



## Overview of AAA KTN Experimental Workshop for Horizon 2020 challenge 05.12.17 London

The day began with 7 short “pitches” by stakeholders representing a wide range of sectors, disciplines and interests.

Following discussion among delegates the proposed concepts were distilled and represented as three pillars: the **Cognitive Home**, **Cognitive Person** and **Cognitive Workplace**.

Each of these themes were explored at length, culminating in passionate presentations by ‘champions’ for each pillar.

Here follows a top line summary as articulated by the stakeholders themselves:

### **The Cognitive Home:**

*“Let’s revisit the concept of a smart home as a home that works in terms of prevention and social inclusion as well as mental stimulation: a smart home that is a healthy and extrovert place to live. What does this mean in terms of physical and smart requirements?”*

*“This vision requires: data about people, the built environments in which they exist, opportunities for new types of activities that a person might engage in, and scenarios about impacts that might change a person’s needs, including health-related issues.”*

*“We are a research-intensive startup using EEG technology to track cognitive health and performance in the home. This is a platform that could be used for a range of in-the-field studies of neurocognition, and to monitor multiple CNS conditions. But our current goal is to enable earlier detection of the diseases that cause dementia... We are keen to collaborate with new partners”*

*“Be aware of regional / demographic differences”*

*“A future platform (digital market-place) that is virtual. It supports us as we age using the home environment as a base and enabling multiple peripherals to add to data and to support as needed. This enables extended engagement in working and social activity.”*

### **The Cognitive Person:**

*“The notion of a ‘digital person’ seemed to generate a lot of excitement, though what form this would take was a bit unclear to me.”*

*“I would find it interesting to approach the challenge by identifying reasons that older people leave work, and focussing in on ones that we think we could help solve. Perhaps there are a large population of people who leave because public transport becomes too difficult, or because they can’t stand for as long as they are required to, or because they can’t climb stairs, or their eyes get tired, etc etc. This could create a real opportunity to look at a product/robotic design, or software/digital application that could solve a specific problem in an easy to understand way.”*

*“Addressing the need” should not be solely focused on older adults, but should be from everyone: employers, working environments, and all the employee (inc older adults and everyone else”*

*“Integration is very important, indicating how older adults feel being integrated spiritually: feeling they are making good contributions to the work place and society as everyone else, rather than being a burden and everyone else is taking care of them.”*



*“What skills they might need to boost, rather than re-training?”*

*“Needs are interrelated: jobs can keep people healthy and provide an environment for social interaction, whilst health and social needs can drive the need for a change of work(place).”*

*“Inspire people to re-join economy. Don’t match to experience match to potential and use AI and machine learning to develop those people into new roles.”*

*We’ve recently been exploring a notion which potentially could be adapted to fit some part of the application. It looks at a personalised AI and digital platform that would help people make ‘healthy’ choices, and make more transparent the changes you can make on a level that suits you.”*

### **The Cognitive Workplace:**

*“The consensus from all the groups appears to be constructing a proposal to create a platform for facilitating both continuation of work and returning to work for the ageing population – although there as some mention of this not being just an ‘ageing’ challenge”.*

*“My aim is to make workplaces better for older people to thrive in (rather than impose changes on older people themselves). The technology I’m thinking of using is VR, sensors and machine learning”*

*“I can make a significant contribution in two areas: firstly, any detailed ethnography work required to accurately define the unmet needs for this platform, and gauging the scope and range of potential opportunities that this program can cover; and secondly, in the actual physical rollout of the developed work through B2C and B2B communications, implementation of training programs, links to potential commercial partners, and development of an ‘identity’ to move this on from a pure piece of IT programming. Essentially, unless this gets used it remains just an idea, so consumer acceptance and integration into ‘everyday’ life is vital.”*

*“In short, we can use ubiquitous sensors and data analytics to help others (in sociology and psychology, etc) make more informed decisions on workplace policies and measure the outcome.”*

*“As you likely know we have over 25 years’ experience in the design of ageing space, so have quite a lot of resource we can tap into.”*

### **Scaled facilitation:**

*“We are the largest NHS entity by geography in the UK, covering an area approximately the size of Wales or Belgium. With a larger than average older population, we want to develop the region as a test bed for innovative solutions...The regional specialisation strategy we will develop in 2018 will cover more than healthcare for a better understanding of needs and opportunities.”*

*“Our main contribution could be in testing the ability to use technology to help an ageing, but not yet fully retired, workforce to be part of our Telecare environment on a secure remote worker basis.....they would have the perfect empathy with typical Telecare customers and if we could prove the ability to build a hi-tech work-from-home solution – possibly to include AR or VR – then that would be really ground breaking.”*



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## **SC1-DTH-03-2018: Adaptive smart working and living environments supporting active and healthy ageing**

**Specific Challenge:** Demographic change and the ageing of the population create new heterogeneous challenges for age-friendly living, recreational and working environments such as a shrinking workforce and increasing numbers of workers with functional impairments, chronic conditions, care duties or re-integration in and later retirement from the labour market.

Digital solutions can support older individuals in being and staying actively involved in professional life for longer by designing fit for purpose working environments and by enabling flexible management of job-, leisure- and health-related activities considering their needs at the workplace, at home and on the move, with a particular focus on social inclusion, health needs and job retention.

**Scope:** Proposals should develop and validate digitally enabled adaptive services and solutions<sup>1</sup> leading to smart work environments for older adults, supporting them to remain actively involved in professional life, helping them to sustain and renew their work and personal life related skills and support independent active and healthy lifestyles while taking into account reduced capabilities due to age-related health risks and conditions.

Proposals should be based on trans-disciplinary research, involving behavioural, sociological, psychological, medical and other relevant disciplines, including gender and cultural aspects. Proposals should convincingly describe the planned progress beyond state of the art in development and integration of unobtrusive, adaptive solutions for age-friendly living and working environments, addressing the needs of employees in specific and various sectors and workplaces<sup>2</sup>.

Proposals should build on active user engagement (e.g. employee participation at the workplace) in order to ensure the understanding of user needs, safeguarding ethics, privacy, security and regulatory aspects (e.g. labor law). Attention theft and impeding physical activity by ICT should be avoided.

Concepts should aim at realistic and verifiable benefits for flexible and sustainable job longevity measures and the consortium should include the necessary stakeholders to validate all relevant issues. The validation should take place in real settings (at workplaces and at home as required). The approach should demonstrate improvements in quality of life and/or improved health and safety for older adults, better management of aging workforce leading to a win-win for employers and employees, health and social system efficiency

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<sup>1</sup> Proposals should make use of the European global navigation satellite systems Galileo and EGNOS (Geostationary Navigation Overlay Service), if relevant.

<sup>2</sup> A Workplace is a location, which can be inside or outside, virtual or physical, and can include an office, factory or home – where a person's primary occupation takes place.



gains, business and financing models and organisational changes required for service delivery.

The Commission considers that proposals requesting a contribution from the EU between EUR 3 and 4 million would allow this specific challenge to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts. Participation of SMEs is encouraged.

Expected Impact: Proposals should present methodologies and metrics as appropriate for measuring progress with significance towards the expected impact in:

- Independent living, and quality of life of older persons compared to current state of the art, enabling older persons to stay actively involved in work life for longer or return to work after severe disease;
- Enhanced health and safety working conditions and quality of life of older persons at work compared to the current situation, enabling older persons to be able to contribute at an appropriate level for a longer period of time;
- Evidence of user-centred design and innovation, new intuitive ways of human-computer interaction, and user acceptance;
- Potential cost-effectiveness due to enhanced self-care, life-style, age-friendly and skills conducive work environments and socio-economic benefits;
- Competitive advantage for European industry through flexible and sustainable work arrangements for an ageing workforce;
- Global leadership in ICT based innovation for active and healthy ageing including the occupational environment.

Type of Action: Research and Innovation action