

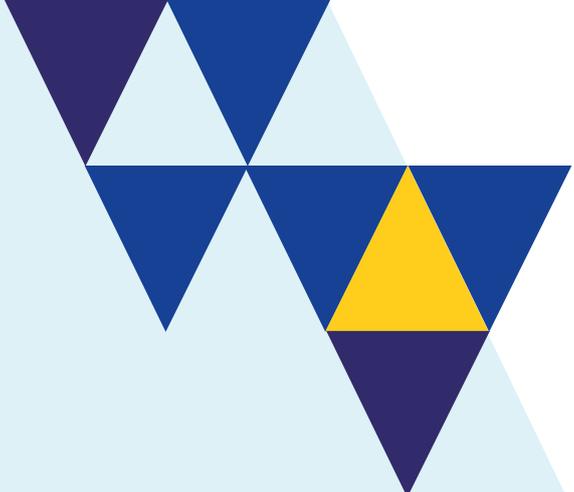
AAL SUCCESS STORIES 2026

15 AAL INNOVATIONS CREATING REAL IMPACT



AAL

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Introduction

Europe's ageing societies require solutions that not only respond to immediate needs but also strengthen long-term capacity for innovation across care systems, communities and industries. In this context, the Active Assisted Living (AAL) Programme has played a distinctive role as an applied research and innovation instrument, bringing together SMEs, research organisations, public authorities and end-user groups to co-develop solutions that improve the lives of older adults. This edition of the AAL Success Stories highlights 15 recently completed projects that provide concrete insights into how AAL-funded projects generate lasting value beyond the formal funding period.

The selection represents a deliberately diverse sample of technological, organisational and user-centred approaches. Projects span different maturity levels: products and solutions that have reached or are close to the market; projects that require further investment, partnerships or validation to enter commercialisation; and concepts whose early-stage innovations, research contributions or organisational learning hold strategic relevance for future development. This approach allows the study to capture a wide spectrum of "success" within the AAL ecosystem – ranging from commercial deployment and clinical validation to strengthened competencies, new service models and sustained end-user engagement.

The analysis presented here is based on semi-structured interviews conducted in late 2025 with coordinators or key representatives of each project. Interviews focused on the lasting effects of project participation; success factors and barriers in maintaining impact; the role of partnerships and networks; and lessons for future AAL initiatives. Each case study was validated by the interviewees, ensuring that the narratives reflect both factual developments and practitioners' perspectives.

Across the 15 projects, the success stories collectively illustrate how AAL-funded innovation contributes to the programme's three overarching objectives: strengthening Europe's industrial base, improving the quality of life and autonomy of older adults and their networks, and increasing the efficiency, sustainability and digital readiness of support and care structures. At the same time, the projects address major societal challenges of the period – from reducing caregiver burden and managing chronic diseases to sustaining daily living, mitigating cognitive decline, improving safety, adapting home environments and reducing social isolation.

Taken together, the success stories offer a rich illustration of the many ways in which AAL-funded projects create value for older adults, caregivers, organisations and regional ecosystems. The stories give voice to the organisations and practitioners behind the projects and show how innovations can evolve along different pathways in real-world settings.



AGAPE – Enabling Innovation Adoption in Real-Life Care Ecosystems

AGAPE created a methodology and toolkit to help older adults, caregivers and policymakers adopt digital services more effectively. By profiling users, coaching them through behavioural change and aligning technology with local policy and services, AGAPE focused on making innovation truly usable and sustainable in real-life settings.

Designing Innovation Around Real Ecosystems, Not Just Technology

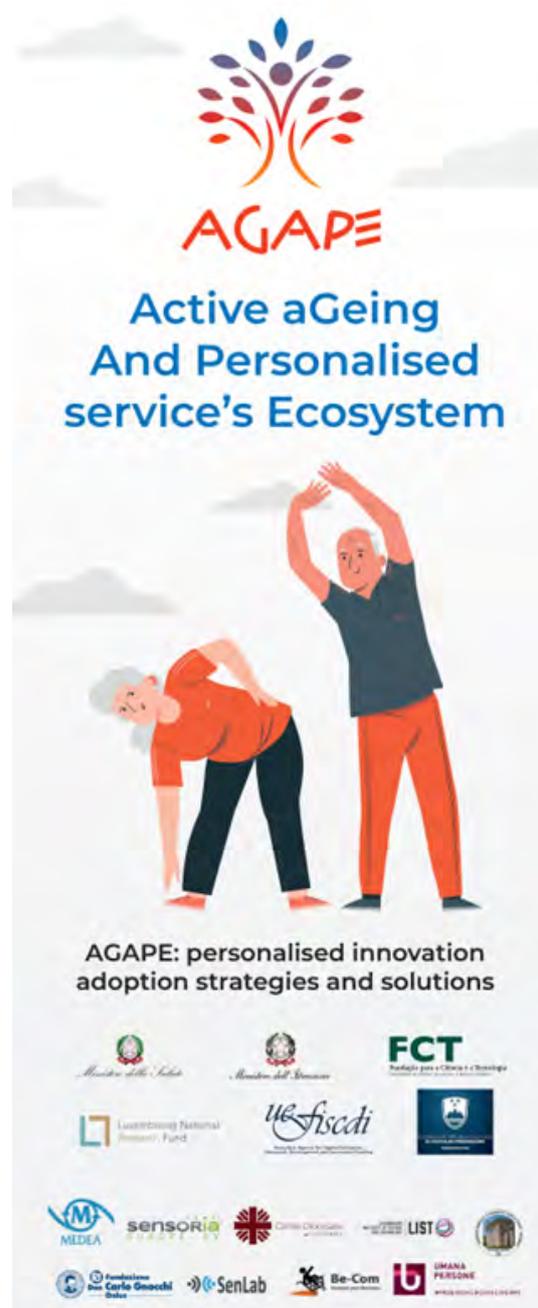
AGAPE emerged from MEDEA's long-standing experience in bringing innovation into real-life care environments. Instead of starting from a technology concept, the project began by mapping the ecosystem in all the piloting areas; Tuscany, Coimbra and Bucharest: policy directions, existing services, digital skills and the needs of older adults and caregivers. Engaging policymakers from the outset ensured that the solutions developed would align with regional priorities and be sustainable beyond the project.

A Methodology for Supporting People Through Digital Change

The heart of AGAPE is an innovation adoption methodology that profiles users, identifies their digital skills and readiness for change, and adapts services and interfaces accordingly. The project introduced the role of the AGAPE Coach, who supports participants either in person or virtually, depending on their abilities. Combining psychological behavioural-change theories with personalised support enabled users to gradually build confidence and adopt digital tools more effectively. The toolkit also allowed solutions to be customised based on user needs, digital literacy and motivation.

“Innovation only succeeds when it starts from real life and supports people step by step in adopting new services.”

Pietro Dionisio, Project Manager, Medea S.r.l.



Pilots in Three Countries Revealed Cultural and System-Level Differences

Pilots in Tuscany, Coimbra and Bucharest showed how innovation adoption is influenced by local culture and care practices. In Romania, for example, prevention and healthy lifestyles are less embedded in daily routines, making behavioural change a central innovation challenge. The project evaluated not only digital skills but also health literacy and openness to new services. While the team had hoped to include users with very low digital skills, most participants had a moderate level; still, AGAPE demonstrated that personalised coaching and adapted interfaces can significantly increase confidence and willingness to use digital tools.

Stronger Results Than Expected – And Areas Still to Explore

AGAPE's innovation adoption toolkit and coach model were widely recognised as its most valuable results, even surpassing expectations. Reviewers highlighted the approach as a distinctive contribution beyond technology development. However, the team could not fully test all planned adaptations, such as more granular interface versions for people with no digital experience. Longer trials would also have allowed deeper exploration of behavioural-change dynamics, which showed promising impact but needed more time to measure comprehensively.

Outlook: From Project Result to Regional Policy Conversations

MEDEA continues to refine AGAPE's methodology through new European projects and local initiatives. Discussions with policymakers in Tuscany remain active, aiming to integrate the approach into regional agendas for prevention and home care. Many end users who participated in AGAPE have already been included in further initiatives. For MEDEA, AGAPE confirmed that sustainable innovation must begin at the proposal stage, with ecosystem mapping and stakeholder engagement embedded "by design," and that adoption strategies are essential for translating technological ideas into everyday practice.

“Real impact comes when innovation fits the local ecosystem - policies, services and the everyday lives of the people who must use it.”



Elena Tamburini,
Medea S.r.l. coordinator
and Research Area
Manager



PROJECT INFO

AGAPE was an AAL project led by MEDEA that developed an innovation adoption methodology and toolkit, tested in Tuscany, Coimbra and Bucharest. Through user profiling, coaching and ecosystem mapping, the project aimed to make digital services more usable, acceptable and sustainable in real care environments.

www.aal-europe.eu/projects/agape
www.agape-ecosystem.eu

Alpha – Guiding the Shift to Plant-Based Proteins in Older Adults’ Diets

Alpha explored how digital tools can help dietitians support older adults in maintaining protein quality during the shift toward plant-based nutrition. Through focus groups, data development and early prototypes, the project laid the foundation for a tool now used in hospitals and food innovation.

Rethinking Protein for an Aging Population

The idea for Alpha emerged during the COVID-19 period, when plant-based eating was accelerating. The team saw both opportunity and risk: while the protein transition benefits sustainability, older adults remain vulnerable to low protein intake. Alpha set out to guide this shift responsibly by developing a technology that helps ensure sufficient protein quantity and quality. For its coordinator, Pol Grootswagers, it was the first time leading a large international project, which brought steep but valuable learning curves.

From Older Adults to Dietitians: Identifying the Real User Need

The project initially aimed to support older adults directly, but early focus groups revealed that this was not the right primary target. Dietitians, however, strongly expressed the need for a tool that could calculate protein quality in meals and guide the creation of suitable plant-based menus. From that moment, Alpha focused on dietitians, conducting iterative research to understand their needs and how they work. This shift clarified the value proposition and ensured that development aligned with real-world practice.

“Alpha taught me to move beyond concepts and deliver something tangible that makes a difference in everyday practice.”



**Pol Grootswagers,
PhD; Assistant Professor
Nutrition and Ageing,
Wageningen University &
Research**

Building the Scientific and Technical Foundations

Alpha produced three essential building blocks. First, it created new protein-scoring algorithms for meals based on essential amino acids and digestibility—now published and widely cited. Second, the team developed a comprehensive food composition dataset that includes protein quality information, which had been missing from existing databases. Third, these components informed the first prototype of a digital tool. Although the final review criticised the lack of a polished demo, the project delivered all foundational elements needed for post-project development.

Meal name: Naan vegan shoarma | Product list: Nevo2023_0825_English
 Recipe: Yes | 1 Portions | Reference pattern: FAO 2011 Adult
 Consumer: Healthy senior | 75 kg | Meal protein requirement: 0.3 g / kg bw

Product	Quantity	Dig	EAA Nutrients											
			his	ile	leu	lys	met	cys	p+t	thr	trp	val		
[9013] Vegan chicken pieces base...	70 g	●	399	707	1206	1000	172	217	1330	610	126	734		
[2888] Plant-based alternative to ...	40 g	●	37	67	114	94	18	19	119	57	19	70		
[830] Garlic raw	10 g	●	8	15	21	19	5	5	19	11	5	20		
[8016] Naan bread	70 g	●	95	145	307	103	67	104	347	136	55	186		
[1905] Vegetables av raw	25 g	●	0	0	0	0	0	0	0	0	0	0		
Total recipe			215 g	●	539	933	1650	1216	263	345	1813	813	204	1011
Per portion			215 g	●	539	933	1650	1216	263	345	1813	813	204	1011
Meal requirement					360	675	1373	1080	383	135	922	563	148	900
Percentage of requirement filled					150	138	120	113	69	256	197	145	138	112

Meal Protein Quality Score: **69**
 Limiting EAA: **Methionine**

After AAL: From Prototype to Working Tool

Motivated by critical feedback and additional funding, the team continued development after the project. Alpha evolved into a fully functional platform now used by hospitals in the Netherlands, Denmark and Italy, as well as by universities and product developers. Dietitians use it to assess and improve meals; chefs use it to design plant-based dishes that still meet protein requirements; food researchers rely on it to analyse large recipe datasets. The tool's flexibility has opened unexpected opportunities, including applications in sports nutrition and food innovation.

Challenges and Outlook: From Research to Real Markets

The project's biggest challenge was bridging academic research and applied development. Managing an international consortium, working with software teams and keeping focus under limited time proved demanding. Commercialisation remains work in progress: the team is developing a business model, licensing strategy and pricing with support from business developers. With growing interest from hospitals and researchers, Alpha now stands at the threshold of broader adoption.



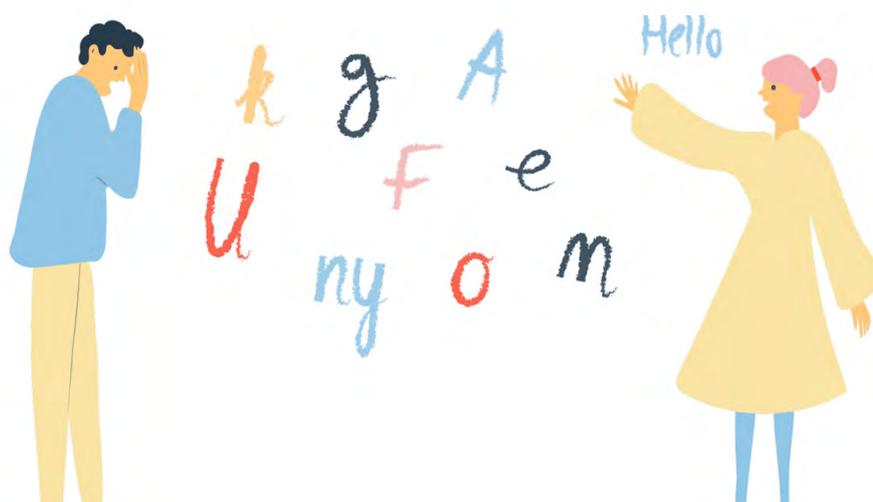
PROJECT INFO

Alpha was an AAL project developing tools to support adequate protein intake during the transition to plant-based nutrition. The project created new protein-quality algorithms, a unique dataset and the first prototype of a dietitian-focused tool now used in hospitals and food innovation.

www.aal-europe.eu/projects/alpha
<https://alpha-tool.eu>

APH-ALARM – Smarter Emergency Support for People Living With Aphasia

APH-ALARM developed an AI-supported mobile system that helps people with aphasia request help during emergencies when speech is not possible. By combining gesture and motion analysis with user-centred design, the project created a working prototype now under consideration for integration into Hungary's public emergency services.



Addressing Emergency Situations When Speech Fails

APH-ALARM was created to support people living with aphasia, who may be unable to speak or may lose speech capability during sudden health events. For these individuals, calling for help can be extremely difficult—especially when alone. The project aimed to create a mobile-based support system that detects critical situations based on movement and gesture patterns and then initiates an emergency alert. The consortium brought together researchers, an SME specialised in motion analysis and end-user organisations across Hungary, Austria and Portugal, ensuring a strong user-centred focus from the beginning.

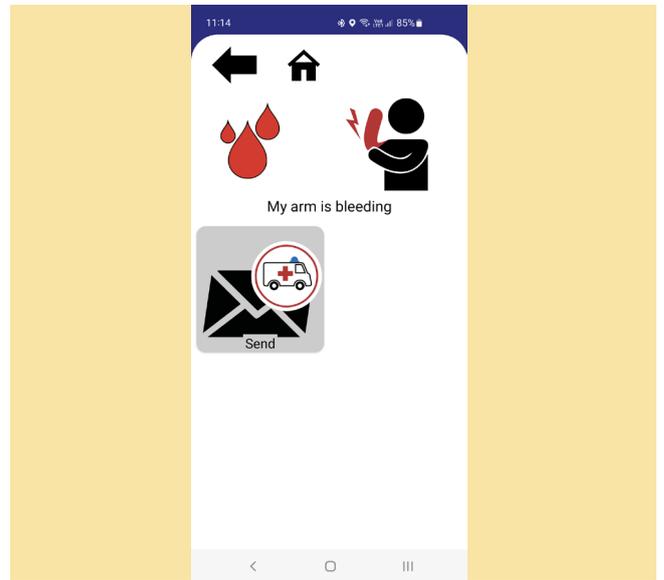
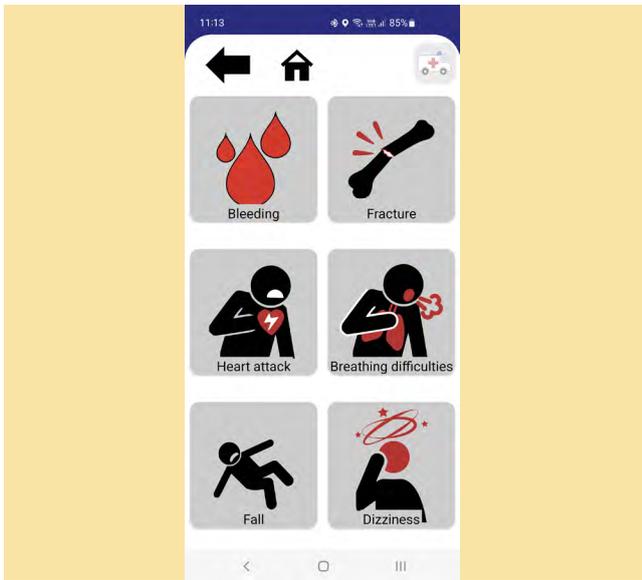
Co-Creating with People Living with Communication Impairments

Because every person with aphasia has different capabilities, the system had to be adaptable rather than rely on one standard interaction model. The Hungarian aphasia association was deeply involved in defining

requirements and testing prototypes. Users helped refine which gestures or movements could realistically be used to trigger alerts. Testing real emergency-like scenarios was challenging, so the team combined real user input with simulated events to train and validate the system. Ultimately, end users confirmed that APH-ALARM offered a valuable sense of safety, especially for people who cannot rely on speech in crisis situations.

A Working Prototype with National-Level Potential

Technically, APH-ALARM reached its goals: the prototype worked, users could trigger alarms, and the system reliably transmitted data. The SME partner had prior experience integrating accessibility solutions into the national 112 emergency service in Hungary, and APH-ALARM is now being discussed in this context. While not all project elements will move into service, core features—such as gesture-based alerts—are being considered for adoption at national scale, which would significantly broaden the system's impact.



Challenges: Certification, Market Size and Social Value

Despite its promise, APH-ALARM faces structural barriers. Certifying the system as a medical device would require extensive funding and documentation – difficult for an SME in a niche market. Although the societal benefit is clear, willingness to pay remains limited. This tension between social usefulness and market viability is common in assistive technologies. The coordinator stressed that solutions for small communities often need public or EU-level support to become long-term services.

Lessons Learned: User Needs and Sustainability Must Drive Innovation

The project showed that meaningful solutions must be built around the lived reality of people with communication impairments. Early and deep involvement of end users was essential, as was close collaboration between researchers, SMEs and care organisations. APH-ALARM demonstrated that practical, accessible technology can dramatically increase safety – but also that sustainable adoption requires ecosystem support, funding and realistic regulatory pathways.

“For people who cannot speak during an emergency, having a simple, reliable way to call for help can make all the difference.”

Prof. Géza Németh, Budapest University of Technology and Economics

PROJECT INFO

APH-ALARM was an AAL project developing a gesture- and motion-based emergency alert system for people living with aphasia. Partners from Hungary, Austria and Portugal created and tested a working prototype, now being explored for integration with Hungary’s national emergency services.

www.aal-europe.eu/projects/aph-alarm
www.evoaid.com/en/solution-caring-signal
www.aphasie.hu/aph-alarm-biztonsagi-megoldas-2



BeauCoup – Bringing Cultural Heritage to Older Adults, Wherever They Are

BeauCoup created new ways to share museum collections with older adults beyond museum walls. Through multisensory boxes, mobile backpacks and digital exhibitions, the project developed flexible delivery models that make cultural heritage accessible in homes, care centres and community spaces.



“BeauCoup proved that cultural heritage can travel - through objects, stories and digital experiences - to reach people wherever they live.”



**Prof. Patrizia Marti,
University of Siena**

Making Culture Reach People Who Can No Longer Visit Museums

BeauCoup began with a simple but powerful idea: many older adults cannot visit museums, yet cultural participation remains essential for wellbeing. The project, coordinated by AIT Austrian Institute of Technology, set out to create solutions that could bring curated cultural experiences to people—wherever they live. The team developed three complementary models: the bag, a mobile kit carried by facilitators; the box, a larger multisensory set sent to care centres; and the screen, a digital platform enabling virtual exhibitions and guided tours. Together, they formed a continuum from in-museum preparation to fully remote access.

“Designing BeauCoup’s tools showed us that cultural access is not a single solution but a continuum, from tangible multisensory kits to flexible digital platforms that can connect collections across institutions.”

Georg Regal, project coordinator, AIT Austrian Institute of Technology

Multisensory and Mobile: Designing Tangible Cultural Experiences

The University of Siena designed and built the two physical systems within the box model. The Magic Casket, a multisensory storytelling system, combines tangible replicas, olfactory stimuli, soundscapes and tactile elements to let participants explore artworks through touch, smell and narrative. It was extensively tested in day centres, museums and homes—where it proved highly engaging and easy to use for people with varying abilities. Siena also designed the Travelling Backpack, worn on the front to allow facilitators to share objects and stories during community walks or local visits. Both tools were widely appreciated and received interest well beyond the project’s end.

Digital Exhibitions That Connect Museums Across Europe

The digital screen platform enabled virtual access to curated exhibitions, including real-time guided sessions. Unlike standard video calls, the system allowed participants to move freely between artworks, while the guide gently brought the group back together when introducing the next object. This format also enabled cross-museum exhibitions that brought together collections from Siena, Ljubljana, Lisbon and Graz, creating thematic journeys impossible in a single physical museum. During the COVID-19 lockdowns, these digital formats became even more relevant and highly valued.

Strong Demand Meets Post-Project Challenges

After the project ended, Siena continued to refine the Magic Casket and received multiple requests to purchase the system. A new, more compact version was created. However, exploitation proved difficult: partner communication slowed once funding ended, and formalising agreements for commercialisation became a major hurdle. Issues such as intellectual property, replica licensing and museum content rights also complicated progress. The consortium agreed on the need for structured post-project support to help promising results transition to market-ready products.

Lessons Learned: User Involvement and Sustainability Planning Are Key

BeauCoup showed how valuable co-creation can be. Older adults, caregivers, curators and decision-makers were involved throughout, ensuring each model met real needs. The project also demonstrated that cultural delivery requires a continuum of solutions—not a single tool. At the same time, partners emphasised that sustainable adoption requires clearer post-project pathways, continued collaboration and dedicated support for exploitation activities.



PROJECT INFO

BeauCoup was an AAL project developing mobile, multisensory and digital tools to bring museum content to older adults in homes and care settings. Solutions were piloted in Austria, Italy, Portugal and Slovenia, with the Magic Casket continuing to evolve after the project.

www.aal-europe.eu/projects/beaucoup
www.beaucoup-project.eu



Care about Care – Strengthening Communication and Support in Home Care Networks

The Care about Care project partners developed two digital services to support care workers, home care service users and their relatives in coordinating everyday care. Through mixed-reality guidance and an easy-to-use communication app, the project explored how technology can strengthen care networks across Austria, Luxembourg and Belgium.

“With the right preparation, even complex technologies like mixed reality can work smoothly in real home-care situations.”



Dr Cornelia Schneider,
project coordinator,
University of Applied
Sciences Wiener Neustadt

Aiming to Support the Entire Care Network

The Care about Care project set out to improve collaboration and communication between care workers, people needing support at home and their family carers. Two innovative digital solutions were developed and tested: (i) Remote Care Assist, a mixed-reality service enabling care workers to receive on-site assistance, and (ii) the Care App supporting care appointment management, now commercialised as myneva.connect. Cornelia Schneider (University of Applied Sciences Wiener Neustadt) coordinated project activities in close collaboration with Birgit Trukeschitz (WU Vienna University of Economics and Business).

Developing Two Solutions with Different Paths to Market

The smartphone-based Care App reached market readiness shortly after the end of the project, as its technical complexity was manageable and its value for care organisations became clear early on.

The innovative integration of advanced mixed-reality components and additional devices into Remote Care Assist required more time and testing on its route to market. It is now being further developed and tested within follow-up projects that expand language support and introduce additional features such as translation and chat-based assistance.

Extensive User Involvement Across Three Countries

The consortium involved end-user organisations in Austria, Luxembourg and Belgium, each recruiting care workers, home care service users and their family carers. Members of all target groups were involved in co-creating and testing the two digital solutions. The project showed that with well-prepared training and phased testing, even complex technologies like mixed reality, used for the Remote Care Assist, can be adopted by care workers. Testing, however, also revealed organisational aspects relevant for successful implementation of digital technologies in long-term care settings. The team was impressed by how quickly home care service users and their carers learned to check and manage care appointments using the Care App and how frequently the Care App was used in their daily routines.



Success Factors and Challenges: Partners, Planning and Recruitment

A key success factor was the commitment of project partners with different backgrounds and roles – care provision, digital development, evaluation expertise and business. Previous collaboration between some key partners enabled a smooth project start. Several smaller tests involving the target groups throughout the project supported the technical development of the solutions. However, recruiting of participants for field trials turned out demanding, requiring multiple outreach approaches, including printed flyers and automated messaging through care organisations. Such challenges may be a consequence of the project itself as participants want to use the technology for as long as they need it, rather than testing it for a limited period. In addition, complexity was added by developing and testing two technologies which resulted in having to manage diverse target groups and planning and conducting workshops and test settings tailored to these target groups.

Outlook: Clarifying Roles, Rights and Routes to Market

Post-project, the project team is aware of the importance of agreeing on intellectual property rights early, as delays in clarifying responsibilities may slow commercialisation. Challenges remain in Europe’s care-technology market, where scattered and unclear reimbursement structures and regulations can hinder innovation. Nonetheless, Remote Care Assist continues to evolve through follow-up projects, and the Care App, now myneva.connect, is already available on the market, supporting communication in everyday home care.



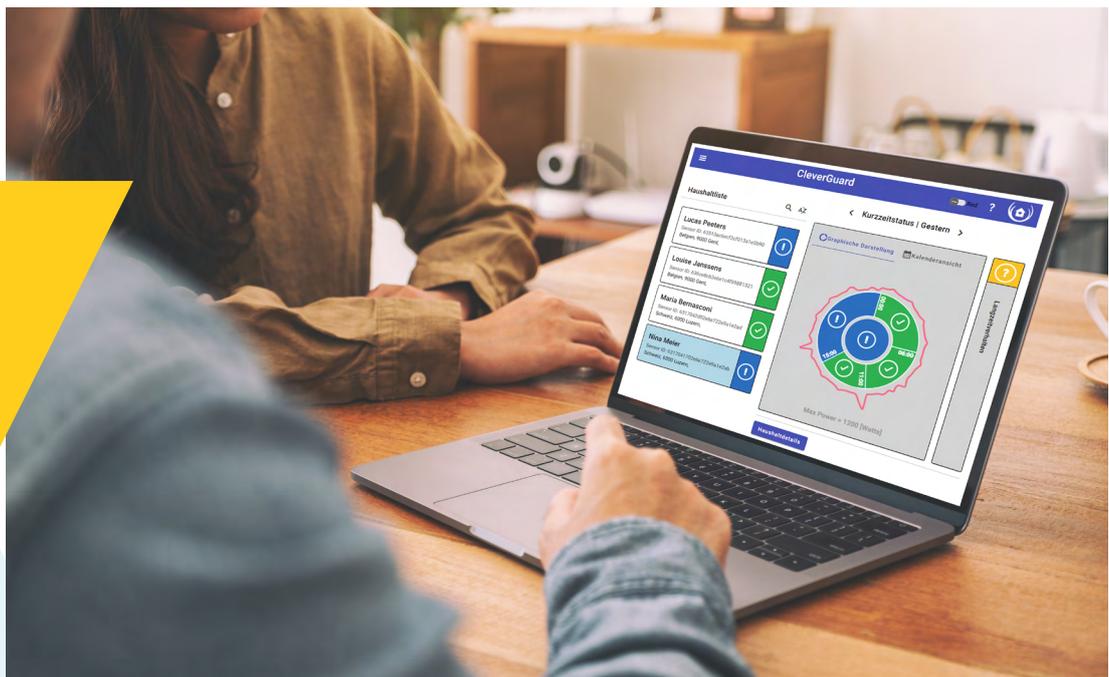
PROJECT INFO

Care about Care was an AAL project that developed two digital services—Remote Care Assist and the Care App—to support communication and guidance in home care. The project involved partners in Austria, Luxembourg, Belgium and Switzerland.

www.aal-europe.eu/projects/care-about-care-cc

CleverGuard – Supporting Informal Care Through Unobtrusive Home Monitoring

CleverGuard explored how unobtrusive monitoring of everyday household activity can support informal caregivers of older adults living alone. By analysing electricity usage patterns with AI, the project aimed to detect deviations from normal routines and provide caregivers with meaningful prompts for timely, context-aware contact.



Observing Daily Life Without Intrusion

CleverGuard started from a simple but sensitive question: How can caregivers know when something might be wrong without constantly checking in or installing invasive sensors? The project focused on older adults living alone and used non-intrusive load monitoring (NILM) to analyse electricity consumption in the home. By observing when appliances such as kettles, toasters or televisions were used, the system learned a person's daily routine and identified deviations that could signal a potential issue. Importantly, CleverGuard was never designed to diagnose conditions, but to flag changes that might warrant human attention.

From Load Curves to Meaningful Signals

A key technical challenge lay in interpreting electrical load patterns meaningfully. After an initial learning phase, CleverGuard divided the day into morning, noon, afternoon, evening and night, evaluating each segment using AI-based outlier detection. If expected activity was missing—such as no morning appliance use—caregivers received a notification describing the deviation. The system deliberately avoided drawing conclusions about causes, recognising that the same pattern could reflect illness, lifestyle choices or harmless exceptions. This design choice underlined the project's core principle: technology should support, not replace, human judgement.

“CleverGuard doesn’t tell you what is wrong – it gives caregivers a reason to start the right conversation.”



**Dr Daniel Bolliger,
Lucerne University of
Applied Sciences and Arts -
School of Engineering
and Architecture,
iHomeLab**

Strengthening Care Relationships Through Better Communication

One of CleverGuard’s most important insights was its effect on the relationship between caregivers and older adults. Notifications did not prompt immediate intervention but created a concrete starting point for communication. Instead of routine calls asking “Are you okay?”, caregivers could refer to specific observations and open a meaningful conversation. Field trials, including assisted-living settings in Belgium, showed that initial concerns about surveillance often shifted over time. Many participants moved from feeling observed to feeling cared for, particularly once the system proved invisible in daily life and transparent in its purpose.

Cultural Context and Acceptance

Acceptance of CleverGuard varied across countries. While some participants initially expressed strong concerns about being monitored, others welcomed the reassurance that someone was paying attention. These differences highlighted how cultural norms, expectations of care and trust in technology shape adoption. The project therefore reinforced the importance of contextual sensitivity in AAL solutions and demonstrated that acceptance often grows once users experience tangible benefits and understand the system’s limitations.

Outcomes and Lessons Beyond Market Launch

Although CleverGuard did not result in a market-ready product within the AAL domain, its outcomes extended beyond commercialisation. The industrial partner applied the underlying technology to other application areas, while the research team gained substantial expertise in usability, co-creation and translating complex data into intuitive caregiver interfaces. The project also highlighted structural challenges common to AAL innovation: fragmented markets, limited willingness to pay and high expectations placed on early-stage prototypes. CleverGuard ultimately demonstrated how value can emerge through learning, transferable technology and improved understanding of informal care dynamics.



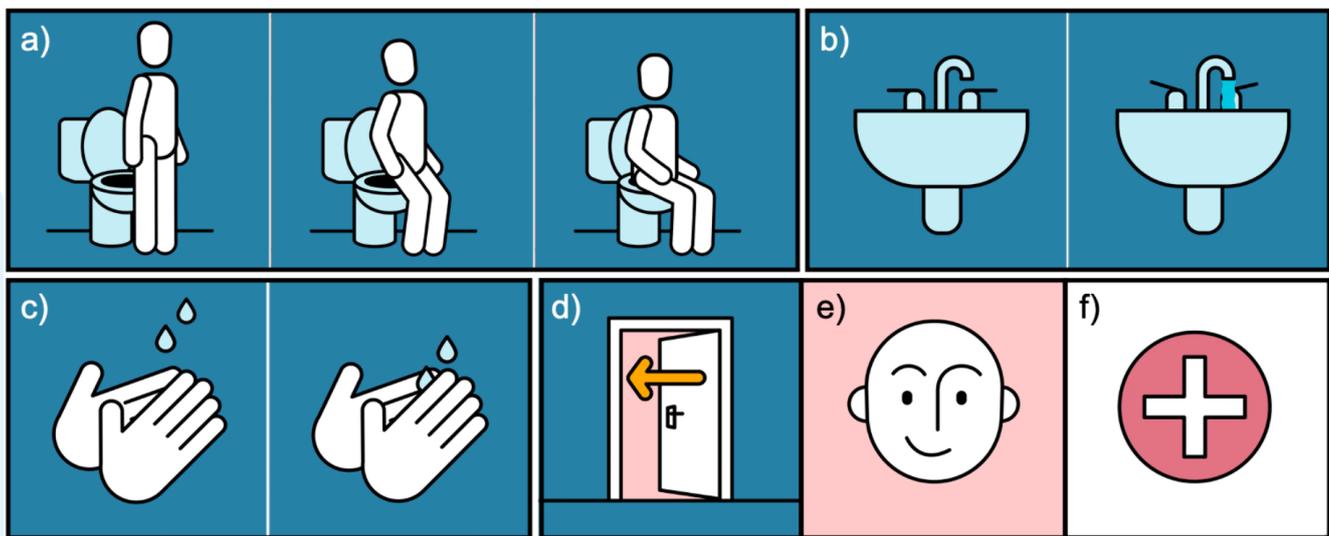
PROJECT INFO

CleverGuard was an AAL project using non-intrusive electricity-usage monitoring and AI to support informal caregivers of older adults living alone. By detecting deviations from daily routines, the system aimed to enable timely, human-centred communication rather than automated intervention.

www.aal-europe.eu/projects/cleverguard
www.hslu.ch/en/lucerne-university-of-applied-sciences-and-arts/research/projects/detail/?pid=5798

DIANA – Supporting Safer Care for People with Cognitive Decline

DIANA developed sensor-based tools to help nurses understand behaviour in people with cognitive decline. The project combined clinical, technical and research partners to visualise movement patterns, detect risks and support autonomy in daily activities.



A New Field: Understanding Behaviour in Dementia Care

DIANA marked an expansion of cogvis' – coordinator and company behind the project – work from fall detection to the complex world of dementia care. People with cognitive decline show unpredictable behaviour, often changing from day to day. Nurses need clear insights into what happens in resident rooms, yet existing systems do little to capture patterns or detect early warning signs. DIANA aimed to close this gap by combining clinical expertise with advanced sensing and behavioural analytics.

From Idea to Prototype: Clinical, Technical and Research Contributions

The consortium worked in real care environments to shape the solution. The Geriatric Clinic St. Gallen provided patient rooms, a memory clinic and a day-care setting for testing; its staff helped define real behavioural challenges and validated early prototypes. The Technical University of Vienna focused on detecting steps in daily routines – especially toileting – and explored how interfaces should look for people with cognitive decline, experimenting with abstract versus familiar visuals. The Portuguese nursing home partner - Cáritas Diocesana de Coimbra – contributed diverse use cases and helped test alarm concepts. Meanwhile, the University of Lisbon supported exploitation, including market scoping and business potential. Together, partners created heat-map-based behaviour visualisations, night-time movement insights and new ways to identify behavioural anomalies – all grounded in clinical practice.

“Every time we work in dementia care, we realise how complex the field is – and how valuable it is when technology truly supports both staff and residents.”



Michael Brandstötter,
founder and partner,
cogvis software and
consulting GmbH

Project Results and Integration into Market Products

Parts of the DIANA prototype—especially the movement visualisations and new alarm types—were further developed after the project and are now integrated in the cogvis’ commercial solution. These functions help care teams understand activity levels, sleep patterns, medication effects and sudden behavioural changes. While customers recognise the value, they tend to use the system selectively, for example when onboarding new residents or when behaviour becomes difficult to interpret. DIANA provided the foundation for expanding the company’s portfolio toward dementia-related care challenges.

Challenges: Ethics, Complexity and Market Adoption

Work with people living with dementia brought significant ethical complexity: obtaining consent, securing ethics approvals and conducting studies with a vulnerable group required much more effort than anticipated. The team also faced a lack of prior research, meaning many concepts had to be designed from scratch. Market adoption remains a challenge, as paying customers need solutions that are effortless to use and clearly fit into daily routines.

Outlook: Tailoring Insights for Every Role in Care

Next steps focus on tailoring information to different user groups—from assistant nurses to facility managers—each requiring different types of insights. DIANA also aims to make real care effort more visible, helping facilities document needs that are often underestimated in reimbursement processes. With dementia cases rising across Europe, demand for such tools is growing, and refinement continues.



PROJECT INFO

DIANA was an AAL project developing sensor-based behaviour monitoring for people with cognitive decline. Partners included a Swiss clinic, technical and academic teams, and care organisations in Portugal. Several functions developed in DIANA are now part of a commercial product supporting dementia care.

www.aal-europe.eu/projects/diana
<https://cogvis.ai>



engAGE – Combining Theatre, AI and Social Robots to Support Cognitive Health

engAGE created a digital ecosystem that blends theatre-based therapy, remote monitoring, social robots and AI-driven assessment to support older adults with cognitive decline. Through multi-country trials, the project demonstrated how creative, digital and clinical approaches can work together in care settings.

A Multimodal Approach to Cognitive Decline

engAGE set out to support older adults living with mild cognitive impairment by combining creative activities with advanced digital tools. The consortium built an integrated platform offering remote monitoring, cognitive games, group sessions with a social robot and AI-based evaluation that assists professionals in adjusting care or exercise plans. The project brought together universities, SMEs and clinical partners from Norway, Switzerland, Italy and Romania, allowing each service to be developed and tested in diverse environments.

Building on Existing Platforms to Reach Higher Readiness

Two commercial solutions formed the foundation: TelluCare telecare system from Tellu (Norway) and the Memas communication platform from Karde (Norway). Both were adapted, improved and enhanced within engAGE, adding interoperability features and AI functionalities developed by the coordinator. This structure allowed the team to start from higher TRL components and focus their efforts on new services, including machine-learning pipelines capable of analysing and correlating heterogeneous information for different clinical contexts. Both TelluCare platform and Memas services have already integrated some components from engAGE into their commercial portfolios, showing tangible impact beyond the project period.

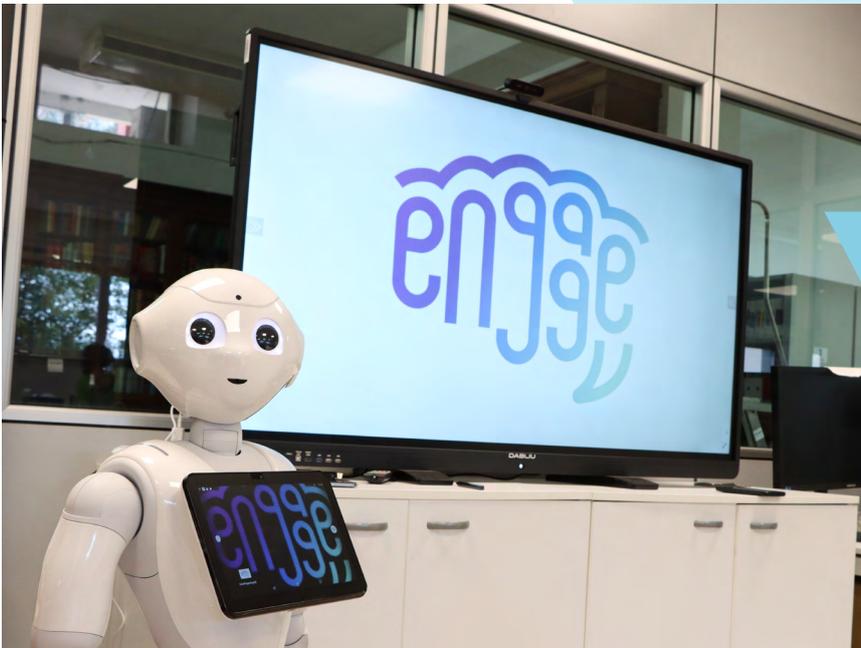
“engAGE showed us how creativity, AI and human-robot interaction can work together to support older adults in meaningful ways.”



**Prof. Ionut Anghel,
project coordinator,
Technical University
of Cluj-Napoca**

Meaningful Engagement Through Creative Activities and Robots

Trials conducted in care centres offered a unique combination of social robot sessions and cognitive exercises. Older adults responded positively to theatre-inspired activities facilitated by the robot and enjoyed the social engagement it brought. At home, participants used remote monitoring, cognitive games and exercises, which gave them a sense of security and confidence while allowing for cognitive function stimulation. Clinical partners described the experience as both enjoyable for users and informative for care teams, who gained insight from data streams related to daily routines and cognitive training.



Collaboration, Learning and the Value of AAL

The coordinator, Prof. Ionut Anghel, emphasised that participating in AAL projects expanded international partnerships, created visibility and generated new opportunities—such as the follow-up TransCare project (funded under the Transforming Health and Care Systems (THCS) programme). For research teams, the project provided valuable experience in applying machine learning to real-world clinical data and refining AI models. For SMEs, engAGE offered a testbed to validate features and integrate them into market products. All partners benefitted from the programme's community dimension and exchange platforms.

Challenges: Digital Literacy, Ethics and Multi-Country Coordination

Working with older adults revealed varying levels of digital literacy, particularly in Romania, requiring careful onboarding and adaptation. Ethical approvals differed strongly across countries and added significant administrative effort. The consortium also faced challenges in aligning cultural and organisational differences across partners. At the same time, these difficulties strengthened collaboration and informed recommendations for future innovation teams: Start with the user, plan for regulatory hurdles early and build flexible solutions rather than medical devices, which require resources beyond typical project scopes.



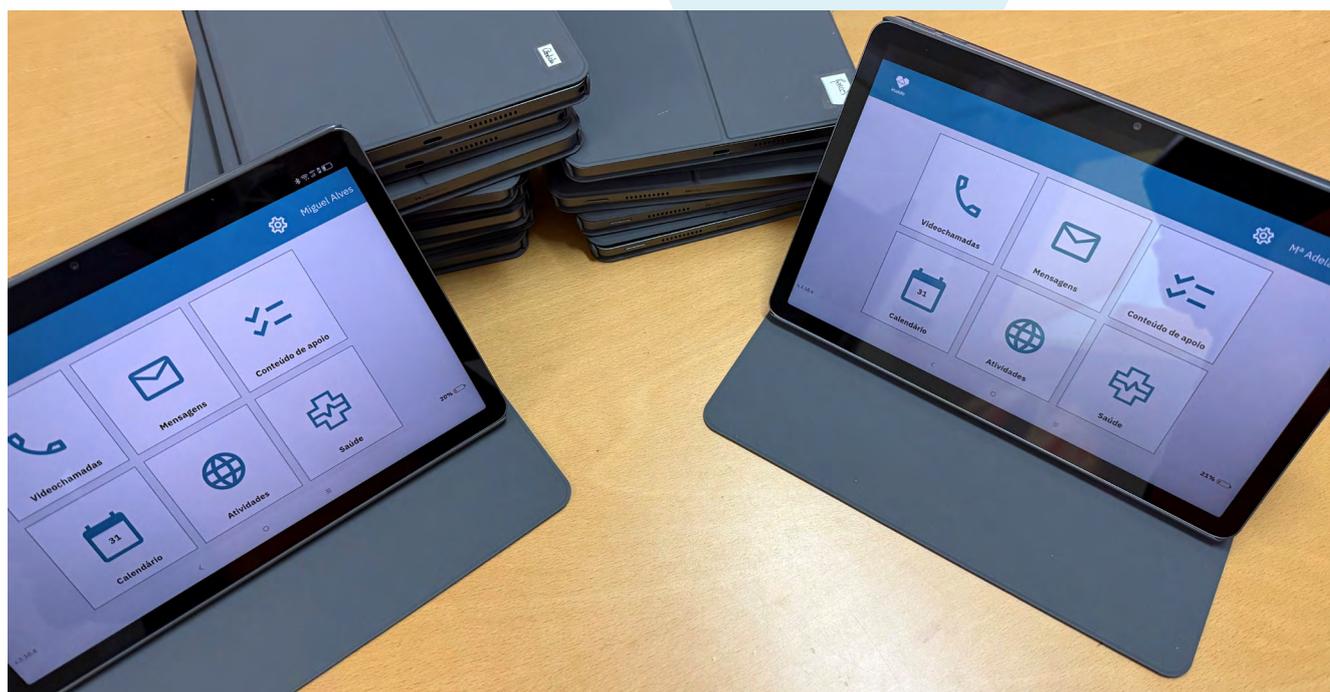
PROJECT INFO

engAGE was an AAL project combining theatre-based therapy, cognitive games, social robots and AI-supported monitoring for older adults. Partners from Norway, Switzerland, Italy and Romania developed and tested an integrated platform, with several components now continuing in the follow-up TransCare THCS project.

www.aal-europe.eu/projects/engage/
<https://engage-aal-project.eu/>

frAAgiLe – A Digital Approach to Detect and Address Frailty Early

frAAgiLe set out to help care organisations identify frailty risks early and guide personalised interventions. The project created a digital tool tested with therapists and end users, providing essential insights that Ideable later integrated into a broader commercial geriatric assessment platform.



Understanding Frailty to Improve Care

Frailty affects many older adults and increases the risk of dependency. frAAgiLe aimed to support care organisations by offering a structured way to assess frailty and act early. The project brought together researchers, therapists and technology developers to build a tool that could capture different dimensions of frailty and suggest tailored interventions. For Ideable, coordinating the project offered the opportunity to explore how a digital frailty assessment could become part of a scalable, market-ready solution.

From Assessment Concept to Practical Insight

The team focused on identifying which clinical scales best detect frailty and how results should translate into meaningful actions. Therapists and geriatric experts contributed to selecting questionnaires and international scales, defining thresholds and translating scores into intervention plans. This intensive co-creation helped the consortium understand how to link assessment data with practical recommendations—knowledge that later proved crucial when expanding beyond frailty to a broader geriatric view.

“The project taught us which frailty scales truly matter and how to turn those results into practical actions that improve older adults’ daily lives.”



**Iñaki Bartolomé,
Ideable**

What the Project Achieved and How It Lives On

Although the initial prototype did not reach production due to technical issues and a partner company being acquired, the project generated valuable evidence. Testing with care organisations showed that frailty assessment alone was not enough; organisations also needed cognitive, physical, social and clinical indicators to understand the full picture. Ideable took these insights and developed a more complete geriatric assessment tool, now part of its commercial kwido platform. The frailty knowledge from frAAgiLe directly shaped this module and helped ensure its relevance for real care providers.

Challenges During and After the Project

The project revealed both technical and market barriers. On the technical side, the prototype required more maturity before it could scale. On the market side, there was strong interest in holistic assessment rather than isolated frailty screening. Ideable also faced the challenge of gaining visibility as an SME in a sector where trust and long-term collaboration are essential. Today, the company is expanding internationally (Portugal, Spain, Italy, Poland, etc.) and relies on integrators and partnerships to demonstrate the value of its extended home-care model that comes directly from the frAAgiLe experience.

Outlook: Towards Scalable, Home-Based Support Models

The frAAgiLe experience contributed to Ideable’s current vision of “extended nursing home” or “extended day care” models, where professional support reaches older adults in their homes through digital tools. With kwido now serving around 10,000 users and expected to grow significantly, the foundational work on frailty still plays an important role.



PROJECT INFO

frAAgiLe was an AAL project coordinated by Ideable Solutions, aimed at developing a digital tool to assess and address frailty risks among older adults. The project involved care organisations, therapists and researchers, and its insights now feed into Ideable’s commercial kwido geriatric assessment platform.

www.aal-europe.eu/projects/fragile
www.ideable.net
www.kwido.com

GUARDIAN – A Social Robot Ecosystem Supporting Informal Caregiving at Home

GUARDIAN developed a modular social robot ecosystem designed to support informal caregivers of older adults living at home. By combining robotic interaction, life-pattern monitoring and cloud-based services, the project aimed to provide reassurance, structure and timely information to those supporting ageing relatives from a distance.

“GUARDIAN was designed to give caregivers peace of mind by making everyday life at home more transparent, without taking control away from the older person.”



Prof. Dr. Henk Herman Nap,
project coordinator,
Vilans

Starting from the Needs of Informal Caregivers

GUARDIAN was conceived in response to a growing challenge faced by informal caregivers: supporting older relatives who live alone while balancing work, family responsibilities and geographic distance. Rather than focusing solely on the older person as a user, the project explicitly addressed the needs of caregivers who seek reassurance that daily routines are maintained and potential risks are detected early. The solution was designed to reduce uncertainty and emotional stress by providing contextual information without requiring constant physical presence.

A Modular Robot Ecosystem Rather Than a Single Device

Instead of developing a single-purpose robot, GUARDIAN created an open and modular ecosystem. The Misty II robot served as one possible embodiment, while a cloud-based backend enabled remote access, configuration and personalisation. Modules supported daily structure, reminders, social interaction and the detection of deviations from usual activity patterns. This architecture allowed caregivers to stay informed about routines and potential issues, while older adults interacted with the system in a non-intrusive way. The modular approach also enabled partners to develop and refine components independently.

Co-Design with Care Networks and Ethical Reflection

User involvement extended beyond older adults to include informal caregivers and care organisations. From early needs assessments to iterative testing, caregivers contributed insights on what information is helpful, when alerts become intrusive and how technology can support rather than replace human care. Ethical and responsible-innovation considerations were integrated into these co-design processes, ensuring that monitoring functions respected - among others - privacy and autonomy while still providing meaningful reassurance to caregivers.



Impact Beyond the Project Through Multiple Care-Oriented Pathways

Although GUARDIAN was not commercialised as a single product, its components continued to evolve after the project ended. Smartrobot.solutions integrated the platform into commercially available care robots used in residential and community settings. ConnectedCare developed Lizz, a digital health care assistant offering similar caregiver-oriented functionality and now available on the market. Additional derivatives, such as companion robots like the Maatje robot and Maatje pop of Smartrobot.solutions, further illustrate how GUARDIAN's architecture supports different caregiving contexts. These outcomes demonstrate that caregiver-centred value can be realised through modular transfer rather than direct product launch.

Lessons on Sustainability in Informal Care Contexts

The project highlighted both the potential and the limits of robotics in informal care. Fragmented care markets, reimbursement uncertainty and reliance on non-European hardware platforms complicate large-scale adoption. At the same time, the coordinator emphasised the long-term value of AAL participation in building trusted networks, advancing responsible innovation practices and strengthening organisational capacity. GUARDIAN shows that solutions addressing informal caregivers' needs may achieve impact through gradual integration into existing services rather than immediate commercial scaling.



PROJECT INFO

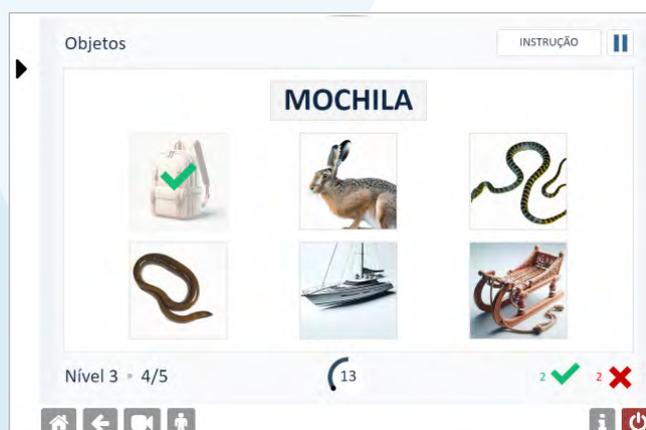
GUARDIAN was an AAL project developing a modular social robot ecosystem to support informal caregivers of older adults living at home. Coordinated by Vilans, the project combined robotics, cloud services and co-creation. Several components have since been integrated into caregiver-oriented products and services.

www.aal-europe.eu/projects/guardian
<https://guardian-aal.eu>
<https://lizz.health>



ORACIA – Digital Rehabilitation to Restore Communication After Stroke

ORACIA developed a clinically grounded digital rehabilitation tool for people with aphasia after stroke. By combining therapist-supervised exercises with home-based practice, the project created a medical-grade prototype that strengthens communication abilities and offers a realistic pathway toward CE-certified digital therapy.



Addressing a Critical Gap in Post-Stroke Rehabilitation

Aphasia affects millions of stroke survivors in Europe, yet rehabilitation often remains limited to brief clinical sessions with few tools to support practice at home. ORACIA set out to bridge this gap. The idea emerged directly from clinical demand: therapists lacked digital instruments that could extend therapy beyond the clinic and allow structured follow-up. The consortium brought together partners from Portugal, Luxembourg, Spain and Switzerland to design a system capable of supporting expressive and receptive language training in everyday contexts.

Developing a Medical-Grade Digital Therapy Pathway

From the outset, the team decided that ORACIA would be developed as a certified medical device rather than a general wellness app. This decision shaped the entire methodology: clinical protocols were approved by ethics committees, data management followed medical-device standards, and the software was developed under ISO-13485 quality standards. Co-creation with therapists, patients and caregivers played a central role, ensuring that exercises reflected therapeutic practice and that the interface matched users' cognitive and motor abilities. Pilots in Portugal, Luxembourg and Spain supported iterative refinement even beyond the formal project period.

“We designed ORACIA as a real medical device because people with aphasia deserve tools that truly support their recovery.”



**João Quintas, PhD Eng.,
project coordinator,
Instituto Pedro Nunes - Association
for Innovation and Development in
Science and Technology**



Linking Clinical Exercises to Real-World Communication

Unlike many digital therapy tools that rely solely on screen-based tasks, ORACIA encourages users to connect words with meaningful daily-life actions. Exercises progress from object recognition and naming toward functional communication—such as locating items in the home or using recorded prompts to support expression. This approach mirrors clinical reality, where generalisation of language skills to everyday activities remains a persistent challenge. Therapists reported that ORACIA helped maintain continuity between in-clinic and at-home practice, while patients valued the structured progression and clarity of tasks.

From Prototype to Pre-Commercial Development

The final prototype met the technical and usability requirements for early-stage medical-device development. However, after the project ended, the consortium faces the common commercialisation challenges for medical devices: business strategic priorities to ensure short-term operation, long formal clinical investigation roadmap, long regulatory roadmap. As a result, the consortium members are now exploring possibilities for the exploitation of the results including a dedicated spin-off to carry ORACIA through certification and into the market. Despite these hurdles, clinical partners continue to use the tool in small-scale pilots, and stakeholders across several countries have expressed interest.

Lessons for Future Digital Therapy Development

The coordinator emphasised two main lessons. First, strong clinical partnerships and continuous user involvement are indispensable for solutions that support people with communication impairments. Second, exploitation requires a committed commercial champion early on; without this, even highly promising tools risk losing momentum after funding ends. ORACIA demonstrates that clinically credible, user-centred solutions can emerge within AAL, but sustained investment is essential to bring them to market.



PROJECT INFO

ORACIA was an AAL project developing a digital rehabilitation tool for post-stroke aphasia. Partners in Portugal, Luxembourg, Spain and Switzerland created a medical-grade prototype enabling therapist-supervised and home-based training, now being prepared for further clinical validation and commercialisation.

www.aal-europe.eu/projects/oracia
www.ipn.pt/laboratorio/LAS/projecto/187
<https://oracia.las.ipn.pt>
<https://oracia.eu>

PREPARIO – Making Everyday Kitchen Tasks Safer and Easier for Older Adults

PREPARIO explored how to redesign microwave ovens so older adults can heat meals safely and confidently. By testing prototypes in real households and involving local care organisations, the project showed how small design changes can make a big difference in daily independence.



Understanding Why Microwaves Often Fail Older Users

Although microwaves are common, many older adults avoid using them because they find the controls confusing or fear making mistakes. PREPARIO set out to understand these barriers and develop a more intuitive microwave for ageing users. The municipality of Vila Nova de Cerveira and Santa Casa da Misericórdia de Lisboa served as end-user partners, bringing direct access to older residents and care organisations. For the municipality, joining the project was a natural step: supporting older adults is part of its daily mission, and PREPARIO aligned with the region's demographic challenges.

Testing Prototypes in Real Homes and Care Contexts

The municipality conducted two rounds of user trials with independent but ageing residents. These tests showed that even people who own a microwave rarely use it because they worry about temperature settings, time adjustments or simply doing something wrong. The prototype developed by the coordinator introduced simplified, automated heating options, reducing the need to manage multiple parameters. Participants welcomed the ease of use and felt reassured by a product that anticipated their limitations rather than requiring digital skills they often do not have. Care organisations participating in the trials confirmed the relevance of these adaptations.

Beyond Heating: Supporting Meal Distribution Services

In rural areas, many older adults rely on daily meal-delivery services. PREPARIO explored how an adapted microwave could support not just individuals but also the organisations delivering meals. The prototype included the possibility of connecting usage data to service providers, allowing them to see whether a delivered meal had been opened or heated. For isolated older adults, this created an additional layer of safety, giving social organisations insight into daily routines and potential risks. For the municipality, this was one of the project's most valuable findings, demonstrating how design and connectivity can support community-based care.

Challenges: Market Readiness and Partner Continuity

One project partner withdrew during the process, which limited technical progress and complicated the path toward commercialisation. While the municipality completed all planned activities, the coordinator – a small company – faced capacity challenges in developing a market-ready product. Although discussions with larger appliance manufacturers were initiated, they did not progress further. For the municipality, this highlighted a common issue in European projects: strong user engagement does not automatically translate into market uptake, especially when solutions depend on industrial partners and manufacturing capacity.

Lessons: Engage People Early and Make Technology Invisible

PREPARIO showed that projects succeed when citizens understand and value the topic. Older adults engaged readily once they realised the product could genuinely support their independence. The project also confirmed that technology for ageing users must require as little action as possible – no codes, no complex interfaces, no digital prerequisites. Municipalities and local organisations play a key role in making such projects meaningful and in reaching people who benefit most from innovation.

“European projects only work when they stay close to real people and offer technology that fits their daily lives.”



**Manuela Ferreira,
Município de Vila Nova de
Cerveira**



PROJECT INFO

PREPARIO was an AAL project exploring how to create user-friendly microwaves for older adults. Pilots in Portugal tested prototypes with independent seniors and care organisations, demonstrating the value of simplified controls and connected features for safer daily meal preparation.

www.aal-europe.eu/projects/prepario

RecoveryFun – Virtual Reality Rehabilitation for Complex Chronic Conditions

RecoveryFun developed a VR-based rehabilitation system that supports patients with chronic diseases and motor or cognitive impairments. Through international clinical testing and interdisciplinary collaboration, the project created engaging exercises, stress-monitoring features and a clinical dashboard that later shaped Tech4Care’s ongoing commercial development.



A Digital Therapy Concept Rooted in Real Clinical Needs

RecoveryFun set out to explore how virtual reality could improve rehabilitation for people living with chronic and neurodegenerative conditions. Tech4Care, acting as one of the technical partners, focused on creating immersive VR exercises paired with sensors to capture movement performance and stress indicators. The idea was to make therapy more motivating and precise while giving clinicians clearer insights. The project brought together partners from Italy, Switzerland, Belgium and Romania, including hospitals and research institutions that contributed their expertise and access to real patient environments.

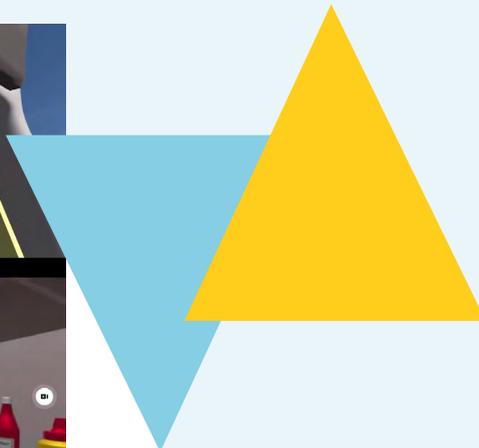
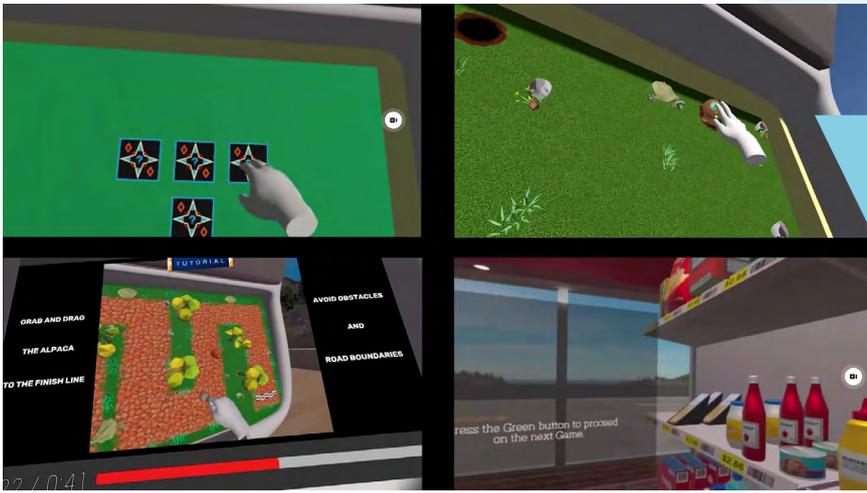
Building and Testing an Integrated VR Rehabilitation System

Tech4Care developed the VR software deployed on headsets and created the clinical web platform for therapists, allowing them to manage patients, review data and monitor progress. Other partners contributed sensors and movement-tracking components and ensured clinical relevance through extensive feedback loops. Crucially, the consortium tested the full system with patients in leading rehabilitation centres such as IRCCS INRCA in Italy and specialised clinics in Switzerland and Belgium. These pilots allowed continuous refinement of exercises, interaction modalities and data presentation, ensuring the prototype reflected practical therapeutic workflows.

From Prototype to Continued Development Beyond the Project

While the integrated system achieved strong results in clinical trials, market uptake of such a complex solution required more resources than a small startup could sustain alone. After the project ended, Tech4Care continued developing the components it owned, updating the VR software and expanding the exercise





“A prototype is just the beginning – turning rehabilitation technology into real impact requires strong partners, clear communication and sustained support.”



**Mauro Catena,
Tech4Care**

catalogue. The company is evaluating new clinical trials in Switzerland leveraging the possible contribution of a local insurance provider, to explore reimbursement pathways that help patients use the system at home. Several subcomponents are already registered as medical devices, while full system certification will require further evidence.

Key Learnings: Diversity of Practices and the Need for Customisation

Working with clinics across four countries provided Tech4Care with deep insight into different rehabilitation practices. Teams learned that patients require highly customisable exercises to reflect varying levels of

severity and different therapeutic goals. RecoveryFun also revealed the need for broader exercise libraries and stronger personalisation options, many of which now guide the company’s ongoing development.

Challenges and Outlook: Scaling Requires Visibility and Strong Partners

The project’s main challenge lay in the complexity of commercialisation. Launching an integrated VR rehabilitation system requires significant investment in marketing, communication and long-term follow-up – resources that small companies often lack. Tech4Care stresses the need for strong partners and early outreach beyond specialist circles to avoid losing momentum once funding ends. The company continues to refine the system, explore new fields such as autism therapy and build strategic alliances to bring VR rehabilitation into patients’ homes.



PROJECT INFO

RecoveryFun was an AAL project creating a VR-based rehabilitation system combining immersive exercises, sensors and a clinical dashboard. The consortium included partners from Italy, Switzerland, Belgium and Romania, with Tech4Care leading software development and continuing the system’s evolution after the project.

www.aal-europe.eu/projects/recoveryfun
www.tech4care.it

ReMember-Me – Supporting Early Detection and Prevention of Dementia Through Daily Engagement

Many older adults living with dementia are never formally diagnosed or do not realize they have the condition, which makes it harder for them to take steps to adapt or seek support. In the ReMember-Me project, a consortium of eight partners from six European countries developed a tablet-based cognitive evaluation and personalized training system supported by social robotics and wearable sensors to capture daily activity and sleep patterns. The technological solution focused on introducing an ecological and accessible way to support early detection and prevention of dementia.



Addressing Early Cognitive Decline Through Daily Engagement

ReMember-Me was created as a modular and practical system with its minimum viable product available in its entirety on tablets while also offering integration with robotic companion (Zora robots James) and smart wearables in its more advanced tiers. The final ReMember-Me system incorporates a fine-tuned multiparametric baseline assessment with seven digital scales evaluating cognition, mood, depression, socialization, physical activity, sleep, wellbeing, and motor status, alongside the ReMember-Me Cognitive Assessment Scale (ReMCAS), a fully digital, self-administered, and auto-scored tool. The system includes an inference-

based personalization module that tailors the training regime for older adults, recommendations for caregivers and family members, and result presentation for healthcare professionals based on detected vulnerabilities and strengths. The personalized training regime comprises 59 scientifically grounded activities, including seven serious games, physiotherapeutic home exercises, binaural beats, mindfulness and meditation, neurobics, virtual travel, ASMR content, and the ReMember-My Story socialization platform. For Ronny Broekx, who contributed as a development and data protection expert, the project aimed to make dementia support more appealing, intuitive and meaningful for both older adults and family members.



“Technology only works in dementia care when it fits real lives – simple, engaging and supported by families.”



**Ronny Broekx,
project manager**

Testing, Awareness and Ongoing Use Beyond the Project

ReMember-Me involved eight care organisations and research partners in Cyprus, Italy, Spain, Hungary, Belgium and Romania. Although COVID-19 delayed the start of fieldwork, a total of more than 530 participants were involved across co-design sessions, laboratory testing, and large-scale field trials, including older adults (both cognitively fit and with Mild Cognitive Impairment), informal caregivers, healthcare professionals, students, commercial stakeholders, and external experts.

What the Project Learned: Simplicity, Time and True User Needs

The testing revealed that the system was associated with benefits for older adults but also caregivers, not only in health and cognitive function but also in reducing stress and loneliness. The team learned that working with older adults requires rethinking assumptions. Many technological ideas are attractive in theory but do not translate into the realities of daily life. ReMember-Me confirmed that simple, engaging tools are more effective than complex devices, and that family involvement can be a powerful enabler.

Outlook: Toward Commercialisation Through New Partnerships

The ReMember-Me project achieved significant recognition, earning the Gold Award in the Cyprus Responsible Business Awards 2021 in the Health & Technology for the Common Good category. In 2022, it also secured the Bronze award in the same category due to the integration of components into Materia Group’s innovative eCare service. Furthermore, the project delivered significant academic work and received significant TV coverage in Italy. The next step is to secure additional funding to refine and commercialise the system. A key driver of this momentum is Materia Group in Cyprus, and ESKILARA S. Coop. TXIKIA, based in Bilbao, a Spanish incubator, has expressed interest in further deployment. Partnerships in Belgium are also exploring how ReMember-Me could be integrated into local care networks.



PROJECT INFO

ReMember-Me was an AAL project creating a tablet-based cognitive training and monitoring system supported by wearable sensors. Piloted across Cyprus, Spain, Belgium and Romania, it focuses on early detection and user engagement, with ongoing use and further development led by partners in Cyprus and Belgium.

www.aal-europe.eu/projects/remember-me

T4ME2 – Redesigning the Toilet to Support Mobility, Safety and Independence

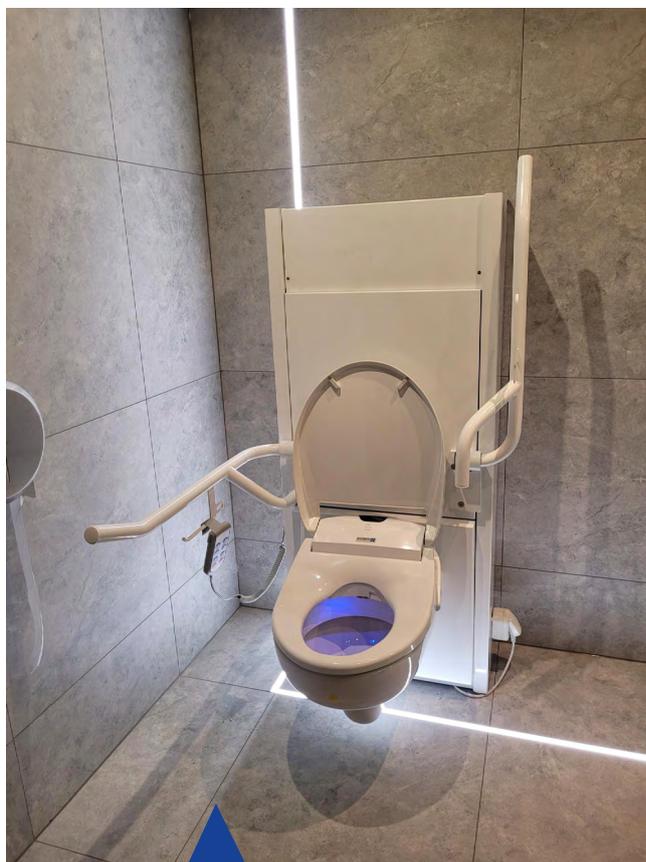
T4ME2 developed a new concept for semi-public toilets that help older adults and people with mobility limitations stand up more safely and independently. Through co-design and European field trials, the project created a modular prototype combining mechanical support, intelligent control and safety monitoring.

Aiming to Transform a Neglected Space in AAL Innovation

Toilets remain one of the most challenging yet least explored environments in ageing and care technology. Many older adults limit social participation because they fear unsafe or inaccessible restrooms outside their homes. T4ME2 tackled this directly by designing a supportive toilet for semi-public settings—restaurants, cultural centres, day-care facilities—where people most often need assistance. Coordinated by TU Wien, the project gathered 10 partners from Austria, Hungary, Poland, Romania, Belgium and the Netherlands, integrating engineering expertise, user knowledge and safety technologies.

Co-Designing a Toilet That Adapts to the User

The prototype combined mechanical lifting and tilting functions to help users sit and stand with less effort. Interfaces were redesigned through participatory workshops, resulting in improved remote controls and alternative interaction modes. Speech control, initially surprising in this context, proved valuable for users who need both hands to stabilise themselves. RFID-based personalisation allowed the toilet to automatically adjust height and tilt when a user entered the room. These variations were tested in care homes and community spaces across Europe.



“User involvement takes effort, but it is the only way to create solutions that truly enable independence and dignity.”



**Paul Panek, project coordinator,
Vienna University of Technology**

Adding Safety Monitoring Where It Matters Most

A key innovation came from integrating a mature fall- and movement-detection technology from the Viennese partner, originally developed for living rooms. T4ME2 adapted it for the confined space and angles of toilet rooms, enabling discreet monitoring and rapid help in emergencies. This component is already on the market in standard rooms and demonstrated strong potential as part of a future “smart toilet” ecosystem.

Real-World Trials Confirmed a Strong Need

Across trials, participants reported that supportive toilets would increase their confidence to leave home and participate in community life. For many, the biggest perceived barrier to public outings is the fear of not being able to stand up safely in unfamiliar restrooms. T4ME2 showed that mechanical support combined with monitoring can meaningfully reduce this fear. The project also tested feasibility within social welfare organisations, highlighting broader benefits for care systems through improved independence and reduced assistance needs.

From Prototype to Modular Commercial Paths

Although the full system is complex and costly to commercialise at once, partners continued development on selected components. The Hungarian manufacturer is advancing the motorised toilet base, while the Austrian safety technology partner is expanding monitoring solutions for bathroom use. The modular approach allows companies to bring components to market gradually, reflecting the high investment required to turn prototypes into certified products. For TU Wien, the project further demonstrated the importance of early user involvement and the value of AAL funding in bringing ambitious ideas to life.



PROJECT INFO

T4ME2 was an AAL project developing a supportive, height- and tilt-adjustable toilet with intelligent interaction and safety monitoring. Piloted in Austria, Hungary, Poland, Romania, Belgium and The Netherlands, the project produced a modular prototype, with several components moving toward commercialisation.

www.aal-europe.eu/projects/t4me2
<http://toilet4me-project.eu/t4me2.html>

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