No

* 25. After the end of the project, did your organisation continue to collaborate with research and technological development (RTD) organisations (former project partners) in the development or market launch of other, subsequent solutions or components in the AAL domain?

- ◯ Yes
- ◯ No

26. How many research and technological development (RTD) organisations (former project partners) does your organisation continue to interact with in the same way as in the project?

27. What is the scope of collaboration with these research and technological development (RTD) organisations?

- ☐ Research and innovation project
- ☐ Implementation partner
- ☐ Test panel
- ☐ Supplier-customer relation
- ☐ Other (please specify):

AAL Innovation Impact Assessment Questionnaire

Partnerships to build value chains

The AAL Programme aims at creating new networks of organisations that develop and commercialise or deploy AAL solutions or components. A value chain represents consecutive steps of activities that transform inputs, organise processes and include logistics, operations, marketing and sales of products and services.

* 28. Is your organisation enrolled as a member in a new value chain to launch the AAL solution or component (developed in the project) on the market?

- ◯ Yes
- ◯ No

AAL Innovation Impact Assessment Questionnaire

Partnerships to build value chains

29. How many (and which) former AAL project partners are part of this new value chain?

How many

Which partner(s)

30. From which countries? Tick all that apply:

- [ ] Austria
- [ ] Belgium
- [ ] Bulgaria
- [ ] Croatia
- [ ] Cyprus
- [ ] Czech Republic
- [ ] Denmark
- [ ] Estonia
- [ ] Finland
- [ ] France
- [ ] Germany
- [ ] Greece
- [ ] Hungary
- [ ] Ireland
- [ ] Israel
- [ ] Italy
- [ ] Latvia
- [ ] Lithuania
- [ ] Luxembourg
- [ ] Malta
- [ ] Netherlands
- [ ] Norway
- [ ] Poland
- [ ] Portugal
- [ ] Romania
- [ ] Slovakia
- [ ] Slovenia
- [ ] Spain
- [ ] Sweden
- [ ] Switzerland
- [ ] United Kingdom
- [ ] Other (please specify)

AAL Innovation Impact Assessment Questionnaire

Partnerships to build value chains

* 31. Did your organisation join an existing value chain to launch the AAL solution or component (developed in the project) on the market?

- ◯ Yes
- ◯ No

AAL Innovation Impact Assessment Questionnaire

Partnerships to build value chains

32. How many (and which) former AAL project partners are part of this existing value chain?

How many

Which partner(s)

33. From which countries? Tick all that apply:

- [ ] Austria
- [ ] Belgium
- [ ] Bulgaria
- [ ] Croatia
- [ ] Cyprus
- [ ] Czech Republic
- [ ] Denmark
- [ ] Estonia
- [ ] Finland
- [ ] France
- [ ] Germany
- [ ] Greece
- [ ] Hungary
- [ ] Ireland
- [ ] Israel
- [ ] Italy
- [ ] Latvia
- [ ] Lithuania
- [ ] Luxembourg
- [ ] Malta
- [ ] Netherlands
- [ ] Norway
- [ ] Poland
- [ ] Portugal
- [ ] Romania
- [ ] Slovakia
- [ ] Slovenia
- [ ] Spain
- [ ] Sweden
- [ ] Switzerland
- [ ] United Kingdom
- [ ] Other (please specify):

AAL Innovation Impact Assessment Questionnaire

Partnerships to build value chains

34. Is there a dedicated business partner, outside the project consortium, that commercialises the AAL project's results?

- ◯ No
- ◯ Yes (please provide the name of this business partner and summarise its activities):

35. Has the original business plan developed in the AAL project proved to be successful or new business approach had to be developed after the project?

- ◯ Original business plan successful
- ◯ New business approach developed
- ◯ Not applicable

Please explain your answer:

AAL Innovation Impact Assessment Questionnaire

New AAL solution or components launched

The ultimate goal of the AAL Programme is the commercialisation or deployment of the AAL solution or components. This is referred to as commercial launch. The innovative solution may enter the market as a commercial proposition within 2 years after the end of the AAL project funding period. The real benefit to end-users and the impact of the solution can only be assessed when the solution is launched and adopted by the consumers.

* 36. In the last two years, did your organisation commercially launch (i.e. launched on the market) an AAL solution or component that was developed in this specific project?

- ◯ No
- ◯ Yes (please provide the number of AAL solutions or components launched in the last two years):

  [ ]

AAL Innovation Impact Assessment Questionnaire

New AAL solution or components launched

37. In which countries have the AAL solutions or components been launched? Tick all that apply:

- [ ] Austria
- [ ] Belgium
- [ ] Bulgaria
- [ ] Croatia
- [ ] Cyprus
- [ ] Czech Republic
- [ ] Denmark
- [ ] Estonia
- [ ] Finland
- [ ] France
- [ ] Germany
- [ ] Greece
- [ ] Hungary
- [ ] Ireland
- [ ] Israel
- [ ] Italy
- [ ] Latvia
- [ ] Lithuania
- [ ] Luxembourg
- [ ] Malta
- [ ] Netherlands
- [ ] Norway
- [ ] Poland
- [ ] Portugal
- [ ] Romania
- [ ] Slovakia
- [ ] Slovenia
- [ ] Spain
- [ ] Sweden
- [ ] Switzerland
- [ ] United Kingdom
- [ ] Other (please specify):

38. Who is paying for the AAL solution or components?

- ( ) Health insurers
- ( ) Providers of (home) care and welfare services, housing and municipalities
- ( ) Individuals
- ( ) Other (please specify):

AAL Innovation Impact Assessment Questionnaire

New AAL solution or components launched

39. In the next two years, does your organisation plan to commercially launch (i.e. launch on the market) an AAL solution or component that was developed in this specific project?

- ◯ No
- ◯ Yes (please provide the number of AAL solutions or components you plan to launch in the next two years):

* 40. Please assess the importance of the AAL project for developing this AAL solution or component, compared to other support programmes and private investments. The AAL project has been:

◯ Very important ◯ Important ◯ Somewhat important ◯ Not important

AAL Innovation Impact Assessment Questionnaire

Users of new AAL solutions

41. Does your organisation provide the AAL solution or component toprimary end-users (older persons whose quality of life is addressed)?

- ◯ No
- ◯ Yes (please state the total number of primary end-users benefitting from your AAL solution or component):

42. Does your organisation provide the AAL solution or component tosecondary end-users such as formal and informal care organisations?

- ◯ No
- ◯ Yes (please state the total number of secondary end-users (organisations) benefitting from your AAL solution or component):

43. In which countries are the end-users based? Tick all that apply:

- ☐ Austria
- ☐ Belgium
- ☐ Bulgaria
- ☐ Croatia
- ☐ Cyprus
- ☐ Czech Republic
- ☐ Denmark
- ☐ Estonia
- ☐ Finland
- ☐ France
- ☐ Germany
- ☐ Greece
- ☐ Hungary
- ☐ Ireland
- ☐ Israel
- ☐ Italy
- ☐ Latvia
- ☐ Lithuania
- ☐ Luxembourg
- ☐ Malta
- ☐ Netherlands
- ☐ Norway
- ☐ Poland
- ☐ Portugal
- ☐ Romania
- ☐ Slovakia
- ☐ Slovenia
- ☐ Spain
- ☐ Sweden
- ☐ Switzerland
- ☐ United Kingdom
- ☐ Other (please specify):

AAL Innovation Impact Assessment Questionnaire

Intellectual Property Rights (IPR)

* 44. Did you take any actions to legally protect your AAL solution or component (e.g. through patents, trademarks and other formal legal protection)?

- ◯ Yes
- ◯ No

AAL Innovation Impact Assessment Questionnaire

Intellectual Property Rights (IPR)

45. Please provide the number of IPR protection applied for and granted for the results of the AAL project.

	Number
Patents	
Trademarks	
Copyright	
Other	

Other (please specify)

AAL Innovation Impact Assessment Questionnaire

Revenues from new AAL solutions and components

46. Last year, what was the revenue your organisation generated from AAL solutions and components that have been developed (partly) in the AAL project? (x €1,000)

47. What percentage of these revenues from last year concerns licensing of patents, trademarks, copyright, etc?

48. What is the expected revenue growth over the next year for these AAL solutions and components (and any licensing revenues) ?

AAL Innovation Impact Assessment Questionnaire

Investments received for follow-on innovation activities

49. What is the total value (x €1,000) of financial investment received from public third parties for follow-on innovation activities linked to the AAL solution? (Examples are loans, grants and investments by public agencies)

50. What is the total value (x €1,000) of financial investment received from private third parties to follow-on innovation activities linked to the AAL solution? (Examples are investments by venture capitalists, banks, business angels and incubators)

AAL Innovation Impact Assessment Questionnaire

Creation of new companies

* 51. Is your organisation a start-up, i.e. an enterprise that exists for less than five years?

- ◯ Yes
- ◯ No

AAL Innovation Impact Assessment Questionnaire

Creation of new companies

52. What is the number of Full Time Equivalents (FTE) of your organisation (last year)?

53. What has been the annual growth in FTEs over the last two years?

AAL Innovation Impact Assessment Questionnaire

Creation of new companies

* 54. As a result of the AAL project, did your organisation create a*spin-off*?

- ◯ Yes
- ◯ No

AAL Innovation Impact Assessment Questionnaire

Creation of new companies

55. Please provide the name of this spin-off and summarise its activities:

56. What is the number of FTEs of this spin-off (last year)?

57. What has been the annual growth of this spin-off in FTEs over the last two year?

AAL Innovation Impact Assessment Questionnaire

European common approaches

58. In the last year, did your organisation make contributions to European or international common approaches, partly as a result of your participation in the AAL project? Please briefly explain if you made contribution to the following categories:

Standardisation	
Certification	
Interoperability	
Guidelines (medical, care, ethical)	
Work practices	
Other	

AAL Innovation Impact Assessment Questionnaire

Additional benefits of the AAL project

59. Please rate any other benefits you may have obtained as a result of the AAL project. Tick all that apply:

	Not at all	To a small extent	To a moderate extent	To a large extent	Not applicable
New relations with other organisations (network)	○	○	○	○	○
Closer relations with other organisations	○	○	○	○	○
Community building	○	○	○	○	○
Reputational benefits	○	○	○	○	○
Access to know-how	○	○	○	○	○
Reduced time-to-market	○	○	○	○	○
First mover advantages	○	○	○	○	○
Awareness of AAL solutions	○	○	○	○	○
Other	○	○	○	○	○

Other (please specify):

AAL Innovation Impact Assessment Questionnaire

Closing section

60. Please provide any additional information (website links, news items, videos) so that we can develop together success stories for your AAL project.

61. How can we improve this post-project impact assessment of AAL projects?

AAL Innovation Impact Assessment Questionnaire

Confidentiality

The AAL Programme will collect data about the AAL projects directly from the participants up to three times in the five-year period that follows the AAL Programme funding via the current online questionnaire. The collected data is primarily for the use of the AAL Programme and as such will be kept strictly confidential. The AAL Programme may however aggregate the results to publish overall achievements. Any specific information linked to the original AAL project that could be used for case studies on the AAL website will go through a preliminary approval by the project participants.

By clicking the "Submit" button below, all your responses will be saved and you will be redirected to the website of the AAL Programme. Note that you will not be able to return to your survey.

On behalf of the AAL Programme we **thank you** for your contribution.

If you have any questions related to this survey, please contact us at impact@aal-europe.eu.

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