

Final Evaluation of the Active and Assisted Living Research and Development Programme (AAL2)

Final report

14 September, 2022

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List of abbreviations

AAL	Active and Assisted Living Programme
AALA	AAL Association
AAL1	Ambient and Assisted Living Programme
AAL2	Active and Assisted Living Programme
AB	Advisory Board
AWP	Annual Work Programme
CMU	Central Management Unit
EB	Executive Board
EC	European Commission
EIP AHA	European Innovation Partnership on Active and Healthy Ageing
EIT	European Institute of Innovation and Technology
EU	European Union
GA	General Assembly
ICT	Information and Communication Technology
JP	Joint Programme
JPI	Joint Programming Initiative
JPI MYBL	Joint Programming Initiative More Years, Better Lives
KIC	Knowledge and Innovation Community
KPI	Key Performance Indicator
MTR	Mid-term Review
NCP	National Contact Point
NUTS	Nomenclature des unités territoriales statistiques / Nomenclature of Territorial Units for Statistics
NUTS1	Subnational/regional level of the Nomenclature of Territorial Units for Statistics
R&D	Research and Development
R&D&I	Research and Development and Innovation
SCP	Small Collaborative Project
SDGs	Sustainable Development Goals
SME	Small and Medium Enterprise
TFEU	Treaty on the Functioning of the European Union
URL	Uniform Resource Locators
WHO	World Health Organization

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Executive summary

PURPOSE AND SCOPE OF THE EVALUATION

The purpose of this evaluation is to provide a final assessment of the operation of the Active and Assisted Living Research and Development Programme (AAL2) to the European Commission, in compliance with Decision No 554/2014/EU of the European Parliament and the Council. While AAL2 builds on its predecessor, the Ambient and Assisted Living Programme (AAL1) which ran from 2008 to 2013, the present final evaluation addresses the operation of the AAL2 Programme, from 2014 to 2021. More specifically, it assesses AAL2 (here also referred to as ‘the Programme’) based on the five criteria defined by the Better Regulation Guidelines (relevance, coherence, efficiency, effectiveness, EU added value) and two additional Partnership-specific criteria (additionality, and transparency & openness).

In addition, it draws lessons learned and develops recommendations to feed into European Commission policy on the digital transformation of health and care, deployment coordination of digital health services and cooperation with digital and/or public health initiatives.

The study team applied a number of different data collection methods, including a desk study of existing reports and background documents on the Programme, analysis of funding and administrative data, interviews with Programme representatives (27 in total), country partners and beneficiaries. In addition, two case studies, which are annexed to this report, have provided important insights into specific aspects of the Programme¹. The evaluation also takes into account the results of an Interim Evaluation that had been carried out in 2017. The latter concluded that the Programme had made good progress towards its objectives, remained highly relevant and operated within a coherent framework. However, it stressed that its strategic leadership needed to be strengthened and expressed concern about the decreasing number of Participating States.

Key facts and achievements of AAL2

1. Overall Programme investments under AAL2 were EUR 307.8 million, of which:
 - EUR 108.6 million was committed by the EC (including Programme management, Support Actions and calls),
 - EUR 121.5 million was committed by national funding agencies (exclusively for calls),
 - EUR 77.7 million was committed by beneficiaries (exclusively for calls).
2. A total of 21 countries participated in AAL2, including 16 EU Member States², 3 non-EU countries associated with Horizon 2020³ and 2 non-EU countries not associated with Horizon 2020 (third countries).
3. In total, 151 projects were funded under AAL2.
4. AAL2 supported 705 beneficiaries with 1 078 individual participations, of which

¹ ‘Support Actions for Capacity Development and Community Building’ (case study 1) and ‘Learnings from the AAL2 Public-Public Partnership Approach’ (case study 2)

² Including the United Kingdom

³ Including Switzerland

- small and medium-sized enterprises (SMEs) accounted for 40.3 %,
 - universities and research institutes accounted for 26.8 %,
 - end-user organisations accounted for 26.3 %; participation by end-user organisations increased strongly over the course of AAL2.
5. AAL2 brings together top research performing entities in Europe with SMEs and end-user organisations that do not typically participate in Horizon 2020.
 6. Around 22 % of universities and higher education institutes participating in AAL2 belong to the top 1 % of Horizon 2020 participants; 45.4 % belong to the top 10 %, indicating the nature of research entities participating in AAL2.
 7. Some 56.2 % of AAL participants have not participated in a Horizon 2020 project (outside AAL2); for SMEs, that rate is 62.8 %. There is strong complementarity of AAL2 and other Horizon 2020 Programmes in terms of participants' profiles.
 8. The budget utilisation rate increased by 18.8 percentage points thanks to project reconfigurations and other mechanisms.
 9. Out of 38 projects, 23 (61 %) that were completed by the end of 2019 had brought at least one solution to the market. These covered digital solutions supporting ageing well in a variety of domains, including safety and security; leisure and culture; work and training; vitality and abilities; mobility and transport.
 10. Over 4 800 people attended the AAL2 Forums to intensify transnational collaboration, network and exchange ideas. A total of 65 projects participated in AAL2Business Support Action activities to improve their skills in bringing their solution to the market. Beneficiaries also reported a substantial increase in knowledge of user needs.

KEY FINDINGS OF THE EVALUATION

The Programme continues to occupy a unique position in the field of digital solutions for active and healthy ageing, with strong relevance, EU added value and additionality

As the only European funding Programme focusing on digital solutions for active and healthy ageing, AAL2 continues to occupy a **unique position in the European research and innovation funding landscape**. By mobilising technological innovation and entrepreneurship to address the consequences of demographic change and strengthen the sustainability of health and care systems, **it had a pioneering role in creating and seizing the many opportunities of active and healthy ageing**. AAL2 actively contributed to developing a **positive perspective on ageing instead of considering ageing as a social and economic problem**. In doing so, it has opened a space to **bring together stakeholder groups that previously had little or no interaction, and that worked productively together to develop novel solutions and foster social innovation**.

AAL2 differs from most other parts of Horizon 2020/Horizon Europe because of its **strong market orientation** and its **integrated, holistic approach to involving end users in both the design and implementation of Calls and in the portfolio of Support Actions**. There is a range of **Support Actions** that primarily aim to help beneficiaries to develop innovative solutions and acquire the skills and knowledge to succeed in the market. It has developed a **portfolio of accompanying activities that can be seen as exemplary** also for other Programmes.

The **Article 185 Partnership** has enabled a group of committed countries to pioneer this initiative and launch what could be called an ‘alliance of early movers’ to promote digital solutions for ageing well without relying on the commitment of all Member States⁴. This has allowed more than **700 beneficiaries from 21 different countries** (including five non-EU and three non-European countries) to collaborate on developing solutions that help improve the well-being and quality of life of older people. This includes their families and carers, making support and care systems more efficient and sustainable, creating business opportunities and thus strengthening the industrial base in Europe, in particular the active and healthy ageing sector.

AAL2 brings together a highly relevant combination of beneficiaries, including SMEs and end-user organisations that do not typically participate in Horizon 2020

The Programme **succeeds in reaching its two main target groups**: SMEs constitute 40.3 %, and **end-user organisations** 26.3 % of beneficiaries. Universities and research institutes combined constitute another 25 % of Programme beneficiaries. Our analysis suggests that these universities and research organisations are significantly involved in Horizon 2020, which can be seen as a marker of research excellence. **The Programme therefore brings together some of the top research performing entities in Europe with private companies (mostly SMEs) and end-user organisations that do not typically participate in Horizon 2020.** SMEs in particular benefit from the strong national embedding (local contact points and funding rules) that lowers the barriers to entry for them. In addition, the number of user organisations among beneficiaries of new projects has increased steeply during AAL2.

However, as stated by the Interim Evaluation of AAL2 and the Final Evaluation of AAL1, **scale is important**. The Programme aimed to **make a sizeable difference to the development of the market, and the lives and well-being of its target audiences**. Large enterprises typically have the market power, expertise and production capacity to introduce new products at scale and pace, and therefore should be encouraged to engage in this market. Yet large enterprises were not defined as a core target group in the Programme and only represent 5 % of Programme beneficiaries.

The Programme is well managed thanks to flexible implementation methods and a strong leadership role of the Central Management Unit

The Article 185 Partnership that underpins AAL2 has implications for the governance and implementation of the Programme. In terms of its implementation, the **possibility of having varying levels of commitment** of Participating States has proved to be an **advantage in launching the initiative and pioneering its objectives**. However, it also involves risks, for example if too many countries choose to opt out or reduce their financial commitments.

A **key strength of the AAL2 Partnership is that it allows the Programme to tap into the energy and enthusiasm of Participating States. This allows the development of the landscape for digital solutions and establishes the agenda for active and healthy ageing.** It has also provided the Central Management Unit (CMU) with a degree of managerial flexibility that is useful in adapting the Programme, implementing improvements and inspiring change. In contrast to concerns expressed in the Interim Evaluation, the CMU was **able to provide strategic leadership during the second phase of the AAL2 Programme**. Stakeholders noted that because of this proactive leadership, the **Programme has been able to adjust swiftly to new insights and demands** and implement a number of

⁴ Please also see Case Study 2, ‘Learnings from the AAL2 Public-Public Partnership Approach’ in Annex E.

improvements. Both the leadership style and the governance arrangements have been judged as inclusive and transparent.

A characteristic of the AAL2 Partnership is the combination of a centrally organised project selection process based on excellence criteria with a decentralised mechanism of project funding. In this, the success of each application depends on both its excellence and the availability of national funding. This mechanism adds complexity in cases where proposals have received high quality scores and funding is available for some partners involved, but not for all (if respective national budgets have been exhausted). This leads to a **budget utilisation rate of just under 80 %⁵**, which is **not optimal for the European Commission**. However, the central project selection process can be seen as an advantage as it helps national funders to focus on projects that are competitive at European level.

The Programme has made significant progress towards its objectives, but the complex nature of the market constrains the uptake of solutions

AAL2 has made substantial efforts to improve **the supply side** of the market through the development of digital solutions and supporting their marketisation and commercialisation. The Programme has also increasingly addressed barriers on the demand side of the markets. However, many challenges to the uptake of solutions lie outside the scope of the Programme. The market for digital solutions for active and healthy ageing is **still fragmented and immature**, especially on the demand side. The demand for digital solutions is shaped by a host of factors such as cultural expectations towards older age and care, the acceptance of technology, the digital literacy of its users, cross-sectorial collaboration and the organisation of care delivery and funding within health and care systems. The demand side is also shaped by a number of **intermediaries, such as insurers and public funders**. These factors in combination determine whether digital solutions are seen as acceptable and whether they will be taken up. It is therefore necessary to understand that a wider approach to system transformation and far-reaching integration is needed to fully use the potential of digital solutions for active and healthy ageing.

Compared with AAL1 as an internal benchmark, there was a **positive trend in the number of solutions launched and individual end users reached under AAL2**. The potential of the solutions to impact positively on the quality of life of older people and their carers has been demonstrated by the survey conducted as part of the 2021 Programme Impact Study. However, this finding is based on a small number of completed projects⁶.

In addition, beneficiaries gained substantial knowledge beyond the technological expertise involved in research and innovation. Substantial gains in knowledge were achieved in relation to **an increased understanding of user needs and developing business and commercialisation strategies**. Beneficiaries also confirmed the **positive effects** of the Programme on networking and mutual learning. These effects were strengthened by deploying a series of Support Actions that have been widely judged as effective and supportive by beneficiaries, NCPs and other stakeholders.

Overall, it can be concluded that **the AAL2 Programme has achieved positive results at the output and outcome levels within its remit**. However, while it has supported beneficiaries in overcoming market barriers, the Programme was not able to remove these barriers entirely. As a consequence, **the impact of the Programme is limited by the difficult market environment in which it operates with challenges remaining, particularly on the demand side**. Addressing the fragmentation of the supply side was a

⁵ A large share of the underspend is due to a lack of quality proposals in some countries. This may be due to a variety of different factors, including a low number of relevant actors in the respective country or a lack of awareness of the Programme.

⁶ IDEA (2021): Third edition of the AAL Programme impact assessment. Analytical report FINAL. Brussels, AAL Association. p 40.

key motivation for the initiating the Programme. However, AAL2 has also shown how the fragmentation of the demand side creates barriers to uptake and market success of digital innovation.

RECOMMENDATIONS

On the basis of the above, the following recommendations can be made relating to policy, strategy and operations.

Policy level

1. **There is a space and need for European funding actions at the intersection of digital innovation and demographic change to support active and healthy living, and secure the future of health and care systems.**

Recommendation: A future European policy should promote active and healthy living and support people and societies to use the full potential of digital solutions for ageing well. The development, deployment and integration of new solutions should be an integral part of such a policy. Technological and social innovation are complementary and should not be dealt with in silos.

2. **A wider approach to system transformation is needed to develop the market and overcome the barriers to market impact.**

Recommendation: Future European policy on care and ageing needs to address the system transformation required to use the full potential of digital solutions. This will require a holistic ecosystem perspective and an engagement with all private and public stakeholders, including all relevant levels of government responsible for the sustainability and transformation of health and care systems.

3. **There is an opportunity to tap into the energy of an ‘alliance of early movers’ to promote technological and social innovation for ageing well in Europe.**

Recommendation: Future actions could use the Article 185 Partnership to tap into the energy of an ‘alliance of early movers’ to promote social innovation for ageing well. There is also an opportunity to build on the commitment of the community of stakeholders dedicated to active and healthy living created by AAL2.

Strategy level

4. **Strategies for deploying and scaling up innovation for ageing well require all actors along the value chain to be involved.**

Recommendation: Future actions that aim to support the digital transformation of the health and care systems should develop strategies for deploying and scaling up innovation. This should involve the entire value chain including innovative SMEs and large enterprises, who typically have the market power, expertise and production capacity to launch products and services at scale. An ecosystem perspective applied to the value chain also requires strategic involvement of state and substate stakeholders such as regions and social insurance organisations that structure the demand side.

5. **Continuous learning and an environment supportive of experimentation are vital for improving the Programme and for adapting to challenges and changing expectations.**

Recommendation: Future actions should strive to develop a mindset and practice of learning, trial and error, and adaptation to increase their economic and social impact. This includes a meso-level system component to continuously analyse outputs and outcomes, and to adapt actions to the evolving demands of users and citizens while building the necessary processes and tools to develop the ecosystem for ageing well.

Operational level

- 6. The degree of managerial flexibility and possibility for strategic leadership provided by Article 185 can be a strong asset.**

Recommendation:

Future (public–public) Partnerships should support a strong strategic leadership role. They should create a flexible and enabling environment to facilitate agile and adaptive management without compromising accountability or reducing engagement of national actors.

- 7. Support Actions can be an effective and cost-effective addition to call funding to strengthen an action with a view of reaching its objectives.**

Recommendation: Future actions should consider introducing Support Actions as an effective and cost-effective strategy to strengthen their ability to achieve their objectives. Support Actions are particularly effective if they are tailored to the needs of their target groups and provided at a suitable time in the lifecycle of projects. They must be responsive to the development of policy, technology and markets, and based on a good understanding of the challenges experienced during the implementation. They are particularly useful for building networks, supporting commercialisation expertise, developing an ecosystem perspective to social innovation and for strengthening the visibility of the Programme.

- 8. The combination of a centrally organised project selection process and a decentralised funding mechanism has benefits but also comes with challenges.**

Future Partnerships should allow for a mix of structural and creative approaches to finding solutions for difficulties resulting from decentralisation. This could include the development of shared mechanisms and standardised tools that help simplify the scientific, managerial and financial coordination of the Partnership.

1. Introduction

1.1. Purpose of the evaluation

The **purpose of this evaluation** is to provide a final assessment of the Active and Assisted Living Joint Programme (AAL2⁷) to the European Commission in compliance with Decision No 554/2014/EU of the European Parliament and the Council. The Decision foresaw that the European Commission will carry out a final evaluation of the AAL2 Programme no later than 31 December 2022. This report presents the findings of the final evaluation carried out by Prognos AG. It is part of a larger evaluation study, ‘Evaluation Study on Resilient Europe’⁸, feeding into the *ex post* evaluation of Horizon 2020⁹.

This final evaluation is based on the five evaluation criteria of the Better Regulation Guidelines¹⁰ and two additional Partnership-specific criteria, which are briefly laid out in the following overview.

TABLE 1: EVALUATION CRITERIA AND GUIDING QUESTIONS

Criterion	Guiding questions
EVALUATION CRITERIA DEFINED BY THE BETTER REGULATION GUIDELINES	
Relevance	To what extent have the objectives of the Partnership been, and are still relevant vis-à-vis the needs and problems addressed by the Framework Programme? How flexible has the Partnership been?
Coherence	How well do the different actions work together, internally (i.e. to the Partnership, with other Partnerships and with other Framework Programme activities), and with other EU interventions/policies (complementarities, synergies, overlaps)? Is AAL more effective in achieving synergies, compared to other modalities of the Programme?
Efficiency	What is the relationship between the resources used by the Partnership and the changes it is generating? How did processes cater for flexibility needs in implementation? How cost-effective has AAL been? How proportionate were the costs of application and participation borne by different stakeholder groups, taking into account the associated benefits?
Effectiveness	<p>What is the progress made towards the objectives of the Partnership and those of the Framework Programme, including the contribution to EU priorities and Sustainable Development Goals?</p> <p>Were adequate systems put in place to produce and share lessons learned from implementation and results achieved, for policymaking and between Framework Programme interventions? To what extent does the Programme communication/valorisation strategy allow identifying, capitalising upon and (possibly) transferring good practices/results?</p> <p>This also includes the Partnership-specific question of how the Partnership has helped foster the international positioning and visibility of the European R&I system, and an assessment of the level of international cooperation at Partnership and project level.</p>
EU added value	What is the value resulting from the Partnership that is additional to the value that could result from interventions carried out at regional or national level, or with other forms of implementation?
ADDITIONAL PARTNERSHIP-SPECIFIC CRITERIA	
Additionality	How much additional private and/or public R&I investments on EU priorities have been mobilised thanks to the Partnership, under the Partnership and on top of contribution of partners, at both national and

⁷ In line with the terminology used by various Programme documents, we use the term AAL2 to refer to the Programme being evaluated. The term AAL1 refers to its predecessor Programme, the Ambient and Assisted Living Programme, which ran from 2007 to 2013.

⁸ Issued under call for tenders RTD/2021/SC/021, part of Multiple Framework Contract N° 2018/RTD/A2/OP/PP-07001-2018, Lot 3 ‘Studying, assessing and evaluating research and innovation programmes and policies (SARI)’.

⁹ Article 32 of the Regulation establishing Horizon 2020 <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:02013R1291-20150704>

¹⁰ European Commission (2021): Better Regulation Guidelines.

	<p>European level? How do Partnerships facilitate the creation and expansion of R&I networks that bring together relevant and competent actors from across Europe, thus contributing to the realisation of the ERA?</p> <p>To what extent has the AAL initiative created conditions for the competitiveness of the Union's industry, aimed at a better exploitation of the industrial potential of policies of innovation, research and technological development (H2020), in particular with regards to ICT based products and services for active and healthy ageing?</p>
Transparency & openness	<p>How open is the Partnership to new participants (including procedures/mechanisms to involve new members at Partnership and project level, as well as gradually engage a broader set of stakeholders across Europe)? How transparent are the processes for consulting all relevant stakeholders and constituent entities in the identification of priorities? How accessible is the Partnership to SMEs?</p>

1.2. Scope of the evaluation

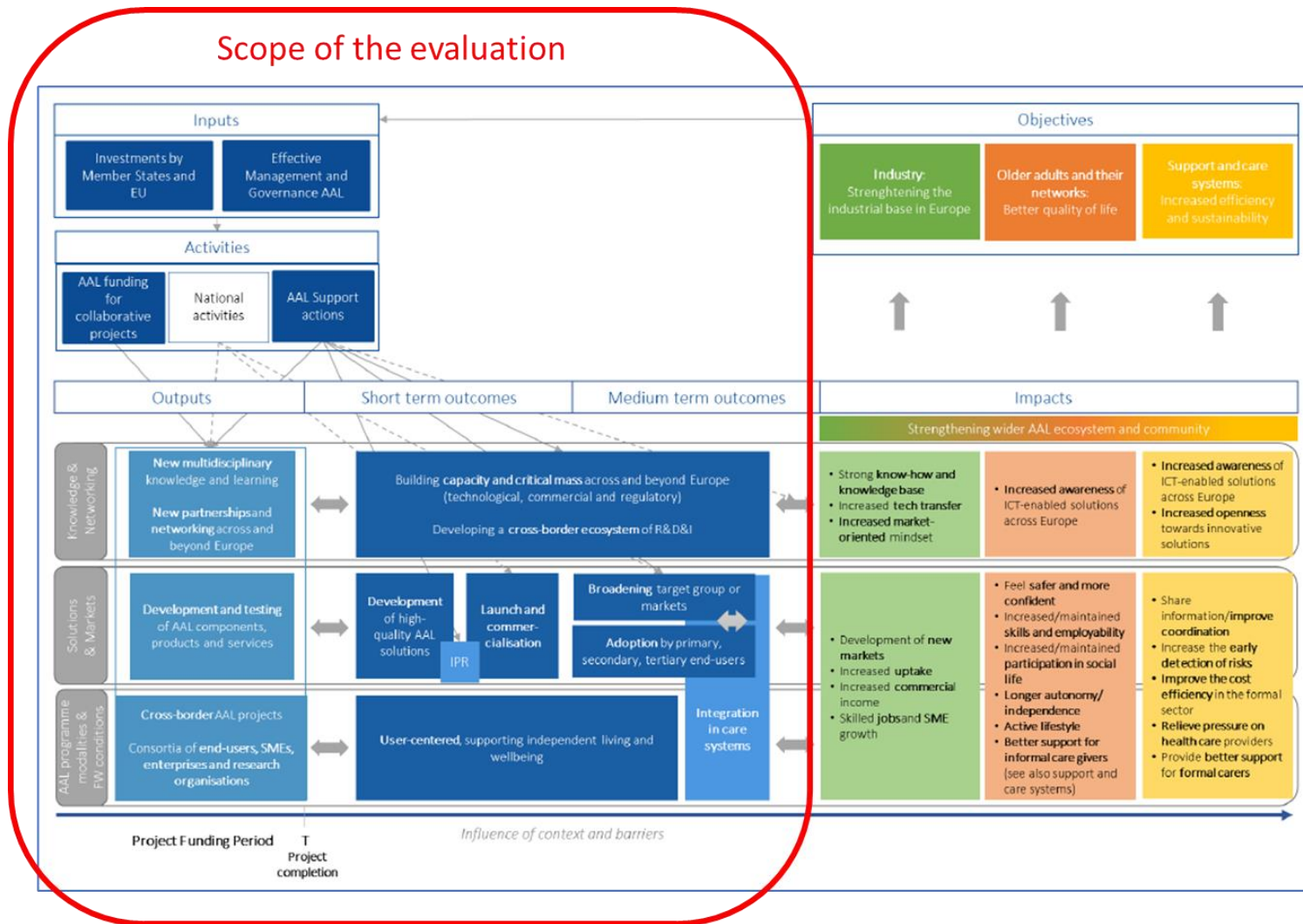
The Final Evaluation covers the entire duration of AAL2 that ran from 2014 to 2021 (AAL2) under Horizon 2020, with some projects still running. It builds on an Interim Evaluation carried out in 2017, covering the first three years of AAL2 (2014-2016). **From 2017 the Programme further expanded**, in particular with regard to the Support Action portfolio. The final project call was launched in December 2020 and from mid-2021 the Programme is gradually being phased out. The Programme is expected to come to its end by 2027 at the latest with projects of the final call expected to end in early 2025. While the Final Evaluation is aimed to assess the achievements of the Programme towards its objectives during AAL2 only, in a few instances it is necessary to include information from the predecessor Programme. This was the Ambient Assisted Living Joint Programme (AAL1) that ran from 2008-2013 under Framework Programme 7.

The evaluation was informed by an intervention logic that underpins the implementation of the AAL2 Programme (see Figure 1). It was developed as part of the 2021 Programme Impact Assessment¹¹ and builds on an earlier version developed as part of the 2020 Programme Impact Assessment¹². The wording of the objectives referred to in the intervention logic deviate somewhat from the original Programme objectives, stated in Section 2.1, although the components and intended impacts of the Programme have remained consistent. Please note: this evaluation focuses on the blue-coloured part of the framework. For a definitive assessment of impacts (marked in green, red and orange in Figure 1), which related to the macro-level and have a much longer time horizon to materialise, it is still too early as many of the AAL2 supported projects are still ongoing or just started.

¹¹ AAL Association (2021). Third edition of the AAL Programme impact assessment. Online: available at: <https://www.aal-europe.eu/wp-content/uploads/2022/02/IA-AAL-Final-summary-report-FINAL.pdf>

¹² AAL Association (2020). Mid-Term Review Satisfaction Survey

FIGURE 1: UPDATED IMPACT ASSESSMENT FRAMEWORK FOR THE AAL PROGRAMME AND SCOPE OF THE EVALUATION



Source: AAL Association (2021), Third edition of the AAL Programme Impact Assessment, p. 6.

The intervention logic sets out the relationships between the objectives, inputs and activities, and defines a series of outputs, short- and medium-term outcomes and impacts.

The Final Evaluation also draws on two case studies that were carried out separately (as part of the Resilient Europe Study) and examine specific aspects of the Programme. Specifically, the case studies explored the following two themes:

- a) The contribution of the **Support Action portfolio** to the capacity development of Programme beneficiaries and the wider community engaged in active and assisted ageing;
- b) The lessons that can be drawn from the experience of **the (Public–Public) Partnership between the EC and the Participating States**, specifically focusing on the governance structure of the AAL Programme.

The first case study theme investigates the implementation of the Support Action portfolio. This was developed alongside the R&D project support to strengthen beneficiaries' capacity to implement their projects and to develop the wider community engaged in active and assisted living. The second case study examines the specific mechanisms of the Partnership arrangement underpinning AAL as an Article 185 initiative. This is jointly undertaken by several EU Member States and the Union participates but does not have the same status as the group of Participating States.

Altogether, 27 interviews were conducted to inform the case studies¹³, including with National Contact Points (NCPs), Programme beneficiaries, members of advisory and executive boards, and other stakeholders. This way, the case studies bring together a wide range of perspectives from various stakeholder groups involved in implementing AAL2.

¹³ Out of the 27 interviewees, 4 provided their responses in writing.

2. Context and background

2.1. Overall rationale and objectives of the Partnership

The Active and Assisted Living Programme (AAL2) was set up in 2014 as a Public–Public Partnership between the European Commission (EC) and individual EU Member States and non-EU countries. It is based on Article 185 of the Treaty on the Functioning of the European Union (TFEU). The AAL2 Programme is the follow-up to the Ambient and Assisted Living Programme (AAL1) that ran from 2008 until 2013 with a similar mandate. It aims to address the challenges of demographic change for societies, social systems and the economy in Europe. It also acknowledges the large potential of information and communication technology (ICT) based solutions for meeting these challenges and for improving the lives of older people, their families and carers.

By 2070, over 30 % of Europeans are projected to be 65 years of age or over, compared to just over 20 % in 2019¹⁴. The share of people aged 80 years and older is expected to double from 5.8 % to 13.2 % over the same period. Within the EU, the impact of ageing varies widely between regions, especially between urban and rural areas, and gains in healthy life expectancy are unevenly distributed¹⁵. At the same time there are social and economic opportunities associated with the concept of healthy ageing. Older citizens are increasingly shaping economies and the demand for services and products in the ‘silver economy’ is increasing rapidly¹⁶. There is now a substantial number of technologies and digital solutions to support people at any stage in their lives, to support ageing in place, enhance the home environment and support social connectiveness¹⁷. In using these technologies to their full potential, there is potential for economic growth and social development in demographic change that can balance some of its impacts on social systems.

In response to these challenges and opportunities, the Programme was initiated to meet the following three main objectives:

1. Enhance the availability of ICT-based products and services for active and healthy ageing, to improve the quality of life of older people and their carers, and help increase the sustainability of care systems.
2. Create/maintain a critical mass of trans-European applied research, development and innovation for ICT-based products and services for ageing well, in particular involving SMEs and users.
3. Leverage/maintain private investments and improve conditions for industrial exploitation by providing a coherent framework for developing European approaches and solutions including common minimum standards that meet varying national and regional social preferences and regulatory aspects.

¹⁴ European Commission (2021). The 2021 Ageing Report. Economic & Budgetary Projections for the EU Member States (2019-2070). Available at: https://ec.europa.eu/info/sites/default/files/economy-finance/ip148_en.pdf.

¹⁵ World Health Organization (2021). Decade of Healthy Ageing. Baseline Report. Available at: <https://www.who.int/publications/i/item/9789240017900>.

¹⁶ European Union (2018): The Silver Economy. A study prepared for the European Commission DG Communication Networks, Content & Technology by Technopolis Group, Oxford Economics. Available at: <https://op.europa.eu/en/publication-detail/-/publication/a9efa929-3ec7-11e8-b5fe-01aa75ed71a1>.

¹⁷ SAPEA, Science Advice for Policy by European Academies (2019): Transforming the Future of Ageing. Berlin: SAPEA. Available at: <https://www.sapea.info/wp-content/uploads/tfa-report.pdf>. pp. 190-196.

The EU has responded to the challenges and opportunities of ageing with a number of programmes and policies. These include:

- the European Innovation Partnership on Active and Healthy Ageing (EIP AHA), 'More Years, Better Lives', a Joint Programme Initiative (JPI) that aims to improve the coordination and collaboration between European and national research programmes related to demographic change;
- EIT Health, the Knowledge and Innovation Community (KIC) of the European Institute of Innovation and Technology (EIT).

More recently, the EC's 2021 Green Paper on Ageing highlights that any European policy response to demographic change also needs to address the twin challenges of achieving the green and digital transformation of society. The Green Paper takes a lifecycle approach to promoting healthy ageing at any stage in people's lives, not only old age. It is thus not specifically focused on older people but takes a wider view on demographic change. It also aligns European policy with the UN Decade for Healthy Ageing and the UN 2030 Agenda for Sustainable Development.

The importance of technology and digital innovation for Europe's resilience was emphasised in the 2030 Digital Compass¹⁸, setting out a vision and targets for a successful digital transformation of Europe by 2030. These include the resilience and sustainability of health and care systems. The 2019 SAPEA report 'Transforming the Future of Ageing' highlighted the use of technology as a key area of interest for healthy ageing¹⁹. The 2017 'Blueprint for Digital Innovation in Health and Care' also stresses the role of technology and digital innovations for providing sustainable and integrated healthcare.

2.2. Baseline

AAL2 has built on the structures and activities developed during AAL1 and has continued and expanded its portfolio of activities. An Interim Evaluation of AAL2, conducted in 2017, concluded that the Programme successfully transitioned from AAL1 to AAL2. It made good progress towards its objectives and remained highly relevant because of the growing importance of demographic change in Europe²⁰. It concluded that the Programme operated within a coherent framework and had produced a critical mass of research, development and innovation activities. The Programme was well managed although it noted that strategic leadership needed to be strengthened, particularly within the AAL Association (AALA).

There was concern about the speed of progress with regard to developing the market and the decreasing number of Participating States that posed a risk to the financial sustainability of the Programme. Other concerns related to the shape and relatively slow development of the market and the limited ability of the Programme to shape the environment for innovative products, services and systems for ageing well. Specifically, the Interim Evaluation noted that there was a gap between 'what the market in its current form requires and what the Programme is able to provide'.

¹⁸ https://ec.europa.eu/info/strategy/priorities-2019-2024/europe-fit-digital-age/europes-digital-decade-digital-targets-2030_en

¹⁹ SAPEA, Science Advice for Policy by European Academies (2019). Transforming the Future of Ageing. Berlin: SAPEA. <https://www.sapea.info/wp-content/uploads/tfa-report.pdf>.

²⁰ European Commission (2017). Interim Evaluation of the Active & Assisted Living Programme. <https://op.europa.eu/en/publication-detail/-/publication/6a22bc32-ad66-11e7-837e-01aa75ed71a1>

In summary, the AAL2 Interim Evaluation made the following recommendations:

- Enhance the strategic leadership of the AALA through appropriate appointments;
- Further intensify support for business planning and market research to strengthen commercialisation and build engagement with the community supporting active and assisted living;
- Provide focused support on key framework conditions shaping the development of the market for innovative solutions, support the integration of solutions in existing systems and encourage testing on the demand side;
- Intensify communication and outreach to increase the visibility of the Programme;
- Secure the sustainability of the Programme for the remainder of the term, including through stabilising the number of Participating States.

The AAL Programme conducted three Programme Impact Assessments between 2019 and 2021, which demonstrate that the Programme substantially contributed to knowledge creation with regard to the technological solutions developed. It also fostered beneficiaries' marketisation skills (through the Support Actions) and their ability to collaborate and network across national borders. The latest Programme Impact Assessment²¹ (published in 2021) concludes that there is a promising increase in the number of solutions available. Projects still needed longer than expected to bring their solutions to the market, but such solutions contributed to the well-being of older people and the sustainability of health and care systems. It also reiterated the existence of barriers to marketisation that have proved to be persistent. These include a lack of market maturity, a lack of external funding to bring solutions to the market and difficulties developing a viable commercialisation strategy.

²¹ AAL Association (2021). Third edition of the AAL Programme Impact Assessment.

3. Implementation state of play

This section presents an overview of the governance and implementation of AAL2 and provides information about the portfolio of activities with regard to the project calls, projects funded and Support Actions.

3.1. Governance

The AAL Programme is owned and governed by the Participating States that form the AAL Association (AALA) as an international not-for-profit association under Belgian law (see Table 2)²². The highest decision-making body of the AALA is the General Assembly (GA), which meets twice a year and comprises representatives from all Participating States who enjoy the same voting rights²³. If more than one agency for the same country is present in the GA, a representative (bearing the country vote) must be designated. Members of the GA are typically national funding authorities (ministries and/or funding agencies) of EU Member States, in addition to a few public authorities from countries not in the EU and a small number of regions, with the EC having observer status only. As of 2022, the AALA consisted of the following participating countries and corresponding agencies²⁴:

TABLE 2: AALA MEMBERS (SITUATION IN 2022)

COUNTRY	ORGANISATION(S)
Austria	Federal Ministry for Climate Action, Environment, Energy, Mobility, Innovation and Technology
Belgium	Brussels Innovation Agency: Innoviris
	Flanders Innovation & Entrepreneurship Agency
Canada	Canadian Institutes of Health Research
Cyprus	Research Promotion Foundation
Denmark	Innovationsfonden
Hungary	National Research Development and Innovation Office
Italy	Ministry of University, Education and Research
	Ministry of Health
	Friuli-Venezia Giulia Region
Luxembourg	LuxInnovation (private sector)
	Fond National de la Recherche (public sector)
Norway	Research Council of Norway
Poland	National Centre for Research & Development (NCBR)
Portugal	Foundation for Science and Technology
Romania	Executive Agency for Higher Education, Research, Development and Innovation Funding (UEFISCDI)
Slovenia	Government Office for Digital Transformation

²² <https://www.aal-europe.eu/about/who-we-are/>. Last access: 18 May 2022.

²³ <https://www.aal-europe.eu/about/who-we-are/general-assembly/>. Last access: 18 May 2022.

²⁴ The full list of countries and corresponding agencies who participated at some point in AAL2 can be found in Table 7 in Annex A.

Spain	Ministry of Energy, Tourism and Digital Agenda
	Biscay Region
	Instituto de Salud Carlos III
Switzerland	Innosuisse
Taiwan	Ministry of Science and Technology of Taiwan
The Netherlands	Ministry of Health, Welfare and Sport
United Kingdom	Innovate UK

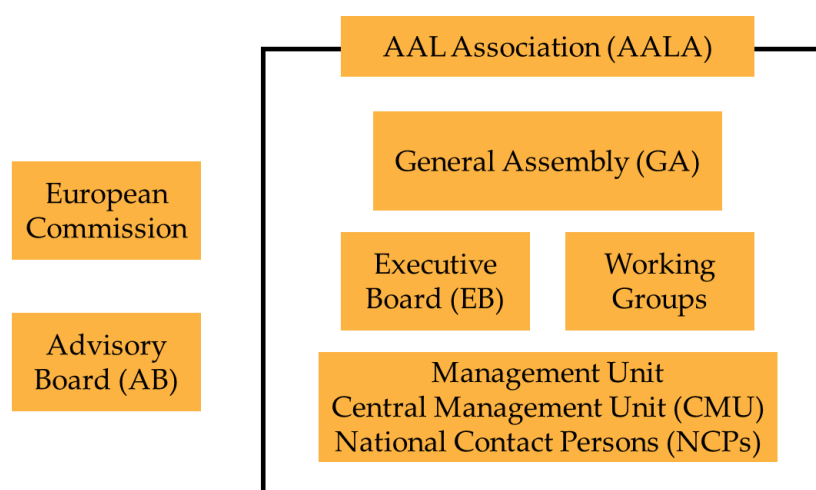
The GA elects an Executive Board (EB) as the official legal representative of the Association responsible for staffing, contracting and budget planning. The GA also organises working groups on specific topics such as the drafting of the annual work plans (AWP) or the preparation of calls. The AWP has to be approved by the EC.

The Management Unit (see Figure 2) for the Programme consists of an EU layer and a national layer: The Central Management Unit (CMU) is responsible for the operational management of the Programme. The CMU closely works with a network of National Contact Persons (NCPs) based in each member country or region. The NCPs check the eligibility of applicants, sign and manage the grant agreements with funded projects, transfer payments and monitor project progress. They are the most important point of contact for the national project consortia along with the CMU. NCPs are required to conduct *ex post* audits of expenditure on indirect actions as per Decision No 554/2014/EU. A key characteristic of the Programme is therefore its degree of decentralisation²⁵; stakeholders and NCPs interviewed for this evaluation were impressed by the strong and collaborative working relationships. This involved relationships between the partners in the Programme and by the leadership shown by the CMU in developing the Programme Strategy and driving its implementation.

An Advisory Board of experts from business, technology, research and politics provides senior technical advice to the AALA²⁶.

²⁵ European Commission (2017). Meta-evaluation of Article 185 Initiatives. Report of the Expert Group. Online available at: [²⁶ European Commission \(2017\). Interim Evaluation of the Active & Assisted Living Programme, pp. 8-9, 38.](https://op.europa.eu/en/publication-detail/-/publication/3966c4a7-b47c-11e7-837e-01aa75ed71a1/language-en#:~:text=Meta-evaluation%20of%20Article%20185%20initiatives%20Report%20of%20the,the%20use%20of%20the%20instrument%20in%20the%20future,pp. 9-10.</p>
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FIGURE 2: GOVERNANCE STRUCTURE OF THE AAL PROGRAMME



Source: Prognos AG 2022, adapted from European Commission (2017): Interim Evaluation of the Active & Assisted Living Programme, pp. 9 and 39.

The AAL Programme has met the following monitoring and evaluation requirements and has instituted additional assessment studies to monitor its work and provide advice for improvement and learning. Insights and information gained from monitoring, evaluation and additional assessments were used to inform improvements to the Programme, including adjustments to the calls' procedure, the creation of Small Collaborative Projects, and the development of additional Support Actions.

- The Programme monitors project progress centrally through a tailored IT infrastructure for financial and administrative purposes.
- NCPs report twice per year on their audit activities and present the results of national financial audits and measures taken to prevent, detect and correct irregularities and fraud.
- An annual independent audit is commissioned from an external auditor to oversee the AAL Association's accounts.
- The AALA provides the EC with an annual report presenting the Programme activities, communications outreach and public affairs, and financial data for monitoring purposes. This report also responds to recommendations given during review of the previous year.
- In addition, the AAL2 Programme commissioned three Programme Impact Studies to measure the achievements of projects after completion and assess related outcomes and challenges.

3.2. Activities and resources

This section starts by describing the Programme's portfolio of activities and how it evolved over the duration of AAL2. Subsequently, it provides key Programme statistics on project applicants and beneficiaries, disaggregated by year, country and type of organisation. Finally, it gives an overview of the Programme's portfolio of Support Actions.

3.2.1. Portfolio of activities

The main activity of the Programme is to launch **annual transnational calls**, select and support promising transnational projects that contribute to the fulfilment of the Programme's objectives. Participation in calls is generally possible for applicants from Participating States providing financial contributions to AAL2 calls. Actual participation in AAL2 projects depends on the application success

in the selection process based on excellence criteria and the national financial contributions available to fund participants from the respective country.

Between 2014 and 2021 the Programme issued eight calls for proposals. It should be noted that the 2021 call was not initially planned but made possible following a decision by the members. However, due to budget limitations, not all members were able to participate in this additional call. The calls were organised according to priority themes, specifically:

- 2014: Care for the future
- 2015: Living actively and independently at home
- 2016: Living well with dementia
- 2017: Integrated packages of solutions
- 2018: Smart solutions for ageing well
- 2019: Sustainable smart solutions for ageing well
- 2020: Healthy ageing with support of digital solutions
- 2021: Advancing inclusive health and care solutions for ageing well in the new decade

During the implementation of AAL2 a number of changes and improvements were introduced to further increase the relevance, efficiency and effectiveness of the Programme and optimise the organisation of calls, support successful applicants in bringing their solution to the market and strengthen the impact of the Programme. They include, for example:

- The introduction of impact assessments and key performance indicators (KPIs) to help focus the Programme on delivering outcomes and impacts.
- The expansion of call themes from narrower topics to addressing broad challenges to give more space to innovative proposals.
- The possibility to apply for Small Collaborative Projects (SCPs) to explore new approaches, or target new business sectors or stakeholder groups through small scale projects.
- Following the onset of the COVID-19 pandemic, the application window for calls was extended to 8 months to allow applicants, especially user organisations, more time to prepare.
- The possibility of reconfiguring project consortia was expanded for those projects in which applicants needed to be replaced because of insufficient budget available at national level. The maximum share of uncovered budget (in terms of person months) for a proposed project to be eligible for reconfiguration was increased from 20 % to 25 %.
- Programme beneficiaries were required to develop a draft business plan at the midpoint of the project at the latest and were given feedback on at their mid-term review (MTR).

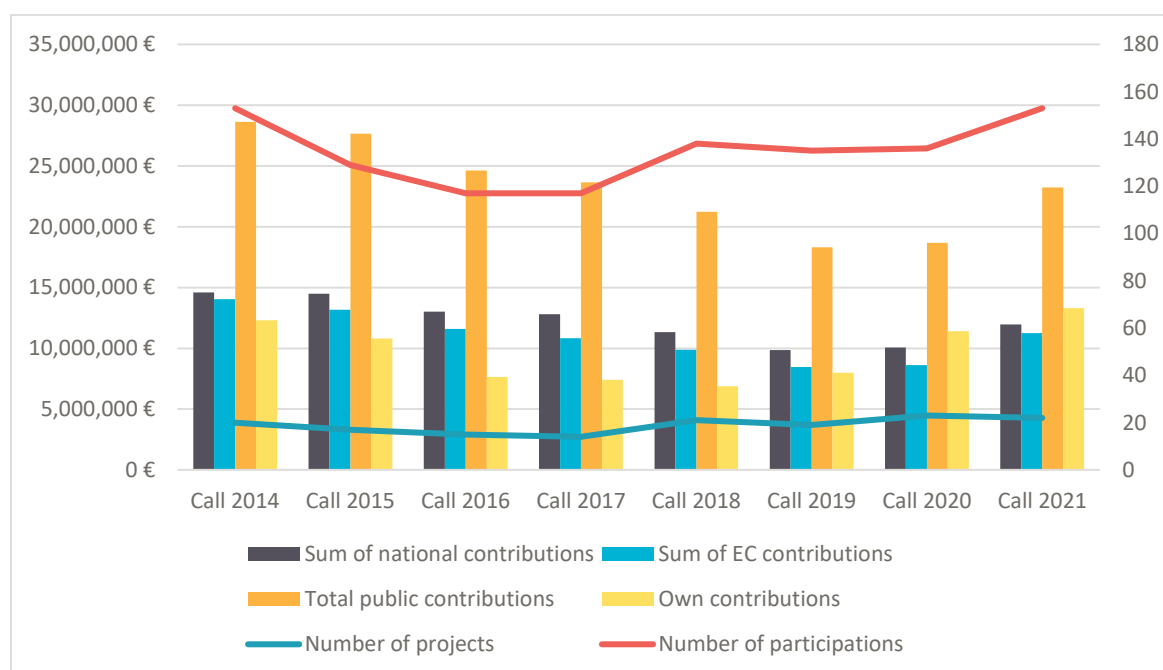
In addition to the call management and implementation, the AAL2 Programme implemented a portfolio of Support Actions aimed at strengthening the capacity of Programme beneficiaries and the wider AAL community. **Support Actions** were largely targeted at specific shared needs and responded to the challenges experienced by beneficiaries in implementing their projects, especially difficulties in bringing their products or services to the market. Over time, the portfolio increasingly moved to addressing the needs of the wider community involved in active and assisted living, for example, through addressing regulatory issues of relevance to the market, as well as issues concerning the ethical implication of novel solutions and concerns about ensuring data privacy. Support Actions also created synergies with other programmes, for example when co-organising the European Week of Active and Healthy Ageing (EWAHA). At a later stage, the Programme also developed and implemented Support Actions aimed at strengthening the wider ecosystem required for integrating novel technologies in existing health and care system successfully and sustainably.

3.2.2. Key Programme statistics

During the period 2014-2021 the AAL2 Programme funded 151 projects with a total of 705 beneficiaries and 1078 participations²⁷. The total public funding volume amounts to EUR 186.5 million. Of the total public funding volume, EUR 98.3 million (52.8 %) were national grants, the remaining EUR 87.8 million (47.2 %) were EC contributions²⁸. The sum of beneficiaries' own (i.e. private) contributions amounted to EUR 77.7 million. The average budget per project (including own contributions) is EUR 1.7 million; the average public funding volume per project is EUR 1.2 million.

Figure 3 gives an overview of six key funding indicators throughout the AAL2 period. The total number of individual participations in projects peaked at the beginning and at the end (153 participations) of the AAL2 period, steadily decreasing until 2017, where a low of 117 participations was reached. However, a similar trend, with a delay of 2 years, can be observed for the different funding contribution levels, which decreased from EUR 40.9 million in 2014 to EUR 26.3 million in 2019, but then rose again to EUR 36.8 million in 2021. In these data, it is not obvious whether the COVID-19 pandemic has had an impact on project participations and funding in 2020 and 2021.

FIGURE 3: PROJECTS, INDIVIDUAL PROJECT PARTICIPATIONS AND FUNDING, PER YEAR



Source: Own analysis based on AAL administrative monitoring data.

The following table shows the number of countries financially contributing to the annual project call per year. While a decrease of participation can be seen after 2014, the number of countries participating remained stable at around fifteen core states after 2017. The lower participation of countries in 2021 is linked to the fact that the 2021 call was an additional call, not initially planned but enabled by a desire of some countries to spend unused budget.

²⁷ The term 'participations' refers to the sum of all beneficiaries in all projects, including multiple counting of beneficiaries that participated several times.

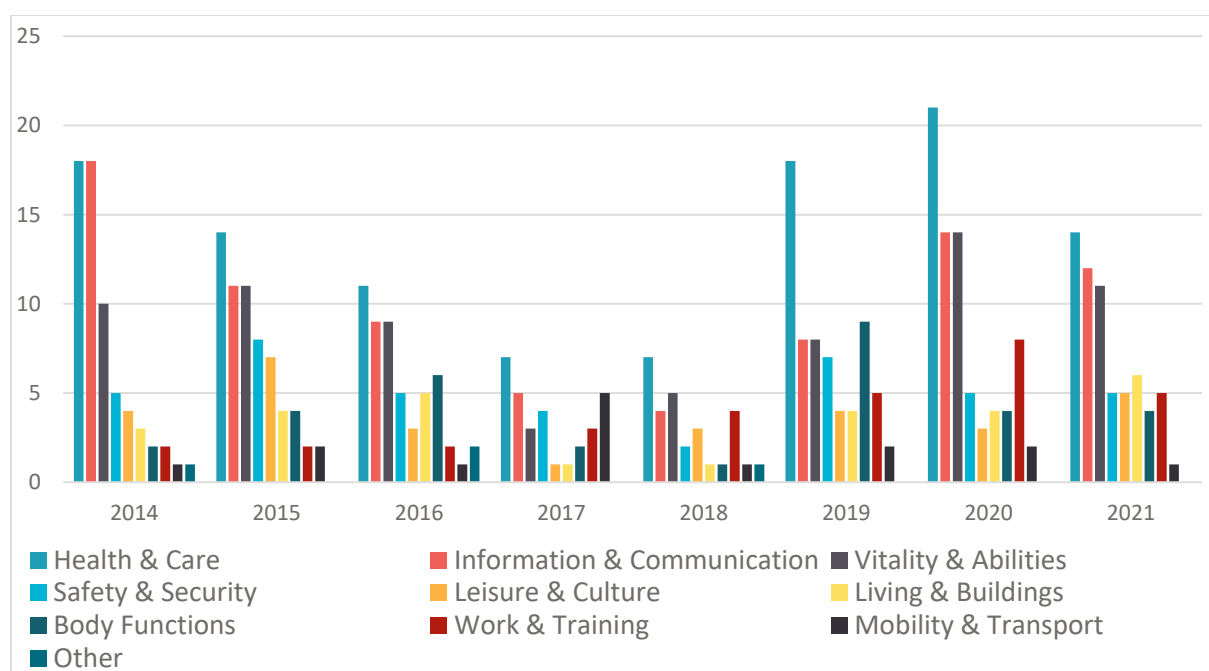
²⁸ Please note: the Partnership's financing is based on the principle of a 50:50 share between EC contributions and national contributions on a programme level. Costs for administration and Support Actions are covered by EC contributions only. This is why the project funding provided by the EC is slightly lower than that covered by national contributions.

TABLE 3: NUMBER OF PARTICIPATING COUNTRIES, PER YEAR

CALL YEAR	2014	2015	2016	2017	2018	2019	2020	2021
Number of participating countries	19	14	15	14	15	15	17	13
Difference from previous year	0	-5	1	-1	1	0	2	-4

Source: Own analysis based on AAL administrative monitoring data.

Figure 4 shows the distribution of projects over the different application areas of AAL2, per year. Please note that double counting is possible and quite common, as individual projects can be linked to several application areas. As can be seen, a significant proportion of the projects are linked to the field 'Health & Care'. This trend is particularly pronounced in 2019 and 2020, preceding the COVID-19 pandemic. The least common application area among the projects is 'Mobility & Transport'.

FIGURE 4: NUMBER OF PROJECTS PER APPLICATION AREA, PER YEAR


Source: Own analysis based on AAL administrative monitoring data.

The number of submitted proposals for the regular AAL calls peaked at the beginning and at the end of the Programme period. It started with 97 proposals (680 individual applicants²⁹) in 2014, then fell to 42 proposals (357 individual applicants³⁰) in 2017 and rose again to 106 proposals (715 individual applicants³¹) in 2020. The final and additional call 2021 (with only 13 participating states), saw 85

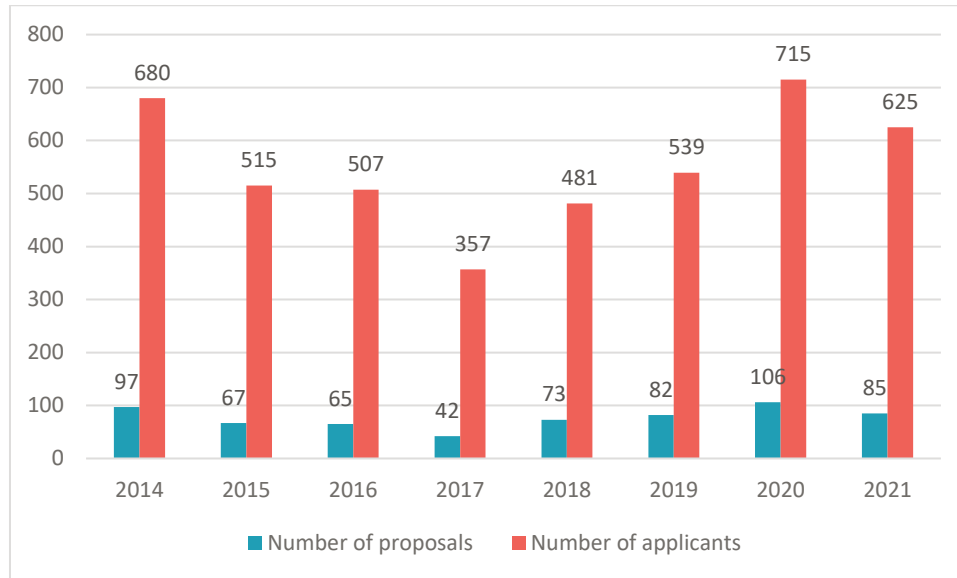
²⁹ Number includes multiple counting of organisations that participated in several applications in the same year.

³⁰ Number includes multiple counting of organisations that participated in several applications in the same year.

³¹ Idem.

proposals (625 individual applicants³²), possibly reflecting increased interest during the pandemic. Figure 5 below illustrates the evolution of proposals over the years.

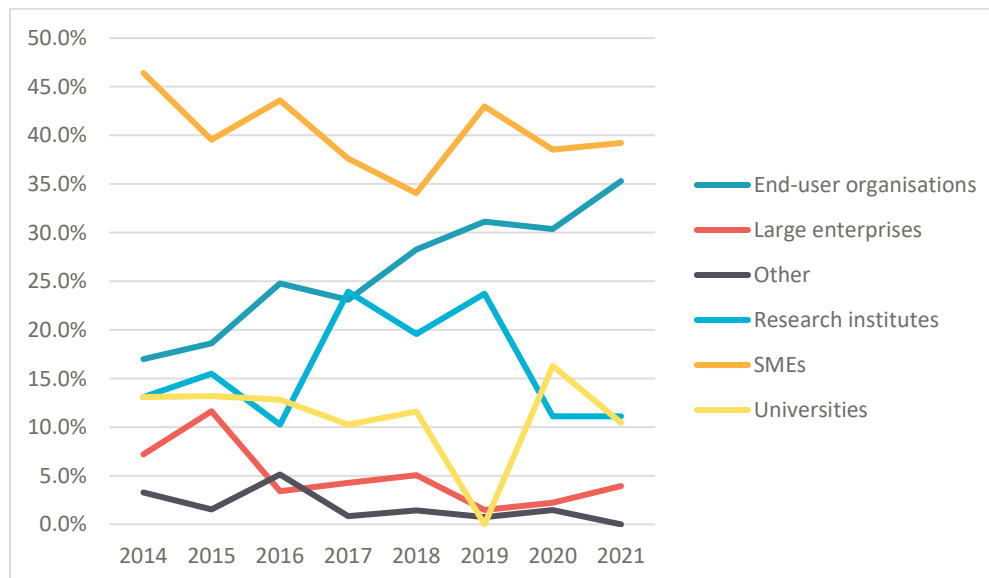
FIGURE 5: NUMBER OF PROPOSALS AND INDIVIDUAL APPLICANTS³³ PER YEAR



Source: Own analysis based on AAL administrative monitoring data

Figure 6 shows the share of participations in newly started projects by type of organisation, per year. As can be seen, the share of participations by SMEs varied over the Programme period, yet was higher than the shares of all other types in every single year. The participations of end-user organisations saw a steep increase over the course of the Programme.

FIGURE 6: SHARE OF PROJECT PARTICIPATIONS BY TYPE OF ORGANISATION, PER YEAR



Source: Own analysis based AAL administrative monitoring data.

³² Idem.

³³ Idem.

Please note: additional Programme statistics can be found in Annex A.

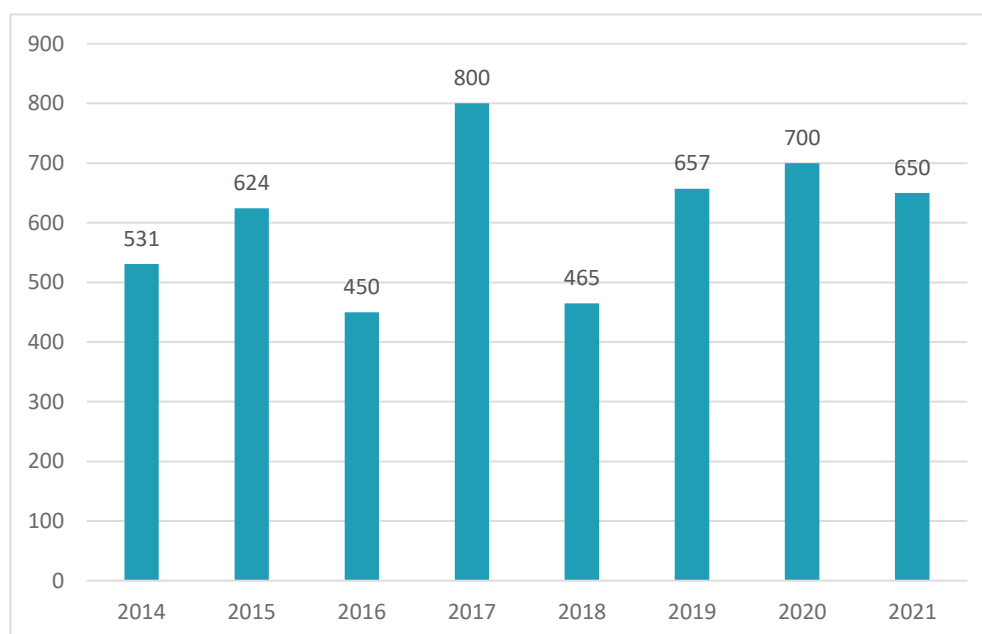
3.2.3. Support actions

The Support Action portfolio has been implemented alongside the annual transnational calls for proposals. Support Actions have evolved and expanded over time and become more tailored to specific support needs, using insights from previous evaluations and from the Programme impact assessments. More information on the implementation of Support Actions can be found in the case study on Support Actions for capacity development and community building (Annex D).

AAL Forum

Throughout the Programme, the AAL Forum has been a key Support Action bringing together AAL beneficiaries and the wider community to showcase project experiences, share good practice and stimulate mutual learning. As shown in Figure 7, participation in the AAL Forum varied between years, reaching a peak of 800 participants in 2017. Participation remained high in 2020 and 2021 despite the constraints of the COVID-19 pandemic which caused the Forum to move to an online format³⁴. The AAL Forum continues to attract researchers, end users, business representatives and public officials, with the largest share of participants coming from the EU-27 countries (81 %-89 %). A smaller share participated from non-EU-27 countries, such as Switzerland (0 %-7 %), the UK (2 %-4 %) and Norway (2 %-4 %). Participation was particularly strong from Austria, Belgium, Denmark, Germany, Italy, the Netherlands, Romania, Spain and Sweden. The Forum has also attracted participants from Canada, Israel, Serbia, Taiwan and the United States³⁵.

FIGURE 7: NUMBER OF PARTICIPANTS IN THE AAL FORUM, PER YEAR



Source: Own analysis based AAL administrative monitoring data.

Programme beneficiaries stated that having these learning and networking opportunities – as well as exposure to potential project partners, user groups and investors at the European level – was a key reason for participating in the AAL2 Forum Programme. Networking opportunities associated with the

³⁴ Annual Report of the AAL Association 2019-2020, Annual Report of the AAL Association 2020-2021.

³⁵ Impact Assessment (2021), p. 69.

AAL Forum were consistently rated very highly by project beneficiaries. They also found these events useful for mutual learning and as source of inspiration for their own projects, user involvement and business approach.

AAL2Business

AAL2Business was launched in 2013 as a Support Action, initially for a three-year period that was subsequently extended to cover the entire duration of the Programme. AAL2Business capitalised on the fact that each project consortium had to undergo a mid-term review during which projects were identified that were likely to benefit from tailored business coaching support. In total, 154 projects participated in the AAL2Business Support Action, of which 40 participated more than once, and a total of 51 requested business coaching. Around 60 % of those that participated noted that their capabilities to develop a commercialisation strategy improved due to their participation in AAL2Business³⁶. Of the 23 projects that launched an AAL solution or component in the market, almost half (48 %) had participated in AAL2Business³⁷.

Challenge Prize / Smart Ageing Prize

The AAL Challenge Prize (later renamed the Smart Ageing Prize) has been awarded every two years from 2016. Calls for submissions were devoted to priority themes such as the Internet of Things (2016), Social Inclusion through Digitalisation (2018) and Silver Entrepreneurship (2020). At its peak the Smart Ageing Prize attracted over 170 submissions. In total, 306 applications were submitted from a wide spectrum of applicants³⁸. Shortlisted entries were evaluated by a panel of judges and semi-finalists were offered additional business coaching. Prize winners and runners-up reported that the experience enabled them to generate additional visibility for their project, reach new audiences and build new partnerships.

Market Observatory

A Market Observatory Support Action was created in 2016 to further strengthen the market orientation and business knowledge of project beneficiaries, and provide specialist insights into the emerging market for active and assistive living. Following an assessment of beneficiaries' information needs, five Investor Events were organised in 2017 and 2018 during which start-ups learned how to pitch their projects to a panel of investors 'Dragons Den' style. Over 22 investors took part in these events. In total, 32 AAL solutions were pitched at the AAL investor events³⁹. The Support Action also included the publication of an 'AAL Market and Investment Report' and a 'Dos and Don'ts when Finding an Investor' booklet.

³⁶ Impact Assessment (2021), p. 18.

³⁷ Impact Assessment (2021), p. 70.

³⁸ Impact Assessment (2021), p. 71.

³⁹ Impact Assessment (2021), p. 73.

4. Evaluation findings

This section presents the findings of the Evaluation for each evaluation criterion, including the five criteria set out in the Better Regulation Guidelines and the two Partnership-specific criteria.

4.1. Relevance

The key challenges addressed by the AAL2 Programme, as described in Section 2.1, remain valid and their relevance will further increase in the future. In 2021, 20.8 % of the EU population was aged 65 and over; this share is expected to increase to 31.3 % by 2100. For **people aged 80 and over, the share is expected to increase 2.5-fold from 6.0 % in 2021 to 14.6 % in 2100**⁴⁰. The ratio between working age people and older people has already been shifting, with fewer younger people supporting an increasing number of older people. This has implications for delivering and financing formal and informal care and other forms of social support for older people. The impact of these developments on European societies has also been emphasised by various recent reports published by the European Commission, such as the European Commission Report on the Impact of Demographic Change⁴¹ and the 2021 Ageing Report⁴². It is therefore essential that people are enabled so they can live more independently, stay active for longer and that society uses available opportunities to support active and healthy living.

There is no doubt that ICT-based solutions have substantial potential to support active and healthy living, despite challenges experienced in implementation and public trust. Stakeholder interviews also observed that the market for innovative solutions is growing and is attracting an increasingly large number of investors from the ICT field as well as from service and care providers (including examples of utility providers). Given the breadth of applications for such innovations (e.g. in the workplace, the health and care sector and in society more widely) there are plenty of opportunities to engage in the AAL market⁴³.

This potential is recognised in several EU initiatives directed at enhancing the capacity of ICT solutions for ageing well⁴⁴. The European Blueprint on Digital Transformation of Health and Care for the Ageing Society⁴⁵ promotes a shared vision of a broad range of stakeholders on how ageing well should look in the digital age. It stresses the role of technology and digital innovations for providing sustainable and integrated healthcare. The 2019 SAPEA report 'Transforming the Future of Ageing' highlighted the use of technology as a key area of interest for healthy ageing⁴⁶. The importance of technology and digital innovation for Europe's resilience was also emphasised in the 2030 Digital Compass⁴⁷, setting out a vision and targets for a successful digital transformation of Europe by 2030. These include the resilience

⁴⁰ https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Population_structure_and_ageing#The_share_of_elderly_people_continues_to_increase

⁴¹ European Commission (2020). Report on the Impact of Demographic Change, available online at https://ec.europa.eu/info/sites/default/files/demography_report_2020_n.pdf

⁴² European Commission (2021). The 2021 Ageing Report: Economic & Budgetary Projections for the EU Member States (2019-2070), available online at https://ec.europa.eu/info/sites/default/files/economy-finance/ip148_en.pdf.

⁴³ Kurt Salmon/IDC (2014). FINAL REPORT. A Study Concerning a Market Observatory in the Ambient Assisted Living field. Online available at: <http://www.aal-europe.eu/wp-content/uploads/2016/03/Final-report-SA-Market-observatory.pdf>.

⁴⁴ Silver Economy Report, p. 6f.

⁴⁵ European Commission (2017). Blueprint on Digital Transformation of Health and Care for the Ageing Society. Online available at: <https://digital-strategy.ec.europa.eu/en/library/blueprint-digital-transformation-health-and-care-ageing-society>.

⁴⁶ SAPEA, Science Advice for Policy by European Academies (2019). Transforming the Future of Ageing. Berlin: SAPEA. <https://www.sapea.info/wp-content/uploads/tfa-report.pdf>.

⁴⁷ https://ec.europa.eu/info/strategy/priorities-2019-2024/europe-fit-digital-age/europes-digital-decade-digital-targets-2030_en

and sustainability of health and care systems. Last but not least, the EC's 2021 Green Paper on Ageing highlights that any European policy response to demographic change also needs to address the twin challenges of achieving the green and digital transformation of society.

The AAL2 Programme is also well aligned with several of the EU2020 flagship initiatives, such as the Innovation Union, the Digital Agenda for Europe and the Agenda for New Skills and Jobs. It is also fully in line with the most recent New European Innovation Agenda⁴⁸, which focuses on the development of new technologies to address the most pressing societal challenges, and to bring them on the market. It also aligns with the UN Decade for Healthy Ageing⁴⁹ and the UN 2030 Agenda for Sustainable Development⁵⁰.

The AAL2 Programme has also been unique in this space as it brought together a focus on improving active and healthy ageing and the use of innovative ICT-based solutions. Stakeholders and NCPs noted that this unique focus has been highly productive both in raising awareness for the potential of ICTs and in strategically developing the emerging landscape and markets. As mentioned above, AAL2 has already collaborated with other European initiatives in the field of health and ageing to create synergies and ensure the sustainability of its impacts (see Section 4.3.2). With the various improvements to the Programme (see Section 3.2.1), AAL2 has also shown flexibility in adapting to a changing policy landscape, improving Programme effectiveness and efficiency and responding to the COVID-19 pandemic, for example. This flexibility is further assessed below (Section 4.3).

However, many of the barriers for market development referred to in Section 2.1 remain and much of the potential of ICTs for active and healthy living is yet to be realised. Several of these barriers lie outside the scope of the Programme and require larger societal interventions. These include substantial political willingness to transform health and care systems and create the environment for innovative solutions to thrive and make a more substantive contribution to active and healthy living (see also the case study on Support Actions).

Overall assessment

The AAL2 Programme has been highly relevant in addressing the challenges arising from rapid demographic change and in developing the potential of ICT-based solutions to address these challenges and contribute to economic growth. Its relevance is also reflected in the various EC policy initiatives in this field. In addition, the **Programme has proved to be flexible** in adjusting to changing policy demands and in continuously improving its operations. However, as many of the barriers to higher impact lie outside its scope of action, **a new approach to strengthen the uptake of innovative solutions is needed.**

⁴⁸ European Commission (2022). Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: A New European Innovation Agenda. Online available at <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52022DC0332&from=EN>.

⁴⁹ <https://www.who.int/initiatives/decade-of-healthy-ageing>

⁵⁰ United Nations (2015). Transforming our World: The 2030 Agenda for Sustainable Development. Online available at: <https://sdgs.un.org/sites/default/files/publications/21252030%20Agenda%20for%20Sustainable%20Development%20web.pdf>.

4.2. Coherence

Coherence with Horizon 2020 and other EU and national policies (programme level)

AAL2 continues to occupy a unique position within the European policy landscape. It is well aligned with general EU policy objectives and acts as a bridge between research and market-oriented programmes. Its three objectives are well aligned with the overall objective of Horizon 2020 to 'contribute to building a society and an economy based on knowledge and innovation across the Union by leveraging additional R&D&I funding'⁵¹. This applies in particular to Societal Challenge 1 on 'Health, demographic change and well-being', which includes 'active ageing and self-managing disease' as one of its broad lines of activities⁵². Under this Societal Challenge, a number of calls and topics have also supported the development of technologies to support active and healthy ageing. Most notably, Work Programme 2018-2020 included a call on 'Digital transformation in Health and Care', consisting of 21 individual topics and a funding volume of approximately EUR 100 million in each of the three years.

While there is a thematic closeness between AAL2 and some of the activities funded under Horizon 2020 Societal Challenge 1, a detailed analysis shows that the respective calls and topics are complementary and synergetic to each other. By way of example, the topic 'SC1-HCC-08-2020: Scaling up innovation for active and healthy ageing' makes explicit reference to AAL2 and encourages the involvement of AAL2 partners⁵³.

Also more generally, AAL2 is distinct from most research funded under Horizon 2020 due to its focus on innovation and SMEs, and its market orientation⁵⁴. This observation was confirmed by the public consultation on Article 185 initiatives conducted in 2017, in which 64 % of AAL2 respondents consider the Programme to be coherent with other EU initiatives⁵⁵.

The collaboration and communication with other programmes, such as the EIP AHA and JPI 'More Years Better Lives' (JPI MYBL), have been deepened during the second phase of AAL2, implementing the recommendations of the Interim Evaluation. The joint organisation of the one-week-long AAL Forum Online Event in 2020, with almost 1 000 international participants, is a result of this collaboration⁵⁶. The Programme has also extended its outreach and collaboration with other EU institutions. These have been mainly in an advisory role, such as supporting informal working groups within the EU Parliament and deepening ties with DG CONNECT to inform the Digital Europe Programme.

To further strengthen its external coherence and alignment with policy, the Programme has expanded its advocacy role within Europe and vis-à-vis Participating States in raising awareness for the potential of innovative solutions and the need for transformative change and has contributed to setting the agenda in this policy field.

⁵¹ European Commission (2011). Proposal for a Regulation of the European Parliament and the Council establishing Horizon 2020 – The Framework Programme for Research and Innovation (2014-2020). Online available at <https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2011:0809:FIN:en:PDF>.

⁵² Terms of reference of the present study, not public.

⁵³ Horizon 2020, Work Programme 2018-2020, part '8. Health, demographic change and wellbeing'.

⁵⁴ While the EIC pilot also focuses on innovation and market orientation, it very much focuses on breakthrough, disruptive innovations, which is not the key objective of AAL2.

⁵⁵ European Commission (2017). Public Consultation on the Evaluation of Article 185 Initiatives. Available at: <https://op.europa.eu/en/publication-detail/-/publication/2e51e50c-afc0-11e7-837e-01aa75ed71a1/language-en/format-PDF/source-66145783>, p. 10.

⁵⁶ <http://www.aal-europe.eu/community-building/aal-forum-intro/>

At national level, the AAL Programme demonstrated complementarity in those participating countries, in which AAL2 provided the only opportunity to engage in this particular field (as noted by NCPs during interviews). The possibility to contribute to Programme activities in line with national capacities and needs, enabled the remaining countries to work together constructively. This potentially helped those countries in which markets were small to shape the Programme according to their needs (here referred to as 'smaller' countries). NPC's interviewed for this evaluation noted that the AAL2 Programme was particularly valued by a number of smaller countries. For these countries, this was an opportunity to establish and develop the agenda for active and healthy ageing both domestically and within the EU.

Finally, it should be stated that AAL2 is aligned with the UN Sustainable Development Goal 3 to 'ensure healthy lives and promote well-being for all at all ages', even though it does not directly link to any of the specific targets defined below⁵⁷.

Coherence with Horizon 2020 (participant level)⁵⁸

To assess the degree of involvement of AAL2 participants in Horizon 2020 we analysed the Horizon 2020 centrality score of 699 AAL2 participants⁵⁹. A centrality score refers to the degree of involvement in Horizon 2020 (based on number of participations), compared to all other Horizon 2020 participants. It is measured in percentiles. As can be seen in Table 4, **5.6 % of AAL2 participants were among the top 1 % Horizon 2020 participants during the same period of time**. This number is particularly high for **universities and higher education institutes with 22 % of them belonging to the top 1 % of Horizon 2020 participants**. To a lesser degree, this applies to research institutes, with 8 % of them falling into this category. In contrast, among private companies and other types of organisations, this share is 0 %; for public entities, it is 1.1 %. **56.2% of AAL2 participants have never participated in Horizon 2020**, with that number being as high as 62.8 % for private companies and 82.8 % for public entities.

These centrality score figures show that **AAL2 manages to bring together top research performing entities in Europe with private companies (mostly SMEs) and end-user organisations that do not typically participate in Horizon 2020**. This also means that there is a strong complementarity between AAL2 and other activities under H2020.

⁵⁷ United Nations (2015). Transforming our World: The 2030 Agenda for Sustainable Development. Online available at: <https://sdgs.un.org/sites/default/files/publications/21252030%20Agenda%20for%20Sustainable%20Development%20web.pdf>.

⁵⁸ PPMI Analysis based on the combination of AAL administrative data and CORDA data.

⁵⁹ Using organisation name and website, we had matched the AAL2 participants data to Corda PIC numbers. A small number of records had to be removed because of data issues. The statistic therefore refers to 699 out of 705 AAL2 participants.

TABLE 4: H2020 CENTRALITY SCORE OF AAL2 PARTICIPANTS

Centrality within H2020	All AAL2 participants		Universities & higher education institutes		Private companies (including SMEs and large enterprises)		Public entities		Research institutes		Other	
	Number	Share within category of AAL participants	Number	Share within category of AAL participants	Number	Share within category of AAL participants	Number	Share within category of AAL participants	Number	Share within category of AAL participants	Number	Share within category of AAL participants
Top 1 %	39	5.6 %	31	22.0 %	0	0.0 %	1	1.1 %	7	8.0 %	0	0.0 %
Top 10 %	127	18.2 %	64	45.4 %	24	8.2 %	4	4.3 %	29	33.3 %	6	7.1 %
Top 50 %	235	33.6 %	84	59.6 %	72	24.6 %	13	14.0 %	45	51.7 %	21	24.7 %
Bottom 50 %	71	10.2 %	8	5.7 %	35	11.9 %	3	3.2 %	11	12.6 %	14	16.5 %
No H2020 participation so far	393	56.2 %	49	34.8 %	184	62.8 %	77	82.8 %	31	35.6 %	50	58.8 %
Total	699		141		293		93		87		85	

Source: Own analysis based matching of data from the AAL website and from CORDA.

Internal coherence

In terms of internal coherence, the AAL2 has made good progress in clarifying and conceptually developing the role of each of the Programme components. This relates to the refinement of the Programme calls as well as the Support Actions that are well integrated and designed to support the three objectives of the Programme. Support Actions were developed to run alongside the projects funded by the Programme. They were based on insights gained from analysis and progress monitoring that helped identify challenges and opportunities. Some Support Actions were already present in AAL1 and were intensified during AAL2, while others have been added in response to analysis and changing policy needs.

As described in detail in the case study on Support Actions for capacity development and community building (Annex D), four phases of development can be distinguished:

- An initial focus on networking, mutual learning and actions to strengthen the involvement of end users in projects approved for funding (starting in AAL1);
- A second phase in which Support Actions addressed specific information and capacity needs of project teams by strengthening their market orientation and business skills (from 2012);
- A third phase that supported projects in bringing their products and services to the market by providing access to market intelligence tailored to the knowledge gaps of participants and the wider community (from 2014);
- A fourth and final phase which saw the development of an ecosystem approach, in addition to the consolidation and diversification of the Support Actions (from 2017) – the ecosystem approach built on the realisation that a wider approach to health and care system transformation is needed if AAL innovations are to realise their full potential.

Support Actions expanded from primarily offering opportunities for networking and exchange to developing targeted interventions aimed at specific skill and knowledge gaps. Stakeholders interviewed for this evaluation noted that there was significant learning involved in developing and adjusting Support Actions, as well as a willingness to listen to beneficiaries and expert advice, and to embrace novel ideas for improvement. Opportunities were used to apply the management tools of the project funding to identify challenges and offer tailored support, for example by using projects' mid-term reviews to identify weaknesses in the projects' approaches to marketisation and provide targeted coaching to develop project beneficiaries' business skills (AAL2Business).

AAL2 also broadened the target audience from providing support to individual project teams to serving and developing the wider AAL community. Project funding was most successful in relation to achieving the first two objectives associated with bringing about innovative solutions and creating a critical mass of research, development and innovation. However, the third objective of shaping the market conditions for such innovations was correctly understood as being much harder to achieve and thus benefiting from specific support. During AAL2 this increasingly involved activities aimed at shaping the market, by building and engaging with its demand side (e.g. by involving regions as purchasers and providers of health and care). It included promoting an understanding of the need for a wider approach to ecosystem building for European societies to capitalise on the potential of innovation in this sector.

On the basis of the above, it can be stated that the programme design of AAL2 has created synergies between its various components and between individual projects.

Overall assessment

The Programme shows strong external and internal coherence. In terms of external coherence at programme level, AAL2 is **complementary to other programmes and initiatives** including Horizon 2020, the EIP AHA and JPI MYBL. It also cultivates **links with the initiatives** through joint activities and had a strong advisory role in relation to EU policy. As our analysis shows, the Programme also has **strong coherence and complementarity with initiatives at national level**.

The Programme **manages to bring together top research performing entities in Europe with both SMEs and end-user organisations that do not typically participate in Horizon 2020**. This finding is highly relevant and speaks of the innovative approach to fostering near-market innovations, even though much of the potential for solutions for active and healthy living is yet to be realised.

The Programme also **demonstrates strong internal coherence**, as its core activities are well aligned with each other and with the three objectives of the Programme.

4.3. Efficiency

This section will address the efficient implementation of the Programme, including the governance structure of AAL2, the performance of the CMU, the administrative burden at programme and project level, and its budget utilisation. The final subsection will address how flexible the Partnership has been in adjusting objectives, activities and resources to changing circumstances.

Please note: Given that it is too early to make an overall assessment of the (long-term) effects of AAL2 (see section 4.4.5), it was not feasible to assess the relationship between the resources used by the Partnership and the changes it is generating.

Implementation and governance structure

As described in the case study dedicated ‘to analysing the public-public partnership approach of AAL2’ (see Annex E), the Article 185 construction of AAL2 has **advantages and challenges**.

The **possibility of having varying levels of commitment** (in terms of financial contributions and/or content-related engagement) **was seen as helpful at the beginning of AAL**. It was a way of getting the initiative started in a field that was still largely underdeveloped and to which countries gave uneven priority. By building an ‘Alliance of Early Movers’ the Programme was able to tap into the energy and enthusiasm of those dedicated to promoting digital solutions for ageing well (see case study 2). The fact that countries were not obliged to commit a specific financial contribution or other types of engagement for the entire Programme duration, lowered the threshold for them to join. However, this in-built flexibility **proved to be challenging in the longer term**. The decrease in funding commitments which occurred during the first half of the Programme (see Table 8 in Annex A) challenged the financial sustainability of the Programme at mid-term⁶⁰.

Interviewees indicated that the **possibility and/or willingness of NCPs to engage in developing a joint strategic agenda varied**. A few funding agencies may have seen their role primarily in following due

⁶⁰ While this risk was detected by the interim evaluation, it did not materialize. See also Section 4.5.

process in managing project funding, with less attention given to providing strategic direction. Some of them noted that they had tried to align national strategy, but they had not been able to convince their political masters to support AAL as strongly as they wished. This meant that the CMU had to play a strong role in driving strategy development while encouraging NCPs to engage in the process.

It has also been noted that **the EC has a different role in the governance structure** of the Programme compared to Participating States, as it was not possible for the EC to join the AAL Association as full member (given the legal framework of the Partnership). While the Programme is largely owned by the Participating States who form the main decision-making body, it is also a Partnership between the Participating States and the EC as per Decision No. 554/2014/EU. The EC contributes 50 % of public funding, yet in the GA the EC has observer status only. The only effective mechanism for the EC to influence the strategic direction of AAL2 is during the approval process of the Annual Work Programme (AWP). Some interviewees therefore suggested that the governance structure is weighed against the EC.

However, in general, the **assessment of NCPs and other stakeholders about the functioning of the governance structure of the Programme was positive**. A modus operandi was found that appeared to work well for the various decision-making processes in place and almost all NCPs were satisfied with the strategic direction and processes of engagement of AAL2.

Performance of the CMU

Our findings confirm the assessment of the Interim Evaluation that the CMU operates effectively and at a high level of competence. Based on the insights from interviews and desk research, **our analysis does not confirm the concerns about the lack of strategic capacity expressed in the Interim Evaluation**. The vast majority of individuals interviewed lauded the leadership, commitment and energy of the CMU and saw its performance as a key strength of AAL2. NCPs and other stakeholders provided **highly positive feedback with respect to the performance and role of the CMU in developing the Programme**, especially during the second phase of AAL2 after a change in leadership. It was also stated that the level of dedication to its mission distinguishes AAL2 from the other R&D programmes. This positive assessment was also reflected in the MTR satisfaction survey conducted by the AAL Programme in 2020⁶¹.

The CMU implemented a number of changes to the management of the Programme as outlined in Section 3.2.1. These have improved its efficiency and focused the Programme on maximising the outputs, outcomes and impacts. Stakeholders described the management approach as **proactive, flexible and inspirational** and noted that this approach was specific to AAL2 and in contrast to the experience of other (Horizon 2020) programmes. In this respect, the Partnership seems to have enjoyed an unusual degree of managerial freedom that was used to its advantage and appreciated by its members.

Administrative burden

The Public Consultation on the Article 185 initiatives conducted in 2017 concluded that the administrative burden on applicants was higher compared to projects that were funded by one country only. Yet it also concluded that projects funded by Article 185 Partnerships were **less administratively burdensome than Horizon 2020 projects** insofar as applicants were already familiar with national

⁶¹ AAL Association (2020). Mid-Term Review Satisfaction Survey.

funding rules. **Beneficiaries interviewed noted that the use of national funding rules simplified the process for them, which was especially relevant to SMEs**, although national funding rules and procedures varied significantly in complexity. More critically, interviewees stated that they needed to report separately to the EC and their respective NCP, often in two different formats, which was consistently felt to be an added burden.

Financial matching and budget utilisation

As an Article 185 initiative, the AAL Programme combines national project (co-)funding with a centrally organised selection process based on three core criteria. This constellation requires a complicated matching process to make the best use of the available funding and minimise the risk of underspending⁶². Irrespective of its excellence, an application can only be funded if all Participating States involved as national funders still have sufficient budget available. If not, applicants whose country has run out of national budget, can be replaced by other participants from countries that still have budget available⁶³.

This matching process was introduced to address problems in budget utilisation resulting from the combination of applying national funding rules together with a central evaluation process. All projects invited for reconfiguration during AAL2 (47 in total) succeeded in reconfiguring their proposals and signed grant agreements, with the exception of one project in Call 2020. However, the matching process requires substantial additional administration and thus introduces new challenges. In the interviews, **NCPs and beneficiaries reported difficulties in reconfiguring projects** as this required them to redistribute tasks within the consortium or identify new beneficiaries that could execute specific work packages. **Interviewees agreed that the process was manageable but created additional challenges.** The MTR Satisfaction Survey confirmed that the majority of those involved in project reconfiguration were satisfied with the outcome⁶⁴.

In total, the **budget utilisation under AAL2, defined as the ratio between total budget committed by Participating States and annual budget contracted over the programme period was 79.4 %**⁶⁵. Budget utilisation varied between years, with the utilisation rate being as low as 65.1 % in 2019 and as high as 97.2 % in the last call in 2021 (see Figure 8).

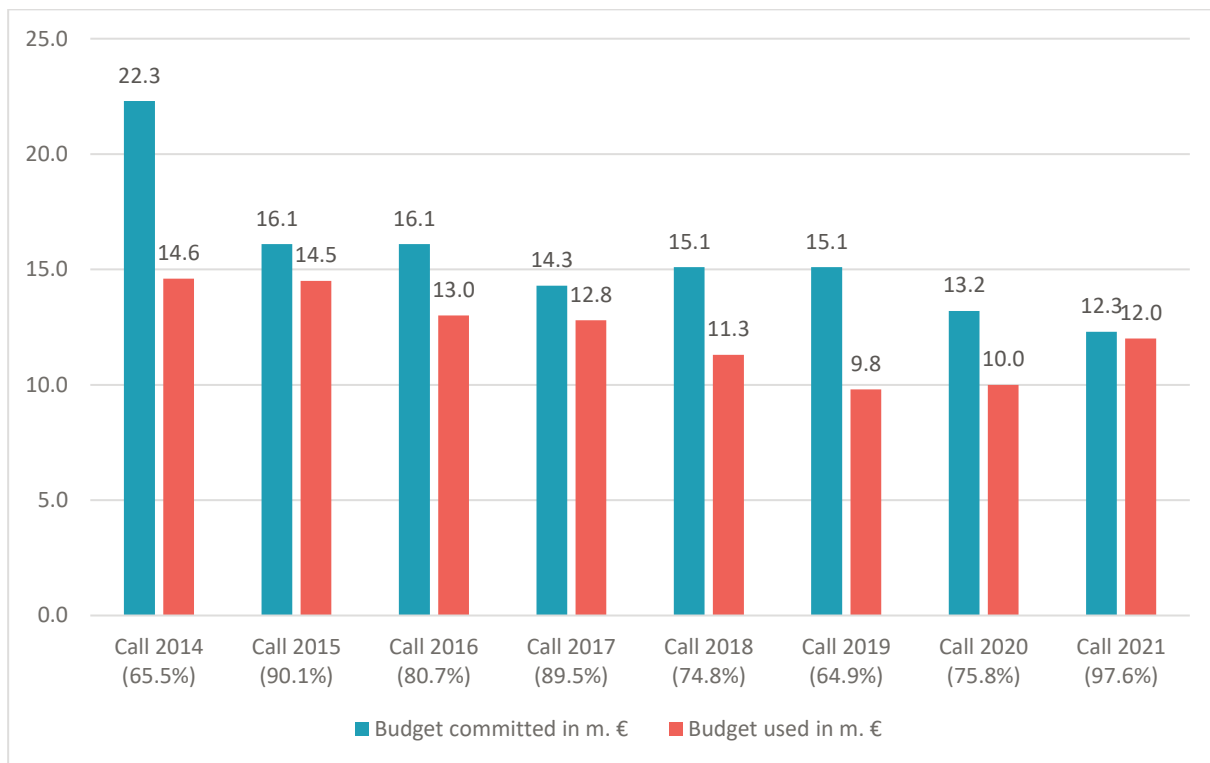
⁶² See the case study exploring the AAL Partnership for more information.

⁶³ Subject to the condition that not more than 20 % (25 % from 2018) needs to be replaced.

⁶⁴ AAL Association (2020). Mid-Term Review Satisfaction Survey.

⁶⁵ This figure relates to the national contributions only. If EC contribution is included in the calculation, the rate is 81.9 %.

FIGURE 8: CALL BUDGET COMMITTED VS BUDGET USED PER YEAR (NATIONAL CONTRIBUTIONS ONLY)



Source: Own analysis based on AAL administrative monitoring data.

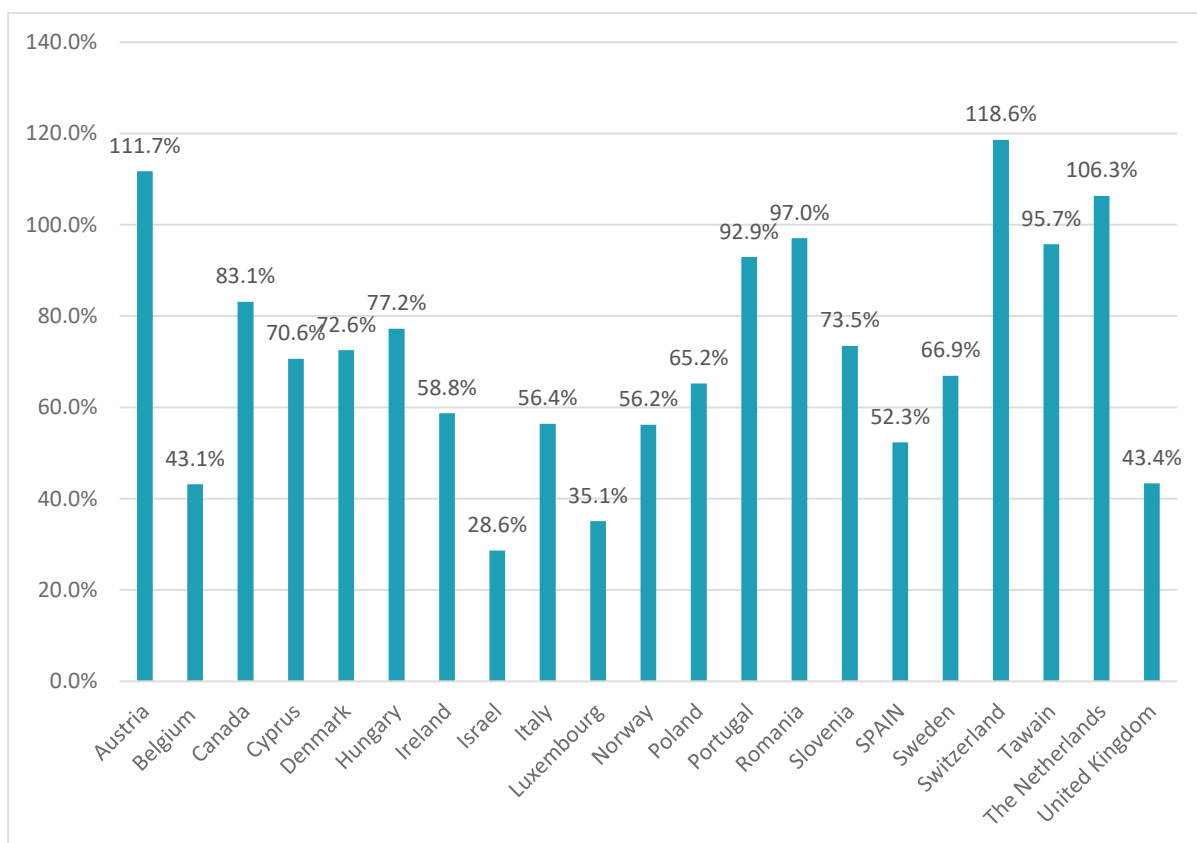
The variation of the project budget utilisation rate was even larger when comparing different countries (see Figure 9 below). While Switzerland, Austria and the Netherlands contracted more funding than originally committed, Israel, Luxembourg, Belgium and the United Kingdom contracted significantly less than 50 % of what they had committed originally.

There are a number of reasons that can explain the under-utilisation of the committed budget:

First, there was a lack of absorption capacity in some countries illustrated by a low number of proposals submitted and/or a low number of highly ranked proposals in those countries⁶⁶. This led to 28.7 % of the committed budget not being used. Second, some proposals could not be funded because at least one country had already depleted its committed budget. This accounted for 8.2 % of the budget underspend. However, thanks to the possibility of reconfiguring projects and some national budgets being increased, an additional 18.8 % of the originally committed budget could still be contracted.

⁶⁶ This may be due to a variety of different factors, including a low number of relevant actors in the respective country or a lack of awareness of the Programme. A detailed examination of the reasons was outside the scope of this study.

FIGURE 9: BUDGET COMMITTED VS BUDGET USED PER COUNTRY



Source: Own analysis based AAL administrative monitoring data.

Flexibility in adjusting objectives, activities and resources to changing market and policy needs

The terms of reference for this evaluation request an assessment of the extent to which the Partnership has been flexible in adjusting to changing market and/or policy needs.

There are numerous examples of adjustments and improvements made to the Programme that demonstrate the flexible and forward-thinking approach taken when dealing with challenges and responding to stakeholder feedback. In terms of its **strategic direction**, the CMU and AALA have positioned themselves as a ‘learning organisation’ giving emphasis to monitoring, assessing and improving the implementation of the Programme. To this end, three Programme impact assessments were commissioned that made a **strong and convincing effort to inform improvements to AAL2**. As part of this evidence-informed learning process, the definition of the objectives and the **intervention logic were sharpened** and changes were made to many dimensions of the Programme (see Section 5.2.1). Stakeholders interviewed consistently stated that **the CMU was highly adept at listening to and using feedback from stakeholders and the wider community to improve the Programme**.

The ability to **respond flexibly** was also demonstrated during the COVID-19 pandemic with adjustments made to call procedures to encourage participation and the AAL Forum moving to an online format.

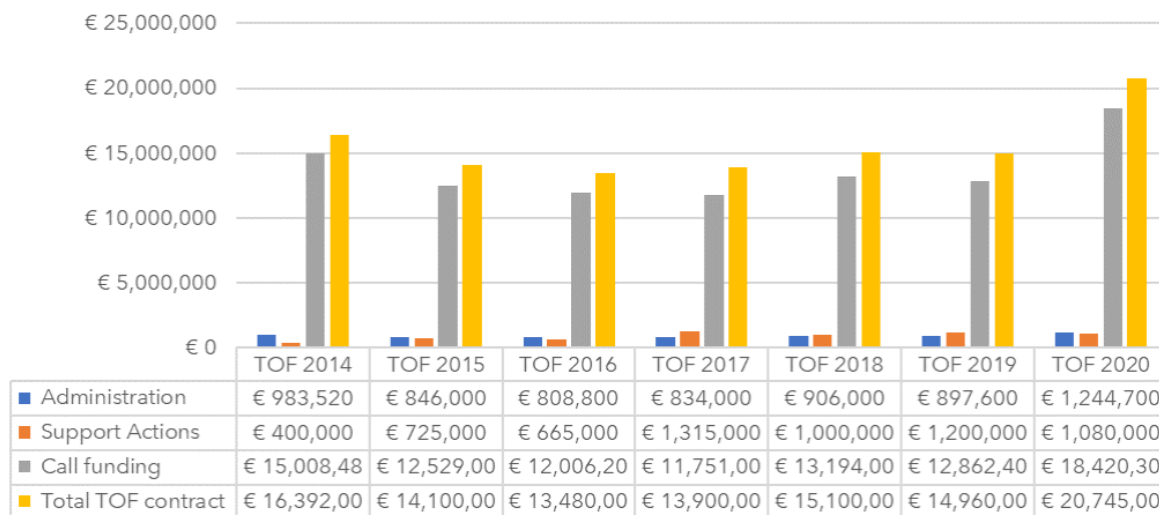
In terms of responsiveness to **policy needs**, the challenges faced by AAL2 and by innovators in the field of active and assisted living more widely, were explored by introducing an Ecosystem Support Action. This approach was developed by involving a large number of stakeholders and by systematically exploring the many factors that determine the success of novel solutions in the market. These were assessed as to whether they can fulfil their potential to improve the lives of older people, their families and carers.

While the Programme has not been able to influence its market environment to an extent that would bring about significant improvements in the uptake of novel solutions, the challenge of integrating innovations into existing, complex and highly variable health and care systems is now much better understood. This way, **AAL2 has laid some of the groundwork for future actions and initiatives that aim to address demographic change and to improve the sustainability of European health and care systems.**

Cost-effectiveness and administrative overhead

The administrative costs for the Programme are fixed at maximum 6 % of the EC contribution. In absolute terms, this means that between EUR 0.8 million and EUR 1.2 million was used per year on administrative overhead and EUR 5.4 million in total between 2014 and 2020. While it is difficult to compare the percentage of administrative overhead of AAL2 to that of other Article 185 Partnerships such as ECDTP2 and Eurostars⁶⁷, for example, it is important to note that in absolute terms, it is significantly smaller than those of other Article 185 Partnership Programmes. In view of the strong performance of the CMU during the final years of AAL2, this means that the budget has been used highly efficiently⁶⁸.

FIGURE 10: ANNUAL EC CONTRIBUTION AND BREAKDOWN OF SPENDING BETWEEN TYPES OF COSTS



Source: AAL Association (2021): Final AAL Programme Evaluation. Self-Assessment Report (not public).

⁶⁷ This is due, among others, to the fact that other Article 185 Partnerships have a high proportion of in-kind contributions and that the ratio between EC and PS contributions is different.

⁶⁸ In the case of EDCTP2 and Eurostars, admin costs amounted to EUR 29.9 million and EUR 10.6 million, respectively, for the period 2014-2020.

Spending on Support Actions under AAL2 was also very moderate, constituting 5.9 % of the total EC contributions over this period. The analysis presented in the Case Study on Support Actions concludes that Support Actions were effective in supporting the Programme objectives and cost-effective in terms of its spending (See case study 1).

Overall assessment

In terms of its efficiency, AAL2 is characterised by a **combination of strengths and weaknesses**, some of which are directly linked to it being an Article 185 Partnership. The possibility of having varying levels of financial (national) commitment has proved to be an advantage and a disadvantage for the implementation of AAL2. It provides the opportunity and flexibility needed for an ‘alliance of early movers’, but it increases the financial risk to the Programme if countries choose to opt out or significantly reduce their financial contributions. **A modus operandi was found that appeared to work well for most (remaining) members.**

In contrast to concerns expressed by the Interim Evaluation, the **AALA and CMU were able to provide proactive and strategic leadership during the second phase of AAL2**, after a change in leadership. As highlighted by interviewees, the competence, managerial flexibility and responsiveness of this leadership allowed AAL2 to improve, evolve and adapt to changing circumstances. **This flexibility and agility were key strengths of the Programme.**

The **ratio of budget committed to budget spent of approximately 80 %**, with variation between years and countries, is **not optimal**⁶⁹. However, it needs to be borne in mind that a large part of the underspend is due to an insufficient number of participations in quality proposals in some Participating States, and that the utilisation rate improved significantly thanks to the project reconfiguration process.

With data on long-term impacts of the Programme still emergent (see the section on Effectiveness), an assessment of the relationship between resources used and the changes which the Partnership is generating is preliminary. **Administrative costs and spending on Support Actions were very moderate**, with 6.0 % and 5.9 % of the annual Programme budget, respectively. In view of the strong performance of the CMU in particular during the second half of AAL2 and the benefits created by the Support Actions, this means that the **respective budget items have been used highly efficiently.**

4.4. Effectiveness

To assess the effectiveness criterion, the evaluation analysed the progress made towards each of the three Programme objectives. As stated in Section 4.2, the objectives of AAL2 are well aligned with the objectives of Horizon 2020, general EU priorities and the UN Sustainable Development Goal No 3. Therefore, this analysis also covers progress towards the objectives of the Framework Programme. The results are presented in the following section. This section also covers Partnership-specific questions relating to the international positioning and visibility of AAL2.

⁶⁹ The exact number depends on whether only national contributions or also EC contributions are taken into account.

4.4.1. Objective 1: Enhance the availability of information and communication technology (ICT) based products and services for active and healthy ageing, to improve the quality of life for older people and their carers, and help increase the sustainability of care systems

In assessing the progress towards this objective, the Interim Evaluation assessed the degree of involvement of end users in funded projects. It found that 18 % of project participants had been end users, a figure that has remained unchanged since AAL1. The Interim Evaluation stated that, while users are well represented, their engagement was still deficient in terms of (1) breadth, i.e. stakeholders not been representative of all types of users and (2) many of them are proxy users rather than end users themselves (e.g. associations, charities).

Our assessment of progress towards Objective 1 starts by examining how the involvement of end users in AAL projects has developed during AAL2 and presents information on output, outcome and impact, including the development and deployment of solutions and their impact on the quality of life of the older people, their families and carers.

Involvement of end user organisations

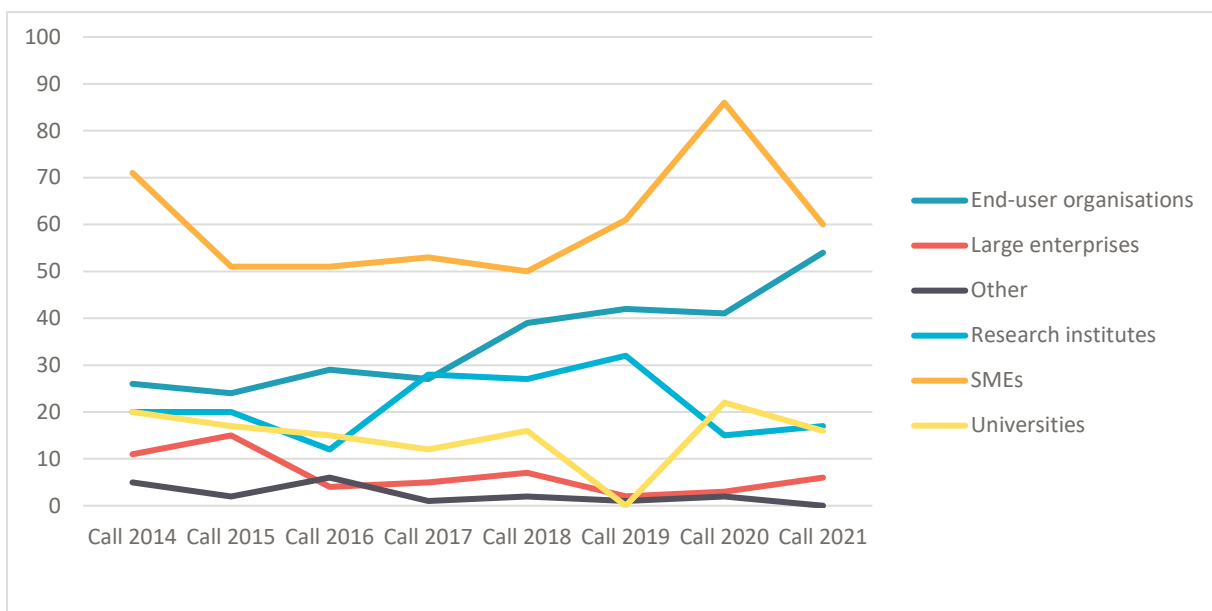
There are different types of end users relevant to AAL:

- **Primary end user:** The person who uses a digital solution for ageing well, considered as a single individual: 'the Well-Being Person'.
- **Secondary end users:** People or organisations directly in contact with one or more primary end user, including informal carers such as relatives, friends or neighbours and formal carers such as care organisations and their representatives.
- **Tertiary end users:** Private or public organisations that do not directly use a digital solution, but are tasked with organising, enabling or paying for them.

In the following analysis, end users only refer to organisations. These are, by definition, secondary or tertiary end users.

The involvement of end-user organisations in new projects increased significantly since the publication of the Interim Evaluation (see Figure 11): Their number more than **doubled from 26 in 2017 to 54 in 2021**. Over the whole programme period of AAL2, end-user organisations constituted **approximately one quarter of all project participants** (see Annex A: Additional Programme statistics).

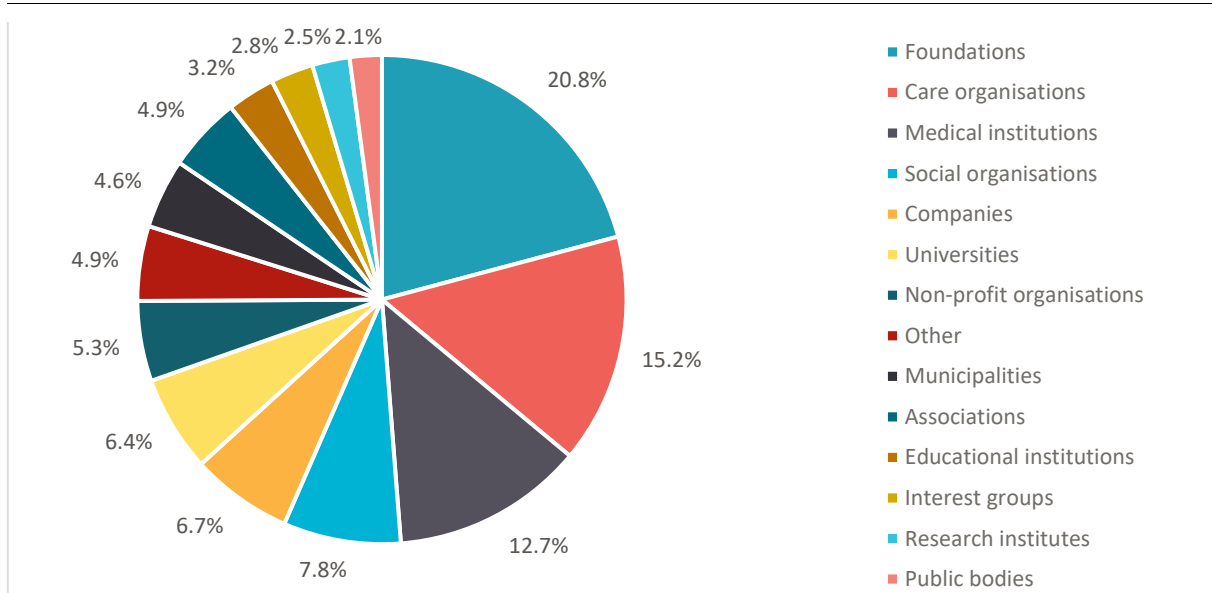
FIGURE 11: NUMBER OF PROJECT PARTICIPATIONS PER TYPE OF ORGANISATION, PER YEAR



Source: Own analysis based on AAL administrative monitoring data.

End-user organisations can be further disaggregated by type of organisation. Around 20.8 % of all end-user organisations are foundations (including charities). About 15 % are care organisations such as care facilities and care services. We therefore conclude that **end users are well represented among the AAL2 beneficiaries.**

FIGURE 12: SHARES OF DIFFERENT TYPES OF END USER ORGANISATIONS



Source: Own analysis based on AAL administrative monitoring data.

Development and deployment of solutions

The 2021 Programme Impact Study stated that **23 of the 38 (61 %) AAL projects brought at least one solution or component to the market**. Considering that most solutions require 2-3 years to mature after the end of a project before they can be launched, this is a positive result. Numbers provided by the 2019 and 2020 Impact Assessments also demonstrate a steep increase in solutions in the market, with 24 of 85 projects launching a solution or component⁷⁰.

The 2021 Programme Impact Study also provides information about the revenue generated by projects, the number of individual end users using the solution after one year and the number of paying customers. The average total revenue for projects with positive revenue was **EUR 243 875 per year for products or services**, and about EUR 50 000 for components⁷¹. These figures were slightly higher for projects included in the survey presented in the Impact Assessment reports published in 2019 and 2020. However, these two surveys largely related to projects that had been launched under AAL1 and their solutions had more time to mature. The average total number of **individual end users per solution in one year was 1 855**, an **increase of around 30 %** compared to the numbers reported in the 2019 and 2020 Impact Assessments. The average total number of **paying customers per solution in one year was 771**, compared to approximately 1 000 paying customers using solutions developed by the projects included in the survey in the two previous years.

It is not useful to compare these outcomes against the outcomes of other programmes, given that the AAL Programme is special in addressing an immature, fragmented and highly regulated market. However, **compared with the internal benchmark of AAL1 (using the 2019 and 2020 Impact Assessment reports) numbers of solutions launched and numbers of individuals reached per year show a positive trend**.

Impact on quality of life of older people and carers

The 2021 Programme Impact Study also presents findings on the impact of the developed and deployed solutions on the quality of life of older people. However, only 13 beneficiaries participating in the 38 projects that had already launched a solution in the market were asked to respond to this question. Of these respondents, the following numbers agree that AAL solutions helped older people to achieve specific measures of well-being:

1. Nine out of thirteen live independently in their own homes;
2. Eight out of thirteen remain in better mental condition;
3. Six out of twelve succeed in independently interacting with their network;
4. Five out of twelve feel less dependent on others for daily tasks;
5. Four out of twelve continue participating in common activities with their network.

The 2021 Programme Impact Study also asked beneficiaries about the impact on carers. Of the 13 respondents, the following numbers agree with the following statements:

1. Nine out of thirteen: care visits are more relevant thanks to automated risk detection tools;

⁷⁰ These numbers include projects supported under AAL1.

⁷¹ Numbers are based on 12 respondents who replied to that question.

2. Eight out of thirteen: carers have more time for qualitative interaction with the older adult;
3. Eight out of thirteen: carers feel the effect of being less burdened;
4. Seven out of thirteen: carers in the formal sector feel they save at least 5 % of costs overall thanks to better planning and coordination;
5. Five out of twelve: carers spend at least 15 minutes less on looking for information or coordinating with other carers.

Due to the low number of completed projects (n=38) and consequently the lower number of respondents to this question (n=13), it is difficult to provide a judgement. Nonetheless, they **confirm the potential of the developed solutions**.

The 2021 Programme Impact Study also provides insight into the impact of AAL2 on raising awareness for solutions in the field of active and assistive living. **85 % of formal carers and 91 % of older people responding to the survey** agree with the statement that the **AAL Programme helped raise awareness** of the needs of older people and the opportunities associated with solutions for healthy living and well-being among formal carers as well as older people and their networks.

In the interviews, representatives of user organisations explained that the organisation and funding of care for older people as well as expectations from older people and their families strongly shape the demand side in the market for innovative solutions. Circumstances vary substantially between and within countries. In some countries, end users are largely expected to be individual older people or families while in other countries formal care organisations play a more substantial role in shaping the demand side. This also means that solutions may be paid out of pocket by individuals in some contexts while in another context they are purchased by care organisations. The demand side also involves public funders in some circumstances and is shaped by different degrees of regulation. This heterogeneity explains to some extent the difficulties faced by innovators when launching and trying to keep their product or service on the market.

However, interviewees also stated that expectations and thus markets have been changing and are continuously evolving, with technology becoming more familiar and acceptable, and most people wanting to live at home for as long as possible. This was also noted in countries that had a tradition of older people moving into residential care, which was understood as not being sustainable in the future. Stakeholders and beneficiaries also noted that while there are still significant obstacles to marketisation due to the structure of the market, there is significant potential in developing and promoting innovative solutions.

It is clear from these assessments that outcomes and impacts are difficult to measure. The consecutive Programme Impact Assessments have made some progress in providing better data, but available data are still limited in scope and detail. However, the limited data provided show an upward trend in solutions brought to market and demonstrate some impact on end users while qualitative findings suggest that the market conditions are evolving but that the potential for impact has not yet been realised.

4.4.2. Objective 2: Create/maintain a critical mass of trans-European applied research, development and innovation for ICT-based products and services for ageing well, in particular involving SMEs and users

To operationalise this objective, the Interim Evaluation cited the definition used by the Final Evaluation of AAL1, which had referred to 'the presence of a sufficient number of actors, sufficient cooperation,

and sufficient total R&D and innovation activity to initiate a self-sustaining, productive and viable research environment'⁷². On this basis, the Interim Evaluation examined KPIs such as the number of countries involved in AAL2, national commitments made, budget utilisation, the number of organisations participating in each call and the number of projects funded. It concluded that 'indicators for these elements [were] mostly moving in an undesirable direction'. It further noted that 'both large countries and key innovators have been lost from the Programme' and that 'too few projects start[ed] from validated user insights or have identified customers for the solutions proposed'⁷³.

Our assessment of progress towards Objective 2 builds on these KPIs in addition to other output and outcome-related indicators.

Number of proposals and projects

As shown in Figure 5 (Section 3.2.2), the first years of AAL2 had seen a more than 50 % decline of proposals from 97 in 2014 to 42 in 2017, the period assessed by the Interim Evaluation. From 2017, the number of proposals increased again to 106 in 2020, outperforming the 2014 figure. In 2021, the number of proposals was 85. **Therefore, the negative trend during the first half of AAL2 did not continue during the second half of the Programme and was reversed.**

The same observation applies to the number of projects starting during AAL2 (see Figure 3 Section 3.2.2.). Between 2014 and 2017 the number of projects started decreased from 20 to 14 per year. Yet in 2018 the number of new projects increased to 21 and remained at a high level until the end of the Programme. Thus, **the decrease observed during the Interim Evaluation was reversed in the second half of AAL2.**

Proposals and projects per type of organisation

Objective 2 makes explicit reference to SMEs and end users. Over the entire period of AAL2, 42.1 % of applicants were SMEs and 24.9 % were end users (Figure 16, see Annex A: Additional Programme statistics)⁷⁴. While the number of SMEs among applicants fell from approximately 330 in 2014 to 152 in 2017, the number recovered and stabilised at about 250 towards the end of AAL2. There was a strong increase in the number of end-user organisations among applicants since 2017, which rose from 69 in 2017 to 226 in 2021 (see Figure 11).

In terms of participation of SMEs and end-user organisations in projects, the respective shares were 40.3 % for SMEs and 26.3 % for end-user organisations (see Figure 17 in Annex A: Additional Programme statistics). In summary, it can be stated that the **priority target groups of the Programme were well represented** in the number of applications received, as well as in the projects selected for funding.

⁷² European Commission (2013). Final Evaluation of the Ambient Assisted Living Joint Programme. Online available at: <http://www.aal-europe.eu/wp-content/uploads/2015/05/Final-report-of-the-AAL-Busquin-2013.pdf>, p. 11.

⁷³ European Commission (2017). Interim Evaluation of the Active & Assisted Living Programme. Online available at: https://www.aal-europe.eu/wp-content/uploads/2019/07/KK0617007ENN.en_.pdf, Pp. 15-16.

⁷⁴ Numbers include multiple counting of organisations that participated in several applications.

Geographical distribution of applicants and project participants

The geographical spread of **individual participations in proposals** was uneven, with some countries participating significantly more strongly in proposals than others. These can be grouped as follows:

- Group 1 – Countries with ≥ 500 individual participations in proposals:
Netherlands (731), Switzerland (599), Austria (591)
- Group 2 – Countries with 201-500 individual participations in proposals:
Romania (414), Italy (396), Portugal (282)
- Group 2 – Countries with 101-200 individual participations in proposals:
Belgium (200), Spain (192), Slovenia (169), Poland (143), Hungary (135), Denmark (134), Norway (122), Cyprus (116)
- Group 3 – Countries with ≤ 100 individual participations in proposals:
UK (72), Luxembourg (40), Canada (39), Sweden (17), Ireland (12), Taiwan (9), Israel (6)

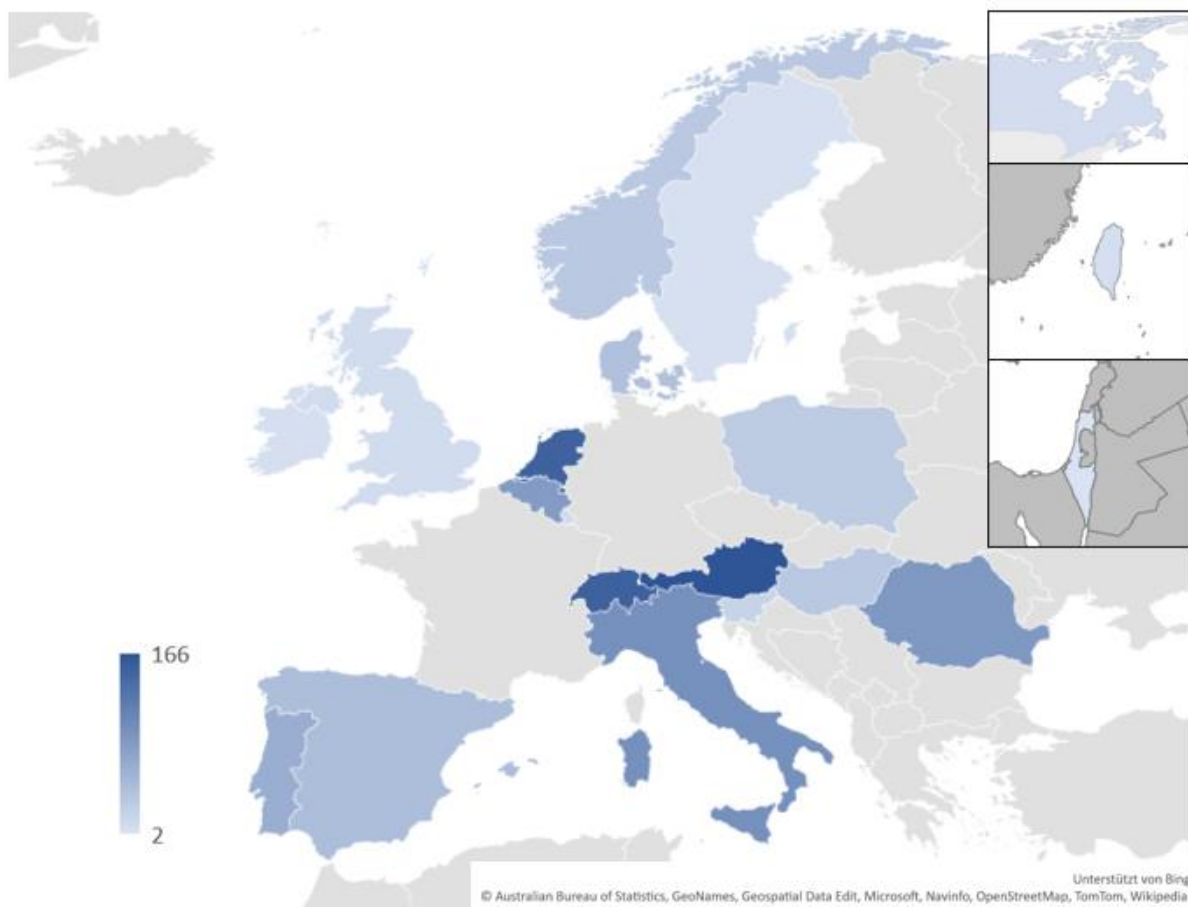
With few exceptions (notably Spain and the UK, with the latter not participating in calls after 2015), the difference in the distribution of applications between countries did not change substantially during AAL2.

Individual participations in projects show a similar pattern of distribution between countries:

- Group 1 – Countries with ≥ 150 individual project participations:
Austria (166), Switzerland (152), Netherlands (166)
- Group 2 – Countries with 51-100 individual project participations:
Italy (97), Romania (88), Belgium (84), Portugal (63)
- Group 3 – Countries with 11-50 individual project participations:
Spain (45), Denmark (42), Hungary (33), Norway (33), Poland (30), Cyprus (22), Slovenia (21), Luxembourg (11)
- Group 4 – Countries with ≤ 10 individual project participations:
United Kingdom (10), Taiwan (10), Ireland (7), Sweden (6), Canada (5), Israel (2)

The map below (Figure 13: Geographical distribution of project participations per country) illustrates the distribution of project participations across the participating countries.

FIGURE 13: GEOGRAPHICAL DISTRIBUTION OF PROJECT PARTICIPATIONS PER COUNTRY



Source: Combination of AAL administrative monitoring data with Bing Maps.

Key learnings identified by participants

Whereas the above statistics mostly relate to the activities supported by AAL2, an analysis of effectiveness also needs to consider the outputs and outcomes of those activities. A key indicator in this respect are the learnings that have been identified by participants. The 2021 Programme Impact Study provides relevant data on four dimensions of learning relating to: (1) users; (2) knowledge; (3) markets; (4) investors. For each of these dimensions, the survey asked beneficiaries whether they felt their knowledge had increased (a) as a result of participating in AAL2 (targeting all 91 respondents) and (b) as a result of participating in the AAL2Business Support Action (with 33 survey participants responding to this question).

With regard to (1) user needs, **82 % of 91 respondents** indicated that **their knowledge had increased as a result of collaborating with users and adapting to user needs**; 47 % agreed that this had resulted in an increase in user acceptance. Out of 33 respondents, 76 % confirmed that their ability to identify user needs and develop user profiles had improved to a moderate or great extent as a result of participating in AAL2Business. 73 % stated that participating in AAL2Business had improved their ability to involve users in developing a product or service to a moderate or great extent.

In terms of (2) operational knowledge, **66 % of 91 respondents** agreed that their knowledge had increased on **technological aspects**. Moreover, 32 % and 30 % acquired new knowledge on aspects of marketing and regulatory aspects, respectively. While gains in knowledge on marketing and regulation were lower than on technological aspects, these were not central to the calls. However, 42 % of 33 respondents stated that participating in Support Actions improved their knowledge on intellectual property rights (IPR) to a moderate extent.

In relation to knowledge gained on (3), the market for active and assistive living through regular calls: 35 % of 91 respondents confirmed that they had gained new insights into the consumer market relevant to AAL solutions; 30 % agreed they had learned about the adaptation to geographically different markets; 28 % agreed that participation had strengthened their ability to assess commercial viability; 14 % agreed they had gained credibility and improved their ability to provide evidence to convince investors. Strengthening the marketisation skills of beneficiaries had been identified as a key area for support and thus became the focus of the AAL2Business Support Action. This has had an effect: Of the 33 respondents who had participated in the Support Action, **61 % agreed that their participation had improved their ability to develop a commercialisation strategy; 75 % agreed that participating had improved their ability to develop a business model.**

Network creation

Another indicator for measuring progress towards Objective 2 is the degree to which AAL2 has helped to develop networks among relevant actors in the Participating States. The survey conducted for the 2021 Impact Assessment shows that for the 91 respondents, **68 % stated that they benefited from the collaboration networks** established during the project. Of the 56 who had participated in the AAL Forum, **89 % stated that the Forum helped them to broaden their network** in relevant domains.

In interviews, beneficiaries noted that participating in networks and having the opportunity to find new partners for **collaboration was a key reason for their participation in AAL2**. They specifically welcomed the opportunity to collaborate across borders and within European networks and highlighted the benefits from those collaborations for inspiration, learning and improvement. This was confirmed by NCPs and stakeholders who also suggested that these **opportunities may have been especially relevant for beneficiaries from smaller countries**, or from countries where the market for AAL2 was still underdeveloped compared with other national/regional markets and systems. Opportunities for collaboration were also fostered by the introduction of **Small Collaborative Projects** as a new instrument that allowed beneficiaries to explore new ideas at a small scale over a shorter period of time within a participatory, collaborative framework.

4.4.3. Objective 3: Leverage/maintain private investments and improve industrial conditions for industrial exploitation by providing a coherent framework for developing European approaches and solutions including common minimum standards that meet varying national and regional social preferences and regulatory aspects

The market for active and healthy ageing solutions is fragmented, highly regulated and facing a complex demand side. There are many obstacles to new solutions being launched and performing successfully on the market. In assessing progress towards this objective, the Interim Evaluation found that more involvement of large industry partners is needed to scale-up solutions and create significant impact on both the market and end users. It also concluded that many beneficiaries were insufficiently

prepared for marketisation, that business planning was insufficient and that the AAL2 as a whole lacked an integrating framework for individual project results.

In a similar vein, our assessment of progress towards Objective 3 focuses on the involvement of large industry partners, support for business planning and commercialisation, and the level of private investment levied by the Programme.

Involvement of large industry

As the Interim Evaluation noted, the development of a new market requires not only agile and innovative SMEs with a strong focus on the user perspective, but also large industry partners that can contribute the expertise and market power to launch and establish new solutions in the market. When looking at Figure 6 (Section 3.2.2), it becomes clear that the **involvement of large industry players remained relatively low**. However, large enterprises were not defined as a core target group and therefore the number of large enterprises should not be taken as an assessment criterion.

Support to business planning and commercialisation

Previous evaluations emphasised the importance of improving participants' business orientation, market knowledge and commercialisation skills, particularly for strengthening their capacity to develop a business plan, find investors and bring solutions to the market. From the outset, the Programme invested in a portfolio of Support Actions. This was strengthened and expanded significantly during AAL2, with Support Actions specifically addressing these needs. AAL2Business and the Market Observatory actions particularly provided participating beneficiaries with the skills and knowledge required to bring their product or service to the market. This was seconded by improvements to the calls procedures, requiring applicants to indicate a business strategy as part of their proposals.

Interviews and the available data from the beneficiary survey **demonstrate that the Support Actions were highly valued by participants and contributed to their feeling more confident and becoming more successful** in navigating the market, engaging with the demand side, exploring and integrating user expectations, and developing business and commercialisation strategies. Beneficiaries, NCPs and other stakeholders interviewed were highly appreciative of the Support Actions, which were rated as exemplary and good practices to follow.

This finding is confirmed in the Programme Impact Study; **61 % of respondents who had participated in Support Actions (n=33) stated that their participation had improved their ability to develop a commercialisation strategy and 75 % agreed that that the Support Actions had improved their ability to develop a business model** (see also Section 4.1.2). The Support Action portfolio, its evolution during AAL2 and its impacts on beneficiaries and projects have been further assessed in the case studies.

Beneficiaries' own contributions and private investments made into Programme beneficiaries

Over the entire AAL2 Programme period, own funding contributed by participants amounted to EUR 77.7 million, which equalled 41.7 % of the combined EC and national funding (see also Section

4.6.1)⁷⁵. Hence, this sum can be seen as the amount of private **investments being directly triggered by the Programme**.

A way of measuring private investments made into Programme beneficiaries is by using the platform Dealroom⁷⁶. Dealroom provides data on investments into companies by various business organisations such as banks, investors or business angels. While it is not possible to link investment data to specific AAL2 projects, they may provide interesting contextual information. From a dataset that contained the URLs of 703 AAL2 participants⁷⁷, we could match 205 participants (approximately 30 %) to data entries included in the Dealroom database (www.dealroom.co). Dealroom identified investments being made in 35 out of those 205 organisations (approximately 17 %) between 2014 and 2020. In total, these investments amounted to around EUR 374 million⁷⁸, with one single company, MindMaze from Lausanne, receiving EUR 307.7 million. Ten more companies received investments of more than EUR 1 million. The remaining 24 companies stayed below the EUR 1 million threshold.

The 2020 edition of the AAL Impact Assessment looked at five investor events that had been organised by the AAL Association in 2017 and 2018⁷⁹. In total, these five events attracted 27 investors and an equal amount of companies, pitching 26 different solutions (with some of the solutions being pitched multiple times, bringing the total number of pitches to 37). While the mentioned report could not identify any direct investment being secured as a result of the event, the authors passed the list of pitching companies through the Pitchbook⁸⁰ database. Out of the list of 27, Pitchbook contained records on 13 of these. Out of those 13, the database had information on investments, mergers and acquisitions for 7 companies, with mostly undisclosed amounts. However, the authors noted that none of the investments made suggest a direct link with the investors' events.

4.4.4. Contribution towards international positioning and visibility

The terms of reference request an assessment of the extent to which Partnerships have helped foster the international positioning and visibility of the European R&I system, as well as the level of international cooperation at Partnership and project level. Five non-EU countries (Switzerland, Norway, Canada, Taiwan, Israel)⁸¹ participate in the Programme, three of which are non-European, demonstrating the Programme's reputation beyond the boundaries of the EU. These five countries accounted for 27.8 % of total national funding, led by Switzerland contributing 24.3 % of national funding. The same countries also constituted about one fifth of the 1 077 participations in project calls (202 participations). Again, most of the non-EU participations were from Switzerland (152). Non-European countries in contrast contributed only 1.3 % of national funding and 1.6 % of participations (17 out of 1 077).

Among European non-EU partners, the Programme helped to raise awareness for the potential of assistive technologies. An impact study from Switzerland, published in 2019, concludes that the Programme has led to increased awareness of the potential, and challenges, of assistive technologies for older people among project beneficiaries and experts⁸². Moreover, interviewees suggested that various regions were able to learn from the Programme and its international perspective. The Swiss Impact

⁷⁵ Own calculation based on AAL2 administrative data.

⁷⁶ www.dealroom.co

⁷⁷ The dataset was generated using information available on the AAL website.

⁷⁸ Due to some exchange rate variation between USD and EUR, this is to be seen as an approximate figure.

⁷⁹ AAL Association (2020). Mid-term Review Satisfaction Survey. Document not public.

⁸⁰ The Pitchbook data provides data similar to those offered by Dealroom, referred to further above.

⁸¹ The United Kingdom is counted as an EU Member State.

⁸² SBF (2019). Impact Studie zur Teilnahme der Schweiz am Active and Assisted Living AAL Programme. Bern, Staatssekretariat für Bildung, Forschung und Innovation.

Study demonstrated that Switzerland's participation in the Programme has reached most of its objectives and contributed to improved cooperation and increased research activity in the field. This is reflected by the continuous commitment of Switzerland to the Programme: across all funding calls, Switzerland has the second highest number of project participations.

At international level, AAL2 was able to create a network of Partnerships associated with ICTs for active and healthy ageing, which included collaborations with the WHO (unit on assistive technologies), the AGE Platform in Europe, the ECH Alliance and the Canadian Institutes of Health Research⁸³. Interviews with non-European partners demonstrated that AAL2 was visible among the relevant stakeholders. A NCP noted that being involved in AAL2 increased the appetite among researchers to collaborate with European colleagues. Although there was only a limited number of participations from non-European countries, participants valued that the Programme allowed for learning from experiences in other countries. This aspect is especially relevant to countries in which the AAL sector is less developed. Moreover, as highlighted during one interview, as ageing will become increasingly problematic in regions other than Europe, the AAL2 Programme provided helpful experience and guidance for future national responses to the challenge of ageing societies outside Europe.

4.4.5. Overall assessment

A key issue that needs to be taken into account when considering the effectiveness of the Programme is that it operates a fragmented and still immature market, and that **many of the barriers to successful deployment and commercialisation of AAL innovations lie outside of the scope of the Programme. Compared with the internal benchmark of AAL1 there was a positive trend in numbers of solutions launched, and individual end users reached.** In addition, the positive potential of the solutions on quality of life of older people and their carers has also been confirmed, although this is based on a small study sample.

A strong feature of the Programme is its portfolio of **Support Actions** that **have proved to be an effective accompanying measure** to the regular Collaborative Projects. By supporting beneficiaries to learn from each other, understand the market, and develop business models and commercialisation strategies, they provide high additional value to the overall Programme.

The **Programme has achieved positive results at the output and outcome levels within the possibilities of its remit.** These outputs and outcomes do not only contribute to progress towards the objectives of AAL2 per se, but also to the objectives of Horizon 2020 Societal Challenge 1 and wider EU policy goals, with which AAL2 is well aligned (see Section 4.2). However, overcoming market barriers remains a key challenge. While the Programme supports beneficiaries in overcoming market barriers, it has not been able to remove them. **However, data on impact are still limited as the Programme only ended in 2021. It is therefore only possible to assess the effectiveness of the Programme in relation to its anticipated outputs and outcomes.**

In terms of support to the international positioning and visibility of the European research and innovation system, AAL2 has made a significant contribution to strengthening the research and innovation collaboration with Switzerland and, to a lesser extent, with Norway. While with Canada, Taiwan and Israel, three more non-EU (and non-European) countries participated in AAL2, the amount of actual involvement of partners from these countries remained very modest.

⁸³ European Commission (2017). Interim Evaluation of the Active & Assisted Living Programme, p. 25.

4.5. EU added value

Based on the data examined by this study, an overall very positive judgement can be made on the EU added value of the Programme.

In the beneficiary survey conducted as part of the Programme Impact Study conducted in 2020-21, 79 % of respondents state that the AAL Programme has an impact in terms of broadening the perspectives of R&D in their country to a moderate (42 %) or great (37 %) extent. Two thirds (66.7 %) state that they are benefiting from the collaboration and networks established throughout and during the AAL projects to a moderate or great extent. More than 80 % state in the consultation that the AAL Programme contributes to strengthening the wider ecosystem and community in the AAL field to a moderate (41 %) or great (43 %) extent⁸⁴. These can be seen as indications of effects that could not have been achieved by a programme at national level.

In our interviews, NCPs noted that countries' national markets related to active and healthy ageing continue to differ in size, scientific activity in the field, and interest of end users and purchasers in innovative solutions. While national funding rules lowered barriers for SME participation, project beneficiaries also experienced benefits from collaborating across national borders and opportunities for learning from other countries. Interviews suggested that this created **opportunities especially for beneficiaries (in particular SMEs) based in countries in which domestic markets were comparatively small or underdeveloped**. Programme beneficiaries in small and mid-size countries appear to have particularly benefited from engaging in the Programme, with substantive participation in calls, for example, from Austria, the Netherlands and Switzerland. However, there were also challenges reported to engage in markets across borders which proved difficult to overcome, including language barriers and barriers relating to knowledge of markets and customer preferences. While the Programme was able to address some of these barriers by providing specific support (e.g. AAL2Business, AAL Forum) some challenges remained persistent.

The added value of the EC's financial contribution of the Programme stems from it being used to ensure a critical mass of research, development and innovation. In the Public Consultation on the Evaluation of Article 185 initiatives, 61 % of respondents consider the financial contribution of the EU to AAL2 as 'adequate', 22 % as 'too small' and 6 % as 'too high'⁸⁵. Some stakeholders noted that **beneficiaries and the wider community benefited from the relative long-term perspective of the Programme and that it is removed from the influence of national politics**.

The Interim Evaluation had expressed concern with respect to the decreasing number of countries actively participating and decreasing budget commitments of those that remained. However, this trend did not continue **during AAL2, which saw almost stable membership** (although some countries did not participate in some of the calls). With only a few exceptions, the analysis of funding data shows no clear trend in countries' financial contributions during AAL2.⁸⁶ In other words, a key concern of the Interim Evaluation did not materialise.

Additional activities of NCPs in countries vary notably, with some of them admitting that they could have been more active in supporting beneficiaries. There are few examples of countries that offered the same or similar support to projects, for example with regard to strengthening business planning and

⁸⁴ Impact Assessment (2021). p. 20, p. 44, p. 52.

⁸⁵ European Commission (2017). Public Consultation on the Evaluation of Article 185 Initiatives, p. 10.

⁸⁶ See Section 3.2.

marketisations skills, as in the AAL Programme (e.g. Switzerland and the United Kingdom). However, the **scope and intensity of Support Actions, including the annual AAL Forum, AAL2Business and Market Observatory activities are unmatched**, at both national and EU level. Interviewees provided numerous examples of ideas, concepts, inspiration and future visions for the sector, such as those developed through the ecosystem support work, as crucial contributions of the Programme.

In **some countries, including Austria, Denmark, the Netherlands and Switzerland, novel funding opportunities were created during or towards the end of AAL2** that have the same or similar aims of fostering innovative solutions to active and healthy ageing; however, these did not exist at the beginning of the Programme and can well be seen as a positive effect of the Programme in bringing solutions for active and healthy ageing onto the agenda of national and (in part) regional governments and funding agencies.

Overall assessment

The **EU added value of the Programme** is positive in a number of domains. The **positive effects identified by the Interim Evaluation still remain valid**. The Programme proves to be particularly useful **to beneficiaries from smaller and mid-sized countries**, as it enables them to engage with new partners and other stakeholders, and to access markets in other countries. In some countries, the Programme has inspired new initiatives, complementing and reinforcing the effects and achievements at national or regional level. The **negative trends** identified by the Interim Evaluation did not continue and were **partially reversed during the second half of the Programme**. However, as noted before, only countries and regions that chose to participate and contribute to it, benefited from the Programme.

4.6. Additionality

Additionality in terms of thematic focus and programme design

The AAL Programme is **novel and unique in the sense that it brings together several topics and policy areas which had previously been separate, at least at EU level**, including technology and digitalisation, demographic change, and the future of health and care systems. This approach has helped to develop a new narrative of demographic change that emphasised the opportunities associated with ageing societies. It has also increased awareness of the potential of ICT-based solutions to address the challenge of demographic change among many stakeholders, including national funding agencies, SMEs and end-user organisations.

By doing so, the Programme has also **managed to bring together various stakeholder groups that previously had little or no interaction with each other**. While some of these interactions have taken place at national level, there is considerable added value in supporting this interaction at transnational and subnational level. SMEs particularly benefited from opportunities to explore and understand markets other than their own domestic markets (see section 4.4.4). More generally, the exchange of knowledge and good practices organised through the Programme was useful for all stakeholders involved in the Programme.

In terms of its design, the Programme **differs from Horizon 2020/ Horizon Europe** not only because of its **market-orientation**, but also because of its **integrated, holistic approach to developing the field** of digital solutions for active and assisted living. The portfolio of Support Actions was a useful instrument

for helping beneficiaries to go beyond the development of solutions and to launch their products or services on the market (see case study on Support Actions, Annex D).

Additionality in terms of budget, activities and outcomes

The budget leverage factor of the Partnership is influenced by the different funding rules at national level. Our analysis of the funding data shows that EUR 1 of EC contributions leverages EUR 1.12 of additional national contributions and EUR 0.88 of own contributions by the beneficiaries, as shown in the table below. As AAL2 is a public–public partnership rather than a public–private partnership, it should be stated that large-scale private sector contributions to the Partnership budget were not foreseen. More information about the additional investments mobilised by the Partnership can be found in Section 4.4.3.

TABLE 5: BUDGET LEVERAGE FACTOR

BUDGET PROVIDED	Budgeted leveraged	Leverage factor
EC contributions	All other contributions (national + own contributions combined)	200.0 %
EC contributions	National contributions only	111.7 %
EC contributions	Own contributions only	88.3 %
All public contributions (EC + national contributions combined)	Own contributions	41.7 %

Source: Own analysis based AAL administrative monitoring data.

It is unlikely that the activities resulting from AAL2, especially the transnational interactions and collaborations, would have happened without the Programme being in place. In interviews, beneficiaries noted that a key reason for participating in the Programme was the possibility of collaboration with other beneficiaries across national borders and working within European networks. **As yet, there is no alternative Programme with the same focus or scope that would allow international consortia to apply for funding for their collaboration in the field of solutions for active and healthy living.** Therefore, **in terms of its activities and corresponding outputs, the additionality of the Programme is high.** In the survey of beneficiaries, reported in the 2021 Impact Assessment, beneficiaries stated that 12 out of 13 AAL products or services and 7 out of 10 AAL components launched would not have been brought to the market or would have generated lower revenues without the support through the Programme.

Overall assessment

Additionality of the AAL Programme in terms of thematic focus, programme design, activities and outputs is strong. By combining different topics (e.g. innovation, health and care, older people), the AAL2 Programme brings together stakeholders from various communities in collaborations that do not exist in other Programmes at European level. In addition, its strong market orientation and its integrated, holistic programmatic approach including through its Support Actions portfolio differentiate the AAL2 Programme from Horizon 2020 and Horizon Europe programmes. The budget

leverage factor of the Programme is defined by the different funding rules at national level and in line with expectations.

4.7. Transparency and openness

Openness towards new participants and mechanism to involve new members and a broader set of stakeholders

The Interim Evaluation of AAL2 states that ‘the Programme’s governance structure is transparent and inclusive and [...] appeared to allow the execution of the Programme in line with its overall goals and objectives’⁸⁷. The underlying Article 185 initiative procedures allow countries to join and leave the Programme at any time. Throughout the AAL2 Programme lifecycle interested countries can apply to become member of the AAL Association. AAL2 provides the possibility for flexible membership (‘variable geometry’) for those countries interested (independent of the decisions of other EU Member States to participate) and also allows for varying degrees of financial commitment to the Partnership. In addition, participation is possible for non-EU countries and for countries not associated with Horizon 2020. Currently Canada and Taiwan participate in AAL2 as non-EU Member States, while Switzerland was an associated country during Horizon 2020.

As a specific feature, AAL2 also engages with a number of subnational regions. During AAL2, four regions participated as members and provided NCPs: Friuli-Venezia Giulia in Italy, Basque Country in Spain, as well as Flanders and Brussels in Belgium. The possibility for regions to become a member and be more actively involved in steering the Programme was seen as an important step by NCPs and other stakeholders interviewed. Interviewees acknowledged that in many countries, regions were responsible for governing health and care systems, and involving them was therefore key to unlocking the potential of novel solutions for active and healthy ageing.

Participation in projects is generally possible for applicants from Participating States providing financial contributions to AAL2 calls. Actual participation in AAL2 projects varied between Participating Countries depending on the application success in the selection process based on excellence criteria and the national financial contributions available to fund participants from the respective country.

AAL2 reached out to engage a broad set of stakeholders across Europe. The calls under AAL2 are open to international project teams with participants from science and research organisations, companies and end-user organisations. Before the beginning of the COVID-19 pandemic, the annual AAL Forum was held at different locations across Europe to allow for regional spread and invite participation from a broad range of stakeholders. Also, the challenge prize as another Support Action was open to all entries in the field and not limited to Programme beneficiaries. There were also increasing efforts to provide services to the wider AAL community including the development of guidelines and regulatory information.

⁸⁷ European Commission (2017). Interim Evaluation of the Active & Assisted Living Programme, p. 17.

Processes for consulting stakeholders and identifying priorities

National stakeholders are consistently consulted as members of the AAL Association⁸⁸. GA sessions provide the opportunity to all Participating States to participate in key decisions and put forward their opinions, priorities and concerns. The funding authorities serving as NCPs are represented in the GA. As these institutions are in close contact with the project participants and other stakeholders in their country, they can bring in the perspectives and needs from different national backgrounds. Decision-making in the GA follows a democratic approach ('one country – one vote') so that all participating countries are involved in the setting of priorities for the AAL2 Programme.

This particularly concerns the selection of the thematic priorities for calls which are developed each year in a working group drafting the Annual Work Programme (AWP). This working group is open to all interested members. Stakeholders interviewed mentioned that in practice the opportunities to engage in the setting of priorities were taken up by the different participating countries to varying degrees, also depending on the individual financial and staff capacities.

Accessibility for the enterprise sector and SMEs

AAL2 is accessible for different types of stakeholders across Europe. The calls under AAL2 target international project teams with participants from science and research organisations, the enterprise sector and end-user organisations. Data on the types of participants in AAL2 projects show that about 45 % of participants are from the enterprise sector. The share of SMEs among the participants of AAL2 projects between 2014 and 2021 was 35.7 %. This high level of participation of enterprises and especially SMEs is in line with an observation from a public consultation on Article 185 initiatives. In this, 82 % of AAL2 respondents consider the Programme to be accessible for its target group, in particular SMEs⁸⁹.

In addition, the strong national embedding of the project funding, represented by a network of NCPs as main contact points for beneficiaries as well as the use of national funding rules, lowers the barriers to participation especially for SMEs as several interviewed stakeholders noted. However, for SMEs the market poses considerable barriers of entry. As a stakeholder mentioned the ability of SMEs to scale up production is often limited and they often face demanding requirements from end-users such as hospitals. Therefore, good participation of SMEs in AAL2 research and development projects does not directly translate into economic success of SMEs in the market.

Overall assessment

AAL2 has demonstrated that it is open to new members participating in the AAL2 Partnership and to new project beneficiaries. AAL2 has developed transparent processes for consulting stakeholders and identifying priorities in each of its core activities. This includes the preparation of calls for proposals, the development of Support Actions and the organisation of networking and outreach activities. The decentralised management of the Partnership leveraging on NCPs, especially by using national funding rules and providing National Contact Points, also contributes to the accessibility for SMEs.

⁸⁸ <https://www.aal-europe.eu/about/who-we-are/general-assembly/>. Last access: 15.6.2022.

⁸⁹ Public Consultation on Article 185, p. 11.

5. Conclusions and lessons learned

5.1. Summary of key findings per evaluation criterion

Relevance

Our analysis **confirms the continued relevance** of the objectives of AAL2. Demographic change is going to continue and shape European societies. ICT-based solutions have substantial potential to enable older people to live independently and actively for longer and thus to make health and care systems more sustainable. The **Programme has proved to be flexible in responding to new insights and changing demands**, for example by developing challenge-led rather than technology-led calls and diversifying its Support Actions portfolio. Nevertheless, **barriers to commercialisation of solutions remain but many of them lie outside the remit of the Programme**.

Coherence

The AAL2 Programme has a **unique position in the European research and innovation funding landscape. It is well aligned with the EU's overarching policy objectives**. It is complementary to other relevant programmes and initiatives including Horizon 2020 and Horizon Europe, the EIP AHA and JPI MYBL, and has collaborated with some of them extensively. The Programme complements **initiatives at national level, although the extent to which participating countries have initiated their own programmes varies**.

AAL2 **manages to bring together top research performing entities in Europe with both SMEs and end-user organisations that do not typically participate in Horizon 2020**. This finding speaks of the innovative approach in network building to fostering near-market innovation.

The Programme also **demonstrates strong internal coherence**, as its activities are well aligned with each other and with the three objectives of the Programme.

Efficiency

In terms of its efficiency, AAL2 is characterised by a **combination of strengths and weaknesses**, many of which are directly linked to it being a Partnership based on Article 185. In terms of its **implementation**, the possibility of having varying levels of financial (national) commitment has proved to be an advantage and a disadvantage. It provides the opportunity and flexibility needed for an 'alliance of early movers' but it increases the financial risks to the Programme if countries choose to opt out or significantly reduce their financial contributions. However, a **modus operandi was found that worked well for most members, driven by the energy and leadership of the CMU and AALA**.

In contrast to concerns expressed in the Interim Evaluation, the **AALA and CMU were able to provide proactive and strategic leadership during the second phase of AAL2**. This leadership enabled AAL2

to improve, evolve and adapt to changing circumstances and to identify new opportunities for its community. **Managerial flexibility and agility were key strengths of the Programme.**

The **budget utilisation rate of just under 80 %**, with variation between years and countries, is **still not optimal**. However, it needs to be borne in mind that a large part of the underspend is due to an insufficient number of participations in quality proposals in some Participating States and that the utilisation rate improved significantly thanks to the project reconfiguration process.

With data on long-term impacts of the Programme being limited (see the section on Effectiveness), it is not possible to provide an assessment or judgement on the relationship between resources used and the changes which the Partnership is generating. **Administrative costs and spending on Support Actions have been very moderate**, with 6.0 % and 5.9 % of the annual Programme budget, respectively. In view of the strong performance of the CMU in particular during the second half of AAL2 and the benefits created by the Support Actions, this means that the **respective budget items have been used highly efficiently**.

Effectiveness

A key issue that needs to be taken into account when considering the effectiveness of AAL2 is that it operates in a fragmented and still immature market and that **many of the barriers to successful deployment and commercialisation of digital solutions for active and healthy ageing lie outside the scope of the Programme**. Compared with AAL1 (as an internal benchmark) there was a **positive trend in the numbers of solutions launched, and individual end users reached**. A beneficiary survey and stakeholder interviews confirmed the potential for positive impacts of solutions on the quality of life of older people and their carers.

A strong feature of AAL2 is its portfolio of **Support Actions that have proved to be an effective accompanying measure** to the annual calls for Collaborative Projects. By supporting beneficiaries to learn from each other, understand the market, and develop business models and commercialisation strategies, Support Actions provide high additional value to the Programme towards its objectives.

AAL2 **has achieved positive results at the output and outcome levels within its remit**. While it supports beneficiaries in overcoming market barriers, it is not in a position to remove these barriers entirely. **Data on long-term / macro-level impacts are limited mostly as it is still too early to conduct a full impact analysis of the Programme.**

In terms of support to the international positioning and visibility of the European research and innovation system, AAL2 has made a significant contribution to strengthening the research and innovation collaboration with Switzerland and, to a lesser extent, with Norway. While with Canada, Taiwan and Israel, three more non-EU (and non-European) countries participated in AAL2, the amount of actual involvement of partners from these countries remained very modest.

EU added value

Our assessment of the EU added value of AAL2 is positive. The Programme proves to be useful in **particular to beneficiaries in small and medium-sized countries**. It enables them to engage with partners and stakeholders across borders and access markets in other countries. In some countries, AAL2 triggered new initiatives, complementing and reinforcing the effects and achievements at national level. The **negative trends** identified by the Interim Evaluation, notably the decreasing number

of countries actively participating in the Programme and decreasing budget commitments, did not continue and were **partially reversed during the second half of the Programme**. To a large extent, this positive trend can be attributed to the proactive Programme management during the second half of AAL2 and the introduction of several improvements. However, as noted before, only those countries and regions that chose to participate and contribute to it benefited from the Programme.

Additionality

The additionality of AAL2 in terms of its thematic focus, programme design, activities and outputs is strong. By combining different topics (e.g. innovation, health and care, ageing well), AAL2 brings together a diverse set of stakeholders that did not collaborate before and do not collaborate in other Programmes at European level. In addition, AAL2 differs from other Horizon 2020 / Horizon Europe initiatives because of its strong market orientation and its integrated, holistic programmatic approach including its Support Actions portfolio.

Transparency and openness

AAL2 has demonstrated that it is open to new members participating in the AAL2 Partnership and new project beneficiaries. AAL2 has developed transparent processes for consulting stakeholders and identifying priorities in each of its core activities including the preparation of calls for proposals, the development of Support Actions and the organisation of networking and outreach activities. The decentralised management of the Partnership leveraging on NCPs, especially by using national funding rules and providing National Contact Points, also contribute to the accessibility for SMEs.

5.2. Lessons learned and recommendations

Given that AAL2 is coming to the end of its lifecycle, there is an opportunity to learn from its experience and the challenges faced by AAL2 in creating the market conditions to increase the integration of novel digital solutions for ageing well. The following section presents key lessons and recommendations relevant to policy, strategy and operational levels for the governance and implementation of future actions.

5.2.1. Policy level

There is a space and need for European funding actions at the intersection of digital innovation and demographic change to support active and healthy living and secure the future of health and care systems.

The AAL2 Programme occupies a **unique position in the European research and innovation funding landscape**. By mobilising technological innovation and entrepreneurship to address the consequences of demographic change and strengthen the sustainability of health and care systems, **it had a pioneering role in creating and seizing the many opportunities of active and healthy ageing**. AAL2 actively contributed to developing a positive perspective on ageing instead of considering ageing as a social and economic problem. In doing so, it has opened a space to **bring together stakeholder groups that previously had little or no interaction and that worked productively together to develop novel solutions**.

Recommendation: A future European policy on care and ageing should promote active and healthy living and support people and societies to use the full potential of digital solutions for ageing well. The development, deployment and integration of new solutions should be an integral part of such a policy. Technological and social innovation are complementary and should not be dealt with in silos.

A wider approach to system transformation is needed to develop the market and overcome the barriers to market impact

AAL2 has made substantial efforts to foster the development of digital solutions, improve their marketisation and commercialisation and increasingly addressed barriers on the demand side of the market. However, most demand-side factors lie outside the scope of the Programme as the market for digital solutions for active and healthy living is still **fragmented and immature**. The demand for digital solutions is shaped by a host of factors, such as cultural expectations towards older age and care, acceptance of technology and the configuration of care delivery and funding within health and care systems. The demand side is also shaped by a number of intermediaries, such as insurers and public funders. These factors in combination determine whether digital solutions are seen as acceptable and whether they will be taken up. It is therefore necessary to understand that a wider approach to system transformation is needed to fully use the potential of digital solutions for active and healthy ageing.

Recommendation: A future European policy on care and ageing needs to address the system transformation required to use the full potential of digital solutions. This will require a holistic ecosystem perspective and an engagement with all private and public stakeholders, including all relevant levels of government responsible for the sustainability and transformation of health and care systems.

There is an opportunity to tap into the energy of an ‘alliance of early movers’ to promote technological and social innovation for ageing well in Europe

While the Interim Evaluation had expressed concern about the decreasing number of countries actively involved in AAL2, the **variable geometry of Article 185 initiatives that allows Participating Countries to decrease or increase their commitment has advantages and disadvantages**. A disadvantage is that variable commitments complicate the management of the Programme to the extent that it can challenge its financial viability. However, **it brought countries together in an ‘alliance of early movers’ that were willing to promote innovative solutions for active and healthy ageing and develop the research communities and market in Europe and beyond**. By tapping into the energy and enthusiasm of those wanting to participate, the Programme has managed to set the agenda for active and healthy ageing and establish the role of digital innovation in this field. However, it is less clear under which circumstances the ‘alliance of early movers’ model is the best programme option for other priorities within the European Union.

Recommendation: Future actions could use the Article 185 Partnership to tap into the energy of an ‘alliance of early movers’ to promote social innovation for ageing well. There is also an opportunity to build on the commitment of the community of stakeholders dedicated to active and healthy living created by AAL2.

5.2.2. Strategy level

Strategies for deploying and scaling up innovation for ageing well require all actors along the value chain to be involved

AAL2 succeeds in bringing together a highly relevant combination of stakeholders, including SMEs, end-user organisations, and research organisations. Involving end users in the development of technologies and understanding their needs and requirements is an essential prerequisite for innovations to be successful in the market. The Programme has also been successful in involving SMEs as important drivers of digital innovations for ageing well. However, **for a programme that has the ambition to make a sizeable difference to the development of the market and the lives and well-being of its target audiences, scale is important.** Large enterprises typically have the market power, expertise and production capacity to introduce new products at scale and pace and therefore should be encouraged to engage in this market. Large enterprises are **under-represented among Programme beneficiaries** (5 %) and there are indications that they have withdrawn from the market more widely.

Recommendation: A future action that aims to support the digital transformation of the health and care systems should develop strategies for deploying and scaling up innovation by involving the entire value chain including innovative SMEs and large enterprises who typically have the market power, expertise and production capacity to launch products and services at scale. An ecosystem perspective applied to the value chain also requires strategic involvement of state and substate stakeholders such as regions and social insurance organisations that structure the demand side.

Continuous learning and an environment supportive of experimentation are vital for improving the Programme and for adapting to challenges and changing expectations

The AAL Programme has established a process and nurtured a culture of continuous learning and improvement. In addition to regular monitoring and auditing practices, this process was based on three Programme Impact Studies that the AALA commissioned from external contractors. Also, as part of its portfolio of Support Actions, the AALA commissioned a number of studies aimed to foster a better understanding of the barriers to marketisation as well as surveys of beneficiaries that have informed the development of activities of AAL2. This approach to continuous learning, trial and error and improvement has been judged by stakeholders as highly productive and a demonstration of good practice.

Recommendation: Future actions should strive to develop a mindset and practice of learning, trial and error, and improvement to increase their economic and social impact. This includes a meso-level system component to continuously analyse outputs and outcomes and to adapt the Programme to the evolving demands of users and citizens while building the necessary processes and tools to develop the ecosystem for ageing well.

5.2.3. Operational level

The degree of managerial flexibility and possibility for strategic leadership provided by Article 185 can be a strong asset

In contrast to concerns expressed by the Interim Evaluation, the AALA's CMU was **able to provide substantial strategic leadership during the second phase of AAL2**. It was due to this proactive and energetic leadership that the **Programme has been able to adjust swiftly to new insights and demands** and to introduce a number of improvements. The degree of managerial flexibility provided by Article 185 has been useful in developing the Programme further and inspire change and improvements.

Recommendation: Future (public–public) partnerships should support a strong strategic leadership role and create a flexible and enabling environment to facilitate agile and adaptive management without compromising accountability or reducing engagement of national actors.

Support Actions can be an effective and cost-effective addition to the funding calls to strengthen the Programme in view of its objectives

AAL2 **differs from most other parts of Horizon 2020 / Horizon Europe** because of its **strong market orientation** and its **integrated, holistic approach to involving end users in both the design of Calls and in the portfolio of Support Actions**. With its range of **Support Actions** that primarily aimed to help beneficiaries to develop innovative solutions and acquire the skills and knowledge to succeed in the market, it has developed a **portfolio of accompanying activities that can be seen as exemplary** for other programmes. These Support Actions have been effective and cost-effective in supporting beneficiaries to meet and learn from each other. They have also helped them to understand the market and develop viable commercialisation strategies, and consider the wider ecosystem of digital solutions for active and healthy living, including health and care systems.

Recommendation: Future actions should consider introducing Support Actions as an effective and cost-effective strategy to strengthen a programme's ability to achieve its objectives. Support Actions are particularly effective if they are tailored to the needs of their target groups, provided at a suitable time in the lifecycle of projects and based on a good understanding of the challenges experienced during the implementation. They are particularly useful for building networks, supporting commercialisation skills, developing an ecosystem perspective to social innovation and for strengthening the visibility of the Programme.

The combination of a centrally organised project selection process and a decentralised funding mechanism has benefits but also comes with challenges

AAL2 combines a centrally organised project selection process based on excellence criteria with a decentralised mechanism of project funding, in which the success of each application depends on both its excellence and the availability of national funding. This mechanism constitutes a trade-off: NCPs only fund beneficiaries within their own remit, but they also face problems if the number of excellent applications exceeds their budgets or their budgets exceed the number of excellent applications. AAL2 has demonstrated that it is possible to navigate such trade-offs and improve processes and outcomes (such as budget utilisation) by developing creative solutions (e.g. by creating the option to reconfigure project teams at application stage). However, it is also worth considering developing shared mechanisms and standardised tools that help simplify the complexity of coordinating the various domains of the Partnership (e.g. scientific, managerial, financial).

Recommendation: Future Partnerships should allow for a mix of structural and creative approaches to finding solutions to difficulties resulting from decentralisation. This could include the development of shared mechanisms and standardised tools that help simplify the scientific, managerial and financial coordination of the Partnership.

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Annex A: Additional Programme statistics

General

The following table groups the project beneficiaries by number of participations. More than three quarters of the participants participated only once in AAL2 projects, 13.2 % participated twice and only 10.0 % participated three times or more.

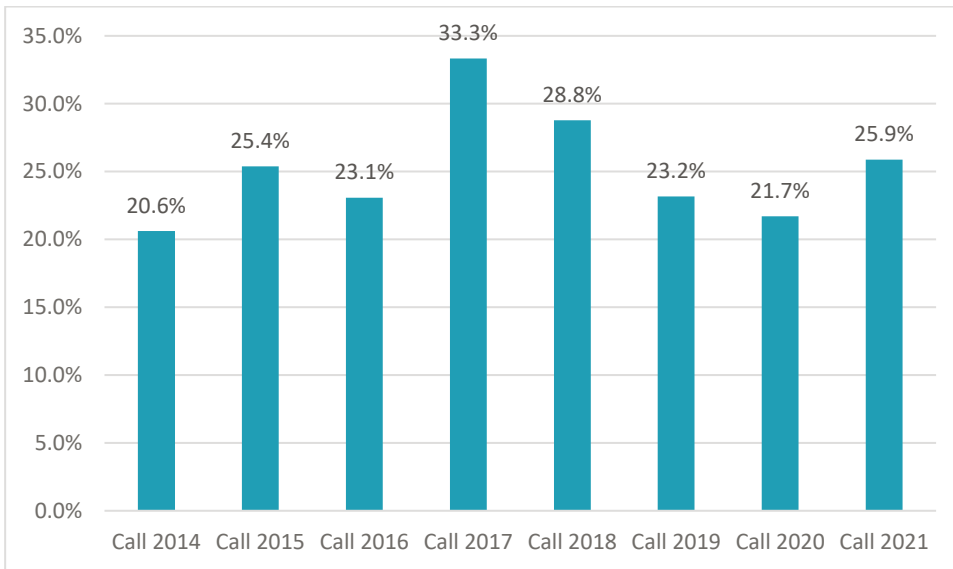
TABLE 6: BENEFICIARIES GROUPED BY NUMBER OF INDIVIDUAL PARTICIPATIONS

NUMBER OF INDIVIDUAL PARTICIPATIONS PER PARTICIPANT	NUMBER OF PARTICIPANTS	SHARE OF PARTICIPANTS
1	541	76.8 %
2	93	13.2 %
3	27	3.8 %
4	14	2.0 %
5	13	1.8 %
6	7	1.0 %
7	2	0.3 %
9	2	0.3 %
10	3	0.4 %
11	1	0.1 %
15	1	0.1 %
19	1	0.1 %

Source: Source: Own analysis based on AAL administrative monitoring data

The following figure depicts the overall success rate of applications throughout the years. Seen over the entire Programme duration, 24.5 % of applications were successful and selected for AAL2 funding.

FIGURE 14: SUCCESS RATE OF APPLICATIONS, PER YEAR



Source: Own analysis based on AAL administrative monitoring data

Analysis per country

Throughout the AAL2 Programme lifecycle (2014–2021) following Participating States and associated national funding bodies participated in the AAL2 Programme activities and are/were a member of the AAL Association. Table 7 lists them in alphabetical order.

TABLE 7: LIST OF NATIONAL SOURCES FOR THE CO-FINANCING OF THE AAL2 PROGRAMME OVER THE PERIOD 2014-2021

	AAL2 PARTICIPATING STATE	NATIONAL FUNDING AGENCY (NFA)
1	Austria	Austrian Research Promotion Agency [FFG]
2A	Belgium	Flanders Innovation & Entrepreneurship / Agentschap Innoveren en Ondernemen [VLAIO]
2B	<i>Belgium^{2*}</i>	<i>SPW-DGO6 Economie, Emploi et Recherche [Wallonia]</i>
2C	Belgium	Brussels Region [Innoviris]
3	Canada ^{4*}	Canadian Institutes of Health Research [CIHR]
4	Cyprus	Research Promotion Foundation [RPF]
5	Denmark	Danish Innovation Fund
6	Hungary	National Innovation Office [NIH]
7	Ireland ^{2*}	Enterprise Ireland
8	Israel ^{1,2*}	Israel-Europe R&D Directorate for FP7 [ISERD]
9A	Italy	Ministero dell'Università e della Ricerca [MIUR]
9B	Italy	Ministry of Health [MoH]
9C	Italy	Friuli-Venezia Giulia Region
10A	Luxembourg	Fonds National de la Recherche [FNR]
10B	Luxembourg	Luxinnovation GIE
11	Netherlands	The Netherlands Organisation for Health Research and Development [ZonMW]
12	Norway	Research Council of Norway
13	Poland	Narodowe Centrum Badań i Rozwoju [NCBR]
14	Portugal	Fundação para a Ciência e a Tecnologia [FCT]
15	Romania	Executive Agency for Higher Education, Research, Development and Innovation Funding [UEFISCDI]
16	Slovenia	Government Office for Digital Transformation
17A	Spain	Ministerio de Industria, Energía y Turismo [MINETUR]
17B	Spain	Instituto de Salud Carlos III [ISCIII] del Ministerio de Sanidad y Consumo
17C	Spain	Government of Biscay region

18	Sweden ^{1,2*}	Verket för Innovationssystem – Swedish Governmental Agency for Innovation [Vinnova]
19	Switzerland ^{3*}	Federal Department of Economic Affairs, Education and Research [EAER]; State Secretariat for Education, Research and Innovation [SERI]; International Cooperation in Research and Innovation**
20	Taiwan ^{4*}	Ministry of Science and Technology [MOST]
21	UK ^{1*}	Innovate UK

1* Participating States who contributed to the first AAL2 calls only with national funding. They are/were member of the AAL Association but did not request EU co-funding because of not signing the AAL2 bilateral agreement with the AAL Association to be eligible for EU co-funding as stipulated in the co-decision establishing the AAL2 Programme.

- Israel (call 2014 and 2015)
- Sweden (call 2014)
- UK (call 2014 and 2015)

2* Participating states/regions who left the AAL2 Programme:

- Wallonia–Belgium in December 2016
- Ireland in February 2017
- Sweden in March 2018
- Israel in September 2018

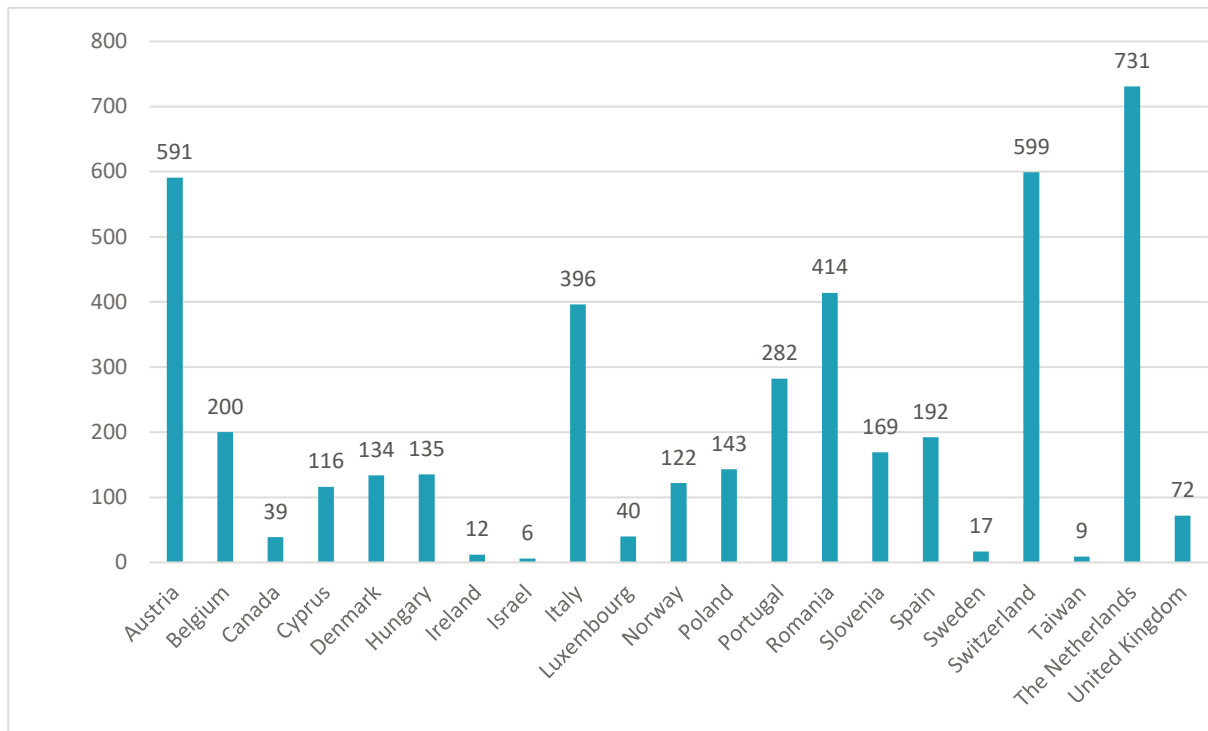
3* As partly associated with Horizon 2020, Switzerland was not eligible to receive AAL co-funding from the EU until December 2016. The Swiss national funding body therefore augmented its national funding by the co-funding percentage granted to an AAL call by the European Commission.

4* AALA third-country members not eligible for EC co-funding:

- Canada joined in September 2015
- Taiwan joined in September 2019

Figure 15 shows the number of individual participations in proposals over the whole programme period, per country. The largest share came from the Netherlands with 731 applicants⁹⁰. Switzerland and Austria rank second and third with almost 600 applicants⁹¹ each. The countries with the lowest number of participations in applications are Sweden, Ireland, Taiwan and Israel, all below 20 applicants.

FIGURE 15: NUMBER OF INDIVIDUAL PARTICIPATIONS IN PROPOSALS PER COUNTRY



Source: Own analysis based AAL administrative monitoring data

Whereas Table 8 shows the evolution of call budget committed per participating country at programme level, shows the actual project funding per country. The significant drop of funding committed by Switzerland after year one has technical reasons⁹². Apart from that, Spain also saw a drastic decline in funding after the first year. Sweden, the UK and Ireland ceased contributing after year 1, 2 and 3, respectively. For all other countries, the commitment remained relatively stable over the programme period. The actual project funding provided per country varied throughout the programme period, yet without a clear trend⁹³. Furthermore, as can be seen for example in the Belgian case, the countries with the highest call budget commitments were not necessarily the countries with the highest amount of project funding being provided.

⁹⁰ Number includes multiple counting of organisations that participated in several applications in the same year.

⁹¹ idem

⁹² Switzerland committed a particularly high amount in the first year of AAL2. This is explained by the fact that Swiss participants were initially not eligible for EC funding and hence were compensated for this by additional funding from the Swiss funding agency. Once Switzerland became an associated country in the Horizon2020 Programme, Swiss partners were eligible for EC funding.

⁹³ The extraordinarily high amounts of funding provided by Switzerland are explained by the same reason as in footnote 91.

TABLE 8: BUDGET COMMITTED PER COUNTRY, PER YEAR

COUNTRY	CALL 2014	CALL 2015	CALL 2016	CALL 2017	CALL 2018	CALL 2019	CALL 2020	CALL 2021	TOTAL COUNTRY
Austria	1,500,000	2,500,000	2,000,000	2,000,000	2,000,000	2,093,931	1,200,000	1,470,000	14,763,931
Belgium	2,800,000	2,800,000	2,900,000	2,500,000	2,500,000	2,500,000	2,300,000	2,000,000	20,300,000
Canada			580,000	232,000	235,868	231,779	230000		1,509,647
Cyprus	200,000	200,000	400,000	400,000	400,000	400,000	100,000		2,100,000
Denmark	267,000				450,000	500,000	400,000	1,363,497	2,980,497
Hungary	750,000	500,000	500,000	500,000	500,000	500,000	500,000		3,750,000
Ireland	500,000	500,000	500,000						1,500,000
Israel	300,000	300,000							600,000
Italy	1,000,000	524,000	1,555,000	1,500,000	1,695,000	1,735,000	1,735,000	1,735,000	11,479,000
Luxembourg	650,000	650,000	650,000	650,000	650,000	650,000	650,000	325,000	4,875,000
Norway	725,000	700,000	625,000		600,000	400,000	450,000	450,000	3,950,000
Poland	500,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000	4,000,000
Portugal	500,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000	4,000,000
Romania	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	8,000,000
Slovenia	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	1,600,000
Spain	1,950,000	200,000	800,000	800,000	950,000	950,000	300,000		5,950,000
Sweden	1,000,000								1,000,000
Switzerland	5,882,353	2,500,000	2,000,000	2,175,000	1,800,000	1,775,000	1,775,000	2,216,650	20,124,003
Tawain							200,000	200,000	400,000
The Netherlands	1,350,000	1,350,000	1,350,000	1,350,000	1,350,000	1,417,074	1,350,000	350,000	9,867,074
United Kingdom	1,200,000	1,200,000							2,400,000
Total year	22,274,353	16,124,000	16,060,000	14,307,000	15,330,868	15,352,784	13,390,000	12,310,147	125,149,152

Source: Own analysis based AAL administrative monitoring data

TABLE 9: PROJECT FUNDING PER COUNTRY, PER YEAR

COUNTRY	CALL 2014	CALL 2015	CALL 2016	CALL 2017	CALL 2018	CALL 2019	CALL 2020	CALL 2021	TOTAL COUNTRY
Austria	1 535 296	2 680 776	2 052 432	2 622 578	2 886 305	1 990 325	1 232 313	1 493 193	16 493 218
Belgium	557 062	1 095 588	406 017	2 304 808	977 081	403 297	992 094	2 021 863	8 757 809
Canada				309 693	124 107	118 764	122 222		674 786
Cyprus	60 879	99 267	410 470	193 920	75 518	550 745	92 842		1 483 640
Denmark	222 105				186 145	107 348	286 741	1 360 494	2 162 833
Hungary	637 858	483 058	273 363	470 753	426 507	460 467	143 466		2 895 471
Ireland	309 533	234 762	336 974						881 270
Israel	171 753								171 753
Italy	951 487	926 220	889 255	168 631	804 077	635 993	739 088	1 360 108	6 474 860
Luxembourg	302 940	249 623	136 985	322 972	100 926		280 822	315 040	1 709 309
Norway	484 383		713 410			401 109	227 691	391 986	2 218 579
Poland	47 165	149 686	213 178	753 355	213 575	496 380	144 022	592 157	2 609 517
Portugal	500 000	500 000	296 933	500 010	500 292	456 223	448 065	514 791	3 716 314
Romania	1 000 002	1 000 000	811 337	1 061 208	1 124 717	998 318	772 647	995 028	7 763 257
Slovenia	116 115	132 375	183 701	145 719	264 330	117 450	53 598	162 024	1 175 311
Spain	1 428 125		319 023	337 142	486 461	231 938	311 134		3 113 822
Sweden	0								0
Switzerland	4 464 805	4 827 421	4 270 212	2 110 527	1 800 913	1 499 642	2 565 906	2 328 273	23 867 698
Taiwan							280 060	102 937	382 997
The Netherlands	1 289 925	1 597 924	1 706 954	1 513 644	1 360 354	1 381 858	1 308 189	331 820	10 490 668
United Kingdom	526 295	514 700							1 040 995
Total countries	14 605 729	14 491 400	13 020 245	12 814 959	11 331 308	9 849 855	10 000 898	11 969 714	98 084 107

Source: Own analysis based AAL administrative monitoring data

Table 10 shows the number of participations in newly started projects per country, per year. Austria has the highest total number of participations (166), followed by Switzerland (152) and the Netherlands (150). Sweden (6), Canada (5) and Israel (2) are at the bottom of the list. In cases where a country did not commit any funding to a specific call, this is indicated by 'n/a'.

TABLE 10: NUMBER OF INDIVIDUAL PARTICIPATIONS IN NEWLY STARTED PROJECTS PER COUNTRY, PER YEAR

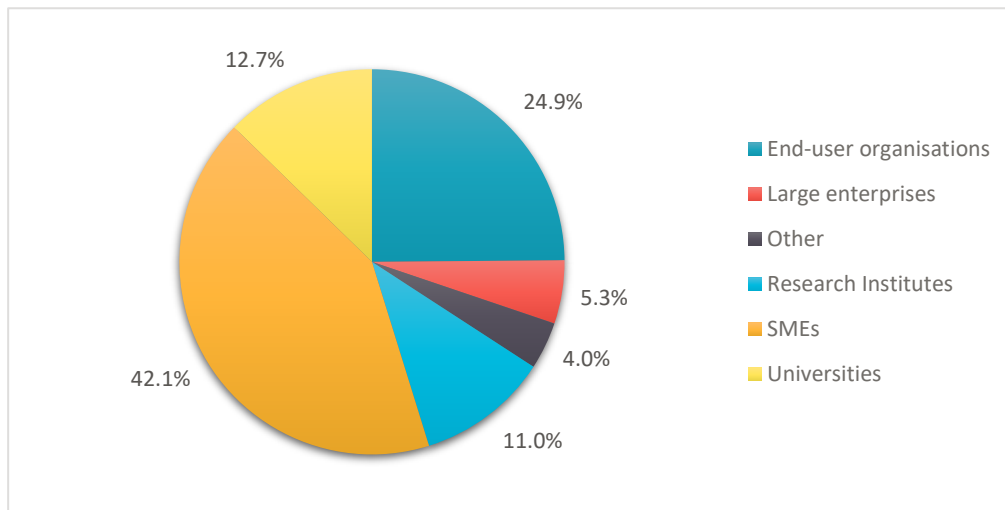
COUNTRY	Call 2014	Call 2015	Call 2016	Call 2017	Call 2018	Call 2019	Call 2020	Call 2021	Total
Austria	17	23	22	21	22	24	16	21	166
Belgium	6	13	5	13	7	11	11	18	84
Canada	n/a	n/a	0	2	1	1	1	n/a	5
Cyprus	2	2	6	3	1	7	1	n/a	22
Denmark	4	n/a	n/a	n/a	5	4	12	17	42
Hungary	6	6	3	3	7	6	2	n/a	33
Ireland	3	2	2	n/a	n/a	n/a	n/a	n/a	7
Israel	2	0	n/a	n/a	n/a	n/a	n/a	n/a	2
Italy	15	13	13	5	12	11	8	20	97
Luxembourg	1	1	1	3	1	n/a	2	2	11
Norway	6	0	8	n/a	0	6	8	5	33
Poland	1	2	3	7	1	6	2	8	30
Portugal	13	7	2	5	12	8	7	9	63
Romania	8	11	10	11	15	9	12	12	88
Slovenia	3	2	2	4	6	1	1	2	21
Spain	18	0	4	4	6	6	7	n/a	45
Sweden	6	n/a	n/a	n/a	n/a	n/a	n/a	n/a	6
Switzerland	21	20	15	18	17	17	22	22	152
Taiwan	n/a	n/a	n/a	n/a	n/a	n/a	7	3	10
The Netherlands	15	23	21	18	25	18	16	14	150
United Kingdom	6	4	n/a	n/a	n/a	n/a	n/a	n/a	10
Total	153	129	117	117	138	135	135	153	1077

Source: Own analysis based on AAL administrative monitoring data

Analysis per type of organisation

Figure 16 shows the share of individual participations in proposals per type of organisation, counting each individual partner in each application. Seen over the entire Programme duration, SMEs make up 42.1 %; the second largest group are end users with 24.9 % of all applications. The least common organisations among the applicants are large enterprises (5.3 %) and other organisations (4.0 %).

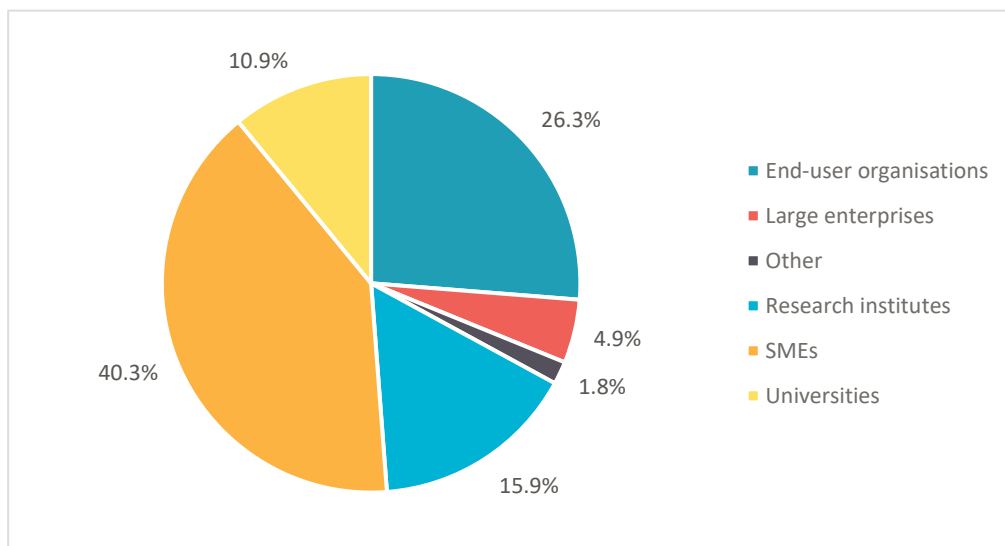
FIGURE 16: SHARE OF INDIVIDUAL PARTICIPATIONS IN PROPOSALS BY TYPE OF ORGANISATION



Source: Own analysis based AAL administrative monitoring data

Figure 17 shows the share of individual participations in newly started projects per type of organisation, counting each individual partner in each project. The distribution across the different types is quite similar to applications, with the higher share of research institutes being the only noticeable difference.

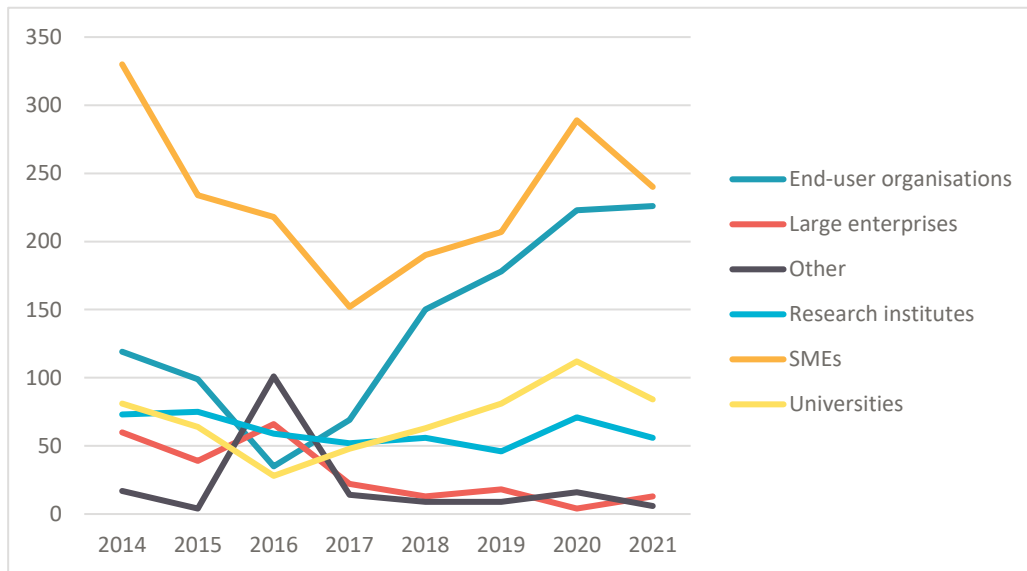
FIGURE 17: SHARE OF INDIVIDUAL PARTICIPATIONS IN PROJECTS BY TYPE OF ORGANISATION



Source: Own analysis based AAL administrative monitoring data

Figure 18 shows the number of applications of individual participations in proposals by type of organisation, per year. While the number of SMEs among applicants fell from approximately 330 in 2014 to 152 in 2017, this number recovered and stabilised at about 250 towards the end of AAL2. There was a strong increase in the number of end-user organisations among applicants since 2017, which rose from 69 in 2017 to 226 in 2021.

FIGURE 18: NUMBER OF INDIVIDUAL PARTICIPATIONS IN PROPOSALS BY TYPE OF ORGANISATION, PER YEAR



Source: Own analysis based AAL administrative monitoring data

Annex B: Recommendations of the Interim Evaluation

The Final Evaluation was commissioned by the EC in compliance with its legal obligations as stipulated in the Decision No 554/2014/EU. The Evaluation included an assessment of the progress towards the objectives of the AAL JP and the recommendations from the Interim Evaluation.

As described in the Baseline (Section 4.2) the Final Evaluation builds on the Interim Evaluation of AAL2 that was published in 2017. The table below outlines how the recommendations from the Interim Evaluation were addressed by the AALA during AAL2.

TABLE 11: RECOMMENDATIONS OF THE INTERIM EVALUATION

RECOMMENDATIONS	COMMENT
<p>Recommendation 1: Enhance the strategic leadership of the AALA. The ability to anticipate and manage change is essential both in addressing the current operational challenges and ensuring that the Programme meets its strategic objectives. The General Assembly should strengthen the strategic leadership capacity within the AALA through appropriate appointments to the Executive Board and/or the CMU. An enhanced strategic management capacity is a prerequisite for achieving all of the other actions and improvements recommended below and requires urgent attention by the AALA.</p>	<p>Partly addressed. New recruitments to the CMU were made 2017, including a new director, although there were also reductions in staffing. NCPs and other stakeholders were highly appreciative of the leadership and good working relationships with the CMU and lauded the CMUs capacity to drive the implementation of AAL2.</p>
<p>Recommendation 2: Provide focused support on key framework conditions shaping market development. The AAL Programme should launch further central Support Actions and measures to improve stakeholders’ knowledge and awareness of the framework conditions that shape the development of the AAL market. Potential focus areas include: IPR, ethics, certification and standards. These actions should be financed through the European Commission if not possible under national rules.</p>	<p>Mostly addressed. New Support Actions were launched to improve insight into the market conditions for active and assisted living, such as the Market Observatory actions and the Investor Events. Guidance was developed on ethical, data privacy and data security implications of active and assistive living technologies, and on standards and interoperability. Another regulatory project provided advice on how the new EU Medical Device legislation applies to AAL innovations.</p>
<p>Recommendation 3: Intensify support for business planning and market research. The support available to projects in relation to business planning and commercialisation should</p>	<p>1. Mostly addressed.</p>

<p>be expanded and intensified. Actions may include:</p> <p>a. Making engagement with the AAL2Business Support Action for coaching and mentoring obligatory from a project’s earliest stages. The range and nature of support available through AAL2Business should be intensified.</p> <p>b. Modifying proposal evaluation criteria to give greater weight to exploitation potential and market readiness.</p> <p>c. Placing greater emphasis on competent business planning within mid-term reviews.</p> <p>d. Specifying project-defined milestones as an aid for ongoing assessment and follow-up of results.</p> <p>e. Modifying the Guide for Applicants to reflect all of the above.</p>	<ol style="list-style-type: none"> 2. The range and nature of support available through AAL2Business was intensified, as recommended (even though participation was not made obligatory). 3. Evaluation criteria at MTR includes assessing a project’s business planning and strategic readiness for marketisation. 4. The Guide to Applicants informs applicants about the requirement to outline a business plan, including market analysis, and develop a plan for marketing in their proposal. It also provides a framework for ‘Business Plan Development’.
<p>Recommendation 4: Build engagement beyond the current AAL community. The Programme should make further dedicated efforts to build engagement with entrepreneurs, developers, SMEs, mainstream industry and a broad range of users beyond the current AAL community. This should include:</p> <p>a. Continuing the AAL Challenge Prize and intensifying the publicity around it.</p> <p>b. Revamping the AAL Forum by making it more relevant for industry and user-oriented.</p> <p>c. Launching open calls for experimental new ideas in AAL. These should run alongside the targeted calls identified in the work programme and should have their own ring-fenced budget.</p> <p>d. Setting up one or more Challenge Projects seeking innovative solutions to identified challenges within the AAL field. These would be similar to the Challenge Prize and operate outside the normal calls.</p>	<p>Mostly addressed.</p> <p>The AAL Challenge Prize was continued and publicity was expanded.</p> <p>Strong synergies were created through collaboration with the EIB on AHA and the JPI MYBL in organising the AAL Forum, which in 2020 was integrated into the European Week of Active and Healthy Ageing (EWAHA).</p> <p>Novel formats were introduced to the AAL Forums such as Hackathons and Citizens Accelerator to attract, and draw on the expertise of, businesses and end users. These have proved to be popular.</p> <p>Call formats were challenge-led, moving away from more narrowly defined topics.</p>
<p>Recommendation 5: Support integration and implementation of AAL solutions. In the context of challenge-led calls, as well as innovation, the AALA should ensure specific provision for actions focusing on the integration and implementation of existing solutions (including AAL project results). Specific measures should be taken to embed secondary and tertiary end users – municipalities, healthcare agencies, insurers, etc., as key actors within these activities.</p>	<ol style="list-style-type: none"> 1. Addressed to a limited extent. 2. An ecosystem approach was developed but no specific actions were taken to integrate solutions into existing systems at the various levels of health and care system organisation. 3. Some NCPs have made efforts to reach out to municipalities, healthcare agencies and insurance, but some indicated that more could have been done.
<p>Recommendation 6: Experiment with large-scale test beds. Despite the operational constraints, the AAL Programme should attempt to facilitate within the existing framework</p>	<ol style="list-style-type: none"> 1. Addressed to a very limited extent. 2. A few NCPs have supported test beds and other forms of experimentation.

large-scale demonstrations and pilots operating under real-world conditions. Such an approach would need to be reflected in the annual work programme and be supported by a majority of national authorities who would agree to adapt their own work programmes accordingly. Pilots and test beds should be motivated by – and where possible led by – competent demand-side (health and social) organisations and could link to existing initiatives such as the EIP AHA.

3. The ecosystem approach emphasises the need for system transformation, with less emphasis given to piloting individual solutions.

Recommendation 7: Ramp up communication and outreach. The AALA needs to become a more active voice for the AAL Programme and its achievements. Communication and outreach activities should be stepped up at all levels, in particular with targeted messages for four key audiences:

a. Market actors (industry, SMEs, entrepreneurs, and secondary and tertiary users) highlighting the new, more market-oriented approach encapsulated in Recommendations 2-6.

b. The policy community, highlighting the value of the AAL model, the synergies with other EU initiatives, and potential for future programmes.

c. National and regional funding agencies in Europe as prospective or returning partners. Again the message should stress the refreshed and more outward-looking approach being adopted.

D. International partners, to draw attention to the mutual benefits of participating in the Programme for them and for Europe.

- Mostly addressed.
- Communication and outreach have been strengthened and the AALA has shown strategic leadership. It has promoted the agenda for active and assistive ageing, as demonstrated by the number of meetings, conferences and workshops to which members of the AALA or the CMU were invited.
- The number of Participating States has largely remained stable during AAL2, with some countries/regions opting in and out.

Recommendation 8: Secure the sustainability of the Programme over the medium term. The AALA should take all necessary measures to safeguard the viability of the AAL Programme for the remainder of its term. This could include: recruiting new partners and/or inviting lapsed partners to return; improvements in operational efficiency through changes in management and procedures; seeking multi-annual pledges from existing NFAs on their support for the Programme through to 2020.

- Partly addressed.
- Sustainability was secured for the remainder of AAL2, also through the stabilisation of the number of Participating States.
- Taiwan was recruited as a new participating country in 2020.
- Efforts were made to improve the operational efficiency, and efficiency gains were achieved.

Annex C: Methods used

The methodology underlying this study was built on a number of different methods, which are briefly described below.

Desk study

A wealth of evidence has already been collected by previous studies, such as previous evaluations, impact assessments, self-assessment reports, annual EC reviews and other reports. A key source in particular for the assessment of the Effectiveness criterion has been an Impact Assessment carried out by IDEA Consult directly on behalf of AALA, which was published in December 2021. It is largely based on a survey of 91 AAL2 participants, covering 38 AAL2 projects that had been completed by December 2019. Throughout this document, the Impact Assessment is referred to as the 'Programme Impact Study'. The secondary analysis and use of this evidence has been one of the key pillars of the study design. In addition, the desk research retrieved information from various published documents such as pertinent strategic, operational and policy documents, and annual programme reports. The full list of literature that has been used is listed in Annex A.

Interviews

A second key component has been interviews with Programme officials, NCPs and beneficiaries. Altogether, 27 interviews⁹⁴ have been conducted. These interviews had a dual purpose: part of the questions were directly related to the evaluation criteria, other questions were primarily linked to two case studies that accompanied the evaluation. Interviews were conducted in a semi-structured format, i.e. using topic guides that provided a general structure, but leaving the flexibility to zoom in on specific aspects when relevant. More specifically, interviewees included:

- Programme representatives
 - o EC policy officers (DG CNECT),
 - o AAL Programme Director, Programme Operations Manager
 - o Members of the Executive Board (Acting President, Vice Presidents)
 - o Members of the Advisory Board
- Country partners
 - o National Contact Points
 - o Representatives of national ministries
- Beneficiaries
 - o Research institutes
 - o Private companies
 - o End-user organisations

⁹⁴ Out of the 27 interviewees, 4 had provided their responses in writing.

Case studies

Two case studies have been conducted to explore specific areas of interest, to complement evaluation questions and to provide relevant learning to inform future programmes. One of the case studies focused on the contribution of the AAL2 Programme to building capacity in the AAL ecosystem (case study 1: ‘Support Actions for capacity development and community building’), the second one focused on efforts to sustain the effects of the Programme beyond its lifetime (case study 2: ‘Learnings from the AAL2 Partnership’). The case studies largely drew on desk research and interviews. While being standalone deliverables, they also inform the assessments of several evaluation criteria in the Final Evaluation. For more information on the design and approach of the case studies, see the case study reports, annexed to this report.

Analysis of funding and administrative data

The study team has also conducted a thorough analysis of funding and administrative data, which have been provided by the CMU. These data included information on applications received, funding committed, funding actually spent and projects launched, among others. They were analysed along different dimensions, including overall level, disaggregation by countries and disaggregation by types of organisation.

Other quantitative methods

A calculation of centrality score has been conducted, to assess the extent to which AAL2 beneficiaries were integrated into the broader Horizon 2020 R&I network. For this, the research team has scrapped the URLs of all AAL2 participants from the AAL website. Subsequently, these were matched to the URLs of H2020 participants available in Corda, to identify the PIC numbers of relevant organisations. In step 3, the analysis was extended to the full list of Horizon 2020 projects and participations. Based on this analysis, we established the extent to which AAL2 participants are integrated into Horizon 2020 R&I networks.

Finally, the study team conducted an analysis of investment data related to AAL2 beneficiaries. For this, the study team made use of the Dealroom platform⁹⁵. Dealroom provides data on investments in companies by various business organisations such as banks, investors or business angels. While it is not possible to link investment data to specific AAL2 projects, they may provide interesting contextual information. From a dataset that contained the URLs of 703 AAL2 participants, we could match 205 participants (i.e. approximately 30 %) to data entries included in the Dealroom database (www.dealroom.co). Dealroom identified investments being made in 35 out of those 205 organisations (i.e. approximately 17 %) between 2014 and 2020.

Data analysis

All data and information collected through the above methods were then rigorously mapped against the different evaluation criteria and individual subquestions. For this, individual team members took care of specific sources and specific evaluation questions. Subsequently, these individual assessments were discussed, validated and refined in two internal workshops⁹⁶. Preliminary results were presented

⁹⁵ www.dealroom.co

⁹⁶ The first internal workshop took place in March 2022 and focused on the mapping of sources against evaluation criteria and questions. The second workshop was conducted in late April 2022 and focused on the discussion and refinement of the initial findings.

to the client in early May 2022 and feedback has been taken into account. On this basis of these analyses, the present report has been drafted.

Note on robustness and data limitations

Some limitations must be noted in relation to the robustness of the methodology, which are detailed below. This Final Evaluation was largely conducted by using desk research, in addition to the analyses of administrative data and stakeholder interviews. This meant that with the exception of the interviews, this study did not collect any new data but relied in its analyses on the data that had already been collected and presented elsewhere.

Small sample sizes of the Programme Impact Study

A key source for this evaluation, in particular for the assessment of effectiveness, has been the Programme Impact Study published in 2021 on the Impact Study reports findings from a survey of AAL2 beneficiaries linked to projects that had been completed by December 2019. However, only 38 projects had been completed by this date. While the survey yielded 91 complete responses, and each of these 38 projects had been covered by at least one of these 91 responses, this means that the effective sample size of projects covered was small.

Also, the number of respondents that had participated in AAL Support Actions and were able to respond to relevant questions were limited: 33 respondents had participated in AAL2Business and 56 respondents had participated in the AAL Forum. The sample size was even smaller for those questions about the effects of solutions on older people and their carers: Only 13 of 91 respondents were in a position to answer these questions. This means that these numbers are illustrative rather than statistically representative.

Limitations relating to the interviews

The purpose of interviews is to enrich quantitative findings with qualitative information from a variety of stakeholder perspectives. Interviews were held with individuals representing all relevant stakeholder groups involved in AAL2 such as Programme representatives, representatives of NCPs from EU and non-EU countries, Programme beneficiaries and other stakeholders (e.g. previous evaluators of the Programme). However, it was not possible to represent all stakeholder groups equally and the number of subgroups of beneficiaries (e.g. companies, user organisations, researchers) was small.

Interviews were meant to primarily cover the content of the case studies, as per project specification, but also contribute to the Final Evaluation. While it was possible to align some of the questions, given that the case studies also contribute insights to the Evaluation, this meant that the list of questions covering two case studies and the evaluation was extensive. This meant that not all questions could be given the same priority during the interviews and questions were selected that were most pertinent to interviewees.

TABLE 12: DATA COLLECTION AND ANALYSIS METHODS EMPLOYED FOR EACH EVALUATION QUESTION

	KEY EVALUATION CRITERIA BASED ON THE BETTER REGULATION GUIDELINES					PARTNERSHIP-SPECIFIC CRITERIA	
	Relevance	Coherence	Efficiency	Effectiveness	EU added value	Additionality	Transparency & Openness
Desk research	✓	✓	✓	✓	✓	✓	✓
Interviews	✓	✓	✓	✓	✓	✓	✓
Analysis of funding and administrative data		✓ ⁹⁷	✓	✓			
Case study 1 (Support Actions)		✓	✓	✓	✓	✓	✓
Case study 2 (Learnings from the AAL2 Partnership)		✓	✓	✓	✓	✓	✓
Other quantitative methods (analysis of centrality score and investment data)		✓		✓		✓	

⁹⁷ As a basis for the calculation of centrality score

Annex D: Case study 1 ‘Support Actions for capacity development and community building’

[See separate document]

Annex E: Case study 2 ‘Learnings from the AAL2 Public-Public Partnership Approach’

[See separate document]