

SHAPES

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WELCOME

While the European population is ageing, life expectancy is increasing. European Union citizens can remain productive and active far beyond the standard age of retirement. Sustaining longer and healthy lives requires solutions that prevent or minimise risks of injury, frailty, and long-term chronic diseases.

through People Engaging in
Supportive Systems is an Innovation
Action funded by the European Union's
Horizon 2020 programme involving a
total of 14 European countries. It aims
at creating an integrated technological
platform that will bring together a
wide range of digital solutions, focused
on improving the health, wellbeing,
and independence of people as they
get older. This interoperable platform
will offer a network of large-scale
interconnected digital products and

WELCOME

services, that will empower older adults, families and caregivers, to solve real and meaningful problems. These solutions are intended for older adults facing a temporary or permanent reduction of functionality and capabilities, whether physical or psychological, but also to help those who are healthy to maintain their health and well-being for as long as possible.

SHAPES will foster European industry and policymakers to find a means to successfully face the challenges of an aging population. In addition, it will push towards the development of value-based business models to open and scale-up the market for innovative digital health and care solutions and services, supporting and extending healthy and independent living. The programme will also impact on the long-term sustainability of health and care systems in Europe, in which current 25% of the population is represented by older people, according to the United Nations (UN).

The project is a collaboration between 36 organisations, led by the ALL (Assisting Living & Learning) Institute, University of Maynooth, Ireland. The project will span 48 months (from November 2019 to October 2023)

and will involve a range of activities, from creating the digital platform itself, to the development and enhancement of 15 technological and social solutions aimed at supporting older people. These solutions will be tested by more than 2,000 older adults involved in SHAPES, to ensure that they are meaningful and suitable for users from different countries and cultures. SHAPES will examine and analyse consenting participants' health, environmental and lifestyle experiences, in order to identify their needs and provide personalized solutions, whilst also upholding data protection requirements and ensuring the user's trust in the overall approach.

SHAPES will also involve hundreds of professionals from different areas of knowledge and practice, including health and social care, government, academia and industry. With an investment of almost 21 million Euro, SHAPES is a broad initiative to encompass the needs and expectations of older adults, a population group that, according to the United Nations, grows 3% on average per year.

Overall project value: EUR 20,944,318.75 of which EUR 18,732,468.25 is direct EU contribution

WELCOME



EDITORIAL

The SHAPES Project began in November 2019 with the aim of understanding the context of the lives of older individuals; building more accessible and age-friendly physical spaces and social pathways; supporting people to continue to live in their own homes and communities; and building, piloting and deploying a large-scale, EU-standardised open platform, capable of integrating a range of digital and technological solutions.

Partners in SHAPES have been incredibly busy over the first 6 months of the project. Following the Kick Off meeting held at Maynooth University in November 2019, and despite the challenge of working under the restrictions of COVID-19, the project has continued to achieve key milestones. The submission of Deliverable 2.5, SHAPES Personas and Use Cases: and of Deliverable 6.1. SHAPES Pan-European Pilot Campaign Plan, marks the Completion of the project's Concept Development Cycle. This important achievement was also marked by the first SHAPES Dialogue Workshop organised by Olomouc University. Although, unfortunately, we could not meet in person, SHAPES created one of the first virtual consultative workshops of its kind, which was executed masterfully by all involved across large number of European countries.

In the first 6 months we have also established the SHAPES Ethical Advisory Board (D8.1), defined the Baseline for Project Ethics (D8.2), submitted the SHAPES Data Management Plan (D8.13), and established the SHAPES Quality Plan (D1.2).

Like all of our colleagues around the world, SHAPES has however been impacted by COVID-19. In response to this the coordinating team arranged a special Project Management Board Meeting, to develop a mitigation plan for work packages that might be affected, in order to support everyone in continuing their work under these new and challenging times. SHAPES partners have developed innovative new methodologies, in order to be able to continue working under the current restrictions, and still produce scientifically robust results.

The SHAPES Coordinators are incredibly grateful to all of our project partners for their commitment, tenacity and flexibility during these challenging first few months of the project. As a team, as a consortium, we have done well. COVID-19 has also taught us that solutions, such as SHAPES, are needed now more than ever and will have a very strong role in supporting older people to live good lives at home and in their communities, in the future. SHAPES also illustrates the opportunities to manage future global health challenges, through the carefully designed interplay of digital and human ecosystems supporting smart and healthy ageing.

Malcolm (Mac) MacLachlan
SHAPES Project Coordinator

SHAPES ACTIVITIES

SHAPES 1st Dialogue Workshop

On the 12th of May, the 1st Dialogue Workshop took place online, gathering almost 150 participants, namely SHAPES partners, academics, students, and NGOs. This online one-day event aimed to unveil and discuss the project's preliminary findings from 4 of the 36 SHAPES partners over the past 6 months.

The workshop was organized into two complimenting sessions;

1. Morning session (8h30 - 11h25):

Presented via YouTube streaming, the morning session was dedicated to present the following topics:

- The SHAPES projects and its key messages by Malcolm (Mac) MacLachlan;
- Ethics requirements for digital solutions by LAUREA;
- Use cases, personas and scenarios by Palacký University;
- Foresight exercise: thinking about future technologies for the users of the future by Fraunhofer INT;
- Co-creation of think tank for European Integrated Care by Carus Consilium Sachsen GmbH.

2. Afternoon session (11:55 – 17:30):

Supported by Zoom platform, in the afternoon session the last 4 topics were discussed during interactive workshops in smaller groups.



The workshop was organised by Palacký University, with the support of AGE Platform Europe.

Find more about the outputs of each workshop in the **SHAPES Events** section.

Additional information

SHAPES PILOT THEMES

SHAPES Pilot Theme 6 preparation

Pilot Theme 6 - "Physical
Rehabilitation at Home": this pilot
theme aims to provide physical
rehabilitation services in a supervised
or semi-supervised home to older
individuals who need exercise
routines during recovery periods after
accidents, surgeries strokes or facing
musculoskeletal diseases. In addition,
the pilot theme seeks to optimize the
rehabilitation process and reduce costs,
and to evaluate the rehabilitation tool
in terms of health benefits, usability
and user engagement.

The Universidad de Castilla-La Mancha (UCLM) is currently preparing Pilot Theme 6 of the SHAPES project. On the 31st of January a meeting was held with members of the UCLM and the El Salvador Nursing home. The purpose of the meeting was to present UCLMs assistive technology to EL Salvador's specialists and to test and get feedback from the end-users'. This approach follows a co-design, involving the end-users from the very beginning of the project, validating early prototypes.





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SHAPES Pilot Theme 2 and 5 presentation

Pilot Theme 2 - "Improving In-Home and Community-based Care Services": this pilot theme is focused on providing a suitable home environment for those who need care through a specialized nursing service. It creates a safe and caring environment aiming to promote and maintain the autonomy of individuals at home, without neglecting the need for medical and nursing care. The pilot theme is also aimed at strengthening informal care and expanding outpatient care, increasing the involvement of the elderly and their families in the environment of care and therapies, and reducing the municipal rescue service and hospitalization rates,

mainly at night and on weekends.

Pilot Theme 5 - "Caring for Older Individuals with Neurodegenerative **Diseases**": this pilot theme addresses the provision of care to older individuals facing neurodegenerative diseases, with the aim of evaluating effective methods and solutions for monitoring and evaluating the health condition of individuals through the different stages of the disease. The pilot theme also seeks to demonstrate digital solutions to improve safety and increase the quality of care, and to demonstrate a systematic approach to ensure the highest level of quality control, automated monitoring and data governance in care for the older individuals who face neurodegenerative diseases.

Within the Pan-European Pilot
Campaign of the SHAPES project, the
Integrated Healthcare and Social Health
System Long Lasting Memories Care
(LLM Care) as well as the Virtual Patient
Scenarios (VPS) – Mobile Virtual Patients
(MVP) will be deployed by varied
pilot sites across the EU. Both digital
solutions are currently provided and
evaluated by the Laboratory of Medical
Physics of the School of Medicine of the
Aristotle University of Thessaloniki with
interventions addressed to older adults
and caregivers respectively.

that combines state-of-the art mental exercise with physical activity in an advanced ambient assisted living providing effective protection against cognitive decline and, thereby, actively improving the quality of life. It provides a comprehensive solution that has a direct impact on improving the quality of life of older adults.



Figure: LLM Care - Physical training program



Figure: LLM Care - Cognitive training program

Virtual Patient Scenarios (VPS) and Mobile Virtual Patients (MVP) are

problem-based learning activities aiming at supporting caregivers' skills with regard to the delivery of care to older adults. They are considered effective learning tools that facilitate the transfer of real-life challenges in engaging scenarios which mimic the tensions, distractions and uneven issues that make real-life decisions more difficult.

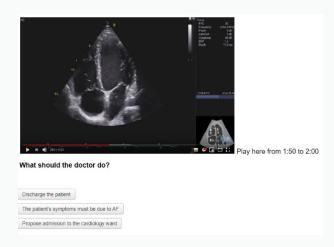


Figure: Virtual Patient Scenarios' interface



Figure: Mobile Virtual Patients' interface

SHAPES DIGITAL SOLUTIONS

KOMPAÏ robotics

KOMPAÏ robots which will be utilised in the SHAPES project, are currently being evaluated in some Nursing homes in Basque Country. What is he doing? KOMPAÏ Makes rounds in the living room, to calm residents, with music for example or to make announcements (menu of the day, weather, ...) helping people to walk with the mobility assistance function, or proposing individual or collective entertainment.





More information

Watch our videos

Games for the Blind

SciFY's project 'Games for the Blind', which has been awarded by <u>Zero</u>
<u>Project</u> as one of the best practices in the world for innovation, impact and contribution to disability support, is one of the digital solutions that will be used in SHAPES. "Our games for blind and sighted people will be adapted for the elderly community "said Vassilis Giannakopoulos during an <u>award in</u> <u>Vienna</u>, making special reference to how the games will be used in SHAPES.

SHAPES NETWORKING

Regional Forum for Europe on "Accessible Europe: ICT 4 ALL"

Mark Wheatley, Executive Director of European Union of the Deaf (EUD),

gave a presentation about SHAPES
Project during the "Accessible Europe:
ICT for ALL - ICT Accessibility: The
Key to Inclusive Communications"
conference at St Julian's, Malta during
December 2019. The conference was
organised jointly by ITU and European
Commission within the Framework of
the ITU Regional Initiative for Europe
on Accessibility, Affordability, and
Skills Development for All to Ensure
Digital Inclusion and Sustainable
Development.



SHAPES official launch at the Northern Health and Social Care Trust

The team at the Northern Health and Social Care Trust (NHSCT) officially launched the SHAPES project in Northern Ireland in January 2020. All have been actively engaged in participating and promoting the recent 1st Dialogue Workshop. We look forward to continued engagement and progressing towards the pan-EU pilot scheme.



Photograph: L-R Professor Michael Scott, Dr Claire Scullin, Dr Glenda Fleming

SHAPES presentation during the webinar "WeCareMore"

SHAPES project was presented during the webinar "WeCareMore: Ideas and Projects for Health and Social Care services 2.0", organized by the AIAS WeCareMore Team in May 2020. Representatives of Local Health care and Social Care services, Educational services and local administrators attended the webinar and were made aware of the aims and future activities foreseen by the project.

SHAPES and social media

SHAPES promotion and communication plan is a cross-cutting task within work package 10, that works on increasing awareness and promoting the project

within the general public. Since November 2019, SHAPES has shared multiple posts related to project results, events and partners' activities on the projects <u>Facebook</u>, <u>Twitter</u>, <u>Linkedin</u> and <u>Instagram</u> profiles.

During phase one of the communication plan (from November 2019 to October 2020), the consortium established that the minimum successful metrics of SHAPES would be reflected in 30 posts and 30 followers on Facebook, 100 interactions and 30 followers on Twitter, 30 posts and 50 LinkedIn connections, and 30 posts and 30 followers on Instagram.

It is with great pleasure and a sense of fulfilment that, after six months, from the beginning of the project, we can confirm we already have 43 posts and 203 followers on Facebook, 75 interactions and 288 followers on Twitter, 18 posts and 65 LinkedIn connections, and 12 posts and 45 followers on Instagram.

Keep up with SHAPES by spreading our Newsletter and following us on social media.

SHAPES Kick Off meeting

11th, 12th and 13th November 2019

On the 11th, 12th and 13th of November 2019, the SHAPES kick-off meeting was held at the University of Maynooth (Ireland). During the meeting, each partner had the opportunity to present themselves and their contributions to the SHAPES project.



Photography: Keith Arkins



Photography: Keith Arkins

SHAPES 1st Dialogue Workshop

12th May 2020

The 1st Dialogue Workshop was a one-day event. The aim was to gather SHAPES partners, academics, students, NGOs, and many others to evaluate the work of 4 of the SHAPES partners over the initial six months of the project.

The Workshop unveiled the project's preliminary findings and in particular:

- The SHAPES projects and its key messages
- Ethics requirements for digital solutions
- Co-creation of a think tank for European Integrated Care
- Foresight exercise: thinking about future technologies for the users of the future
- Use cases, personas and scenarios

The morning session was streamed via YouTube and included presentations from the above-mentioned topics. In the afternoon, the 4 selected topics were discussed during interactive workshops. Participants were divided into 4 groups, so as to give everyone an opportunity to discuss each topic.

The morning session was attended by almost 150 participants. The afternoon workshops were attended by approximately 80 participants.

Ethical requirements Workshop by LAUREA

The workshop was presented by Sari Sarlio-Siintola and Nina Alapuranen and was focused on SHAPES legal, ethics, privacy and fundamental rights protection, namely ethical requirements concerning people's fundamental rights and human capabilities, privacy and data protection, as well as ethics of the artificial intelligence in the SHAPES context. These requirements have explicit impact on both SHAPES technology, user processes, SHAPES businesses, and governance models and the entire SHAPES ecosystem.

Purpose of our workshop



Challenges wi	th the terminology and their rights and wellbeing	Maximize the level of Fundamental Rights of older persons and of care and case can promote. Ensure that your service does not violate and stakeholders (e.g. non-discrimination of the stakeholders) (e.g. no	nd
Ethics of care	and biomedical ethics	Maximize the level of Fundamental Rights of older persons and of care	. $lacktree$
Supported de	cision-making	case can promote.	
Capabilities ap	pproach, social justice and well-being	Ensure that your service does not violate SHAPES stakeholders (e.g. non-discrimination and the SHAPES)	ongatory
Sustainable de	evelopment Corporate Social Responsibility	Be average regarding regar	Obligatory
Ethics of artifi	cial intelligence	artunities	Obligatory
Blueprint for (digital transformation	ppor a them.	Obligatory
Privacy and da	ata protection allenges and has	ed On revel of human capabilities of older persons and care workers which your service & use case	Essential
Cyber security	and resilibitical chamements a	Ensure that your service is not detrimental to any human capabilities of older people and/or other stakeholders	Obligatory
Digital ide!	itify ethical require	Develop solutions which offer users different options to act according their own choice and practical	Essential
10 10°	ine etting the elderly care work	opportunities for them.	
	digital intelligence digital transformation at a protection and challenges and of the ethical requirements base thical requirements base ethical requirements base of the elderly care work are of labor in digital service providing caregivers across Europe	Note that the participation of older people in the development of the SHAPES ecosystem can in itself be seen as a service that supports a person's Human Capabilities. (e.g. capability for practical reason and control over own environment)	Important

 $This project has received funding from the \ European \ Union's \ Horizon \ 2020 \ research \ and \ innovation \ programme \ under \ grant \ agreement \ No \ 857159$

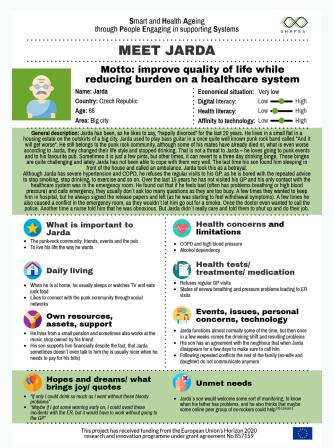
During the workshop, LAUREA collected feedback on ethical challenges and opportunities of the SHAPES ecosystem of digital services. Participants were asked about the importance of ethical requirements and informed about the need to ensure those requirements alongside end-users' requirements. Participants also expressed the need to ensure ethical requirements to avoid risk management issues and to promote innovation for end users, different organizations and society. The participants feedback will help LAUREA to define ethical requirements for the SHAPES solutions and to assess its conformance.

Personas Workshop by UP

The workshop was presented by Eva Dubovská and was focused on the presentation of the personas that were created by UP team together with other SHAPES partners. In total over 60 participants attended the workshops throughout the afternoon.

After introductions were made to the personas and the personas methodology the participants worked in groups to brainstorm on individual persona's needs and possible solutions. Ideas were than presented to others and discussed:

- Selected solutions for personas that were discussed;
- Support peer groups and networks for older adults with multiple chronic conditions;
- Create networks for matching volunteers with isolated older adults based on interests, favourite;
- Activities and places;
- Help older adults with musculoskeletal disorders to get easily accessible online physiotherapy and training;
- Support peer groups for informal caregivers and create a new persona solely describing informal caregivers;
- Think of more technical solutions that could to some extent substitute interpreterguides for deafblind older adults.



Foresight Workshop by Fraunhofer INT

The workshop was presented by Diana Freudendahl and Simone Schmitz that carried out the Foresight Exercises "Thinking about future technologies for the users of the future "with around 70 participants. Information was provided on how future influencing factors and technologies for SHAPES could be identified and the following key questions were discussed with the participants:

- Gaps: What are the current needs of older persons, that are not yet properly addressed?
- **Influences:** What are critical current and possible future influences concerning older persons?
- **Possible direct solutions:** Are there any future technologies which could help older persons in smart and healthy aging and in the satisfaction of needs or the mitigation of negative influences?
- **Possible transferred solutions:** Are there any technologies in other areas (e. g. from industries such as automotive, space, production) which could be adapted to be used in the future for older persons?

The identification of gaps and influences can provide hints for the relevant trends and innovations as well as of changing environments for current and future SHAPES solutions. The following picture shows some results of the Foresight Workshop.



Some results of the Foresight Workshop



We ask workshop participants about: What are current needs of elderly, that are not yet properly addressed and what are critical influences? Additionally we wanted to know of the participants what could be useful future technologies filling the gaps and considering the influences.

Gaps:

- Deaf blind people are excluded (6%), solutions should be accessible to all
- Most existing technologies, unless specifically targeted at elderly people, are NOT designed to be accessible.
- Most technologies fail in helping the people and trust in technology is missing
- Co-design and collaboration methods in order to find problems and needs
- Social isolation how can elderly be integrated
- Accumulated conditions give extra complexity

<u>Influences</u>

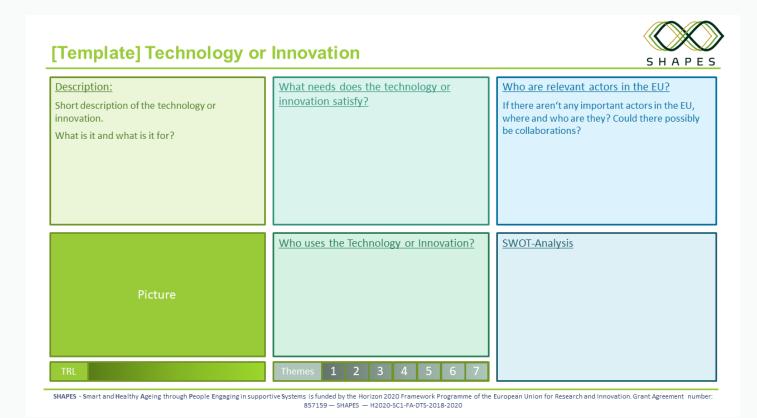
- · Digital divide
- Economic viability
- Investments in technology vs. gain for the people
- Technology needs to be developed with elderly/stakeholders
- It is important to support digital education for doctors, nurses, carers at the same time
- Technologies are there but not known and misinformation on new technologies
- User-centered vs. technology centered design
- Data protection issues

Technologies:

- · Virtual reality (VR)
- Tactile gloves
- Smart insulin pens
- Sensors: EEG Devices (2-4 electrode measurements)
- Therapies: Light therapy, NIR stimulation
- Storing and Transfer of Information (data protection issues) – calculation on the device itself – e. g. with Blockchain
- Navigation systems to monitor movements of patients (interior/exterior) (with AI)
- Gamification (Rehabilitation for kids adaptable to older people)

SHAPES - Smart and Healthy Ageing through People Engaging in supportive Systems is funded by the Horizon 2020 Framework Programme of the European Union for Research and Innovation. Grant Agreement number: 857159 — SHAPES — H2020-SC1-FA-DTS-2018-2020

The gathered information will be used to identify additional possible technological solutions concerning the identified gaps by the participants. Some of the mentioned influences and technologies will be put together as Influencing Factor and Technology cards during the course of the project. Such Technology and Influencing Factor Cards could look like this:



These cards should then provide information and inspiration to other work packages in SHAPES. Additionally, these cards could be used as information source for people who are not directly involved in SHAPES, but are interested in future technologies concerning smart and healthy ageing.

Think Tank Workshop by CCS

The workshop was presented by CCS managing director Dr. Olaf Mueller and focused on the co-creation of SHAPES pilot 1 - smart living environment for healthy ageing at home. Together with experts from the digital healthcare ecosystem, CCS looked for insights into the needs of older adults with the aim of identifying solutions that support older adults in living a sustainable and independent life.

The workshop was structured into four virtual sessions that dealt with: (1) the needs of older people, (2) potential digital solutions, (3) how to sustainably integrate these solutions, and (4) key challenges for a successful implementation. The participants feedback and expert knowledge will help CCS to establish SHAPES pilot 1 in a professionally underpinned and sustainable way. As a next step, CCS will verify workshop results in interviews with older adults in Saxony, Germany.

Chosen needs and solutions



Session 2

NEEDS

- 1 Smartphone Apps2 Solutions from the private sector with connection to hospitals
- 3 Alexa-ish software for individualized learning
- 4 Credible info in real time, tele consultation, smart home safeguarding, physical exercise apps, chatrooms, video chat for community groups, online banking, tech coordinating volunteer 5 Multiplayer gamification e.g. quiz on individualized topics with chat / video, interactive, increasing complexity

SOLUTIONS

- 6 Cartoons
- 7- Haptic feedback on wearables, e.g. fall prevention; text to audio translation
- 8 Simple to use apps, intuitive UX, co-design
- 9 SMS / MMS service
- 10 Platform for info exchange, e- and physical training
- 11- Online market place, online community care
- 12 App to manage care from both sides

- 1 Being heard / involvement in decision making
- 2 Find appropriate health and care professionals
- 3 Solutions tailored to mental and physical health
- 4 Pandemic born issues
- 5 Purpose for the individual
- 6 "Language" barrier
- 7 Info push and visibility
- 8 Min. technological burden
- 9 Up-to-date solutions w/o internet access
- 10 eLiteracy
- 11 Access the community they want
- 12 Caring responsibilities

ISO Ageing societies workshop

27th May 2020

The Agile Ageing Alliance (AAA) is supporting the International Organization for Standardization's efforts to define the next international standard (ISO) within the field of Ageing Societies. To deepen the understanding of what the framework should focus on, AAA organized the ISO Ageing societies workshop, bringing together 40 cross-sector experts and thought leaders, in a united effort to flesh out a new ISO standards framework.

The new ISO standards framework aims to accelerate construction of a new breed of age-friendly housing in 'smart' socially supportive multigenerational neighbourhoods, employing innovative technologies, business and service models, to improve health and wellbeing and reduce the financial burden on Citizens and States.

ISO Standards embody the principles of global openness and transparency, consensus and technical coherence, essential ingredients for building sustainable markets. AAA aims to qualify need, and evolve the proposition through consultation across seven broad categories: industry and commerce; government; labour; academic and research bodies; non-governmental organisations, together with end-users, older adults in particular.

More information

Read our article

SHAPES RESEARCH

Published

Rajamäki, J. (2020). SHAPES Cyber Secure HealthCare Platform in Digital Environments. WSEAS Transactions on Communications, 19, 18–25. https://doi.org/10.37394/23204.2020.19.3

In press

Rajamäki, J., & Hummelholm, A. (in press). SHAPES Secure Cloud Platform for HealthCare Solutions and Services. 19th European Conference on Cyber Warfare and Security ECCWS 2020.

UPCOMING EVENTS

SHAPES 2ND DIALOGUE WORKSHOP

October 2020

The 2nd Dialogue Workshop will be held in October 2020 and will be dedicated to the "Integrated care" topic. Learn more about this event and follow our promotional activities in SHAPES social media.



PROJECT DATA

PROGRAMME: H2020-EU.3.1.4.1. – Active ageing, independent and assisted living and H2020-EU.2.1.1.3. – Future Internet: Software, hardware, infrastructures, Technologies and services.

TYPE OF ACTION: Innovation Action

DURATION: 48 months (1 nov 2019 – 31 oct 2023)

PROJECT BUDGET: € 20944318,75

CONSORTIUM: 36 partners from 14

European countries

COORDINATOR: Maynooth University

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