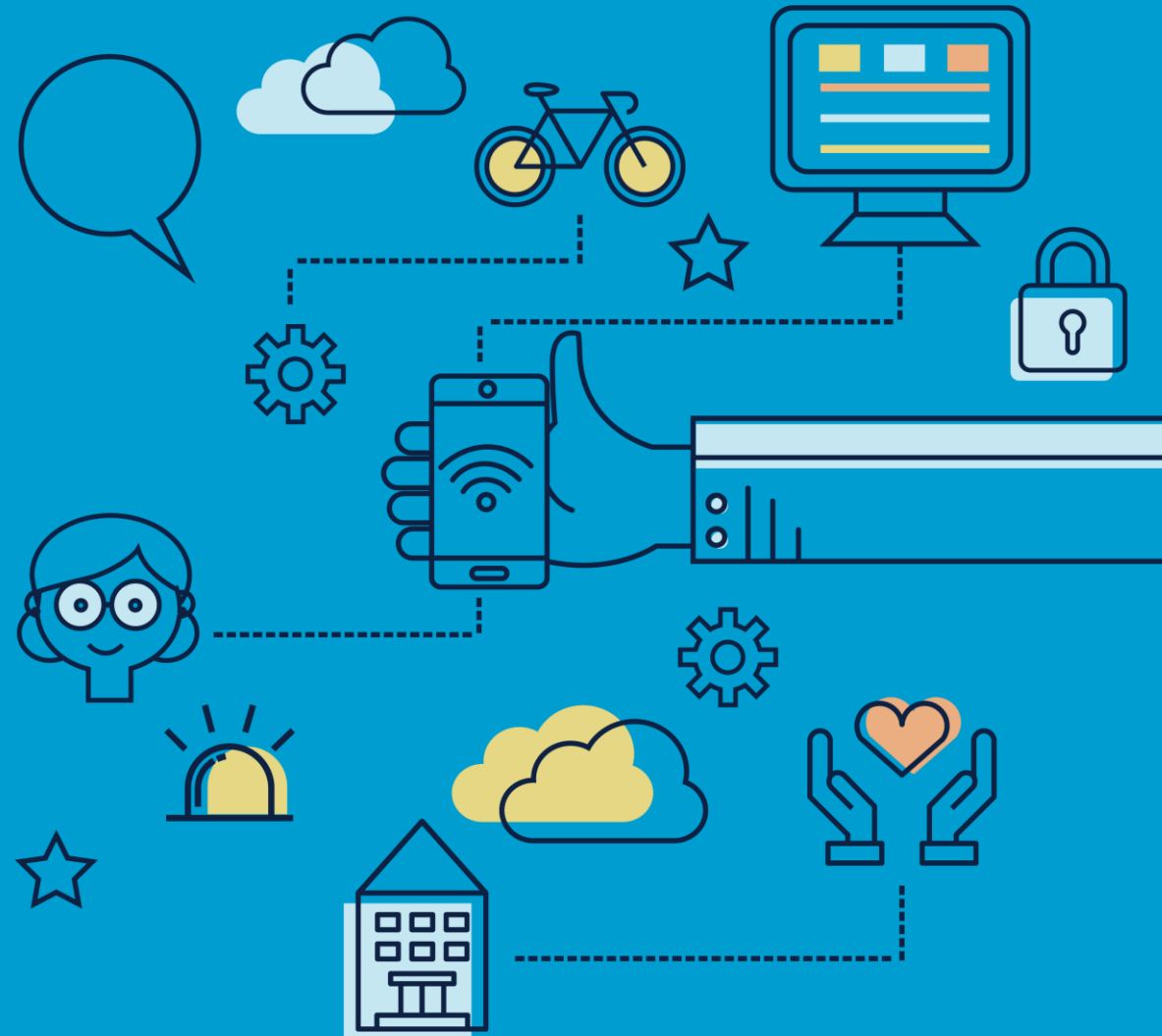# ACTIVAGE PROJECT

# IOT ON ACTIVE & HEALTHY AGEING

Author: Sergio Guillén
Organization: MYSPHERA
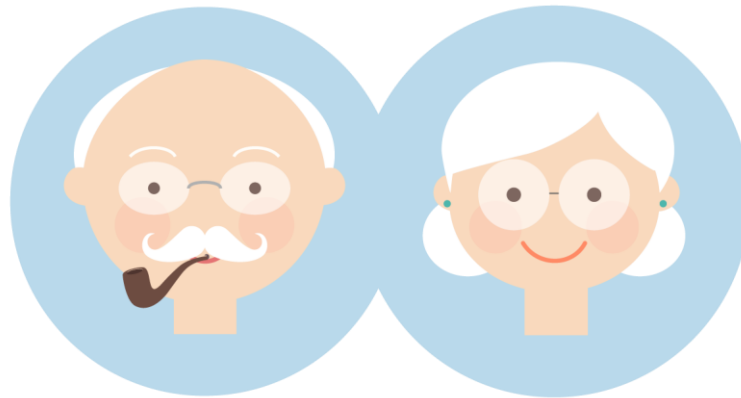Sguillen@mysphera.com

# CONTEXT

A very simple message: ACTIVAGE is here to plant a seed that will change the life of 100 million people across Europe, including us.
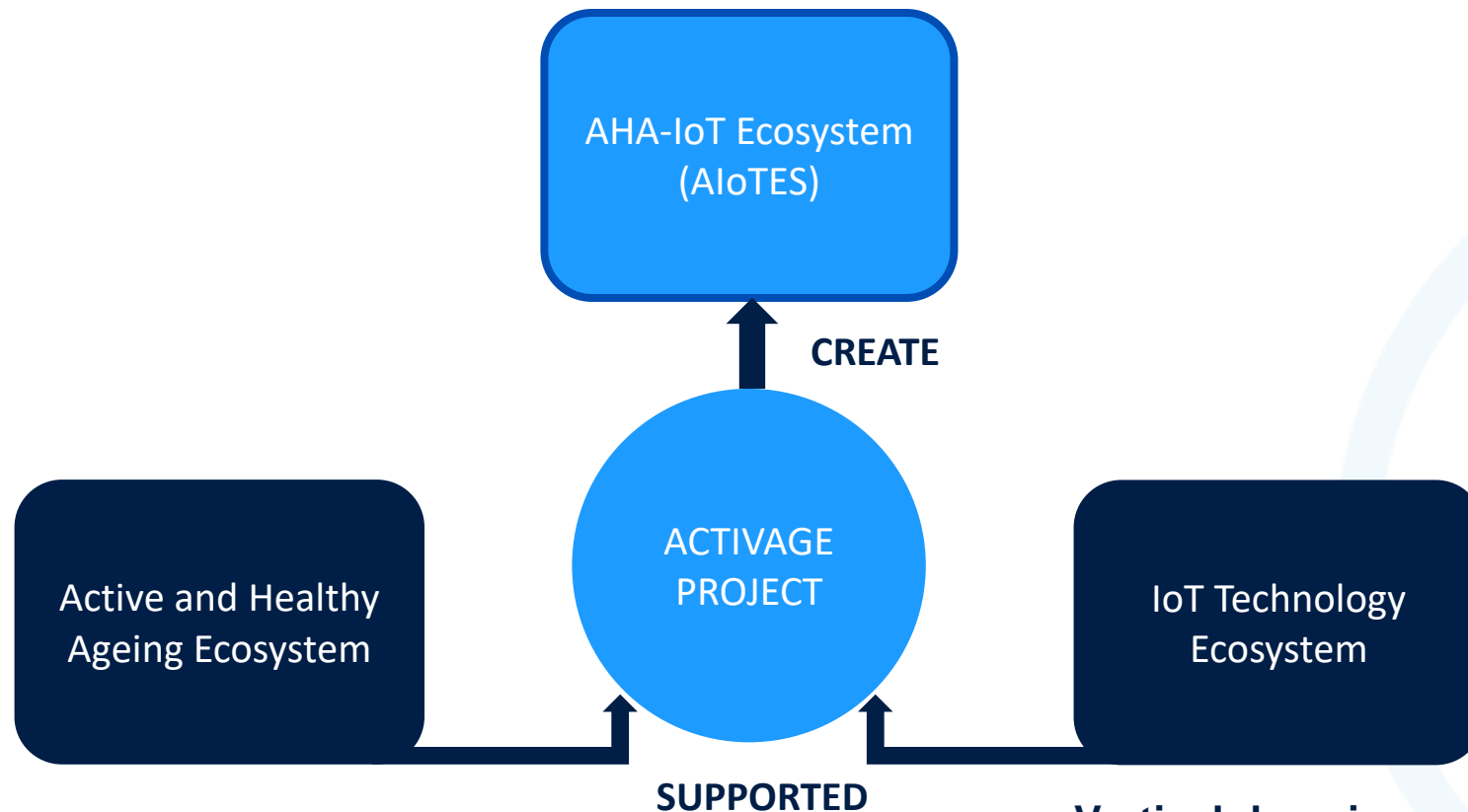
Me ➡️ 👴👵 ⬅️ You

# CONTEXT

ACTIVAGE is founded on the cross – road of two big strategic initiatives launched by the UE Commission in the frame of the European Digital Single Market

AHA-IoT Ecosystem (AIoTES)

**CREATE**

ACTIVAGE PROJECT

Active and Healthy Ageing Ecosystem

IoT Technology Ecosystem

**SUPPORTED**

**Tripple Win:**
- Better Quality of Life and autonomy for the European Senior citizen
- Sustainability of the Health Care System
- Competitiveness of the European Industry and creation of jobs

**Vertical domains:**
- Digital Transformation in Health and Care
- Smart connected Factories
- Smart Farm

**Horizontal enablers:**
- Internet of Things
- European Data Platforms

ACTIVAGE PROJECT

# ACTIVAGE CONTEXT
## Ageing population

- Mortality rates have fallen significantly: **heavy impact on health and social care systems**

- Final goals for EU initiatives related to older adults: **Active ageing and independent living**

- Active and Healthy Ageing **(AHA) community** pretends to **answer and prevent health and social care systems challenges** through Internet of Things **(IoT)**

- **Removing interoperability barriers** to convert the **current available IoT platforms** in a DYNAMIC ECOSYTEM with **connected devices and open systems and architectures integrated within different areas**



INTERNET OF THINGS
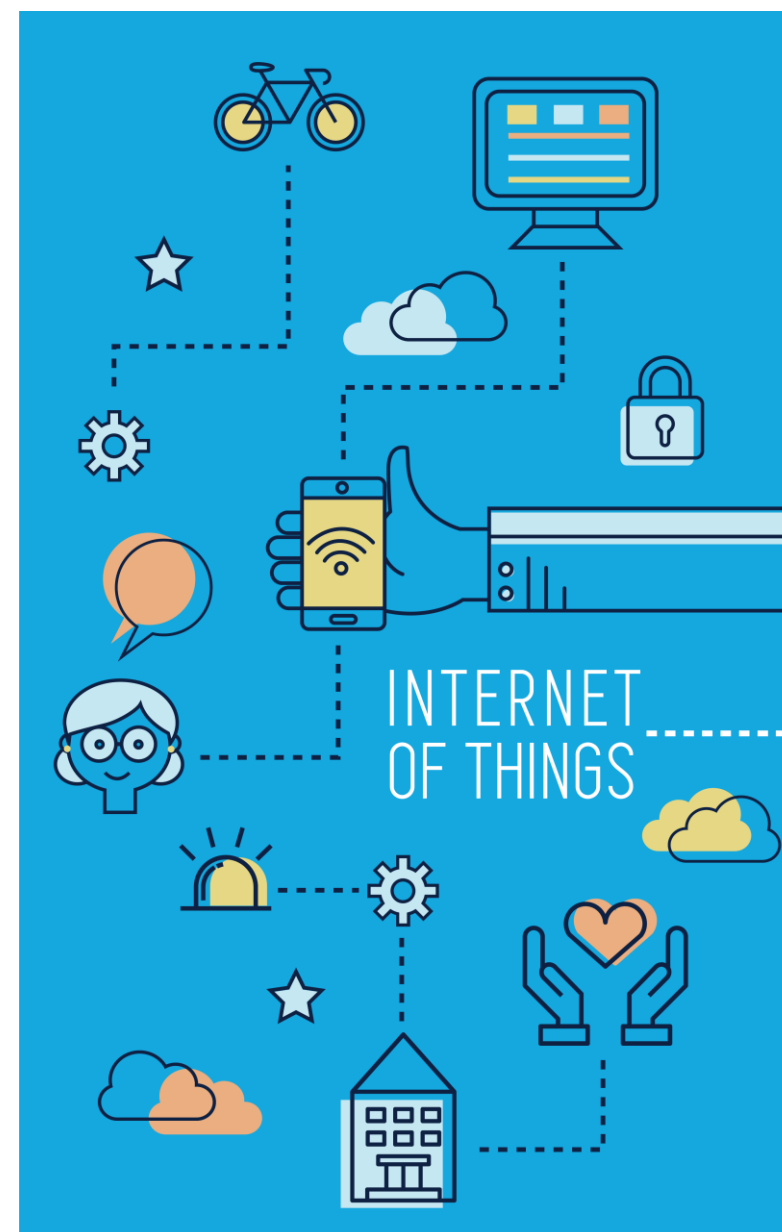
# VISION

The VISION of ACTIVAGE is to be the <u>global world-wide reference</u> for providing the EVIDENCE that STANDARD-SECURE-INTRAOPERATIVE IOT ECOSYSTEMS enable new BUSINESS MODELS and cost-effective solutions for ACTIVE AND HEALTHY AGEING, contributing to the <u>sustainability</u> of the health and care systems, the <u>competitiveness</u> of the European industry through innovation, and the <u>improvement</u> of the <u>quality of life</u> and <u>autonomy</u> of older adults in the form of <u>independent</u> living.

**SIMPLICITY IS NOT A FEATURE OF ACTIVAGE!!**

**Lets put in more simple words for our guests**

**(and some of our consortium members)…**

# VISION

"My Quality of Life is better becasue I have a blend of affordable services that fit my (our) needs. I'm feel free to choose what is better for me (us) any time and I've full control on my life"

"As Service Provider, I have enlarged my portfolio de services for the living of senior people customers and I'm able to upgrade, downgrade, adapt to the very personal needs of my customers. Moreover, I've enlarged my customer base!!!! And now I'm more profitable!! "

"In my small company we are developing a new advanced algorithms to predict risks of and prevent Falls. Our competitive advantage is that we only use context data and no wearables. Well leverage spreaded  IoT ecosystems throuhg Europe to reach international market. We rose 500K of venture capital to go international"

"In my town we have deployed an IoT smart City infrastructure Inaddition to city services we are providing platform service to our Social Care Office to deliver multiple services through providers to senior citizen in town   .

**ACTIVAGE have to prove with measurable key performance indicators that all the above and more is possible and true.**
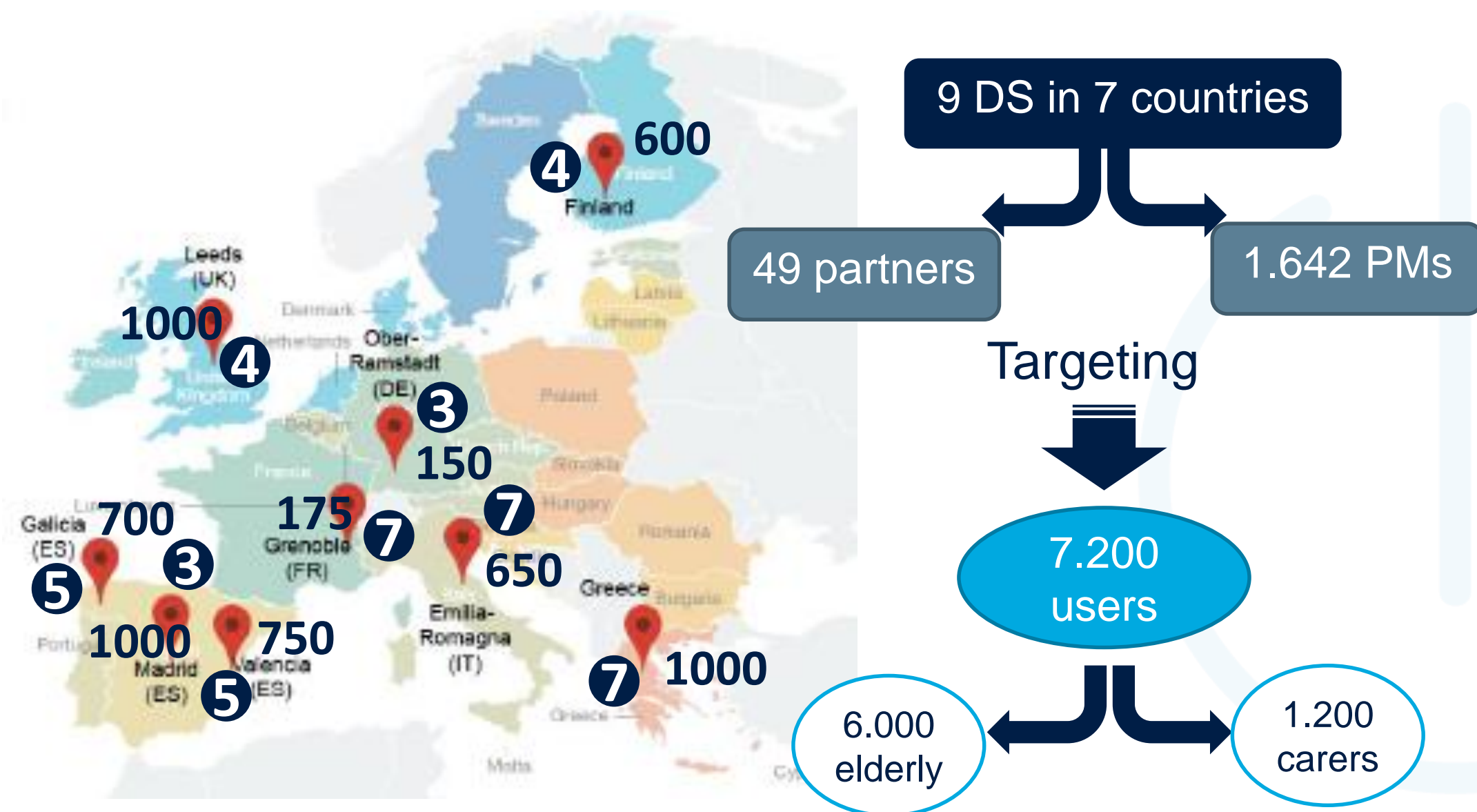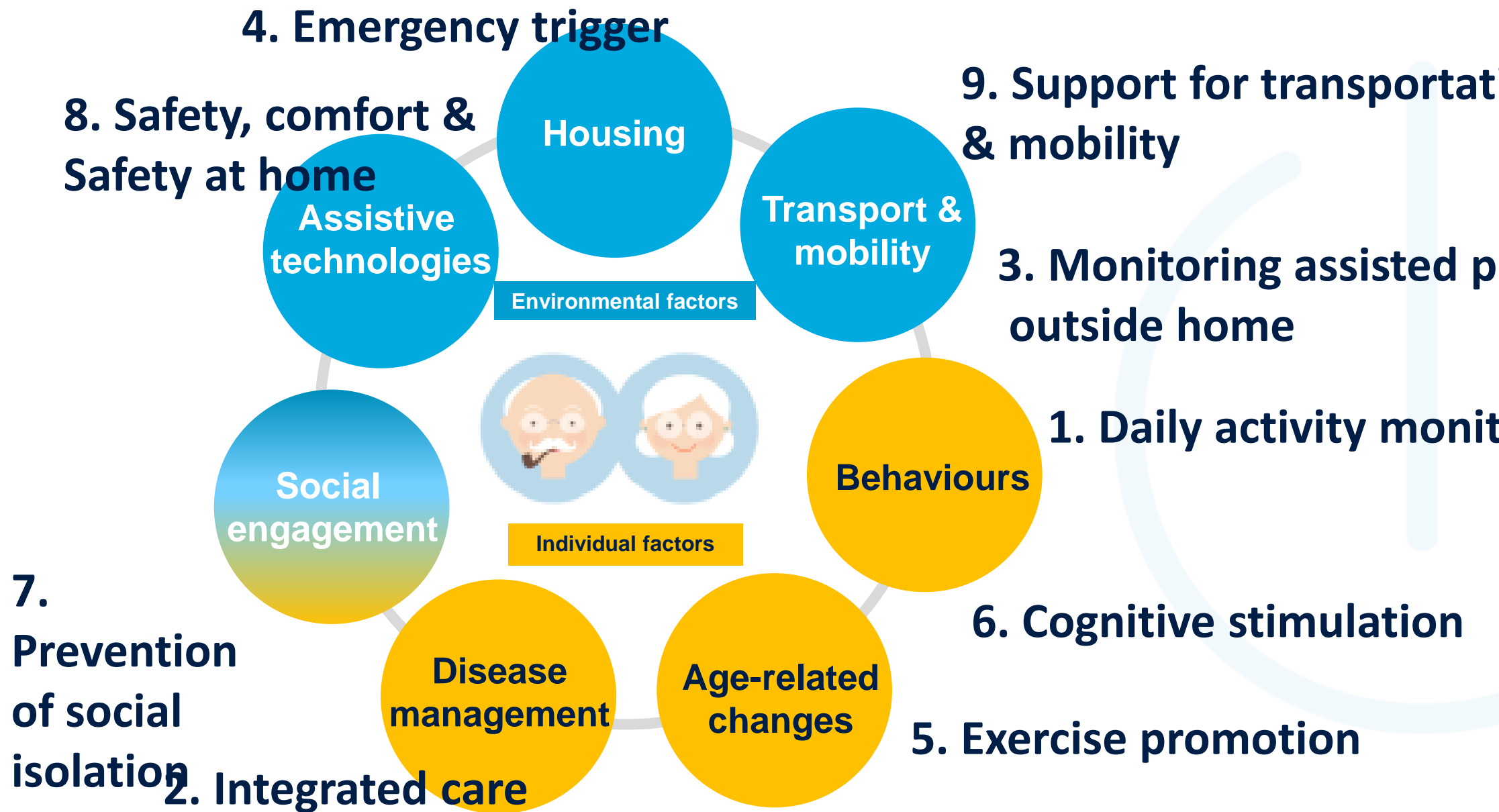
# HOW WE ARE GOING TO IMPLEMENT
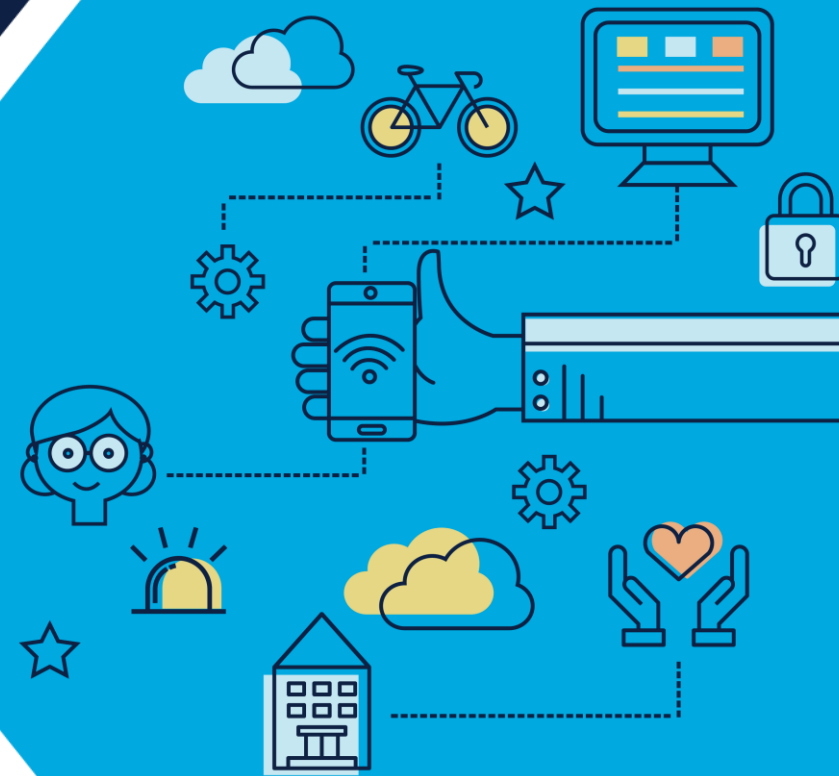
# MAIN ACTIVAGE OBJECTIVES

- **Prolong** and **support** the **independent living** of **older adults** in their **living environments**

- Respond to **real needs** of **caregivers**, **service providers** and **public authorities**

- Deployment of **innovative and user-led large scale pilots** across **nine Deployment Sites** in **seven European countries** based on the IoT technologies

- Create the **first European interoperable and open ecosystem**, **reusing existing IoT platforms, technologies and standards** that will enable to develop AHA IoT services and solutions at large scale.

- Assess the **socio-economic impact**, the benefits of **IoT-based smart living environments** in the **quality of life and autonomy of older citizens**, and in the **sustainability** of the **health and social care systems** → **new business models**

# ACTIVAGE CONSORTIUM



**600** — 4 — Finland

**1000** — 4 — Leeds (UK)

Ober-Ramstadt (DE) — 3 — **150**

**700** — Galicia (ES) — 5

**175** — Grenoble (FR) — 3

**7**

**7** — **650** — Emilia-Romagna (IT)

**1000** — Madrid (ES) — 5

**750** — Valencia (ES)

**7** — **1000** — Greece

**9 DS in 7 countries**

49 partners

1.642 PMs

Targeting

7.200 users

6.000 elderly

1.200 carers

Ⓝ **Number of partners in the local ecosystem**

# ACTIVAGE USE CASES

4. Emergency trigger

8. Safety, comfort & Safety at home

9. Support for transportat & mobility

3. Monitoring assisted p outside home

1. Daily activity monit

6. Cognitive stimulation

5. Exercise promotion

7. Prevention of social isolation

2. Integrated care

Housing

Transport & mobility

Assistive technologies

Environmental factors

Social engagement

Individual factors
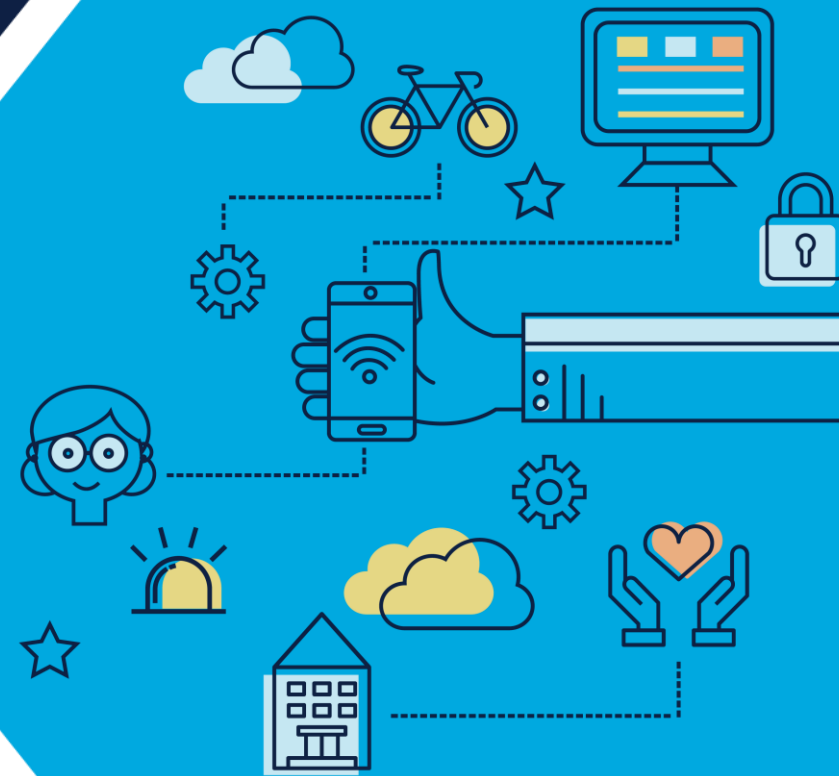
Behaviours

Disease management

Age-related changes

# UC MAPPING TO DS



1 Daily activity monitori[ng]

2 Integrated care

3 Monitoring assisted pe[rson]
outside home

4 Emergency trigger

5 Exercise promotion

6 Cognitive stimulation

7 Prevention of social iso[lation]

8 Safety, comfort & Safet[y]

9 Support for transporta[tion]
& mobility

# IOT LEGACY PLATFORMS

# IOT DEVICES



❶ **In-door sensors/act...**

❷ **Outdoor sensors**

❸ **Wearable sensors**

❹ **Health devices**

❺ **User interaction dev...**
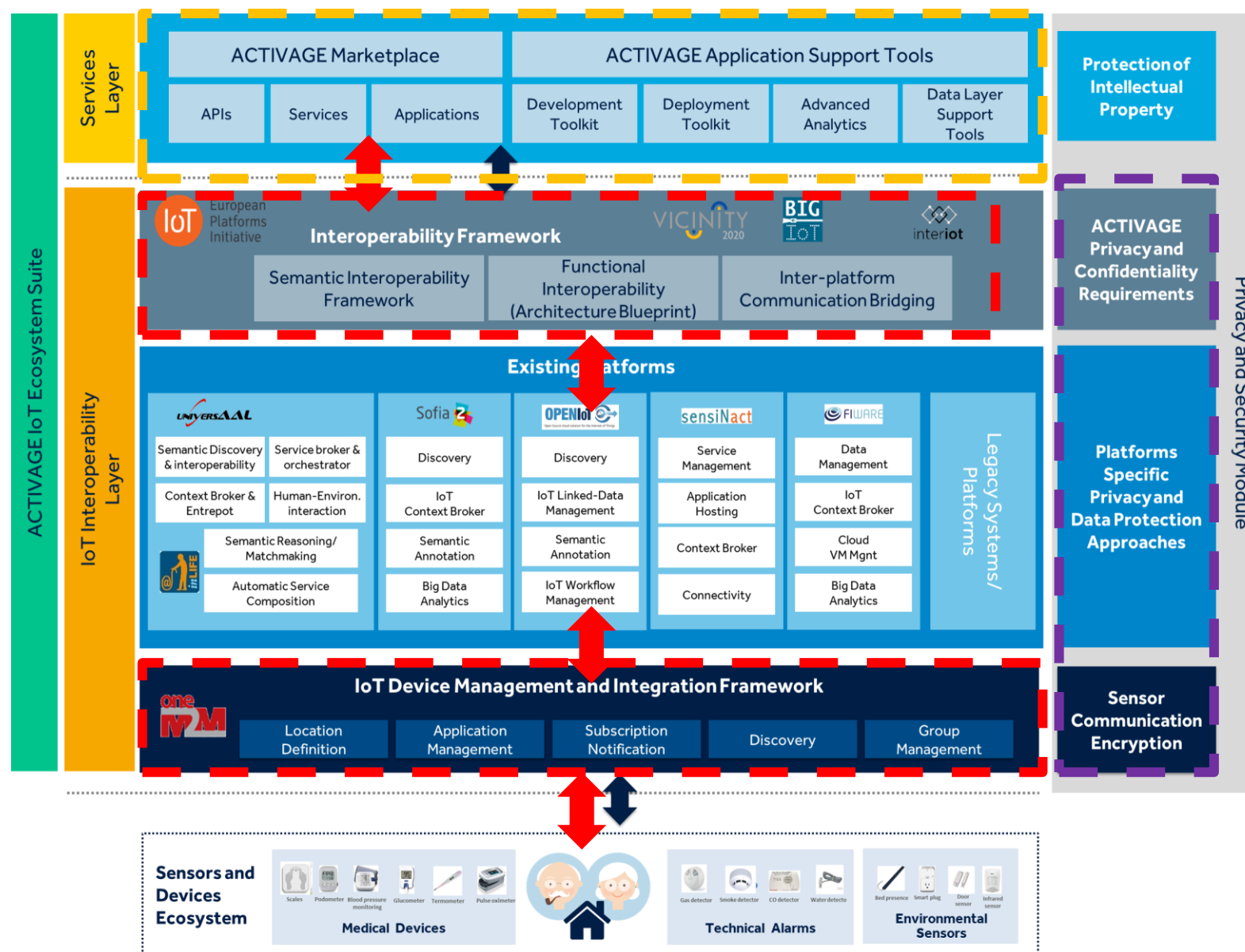
# AHA-IOT GENERIC ARCHITECTURE
## Baseline
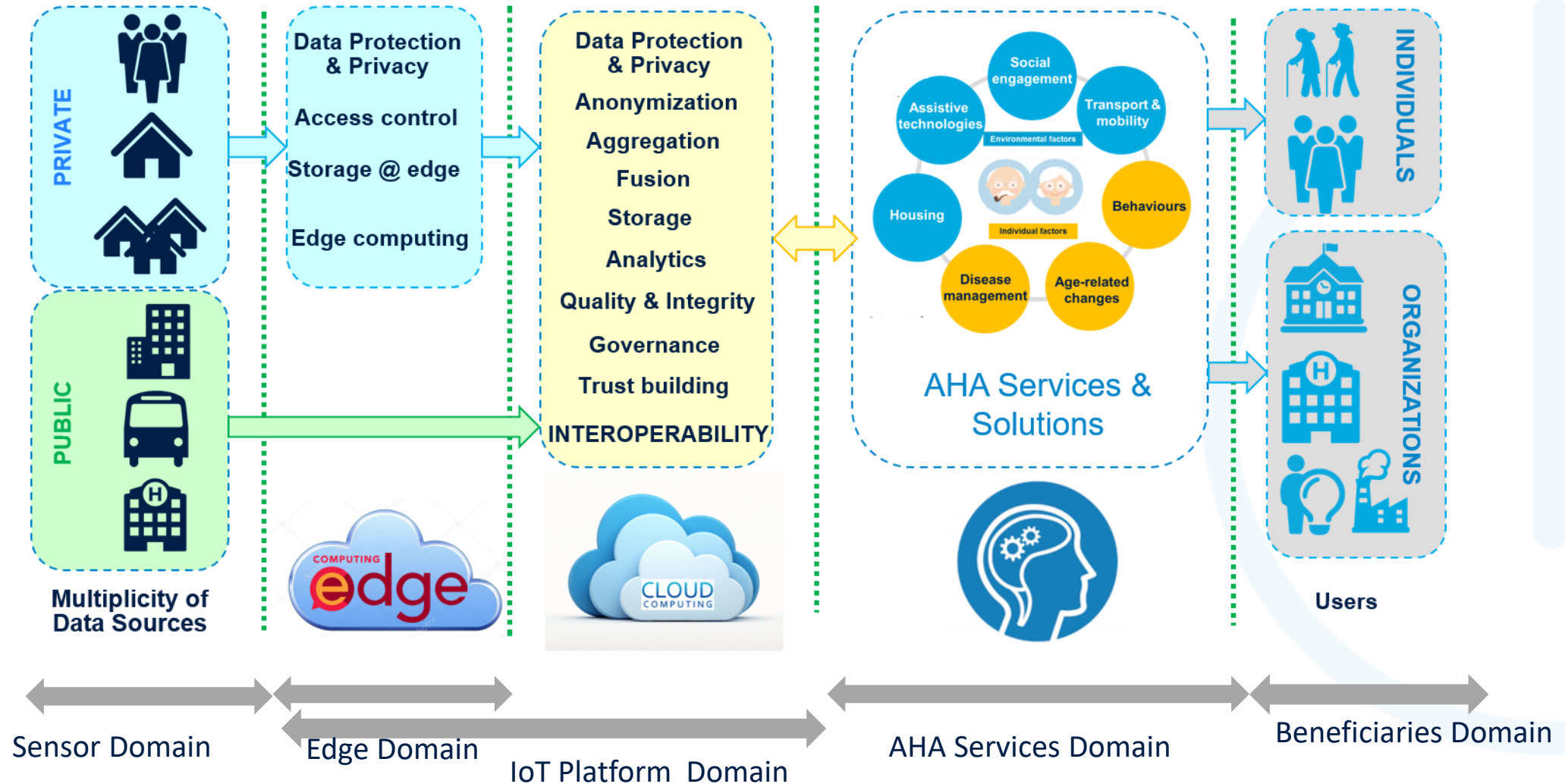
# FULLY-OPEN AHA-IOT ECOSYSTEM



IoTES I-OP LAYERS

**PRIVATE**

**PUBLIC**

**Multiplicity of Data Sources**

Data Protection & Privacy

Access control

Storage @ edge

Edge computing

AHA App User side

Data Protection & Privacy

Anonymization

Aggregation

Fusion

Storage

Analytics

Quality & Integrity

Governance

Trust building

INTEROPERABILITY

AHA Services & Solutions

Social engagement

Assistive technologies

Transport & mobility

Environmental factors

Housing

Behaviours

Individual factors

Disease management

Age-related changes

INDIVIDUALS

ORGANIZATIONS

Users

Sensor Domain

Edge Domain

IoT Platform Domain

AHA Services Domain

Beneficiaries Doma

Service LAYER

AIoTES S&P LAYER

**AHA – IoT ECOSYSTEM DOMAIN**

ACT✆VAGE PROJECT

The most radical and disruptive innovation produced by ACTIVAGE will be the creation of a **standards-based IoT Ecosystem for Health and AHA** that includes a **"Person Centered Data Management Framework"**

# IOT ON ACTIVE & HEALTHY AGEING

## Thank you for your attention

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