

Brussels, 24 March 2020

COST 039/20

DECISION

Subject: **Memorandum of Understanding for the implementation of the COST Action “International Interdisciplinary Network on Smart Healthy Age-friendly Environments” (NET4AGE-FRIENDLY) CA19136**

The COST Member Countries and/or the COST Cooperating State will find attached the Memorandum of Understanding for the COST Action International Interdisciplinary Network on Smart Healthy Age-friendly Environments approved by the Committee of Senior Officials through written procedure on 24 March 2020.



MEMORANDUM OF UNDERSTANDING

For the implementation of a COST Action designated as

COST Action CA19136
INTERNATIONAL INTERDISCIPLINARY NETWORK ON SMART HEALTHY AGE-FRIENDLY
ENVIRONMENTS (NET4AGE-FRIENDLY)

The COST Member Countries and/or the COST Cooperating State, accepting the present Memorandum of Understanding (MoU) wish to undertake joint activities of mutual interest and declare their common intention to participate in the COST Action (the Action), referred to above and described in the Technical Annex of this MoU.

The Action will be carried out in accordance with the set of COST Implementation Rules approved by the Committee of Senior Officials (CSO), or any new document amending or replacing them:

- a. "Rules for Participation in and Implementation of COST Activities" (COST 132/14 REV2);
- b. "COST Action Proposal Submission, Evaluation, Selection and Approval" (COST 133/14 REV);
- c. "COST Action Management, Monitoring and Final Assessment" (COST 134/14 REV2);
- d. "COST International Cooperation and Specific Organisations Participation" (COST 135/14 REV).

The main aim and objective of the Action is to develop an international ecosystem based on a network of researchers and stakeholders that enables the practice and deployment of Smart Healthy Age-Friendly Environments (SHAFE). The primary purpose is to reach every single COST country for spreading awareness and developing the SHAFE concept in rural and urban areas. This will be achieved through the specific objectives detailed in the Technical Annex.

The economic dimension of the activities carried out under the Action has been estimated, on the basis of information available during the planning of the Action, at EUR 156 million in 2019.

The MoU will enter into force once at least seven (7) COST Member Countries and/or COST Cooperating State have accepted it, and the corresponding Management Committee Members have been appointed, as described in the CSO Decision COST 134/14 REV2.

The COST Action will start from the date of the first Management Committee meeting and shall be implemented for a period of four (4) years, unless an extension is approved by the CSO following the procedure described in the CSO Decision COST 134/14 REV2.

OVERVIEW

Summary

To promote social inclusion, independent living and active and healthy ageing in society, the NET4AGE-FRIENDLY COST Action will establish an international and interdisciplinary network of researchers and stakeholders from all sectors. Its aim is to foster awareness, and to support the creation and implementation of smart, healthy indoor and outdoor environments for present and future generations. NET4AGE-FRIENDLY further aims to overcome fragmentation and critical gaps at both conceptual and pragmatic innovation level on responsive, age-friendly and sustainable environments to address European research and policy challenges.

The main approach of NET4AGE-FRIENDLY is the establishment of local or regional ecosystems in each COST country involved, to work on health and well-being in an age-friendly digital world. The ecosystems will consist of citizens, public authorities, businesses/NGOs and researchers. They will be supported by four thematic Working Groups (User-centred inclusive design in age-friendly environments and communities; Integrated health and well-being pathways; Digital solutions and large-scale sustainable implementation; Policy development, funding forecast and cost-benefit evaluations). The outcomes of the thematic Working Groups will be integrated by a dedicated Working Group to create a synergised output as a Reference Framework.

NET4AGE-FRIENDLY will be used as a connector for involving and hosting regular themed sessions with local and regional stakeholders and users' representatives from various countries and backgrounds, as well as for fostering the knowledge creation and sharing among researchers. Particular attention will be devoted to promoting the involvement of Early Career Investigators, entrepreneurs and participants from COST Inclusiveness Target Countries.

<p>Areas of Expertise Relevant for the Action</p> <ul style="list-style-type: none"> ● Health Sciences: Public and environmental health ● Computer and Information Sciences: Artificial intelligence, intelligent systems, multi agent systems ● Environmental engineering: Environmental and geological engineering 	<p>Keywords</p> <ul style="list-style-type: none"> ● smart ● health ● age-friendly ● environments ● wellbeing
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Specific Objectives

To achieve the main objective described in this MoU, the following specific objectives shall be accomplished:

Research Coordination

- RCO1: To synthesise and improve existing knowledge from local, regional, national and international settings, disciplinary disparate dialogues in order to share a coherent scientific overview and dialogue for the design of Smart Healthy Age-Friendly Environments (SHAFE) and integrated care pathways.
- RCO2: To critically investigate the creation of innovative solutions of digital health that promote success and break down barriers, ensuring climate neutral and sustainable development and broad implementation of SHAFE.
- RCO3: To assess the impacts of SHAFE across the life course within economic, social service, civil rights, political, environmental, and social spatial domains.
- RC04: To envision a user-friendly, inclusive conceptual framework for SHAFE for a practical application in understanding the benefit of ICT for age-friendly design within cities, rural communities, neighbourhoods, buildings at European level.
- RCO5: To ensure innovative, flexible, implementable, policy and practice exploitation through international dissemination, networking and ecosystem strengthening across disciplines all over Europe

and beyond.

Capacity Building

- CBO1: To establish an innovative, transnational and participatory network involving researchers, practitioners, policy stakeholders and citizens, to improve interdisciplinary participation regardless of age and gender, in the knowledge sharing and networking activities for developing SHAFE.
- CBO2: To foster international cooperation between researchers from COST Countries, especially ITC, and researchers from NNCs and IPCs, by bringing together different disciplines to enable breakthrough developments in the field of climate-neutral built and social environment, healthcare and well-being and ICT.
- CBO3: To promote knowledge exchange and to foster a cross-European interdisciplinary research capacity, enhancing ECI development, by actively ensuring a gender balance procedure across participants, including each Action member to advise on the implementation of SHAFE at local, regional or national level and in urban, rural and remote areas.
- CBO4: To improve the cooperation and co-creation with cross-sectors stakeholders, such as citizens' organisations, companies, care providers and public authorities for driving a collaborative cross-European programme that cements the international participation and leadership of ITCs in the field of age-friendly design.
- CBO5: To introduce and educate students, ECIs, entrepreneurs and other interested parties, including a citizen-oriented awareness approach, by implementing the understanding and importance of future developments of SHAFE for a sustainable European society.

TECHNICAL ANNEX

1 S&T EXCELLENCE

1.1 SOUNDNESS OF THE CHALLENGE

1.1.1 DESCRIPTION OF THE STATE-OF-THE-ART

Low birth rates and higher life expectancy are transforming the shape of Europe's age pyramid and Europe as a whole, with consequences for daily life for all Europeans. Very likely, the most significant change will be the transition towards a much older population structure, a development which already is well perceived in our society.

The demographic old-age dependency ratio (people aged 65+ in relation to those aged 15-64) is predicted to increase significantly in the EU in the coming decades, from 25% in 2010, up to nearly 52% by 2070 [1]. This implies that the EU would have to shift from 4 working-age people for every person aged over 65 years in 2010 to around 2 working-age persons during this time [2]. Added to this, the proportion of citizens in their working age is shrinking while the relative number of those retired is expanding [3]. This will, in turn, lead to an increased burden on those of working age to provide for the health and social expenditure required by the ageing population for a range of related services [4].

The demographic change will have considerable consequences for welfare systems and public finances. Based on the current structure, it is estimated that the age-related public expenditure (pensions, health, and long-term care) will increase on an average by 4.1% of GDP between 2010 and 2060, from 25% to 29% with particular emphasis on countries such as Italy, Portugal and Greece. Expenditure on pensions is expected to increase from 11.3% to nearly 13% of GDP by 2060 [5]. Healthcare services as well as the welfare system represent a high and increasing share of government expenditure. It is an integral part of debates on the long-term sustainability of public finances across Europe.

The figures mentioned above purport the growing number of older people as a big and costly societal challenge. The concerned older people themselves sometimes face challenges of disrespect and isolation and this reflects a huge societal impact. For example, in 2017, the World Health Organization (WHO) reported that 1 out of 6 people over 60 years-old has been financial, psychological or physical abused [6]. According to European and American research it is not uncommon for about 25% of people over 65 years-old to feel lonely, of which 1 out of 5 feels extremely isolated [7, 8]. Further negative aspects that might develop forms of exclusion are age-discrimination in the labour market, ageism in sectors such as media, culture, and advertisement, lack of communication and socialisation and lack of education and awareness in using new technologies and products [9, 10]. These challenges affect the self-esteem of older people and cause issues such as feeling useless, losing their meaning of life and less participation in activities in the community [11].

To tackle the issues above and to empower older people to actively participate in society, the WHO developed in 2007 the concept of age-friendly environments, which embeds the concepts of age-friendly buildings, neighbourhoods, cities and communities [12]. The concept makes use of a holistic approach to optimise peoples' social and physical environments as well as defining supportive provisions (such as Information and Communication Technologies (ICT), healthcare and services) to improve independent living, equity and an active and healthy participation in society. Until now, the WHO-concept inspired over 1,000 realities to join the Global Network of Age-friendly Cities and Communities and the numbers are constantly growing [13]. Moreover, the United Nations stated with the Sustainable Development Goals (in particular with Goal 3 related to health and wellbeing and Goal 11 focused on cities and human settlements) that sustainable age-friendly environments represent the baseline for guaranteeing a better future for the whole population and for addressing most of the growing ageing population issues [14]. In Europe, considered as the most ageing continent of the world, this concept is

of great interest for many stakeholders. Age-friendly environments became one of the six Groups of the European Innovation Partnership on Active and Healthy Ageing (EIP on AHA), the first created in 2011 [15]. As a follow-up of this activity and in close cooperation with WHO, the Covenant on Demographic Change: towards an age-friendly Europe was launched in 2015 [16]. The EIP on AHA and the Covenant gathered local, regional and national authorities, civil society organisations, universities, and businesses that commit to cooperate and implement evidence-based solutions as a comprehensive answer to Europe's demographic challenge. Lastly, the European Commission approved in 2018 the Thematic Network on Smart Healthy Age-Friendly Environments that delivered a current state of the art and a joint statement to the Commission on the design and development of eHealth and environments that enables people of all ages and that has currently evolved to a Stakeholders Network with nearly 200 partner organisations [17].

The increased number of partnerships and activities developed in Europe in the last few years, demonstrates how the interest among institutions, stakeholders and citizens is growing, but also underline the need to jointly foster implementation, connecting countries, people, and cultures for developing marketable and implementing solutions according to established standards.

Although many different standards have been created around housing and environments, they have little currency amongst the citizens of Europe. The societal impact and awareness among citizens in relation to different ISO standards (e.g. ISO 21542, ISO/TR 22411:2008, ISO 24502:2010) [18, 19, 20], regulations (CEN/CENELEC Guide 6, ADA Design regulations, UK Building Regulation) [21], national policies (NDA Ireland - Building for Everyone, German HABITAT III Report) [22, 23] and interdisciplinary aspects related to the design and development of age-friendly environments, is still disparate and scattered. Among stakeholders such as local and regional authorities and citizens, there is no homogeneous awareness on how to practically tackle issues in relation to age-friendly environments. No coherent understanding, awareness and proper measures are in place with pragmatic solutions to answer to the variety of issues among Eastern-Western and North-South European regions. Also the rise of 5G, wearable devices, assistive technology, virtual/augmented reality, innovative lease-based services and systems will strongly impact on future developments of this concept. COST countries and COST International Partner Countries (IPC) are also shaped with highly different demographic, economic, social, cultural and welfare structures and it is of fundamental importance that existing information, already collected and processed within the afore-mentioned partnerships, has to be shared, connected and used to create critical mass around the present and future generation of researchers, entrepreneurs and scientists.

1.1.2 DESCRIPTION OF THE CHALLENGE (MAIN AIM)

The above-mentioned circumstances, mainly related to how relationships among Member States are developed and stratified, call for a deeper investigation into the age-friendly environments domains, further mentioned as Smart Healthy Age-Friendly Environments (SHAFE):

1. What **knowledge** is available on SHAFE?
2. What is the **best conceptual approach** for understanding SHAFE?
3. What are the **impacts** of SHAFE in the **welfare and health system** and the **community development**?
4. How is **ICT, health and age-friendliness developed and integrated** within the WHO domains of outdoor places and buildings, housing, transportation, social participation, respect and social inclusion, civic participation and employment, communication and information, and community support and health services?
5. How to **increase** the **user-centred approach, understanding, awareness** and **knowledge** among different stakeholders (researchers, entrepreneurs, policy makers, citizens and professionals)?

This COST Action, named NET4AGE-FRIENDLY, is formed by different members of working groups on age-friendly environments. **Its main aim is to establish an interdisciplinary and pan-European network to foster awareness, and to support the creation and implementation of smart, healthy indoor and outdoor environments for present and future generations.** The network will pursue this aim by improving chances for Early Career Investigators (ECIs), entrepreneurs, public authorities and citizens to develop critical mass of knowledge and holistic solutions for age-friendly environments, paying special attention to COST Inclusiveness Target Countries (ITC). These environments will enable

us to learn, grow up, work, socialise and enjoy a healthy life, by benefiting from the use of digital innovations, smart living and accessibility solutions and shared assistive models adaptable within the European setting. SHAFE will be then the facilitators in which all are enabled to easily manage their own lives, according to their specific needs and wishes, following an inclusive design approach.

Disparate knowledge on SHAFE means that much existing European policies, user-centred design approaches and practices have little connection to citizens' needs (demand) and to the entrepreneurs who are empowered to create new solutions for the future age-friendly (digital) market (supply). The 'Tallinn Declaration' [24] calls for actions for efficient and inclusive digital public services to all citizens and businesses. The programme should ensure support for the 'User-Centricity principles' across all public services, while ensuring the respect of fundamental rights. It should be used to facilitate the deployment of simpler, more transparent, effective and interoperable administrative procedures across Europe.

This is compounded by the absence of a comprehensive conceptual framework to pursue a collaborative work to design, implement and monitor SHAFE policies, practices and programmes. The majority of digital solutions and outcomes from the EU-funded frame programmes (e.g. FP7 and H2020) are mostly tested within pilots and the difficulty to scale-up to markets [25] and to integrate between interdisciplinary research areas represent some of the main obstacles in boosting the creation and deployment of SHAFE. All these solutions are developed isolated and the challenge of integrating all of them along with the design of future solutions following common standards for their optimal integration with other solutions is the goal of NET4AGEFRIENDLY. The reasons behind these prominent issues are: inappropriate evidence-based co-designed digital-based solutions, lack of awareness across European stakeholders on validated good practices, cost/benefit concerns on commercialisation aspects and weak cross-sectoral cooperation and coordination in the European market despite the wide promotion of the "silver economy" concept [26].

To achieve the Action main aim fragmentation and critical gaps need to be overcome at both conceptual and pragmatic innovation levels to address the future European research-policies requirements. This will be reached by connecting and stimulating a multidisciplinary, international team of scientists, researchers and entrepreneurs that will foster knowledge, improve holistic strategies and support the development of user-based (users, caregivers, authorities) solutions for realising SHAFE.

This NET4AGE-FRIENDLY Action is inclusive as it welcomes participants from COST Countries, COST Near Neighbour Countries (NNC) and COST IPC. The network encourages end-users (citizen advocacy organisations, public authorities), expert researchers, ECIs, researchers from industry sector, healthcare, stakeholder associations, NGOs, policy makers, with backgrounds from a variety of complementary disciplines to cooperate in a two-way process with citizens, entrepreneurs and public authorities on the effective integration of SHAFE. The inclusion of citizens' representatives in networking activities, multidisciplinary collaboration, exchange of knowledge, and scientific excellence, as well as the expertise of local and regional stakeholders will address the successful implementation and upscale of the age-friendly environments paradigm across Europe. Through exchange of practices, networking and the creation of open access inclusive and innovative contents and dissemination activities, NET4AGE-FRIENDLY will:

- Learn from interdisciplinary and transnational approaches from involved countries and the involvement of local and regional stakeholders in understanding what are the good practices for the integration of SHAFE which are currently in place, particularly where, why and how they work, what barriers and successes they meet and what is the associated role of different stakeholders.
- Collect and share knowledge among different disciplines to promote future collaborations addressing the design and implementation of SHAFE.
- Give a boost to local and regional stakeholders (citizens, research, public administration and companies) to design and implement SHAFE in urban, rural and remote settings by providing a holistic approach composed of inclusive designed frameworks for enhancing awareness on existing guidelines and standards (as mentioned in the state of the art).
- Actively contribute with indicators as results of the working groups to shaping call programmes relevant to ageing into smart and healthy environments, embedding the inclusion of the need for interdisciplinary cross-national research and markets creation into complex societal issues affecting the whole population, endeavouring to shift the current focus from viewing ageing primarily as a context factor.

Moreover, knowledge and capacity generated through NET4AGE-FRIENDLY will be shared in the current and future-established European programmes (Horizon 2020 and Horizon Europe, Digital Europe, INTERREG and COSME). NET4AGE-FRIENDLY will act as a connector for developing future applications (designed collectively and individually) by all Action members.

1.2 PROGRESS BEYOND THE STATE-OF-THE-ART

1.2.1 APPROACH TO THE CHALLENGE AND PROGRESS BEYOND THE STATE-OF-THE-ART

The main approach of NET4AGE-FRIENDLY is the establishment of new local or regional ecosystems or by expanding existing ones in each COST country involved, to work on health and wellbeing in an age-friendly digital world. The ecosystems will be supported by 4 thematic Working Groups (WGs), plus a 5th WG dedicated to create a Reference Framework and horizontal tasks on Management, Dissemination and Exploitation. NET4AGE-FRIENDLY will be used as a connector for involving and hosting regular themed sessions with stakeholders and citizens from various countries and backgrounds and for fostering the knowledge among ECIs and entrepreneurs.

Every COST Action MC member (and additionally other members in one region or country) of NET4AGE-FRIENDLY is dedicated to support a local or regional ecosystem in her/his own country, by increasing or expanding existing initiatives. Each ecosystem consists of representatives of public authorities, care providers, research institutions, citizens and companies, who will jointly work on the (further) development of the concept of SHAFE, with a European linkage and overview. The outcomes of NET4AGE-FRIENDLY will enable its MC members to advise and support the development of SHAFE at local, regional or national level, thus creating a multiplier effect on the Action's impact. COST Action MC members further guarantee to support the organisation of one meeting at local, regional or national level or to bring the subject of SHAFE to a national or regional event (conference, seminar or workshop) during the time period of the Action. Each MC member will monitor progress of the implementation of SHAFE in his/her region or country and report on that progress at WG level by identifying good practices, occurring questions, successes and barriers. This information will be condensed into a Reference Framework for defining SHAFE indicators and strategies that will be used to improve knowledge and pragmatic solutions. The framework will be composed of four sections: inputs (resources and structures which act as key enabling factors), outputs (actions to support age-friendly environments all over Europe), outcomes (short/medium term changes achieved in creating age friendly environments) and impacts (long term changes achieved as a result of improvements in age-friendly environments).

The excellence of NET4AGE-FRIENDLY will be further developed and implemented by 4 cross-cutting thematic interdisciplinary WGs, each including the eight domains of the WHO-concept, further aggregated and exploited through a Reference Framework in a fifth WG. In summary, the NET4AGE-FRIENDLY themes will be focusing on:

- User centred and inclusive design in age-friendly environments and communities (WG1)
- Integrated health and wellbeing pathways (WG2)
- Digital solutions and large-scale sustainable implementation (WG3)
- SHAFE impact and sustainability: policy development, funding forecast and cost-benefit evaluations (WG4)
- Reference Framework (WG5)

The main strength of this COST Action relates to the interdisciplinary and comprehensive composition of scientists from socio-economic, health and ICT sciences that will closely cooperate with other experts and stakeholders across each thematic WG. Members of each WG, starting from the already known state-of-the-art research, will share policy initiatives and measures, demographic and economic developments and user perspectives in the related field. WGs will also focus the activities on measuring and examining the progress of activities and address questions reported at the different levels.

During the lifetime of the COST Action, NET4AGE-FRIENDLY will jointly search for opportunities to embed the international interdisciplinary network into joint brands, service models or a more formal structure or institutionalisation. This will assure a strategy oriented to the future, with room for new initiatives for the whole duration of the Action, developing a pathway for its future implementation of the Action with ECIs and entrepreneurs in continuing to further expand the network and knowledge.

1.2.2 OBJECTIVES

The main objective of NET4AGE-FRIENDLY is to develop an international ecosystem based on a network of researchers and stakeholders that enables the practice and deployment of SHAFE. The primary purpose is to reach every COST country for spreading awareness and developing the concept of SHAFE in rural and urban areas. The indicator for the main objective is to have local or regional ecosystems on SHAFE in at least half of the COST countries involved in this COST Action.

1.2.2.1 Research Coordination Objectives

NET4AGE-FRIENDLY will be a network of social and technical scientists, that closely cooperates with stakeholders such as citizens, public authorities, NGOs and businesses, bringing together scientific disciplines such as ICT, economics, sociology, medicine, engineering, architecture, and design. In order to ensure the impact and quality of the Action, the Management Committee and all experts involved in NET4AGEFRIENDLY will make sure the following Research Coordination Objectives (RCO) will be achieved:

- **RCO1:** To synthesise and improve existing knowledge from local, regional, national and international settings, disciplinary disparate dialogues in order to share a coherent scientific overview and dialogue for the design of SHAFE and integrated care pathways (WG1, WG2).
- **RCO2:** To critically investigate the creation of innovative solutions of digital health that promote success and break down barriers, ensuring climate neutral and sustainable development and broad implementation of SHAFE (WG3).
- **RCO3:** To assess the impacts of SHAFE across the life course within economic, social service, civil rights, political, environmental, and social spatial domains (WG4).
- **RCO4:** To envision a user-friendly, inclusive conceptual framework for SHAFE for a practical application in understanding the benefit of ICT for age-friendly design within cities, rural communities, neighbourhoods, buildings at European level (WG5).
- **RCO5:** To ensure innovative, flexible, implementable, policy and practice exploitation through dissemination, networking and ecosystem strengthening across disciplines all over Europe and beyond (WG4).

1.2.2.2 Capacity-building Objectives

Capacity-building is one of the core elements of NET4AGE-FRIENDLY. Capacity-building of ECIs and experienced scientists and practitioners to work interdisciplinary on societal challenges, of ICT researchers to co-create technology with end-users and of construction engineer scientists to involve ICT expertise and human behavioural patterns. To support individual mobility and to foster collaboration between individuals, NET4AGE-FRIENDLY will make use of the COST Action Short Term Scientific Missions (STSM) instrument in an open call to expand the network of ECIs, as well as training schools and international collaboration.

NET4AGE-FRIENDLY will encourage and enable multidisciplinary working and the following Capacity-building Objectives (CBO) will be achieved under the supervision of the Management Committee:

- **CBO1:** To establish an innovative, transnational, and participatory network involving researchers, practitioners, policy stakeholders and citizens, to improve interdisciplinary participation regardless their age and gender, in the knowledge sharing and networking activities for developing SHAFE (WG5).
- **CBO2:** To foster international cooperation between researchers from COST Countries, especially ITC, and researchers from NNCs and IPCs, by bringing together different disciplines to enable breakthrough developments in the field of climate-neutral built and social environment, healthcare and well-being and ICT (WG1, 2, 3).
- **CBO3:** To promote knowledge exchange and to foster a cross-European interdisciplinary research capacity, enhancing ECI development, by actively ensuring a gender balance procedure across participants, including each COST Action member to enable to advise on the implementation of SHAFE at local, regional or national level and in urban, rural and remote areas (WG4, 5).
- **CBO4:** To improve the cooperation and co-creation with cross-sectors stakeholders, such as citizens' organisations, companies, care providers and public authorities for driving a collaborative cross-European programme that cements the participation and leadership of ITCs in the field of age-friendly design (WG1, 2, 3, 4).

- **CBO5:** To introduce and educate students, ECIs, entrepreneurs and other interested parties, including a citizen-oriented awareness approach by implementing the understanding and importance of future developments of SHAFE for a sustainable European society (WG5).

2 NETWORKING EXCELLENCE

2.1 ADDED VALUE OF NETWORKING IN S&T EXCELLENCE

2.1.1 ADDED VALUE IN RELATION TO EXISTING EFFORTS AT EUROPEAN AND/OR INTERNATIONAL LEVEL

The NET4AGE-FRIENDLY COST Action is unique: it aims to address a crucial gap in COST Actions related to age-friendly design of environments, in particular the impact of digital innovation and smart infrastructure on the future development of our communities in a growing ageing population. It will complement the already existing networks and partnerships (as mentioned in the state of the art) and COST Actions, by joining expertise from a variety of partners across Europe with an important added value of experts involved on voluntary basis from outside the European context. It will also add an inclusive, multidisciplinary approach, by creating synergies between multidisciplinary research activities in networks, to the previous and current work of COST Actions:

- IS1402 – Ageism. Focused on the practice of ageism and to allow older people to realize their full potential. NET4AGE-FRIENDLY benefits from the results of this Action on ageism and full potential of older people to realise digital and healthy age-friendly environments in their own environments.
- IS1409 - Extended Working Life, Health and Gender. Focused on the gendered impacts of extended working life on the health and economic well-being of older workers. NET4AGE-FRIENDLY focuses on the (digital) environments (including working environments) of people to address challenges of ageing and inclusion.
- IC1303 - AAPELE (Algorithms, architectures and platforms for enhanced living environments). Like NET4AGE-FRIENDLY it addressed smart living environments, however focused mainly on the issues of defining software, hardware and service architectures for these environments. NET4AGE-FRIENDLY emphasizes on the inclusion of users/citizens and the construction/building sector.
- CA15122 - ROSEnet (Reducing Old-Age Social Exclusion). Targets the risks of old-age exclusion by focusing on economic, social, service, civic rights and community/spatial exclusion. NET4AGE-FRIENDLY targets participation as well by focusing on smart healthy user-centred and inclusive built environments.
- CA16226 - SHELD-ON (Indoor living space improvement: Smart Habitat for the Elderly). Focuses on the furniture sector to improve the accessibility of the built environment by integrating ICT solutions, ergonomic design and taking into account the health needs of older people. NET4AGE-FRIENDLY builds further upon the knowledge of SHELD-ON and will also extend this knowledge on the outdoor environments.

NET4AGE-FRIENDLY complements EU Framework projects on ageing and environments:

- SIFORAGE (2012-2016), Social Innovation on active and healthy ageing for sustainable economic growth [27]: NET4AGE-FRIENDLY will proceed to focus on the involvement of civil society in the development of SHAFE.
- AGEWELL (2014-2016) [28] – measurement of wellbeing will be analysed and used in NET4AGE-FRIENDLY.
- PROGRESSIVE (2016-2019) [29]: project on standardisation of ICT for active and healthy ageing: the STAIR-AHA platform focusing on Active and Healthy Ageing developed in the project will be used in the reference framework of NET4AGE-FRIENDLY.
- ACTIVAGE (2017-2020) [30]: project on implementation and deployment of mature IoT solutions: its knowledge on ecosystems and large scale IoT pilots on Smart Living Environments will be further exploited in NET4AGE-FRIENDLY.
- CITY4AGE (2015-2018) [31]: elderly-friendly city services for active and healthy ageing, the delivered project results on enabling Ambient Assisted Cities or Age-Friendly Cities will be further exploited in NET4AGE-FRIENDLY.
- HOMES4LIFE 82018-2020) [32] certified smart and integrated living environments for ageing well mainly focuses on housing. The results of this project will be further exploited in NET4AGE-FRIENDLY.
- PULSE (2016-2020) [33] (Participatory Urban Living for Sustainable Environments) will leverage diverse data sources and big data analytics to transform public health from a reactive to a predictive

system, and from a system focused on surveillance to an inclusive and collaborative system supporting health equity.

- DIGITAL HEALTH EUROPE (2019-2020) [34] will provide comprehensive, centralised support to the digital transformation of health and care priorities of the Digital Single Market. Their findings will also be included.
- Recently approved H2020 projects, PHArA-ON (2019-2023) [35], pilots for healthy and active ageing (to start in 2020), will focus on creating a set of integrated and highly customizable interoperable open platforms, SMART BEAR (2019-2023) [36] to create a smart big data platform to offer evidence-based personalised support for healthy and independent living at home and GATEKEEPER (2019-2023) [37] – smart living homes – whole interventions demonstrator for people at health and social risk will be followed and its insights and results will be integrated.

The COST Action will also complement the goals of the Joint Programming Initiative (JPI) More Years, Better Lives, the EIP on AHA, the Covenant on Demographic Change, WHO Global Network of Age-friendly Cities and Communities, Stakeholders Network on Smart Healthy Age-Friendly Environments as well as the goals of the Active Assisted Living programme. The Action will address FUTURAGE (A Roadmap for European Ageing Research) major priorities for European ageing research around inclusion and participation, ageing well and age-related inequalities and will also complement other European and national projects on ageing (e.g. SHARE Survey of Health, Ageing and Retirement in Europe; TILDA The Irish Longitudinal Study of Ageing; Belgium Ageing Studies; Maastricht Ageing Study).

Based on these premises the NET4AGE-FRIENDLY ecosystems will exchange practices and solutions from top-down and bottom-up by complementing and generating new research activities for the end of the H2020 programme in current calls for active and healthy ageing and in particular for the future Horizon Europe, Europe Mission on climate-neutral and smart cities and The European Green Deal (WG1, 2 and 3), Digital Europe and the European Strategy on Data (WG3), WHO Decade proposal on healthy ageing and INTERREG.

2.2 ADDED VALUE OF NETWORKING IN IMPACT

2.2.1 SECURING THE CRITICAL MASS AND EXPERTISE

NET4AGE-FRIENDLY will be an international network of researchers that work at all levels of society, such as citizens advocacy, universities, politics, public administration, entrepreneurs in different fields such as ICT, health and social care, building and construction companies, urban planners/architects. Each COST Action member of NET4AGE-FRIENDLY, especially MC members, will create an inclusive local, regional or national ecosystem (which is composed of a quadruple helix of citizens, public authorities, companies, and researchers) which will interact at an international level within the meetings, training schools, conferences and workshops organised. Each member guarantees to support and take part in the planning and organisation of events and STSMs, to present or to publish scientific outcomes such as articles, reports and blueprints on SHAFE in their own country as well as to engage in social networking and dissemination activities through the local, regional and national networks linked to each participant. This strategy will allow NET4AGE-FRIENDLY to literally become viral in each COST country, by exponentially increasing the networking, the dissemination and knowledge exchange among scientists, business, public, local administrations, policy makers, professionals, and citizens. This will bring an inspiring and fruitful new way of cooperation that will enable to tackle the specific aim of the COST Action and deploy the objectives in an inclusive network that fosters knowledge across all the population. The NET4AGE-FRIENDLY WGs will enable to precisely enter into the insights of various topics which are related to SHAFE and to share knowledge and jointly work on the development of expertise of its members.

2.2.2 INVOLVEMENT OF STAKEHOLDERS

	Citizens	Citizens, the households, people living in urban and rural areas that live and interact on a daily basis with SHAFE.
	Public authorities, standards organisations	Public authorities and standards organisations facilitate and organise SHAFE at national, regional, and local level. They provide and regulate assets such as healthcare and welfare delivery, education, social housing, infrastructure, transportation and common goods.
	Businesses, caregivers,	This part of the quadruple helix is represented by private, public, for profit and not for profit organisations and companies. They

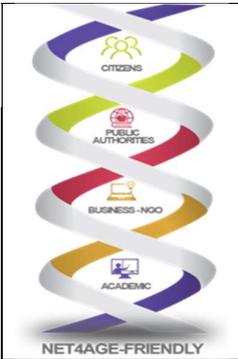
	and non-governmental organisations	provide goods such as ICT services, housing and construction, healthcare, architecture, retail, mobility, and consultancy. SMEs will be particularly encouraged to participate, considering their characteristic ability to focus on very specific niches.
	Academics and scientists	Research organisations, such as universities that perform fundamental or applied research and educate on issues such as health, active ageing, digital solutions, construction, and environment.

Table 1: Quadruple helix of stakeholders of the NET4AGE-FRIENDLY network

Stakeholders as represented in the quadruple helix will be deeply involved in NET4AGE-FRIENDLY. Representatives of each stakeholder group will make part of the local, regional and national ecosystems for questions and answers, advices as well as share and learn from existing good practices.

2.2.3 MUTUAL BENEFITS OF THE INVOLVEMENT OF SECONDARY PROPOSERS FROM NEAR NEIGHBOUR OR INTERNATIONAL PARTNER COUNTRIES OR INTERNATIONAL ORGANISATIONS

The NET4AGE-FRIENDLY network is open to stakeholders of the quadruple helix from all COST countries. Besides, the Action also welcomes the involvement of participants from COST IPCs and from COST NNCs. Free movement between COST NNC and EU fuels scientific collaboration. To participate in this Action will benefit these countries to build a better ecosystem and to provide healthy soil for future generations to live in healthy environments and communities, building smart and intelligent cities and rural areas. Possible future involved international and European RTD organisations would deliver to NET4AGE-FRIENDLY their intergovernmental and transnational experience with health, equity and international projects in different cultures. Their benefit will be to expand their network and to jointly work on issues such as healthy environments, public health and prevention, social equalities, and the implementation of age-friendly environments in general.

3 IMPACT

3.1 IMPACT TO SCIENCE, SOCIETY AND COMPETITIVENESS, AND POTENTIAL FOR INNOVATION/BREAK-THROUGHS

3.1.1 SCIENTIFIC, TECHNOLOGICAL, AND/OR SOCIOECONOMIC IMPACTS (INCLUDING POTENTIAL INNOVATIONS AND/OR BREAKTHROUGHS)

Short-term impact (4 years)	Longer term impact (beyond COST Action)
Scientific impact <ul style="list-style-type: none"> • International availability of data, results and knowledge as a basic standard for networking • Support transfer of knowledge between researchers and industry within participating COST Countries, with focus on COST ITC, and reaching out to COST NNC participants • A network of cooperating scientists and trained ECIs of all relevant disciplines and countries • Researchers are enabled to advise on matters at the local, regional or national level 	<ul style="list-style-type: none"> • An international institutionalised or formalised network of scientists of relevant disciplines • Continued sharing of good practices • Education programmes will include the design and implementation of SHAFE • Training programmes for the next generation of ECIs
Technological impact <ul style="list-style-type: none"> • The exchange of knowledge about testing and concepts of innovative ICT and built environments solutions to create and support SHAFE 	<ul style="list-style-type: none"> • Education programmes involving age-friendly design of ICT and built environments and co-creation

<ul style="list-style-type: none"> • The analysis of impacts of ethical, privacy, data management and business models around SHAFE 	
Socio-economic impact	
<ul style="list-style-type: none"> • First part of healthy living environments across Europe that foster participation of citizens, active and healthy ageing, and independent living • Business opportunities and co-creation learning methods for industries, companies, and retail • More integration of healthcare provision with social networks and services, built environment and ICT sector • Cost-benefit assessment of duly evaluated best practices, leading to influence policy and funding strategies towards broader adoption of solutions across Europe and beyond. 	<ul style="list-style-type: none"> • Contribution of the network to future European strategy on smart, sustainable and inclusive economy by fostering emerging sectors such as ICT and traditional sectors • Environments that foster participation of citizens, active and healthy ageing, independent living across Europe and beyond • Sustainable healthcare systems and workplace improvement • European businesses user-centred and profitable

Table 2: Impacts of the NET4AGE-FRIENDLY network

3.2 MEASURES TO MAXIMISE IMPACT

3.2.1 KNOWLEDGE CREATION, TRANSFER OF KNOWLEDGE AND CAREER DEVELOPMENT

The plan for knowledge creation, transfer and career development will be implemented by the Management Committee (MC), supported by the Core Group (CG) of NET4AGE-FRIENDLY. In addition to being national representatives MC members will be active in WGs and have the role of scientific coordinator and training coordinator. They are overall responsible for organising and facilitating the interdisciplinary cooperation of researchers to identify and create occasions for holistic research approaches, career opportunities and outcomes within and beyond the WGs. Obtained outputs of the WGs will be brought together in a Reference Framework (WG5) that the members and stakeholders can use to discuss and implement SHAFE at all geographical levels. The obtained knowledge will be subject of training through different methodologies, such as through the organisation of six workshops and four Training Schools. To support individual mobility and to foster collaboration between individuals, NET4AGE-FRIENDLY will make use of STSM in an open call to expand the network of ECIs. Interdisciplinary groups of ECIs will be assigned a senior scientific mentor to discuss obtained knowledge, their career development and opportunities and the transfer of knowledge within the COST Action and to other parts of society through academic publications and a handbook on age-friendly design for the future society. The mentoring programme will also include webinar sessions between matched scholars/experts and ECIs in and out of the COST Action, who will be obtained in an open call to increase the interest and the network.

3.2.2 PLAN FOR DISSEMINATION AND/OR EXPLOITATION AND DIALOGUE WITH THE GENERAL PUBLIC OR POLICY

A multi-level dissemination plan, aiming to target the quadruple helix of NET4AGE-FRIENDLY, will be employed during the whole duration of the COST Action, following a Two-way and a One-way communication engagement plan.

Two-way communication engagement comprises the following activities:

- Three WG-topic related conferences will be organised on inclusive design, digital innovations and integrated healthcare to discuss the findings and to raise public and political awareness. Also these conferences will result in open access publications and online podcasts. A Final Conference will present the results of NET4AGE-FRIENDLY COST Action. These four events will be the main face-to-face meetings, with possibility to follow them by online live streaming.
- Six 2-day workshops will be organised in different geographical regions with stakeholders from the quadruple helix. The workshops will present and discuss the ongoing work of the Working Groups.
- Seven sessions (face-to-face and webinar) will be organised to present and discuss the progress of the reference framework, good practices, standards and guidelines of the framework.
- NET4AGE-FRIENDLY members will participate in various research and academic conferences, seminars, and policy events, acknowledged by the Action and publicising its findings and outputs through dissemination activities. Members will be asked every 6 months to report on their recent achievements (publications and events) for the progress reports of the COST Action.

One-way communication engagement (online dissemination) comprises the following activities:

- An Action website will act as the principal online communication platform for proceedings, briefing papers, knowledge syntheses, Training Schools and ECI forum materials. The website's password-protected space will give Action members access to working documents and other work-in-progress activities.
- The Reference Framework of innovative practices, standards, and guidelines on the concepts of inclusive design, integrated healthcare provision, digital innovations and co-creation, policy and funding opportunities and cost-benefit evaluations will be accessible from the website, and disseminated through the social media channels, and available in the "publications" section of the COST official website and other platforms managed by members of the Action.
- The release of infographics, brochures and a handbook including policy analyses, training materials, and, where appropriate, key-message bulletins, to target associations in order to raise awareness.
- Scientific articles/papers. Budget will be allocated for funding 4 open access joint publications.
- Yearly e-newsletters and update of research and social activities based on the schedule organised by the members.
- Newspapers/radio/TV/podcasts interviews.
- Social engagement with a wider audience through Instagram, Facebook, Twitter, LinkedIn.
- YouTube V-logging activity, with a channel on inclusive age-friendly design with videos of seminars, workshops, conference, and interviews on the implementation of the action.

A Dissemination Board (DB) will develop and execute the dissemination and exploitation plan (M6). The DB will comprise: an elected Science Communications manager (with responsibility for managing the DB); a Publications manager; a policy dissemination member (most likely a policy stakeholder, with responsibility for coordinating the production and dissemination of policy analysis); a public dissemination member (with responsibility for media liaison); a web-master with responsibility for website maintenance; a Training Officer; and a representative from each WG. The DB will work closely with other Action organisational structures to coordinate key dissemination events.

Medium	Elements	Indicator	Target
Social media	Facebook/Twitter/Instagram	Posts/likes/members	1,000
	LinkedIn	Group members, posts	500
	DB campaigns launched	Number	4
	YouTube V-log	Viewers	100,000
	Interviews other media	Number	10
Website	Project website	Monthly visitors	1,000
E-Newsletters	Including target groups items	Editions	4
Leaflets/brochures	Promotion events, framework	Editions	4
Events	- International final conference	Quantity and # visitors	1 - # 200 + web stream 200
	- WG Conferences	Quantity and # visitors	3 - # 100 + web stream 100
	- Training Schools	Quantity and # visitors	4 - # 20
	- Workshops of 2 days	Quantity and # visitors	6 - # 20
	- Keynote speech or workshop	Quantity	10
	- Interdisciplinary local or regional WG meetings, incl. events WG4	Quantity and # visitors	20 - # 20
	- Sessions to discuss framework WG5	Quantity and # visitors	7 - # 25 teleconference
Action Reports	Yearly internal evaluation report	Quantity	4
	COST Policies report (PR1)		1
	Mid-term progress report (PR2)		1
	Final Assessment (FA) report		1
Articles and papers	- Special edition academic journal NET4AGE-FRIENDLY	Quantity	1
	- Open access scientific articles		4
	- Targeted magazines articles (public authorities, industry, citizens)		4
	- Conference proceedings		4
Book	e-Book with contributions of all partners	Quantity	1

Table 3: Dissemination activities of the NET4AGE-FRIENDLY network

In addition to these planned activities the MB and DB may suggest and approve other activities or opportunities that arise or adapt the planned activities accordingly.

To ensure the future exploitation of NET4AGE-FRIENDLY after the lifetime of the COST Action, the MC will appoint an Exploitation Manager, who is overall responsible for organising and facilitating the exploration of the sustainability of the NET4AGE-FRIENDLY network, the reference framework, funding and business opportunities and potentials for the future of the network.

4 IMPLEMENTATION

4.1 COHERENCE AND EFFECTIVENESS OF THE WORK PLAN

4.1.1 DESCRIPTION OF WORKING GROUPS, TASKS AND ACTIVITIES

A well-defined decision-making process and a pragmatic approach to the management of the Action will ensure that informed and goal-oriented decisions are taken at all stages.

Three bodies will be in charge:

- **The Management Committee (MC):** composed of the Action Chair plus up to two representatives of each COST Countries having accepted the Memorandum of Understanding of the Action. MC Members will meet once a year, ideally during the main events organised by Action: the Training Schools, workshops and conferences. Its main task is to oversee the coordination, implementation, and management of the Action activities as well as the financial management of the grant.
- **The Core Group (CG):** elected during the first MC meeting, it includes MC members with leadership positions. Gender balance will be considered in the constitution of the CG, which will involve participants from ITCs as well as ECIs. The CG is the body to ensure that the correct decisions are discussed and prepared for the MC to meet the objectives of the Action. The CG will meet at least twice a year, preferably face-to-face, and will review the different milestones and deliverables from the different WGs. The Action will develop an inclusiveness plan that is updated in all CG meetings and presented to the MC to implement a successful strategy to attract NET4AGE-FRIENDLY researchers and stakeholders.
- **The Dissemination and Exploitation Board (DB):** responsible for ensuring that all the activities planned for training and education, outreach, impact and future of the Action are delivered in a timely manner.

The following leadership positions will be part of the Core Group:

- **Short Term Scientific Missions (STSM) Coordinator:** appointed to promote the institutional visits and individual mobility of Action participants, in particular ECIs.
- **ITC Conference Grant coordinator:** will support ECI and PhD students from participating COST ITC countries to attend international science and technology related conferences, workshops or events that are not organised by NET4AGE-FRIENDLY but are very relevant for the COST Action.

Working Groups

Each participant of NET4AGE-FRIENDLY will participate in the activities related to at least one Working Group according to their background, expertise, and interests. Each WG will consist of participants with different backgrounds (such as socio-economic and engineering sciences, ICT, health and political science) to ensure the interdisciplinary focus of each WG. Participants from COST ITC and ECIs will be engaged in all WGs. The WGs are designed to remove the traditional barriers to integrated and systemic solutions addressed by this Action. WGs will have a yearly face-to-face meeting and a webinar. These will be organised under the coordination of the WG leader and a co-leader (preferably an ECI).

As for the CG, also WGs leadership positions will include participants from COST ITC, ECIs and be gender balanced. While WGs have common broad objectives, each will address these objectives specifically in relation to their domain of SHAFE. WG objectives are derived directly from both the crucial research questions of the challenge, and the Action's research coordination objectives, and also represent the core tasks of the WGs.

By including horizontal tasks and decisions concerning dissemination and exploitation, all MC members will be automatically also WG4 members to ensure their involved in key discussions and decisions.

WG	Title	Focus
WG1	User-centred inclusive design of age-friendly environments and communities	Inclusion, accessibility, usability and engagement around environmental, design, technology and infrastructure design thinking
WG2	Integrated health and wellbeing pathways	Policies, regulations and practice of integrated age-friendly healthcare and social provision, focusing on personalised and user-centred pathways
WG3	Digital solutions and large-scale sustainable implementation	Smart technologies in co-creation, scale-up and large-scale implementation, valuing climate-neutral and energy-efficient solutions and opportunities
WG4	SHAFE impact and sustainability	Advocacy and policy networking, funding opportunities, business models and cost-benefit evaluation
WG5	Reference framework	Resources and structures, practices, guidelines, standards, indicators, handbooks

Table 4: Working Groups of the NET4AGE-FRIENDLY network

Working Group objectives and deliverables

NET4AGE-FRIENDLY is organized in a flexible four-year work plan of the five WGs. All WGs will run during the four years of the COST Action.

WG1: User-centred inclusive design of age-friendly environments and communities (M1-M48)	
Objectives	Research: to synthesise existing knowledge and critically assess the practices of the inclusive design of innovative solutions of SHAFE; Capacity Building: CBO2, CBO4
Participants	Researchers from technical, social, health, and human studies, from construction and ICT industries, citizens and public authorities, standards and umbrella organisations
Tasks	Task 1.1: Synthesise and improve the state of the art of existing knowledge and practices Task 1.2: Report, discuss solutions and delivery of the module for the Reference Framework
Activities	7 WG meetings including 1 WG conference, contribute to annual and final reports, 2 peer reviewed joint publications, contribute to dissemination and framework, training schools
Milestones	M1.1: Mid-term overview of state of the art and practices in Q9
Deliverables	D6. WG final report on user-centred design of AFE - M39 D9. WG Module on user-centred inclusive design for framework - M44
WG2: Integrated health and well-being pathways (M1-M48)	
Objectives	Research: To synthesise existing knowledge and critically assess practices of integrated healthcare provision. Capacity Building: CBO2, CBO4
Participants	Researchers from healthcare, patients' organisations, public health, citizens, public authorities, construction, and ICT industries, standards and umbrella organisations
Tasks	Task 2.1: Synthesise and improve the state of the art and practices Task 2.2: Report, discuss and delivery of the module to the Reference Framework
Activities	7 WG meetings including 1 WG conference, report and discuss, and dissemination activities, 2 peer reviewed joint publications, contribute to framework
Milestones	M2.1: Mid-term assessment state of the art and good practices in Q9
Deliverables	D7. WG final report on integrated health and wellbeing pathways - M39 D10. WG Module on integrated health and wellbeing pathways for framework - M44
WG3: Digital solutions and large-scale sustainable implementation (M1-M48)	
Objectives	Research: To synthesise existing knowledge and to critically assess the practices of digital innovation and implementation. Capacity Building: CBO2, CBO4
Participants	Researchers from ICT, construction, citizen organisations, housing, public authorities, human, social and technical studies, standards and umbrella organisations
Tasks	Task 3.1: Synthesise and improve the state of the art and good practices Task 3.2: Report, discuss and delivery of the module to the Reference Framework
Activities	7 WG meetings including 1 WG conference, reports and discussions, dissemination activities, 2 peer reviewed joint publications, contribute to the framework
Milestones	M3.1: Mid-term overview assessment state of the art and good practices in Q9

Deliverables	D8. WG final report on digital innovation and implementation - M39 D11. WG Module on digital innovations and implementation for framework - M44
WG4: SHAFE impact and sustainability: policy development, funding forecast and cost benefit evaluations (M1-M48)	
Objectives	Research: To examine existing policies, advocacy, and funding opportunities and to build up relations with policy makers and funding organisations. Synthesise and improve existing knowledge and models to develop from effective business and evaluation models. To guarantee quality and education, proper dissemination and ensure the future of the Action. Capacity Building: CB01, CB03, CB04, CB05
Participants	Researchers from economic, political science, human, social and technical studies, citizens organisations, public authorities, industries and consultancy, umbrella organisations COST Action Management Committee, WG leaders – Boards
Tasks	Task 4.1: Synthesise and improve and build-up cross sectoral and cross level networks of policy makers and funding organisations and organise networking events and identify and assess successful business and evaluation models Task 4.2: Report and delivery of the module to the Reference Framework Task 4.3: Horizontal activities on training, communication and dissemination, impact and exploitation
Activities	7 WG meetings, organise 4 local, regional, national, and international networking meetings, report and deliver to the framework. Kick-off meeting, Training Schools and workshops, final conference and stakeholder events.
Milestones	M4.1: Mid-term report in Q9 M4.2 Mid-term report in M25
Deliverables	D1. Action web-site - M3 D2. Dissemination and Exploitation Plan - M6 D3. Handbook for quality assurance - M6 D4. WG report on policies, funding opportunities and networking - M9 D5. WG report on effective business and evaluation models - M39 D12. WG module on policy, funding and business models for the Reference Framework - M44 D15. Sustainability Plan “beyond NET4AGE-FRIENDLY” - M48
WG5: Reference Framework (M1-M48)	
Objectives	Research: To synthesise and critically examine existing practices of SHAFE and to develop a reference framework with guidelines, standards and practices (success factors and lessons learned). Capacity Building: CBO3
Participants	Researchers from all disciplines
Tasks	Task 5.1: Assemble and assess knowledge on practices (existing standards, guidelines, and practices’ databases) Task 5.2: Develop the Reference Framework
Activities	7 WG meetings, 7 set-up framework sessions, reference framework development
Milestones	M5.1: Mid-term reports framework development in Q9
Deliverables	D13. WG module on business and evaluation models for the framework - M44 D14. Reference Framework - M47

Table 5: Working Groups of NET4AGE-FRIENDLY network

4.1.2 DESCRIPTION OF DELIVERABLES AND TIMEFRAME

No	Title deliverable	Format	Month
D1	Action web-site (WG4)	Web-site	M3
D2	Dissemination and Exploitation Plan (WG4)	Report	M6
D3	Handbook for quality assurance (WG4)	Report	M6
D4	WG report on policies, funding opportunities and networking (WG4)	Report	M9
D5	WG report on effective business and evaluation models (WG4)	Report	M39
D6	WG final report on user-centred design of AFE (WG1)	Report	M39
D7	WG final report on integrated health and wellbeing pathways (WG2)	Report	M39
D8	WG final report on digital innovation and implementation (WG3)	Report	M39
D9	WG Module on user-centred inclusive design for framework (WG1)	Module	M44
D10	WG Module on integrated health and wellbeing pathways for framework (WG2)	Module	M44

D11	WG Module on digital innovations and implementation for framework (WG3)	Module	M44
D12	WG module on policy, funding and business models for the Reference Framework (WG4)	Module	M44
D13	WG module on business and evaluation models for the framework (WG5)	Module	M44
D14	Reference Framework (WG5)	Framework	M47
D15	Sustainability Plan “beyond NET4AGE-FRIENDLY” (WG4)	Report	M48

Table 6: Deliverables and timeframe of the NET4AGE-FRIENDLY network

4.1.3 RISK ANALYSIS AND CONTINGENCY PLANS

	RISK	CONTINGENCY PLANS
Research-related	Lack of understanding between different traditions or disciplines (medium)	Membership composition reflects the strengths of the various researchers as well as the potential for cross-fertilization. WG leaders are capable of fostering multidisciplinary work and to connect researchers from different backgrounds
	Low quality outputs (medium)	MC members will deliver a quality plan to ensure the quality of work. The Scientific Officer will be regularly consulted on outputs and feedback shared with involved participants. A peer-review like process among Action participants will be put in place for the revision process of outputs.
Network diversity	Low participation in WG meetings, conferences, (low)	Given the response to the invitation to join the initial COST Action proposal, the likelihood of this risk is very low. Should this happen in specific countries, the MC will foster the targeted dissemination efforts
	Low activity and output in local or regional ecosystems (medium)	The COST national representatives of each country are the first responsible for mobilising the Action participants. If the national representative fails, the MC will come into action to encourage the participants. Participation levels will be monitored and under-performance reported to the COST Association and CNCs
	Low participation from stakeholders (low)	The proposed network already involves a wide spectrum of stakeholders. Both researchers, public authorities, healthcare institutions and industries will contact stakeholders to participate in ecosystems, training schools and conferences
Action Management	Low quality deliverables (low)	This Action combines a mix between experienced researchers and ECIs. They will work in partnership. Should this problem appear, the responsible participant will be asked to improve the deliverable and if needed the help of a more experienced researcher will be asked to improve the quality of the deliverable.
	Delay in the production of deliverables (medium)	The WG leaders and MC will ensure that deadlines are respected. Should delays continue to occur or unacceptable delays occur, a substitute within the Action will be assigned to the particular task
	Conflicts (low)	Should a conflict emerge among two or more partners, the MC will address immediately trying to mediate and to find a solution. In case the conflict persists, an ad-hoc crisis committee will be established with the support of the COST Association, possibly involving external expert to reach a solution

Table 7: Risks and contingency plans of the NET4AGE-FRIENDLY network

4.1.4 GANTT DIAGRAM

	First year				Second year				Third year				Fourth year			
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16
WG1 Inclusive design																
WG1 1.1 Synthesize SoA									M1.1				D6			
WG1 1.2 Deliver to framework															D9	
WG1 Meetings + conference												C				

17. European Commission: Thematic Network on Smart Healthy Age Friendly Environments 2018
https://ec.europa.eu/eip/ageing/news/thematic-network-smart-healthy-age-friendly-environments-tnshafeonline-survey_en.
18. ISO 21542: Building construction - Accessibility and usability of the built environment:<https://bit.ly/2CVjtdO>.
19. ISO/TR 22411:2008: Ergonomics data and guidelines for the application of ISO/IEC Guide 71:<https://bit.ly/2BE0zvl>.
20. ISO 24502:2010: Ergonomics - Accessible design: <https://bit.ly/2OWwWHF>.
21. CEN/CENELEC Guide 6 - Guide for addressing accessibility in standards: <https://bit.ly/2BAyqoY>.
22. National Disability Authority Ireland (www.nda.ie).
23. Report HABITAT III, The New Urban Agenda, (<http://habitat3.org/>).
24. The Tallinn Declaration: <https://ec.europa.eu/digital-single-market/en/news/ministerial-declarationegovernment-tallinn-declaration>.
25. WE4AHA, EU project (GA No. 769705) to widening the support for large scale uptake of Digital Innovation for Active and Healthy Ageing, first release, May 2019.
26. Silver economy concept, European Commission: <https://ec.europa.eu/digital-singlemarket/en/news/growing-silver-economy-europe>.
27. SIFORAGE: Social Innovation on active and healthy ageing for sustainable economic growth, ID: 321482.
28. AGEWELL: Ageing Migrants' Well-being: The Structuring of Local Welfare Provisions at the Intersection of Public, Private, Third Sector and the Family, ID 328518.
29. PROGRESSIVE: progressive standards around ICT for active and healthy ageing, ID: 727802
30. ACTIVAGE: ACTivating InnoVative IoT smart living environments for AGEing well, ID: 732679
31. CITY4AGE: Elderly-friendly City services for active and healthy ageing, ID: 689731
32. HOMES4LIFE: certified smart and integrated living environments for ageing well, ID 826295.
33. PULSE: Participatory Urban Living for Sustainable Environments, ID 727816.
34. Digital Health Europe: ID 826353.
35. PHArA-ON [X], Pilots for healthy and active ageing, ID 857188.
36. GATEKEEPER - Smart Living Homes – Whole Interventions Demonstrator for People at Health and Social Risk (area 2), ID : 857223
37. SMART BEAR - Smart Big Data Platform to Offer Evidence-based Personalised Support for Healthy and Independent Living at Home (not available on CORDIS yet)