Ambient Assisted Living: The European Landscape and Links to IoT

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Demographic Ageing

Societal Challenge

Dependency Ratio
- From 1:4 to 1:2
- 80+ doubles by 2025

Cost of Care
- Up by 4-8 % of GDP by 2025

Human Resources
- Shrinking work force
- Lacking 20 million carers by 2020

Major Opportunity

Empowerment
- Active Ageing

New Care Models
- Home based
- Integrated care
- Large Efficiency gains

Growth and Markets
- 3000 B€ Wealth
- 85 Million Consumers and growing

Sophia Antipolis, 10-Dec-2015

ETS1 M2M Workshop 2015 featuring oneM2M
ICT in support of older people...

At Work
- Staying active and productive for longer
- Better quality of work and work-life balance

In the Community
- Overcoming isolation & loneliness
- Keeping up social networks
- Accessing public services

At Home
- Better quality of life for longer
- Independence, autonomy and dignity
EIP-AHA: The EIP on Active and Healthy Ageing

New Knowledge
Proven Ideas
New solutions
Evidence and innovation guidelines
Deployment support

Horizon 2020, SC1

Public Health Programme
Structural Funds
EIB
ESF
EIT-KIC

JPIs
Lives
More Years Better
Alzheimer's

Health
EHealth
ICT & Ageing
AAL JP V2

Research
Innovation
Deployment
TARGET: +2 HLY by 2020

APPROACH:

- Combining demand and supply sides
- Building on existing & new instruments
- Ownership of key stakeholders
- High-level political commitment
- Very large-scale deployment & innovation
- Awareness and best-practice sharing
- Strategic Implementation Plan
- Reference Sites
Relationships among the EU Initiatives

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Horizon 2020, SC1

- JPIs
- Alzheimer's
- More Years Better
- eHealth
- ICT & Ageing

Public Health Programme
- Structural Funds
- EIB
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AAL JP V2

Research
Innovation
Deployment
AAL Association – AALA

Legal entity based in Brussels
Manages the implementation of the AAL Programmes

- The countries are members via one National Funding Authority
- Members sign a bilateral administrative agreement and pay a membership fee (10 000 Euros)
AAL Joint Programme
Applied research for ageing well

Using ICT (Tools, Systems and Services) for

- Better Quality of Life of elderly citizens
- Strengthening the industrial base in Europe

Promoting Innovation by

- Developing products and services for aging well at home, in the community and at work
- Creating critical mass of R & D & Innovation at European level
Call 1: Chronic Condition
Call 2: Social Interaction
Call 3: Self-Serve Society
Call 4: Mobility
Call 5: Home Care
Call 6: Occupation in Life
FP7 ICT & Ageing Research
> 35 projects, >125 M€ funding

- Advanced Prototypes for independent living/active ageing:
  - ADL, Cognitive support
  - Service and social robotics
  - Smart environments for early risk detection & intervention
  - Open Systems, Reference Architectures, Platforms

- Support: roadmaps, ethics, standards, Int’l cooperation
Perspective on a Platform for AAL

- Ambient Assisted Living started as an application focus of Ambient Intelligence vision

- Ambient Intelligence vision
  - Utilize Internet of Things potential to create smart human-centred environments that are context-aware, adaptive and anticipatory

- AAL should build on top of this and support the development of smart and independent living applications

- An AAL platform should help to
  - Manage the IoT complexity in homes as an open distributed system of systems
  - Help to utilize the cumulative potential of the sum total of capabilities
  - Support the implementation of the Sensing-Reasoning-Acting pattern
– Open Horizontal Service Integration Layer across all Verticals

**Benefits from**

- semantic Web technologies for **unified representation of data** regardless of domain and extraction technology, **unified cross-domain query language**, and **externalizable and sharable domain models**
- an implementation of semantic interoperability for **SoA at the level of communication protocol** (existing since 2008)

**Avoids domain-specific APIs** by reducing syntactical dependencies to one single brokerage API

**Allows dynamic evolution of arbitrary constellations based on loose coupling**

- Enables integration & Interoperability in a domain- and vendor independent way
- Future-proof contribution to managing complexity for the general IoT
How does it look like?

This is me
I need these
I offer those

universAAL “Manager”s

Context
History
Entrepot
Dialog
Manager
Profiling
Situation
Reasoner
Space
Gateway
Space
Orchestrator
UI
Handlers
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Horizon 2020, SC1

Health

eHealth

ICT & Ageing

AAL JP

Research    Innovation

Public Health Programme

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EIB

ESF

JPIs

More Years Better Lives

Alzheimer's

New solutions

EIP

EIP – AHA: The EIP on Active and Healthy Ageing

EIT

KIC

ICT & Ageing
ICT Policy Support Programme / CIP

- Large scale pilots
- Assisted living using existing technology
- Focus on evidence, organisation change, and business models
- Building on regional activities

16 pilots
> 50 Regions
> 20,000 users
> 70M€ funding

- Multiple Chronic diseases
- Cognitive impairment
- Integrated Care
- Fall prevention and detection
- Skills & carers
- EIP support
R&I Path towards an established Open Platform for AAL

era before universAAL

various "platform" projects

2010

Consolidation

universaal.aaloa.org
github.com/universAAL/
Apache SW License 2.0

2014

real-life large-scale rollout in 13 pilots in

DE
DK
ES
FR
GR
IT
NL
SI

2016

www.cip-reaal.eu
ReAAL as Stress-tester of

- 30+ applications ported to ReAAL as the common open service platform
- 100+ services based on these applications
- 6 000+ users benefiting from them in 13 pilot sites in eight countries
- Six months of evaluating the socio-economic impact during operation in real life, involving tens of new stakeholders

Expected Impact: Enlarge the ReAAL ecosystem and penetrate the market with ReAAL’s initial portfolio of applications
THANK YOU FOR YOUR ATTENTION!

Questions?

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