
Smart House for Elderly Assistance

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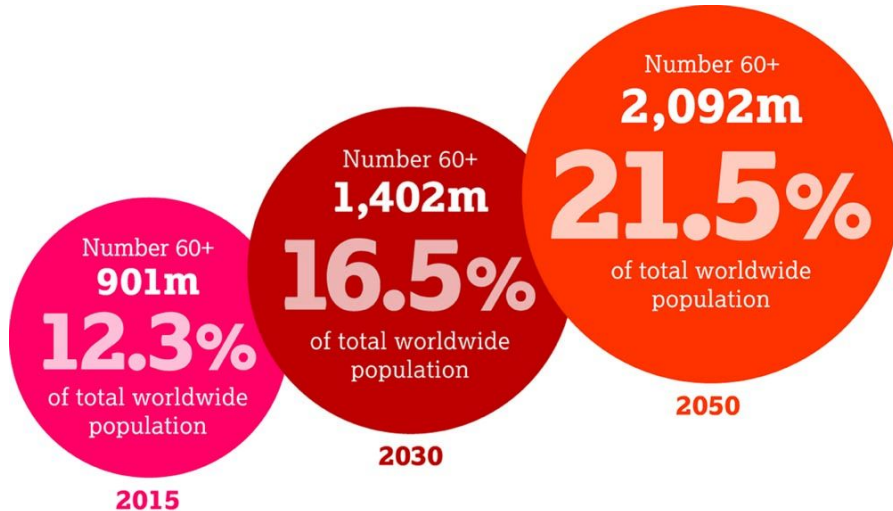


Context

Ageing of population



Growing need for
effective methods of
care through
technology



A young woman with blonde hair, wearing a white shirt, is smiling and hugging an elderly woman with short blonde hair who is sitting in a wheelchair. The elderly woman is wearing a blue and white checkered shirt. They are outdoors in a park-like setting with green trees and grass in the background. The text is overlaid on the image.

A **simple scenario**
with endless
opportunities for
further development

Scenario

Assisting an elderly person in
need

1. Detecting anomalies
2. Identifying drugs
3. Locating person
4. Assisting the person

ADREAM

by

LAAS-CNRS



OM2M
Connecting things



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OM2M
Connecting things





1. Detecting anomalies

→ **Heart rate monitor**

Connected to **IoT network** for constant monitoring via **BLE/ZigBee**

→ **Machine learning**

To **detect heart rate anomalies**

→ **Future: Extendible**

Using a multi purpose open source medical bracelet, we can use **more metrics** in the long term



2. Identifying drugs

- **QR code**
Key objects are tagged with a **QR code**,
for faster **recognition**
- **Interaction with its surroundings**
Handle medical supplies
- **Future: Different action for
different situations**



3. Locating person

→ **Proximity sensor**

Detect the **person's whereabouts** in the house

→ **Future: Multiple people**



4. Assisting the person

→ Move

→ Deliver drugs

→ Future: Extended assistance

Helping the person get up after **falling**,
streaming video and **data** to a help
center / ER for diagnostic or help,
computer vision for instant diagnostics.

Technologies



Bluetooth LE: sensor-OM2M communication

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OM2M: organize data from sensors



Java, Python + AI: Detecting anomalies from OM2M's data

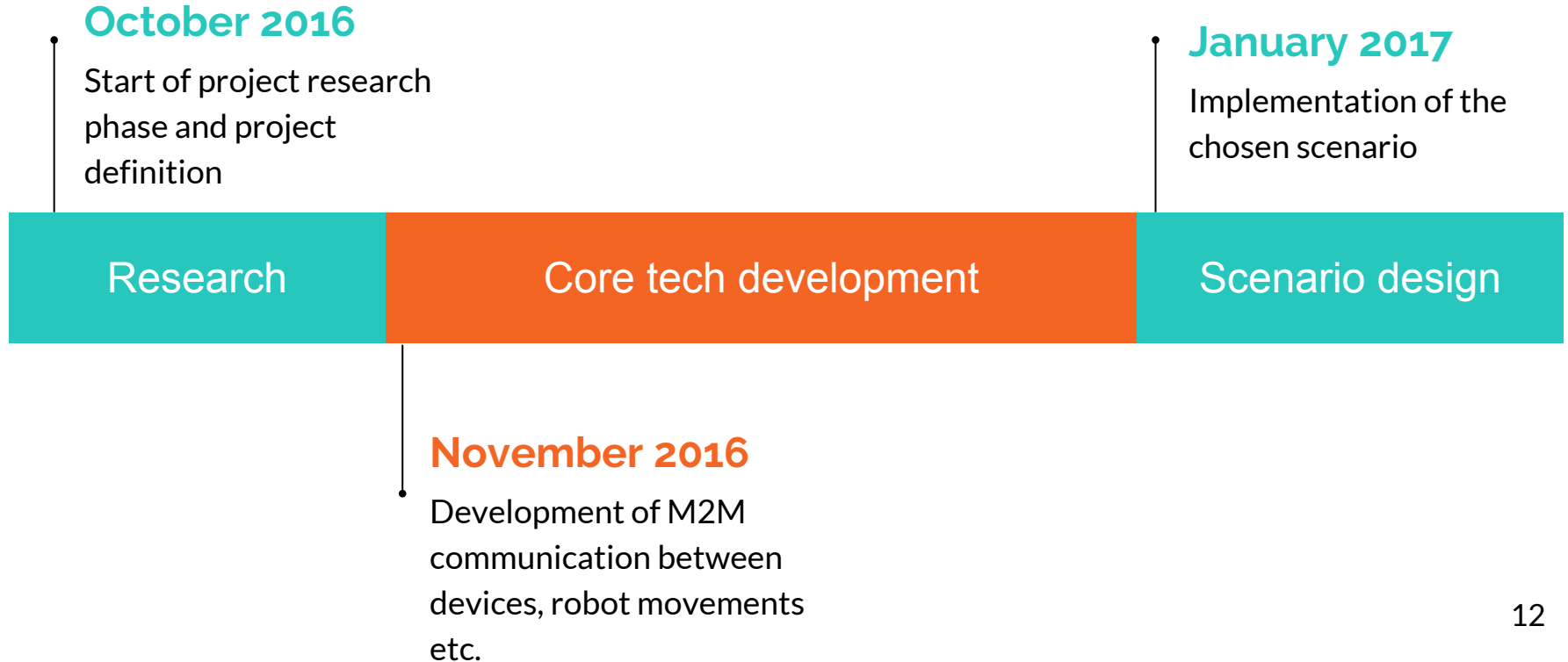


Ontologies: spatial comprehension, diagnostic



ROS (Robot OS): control the robot

Roadmap



Let's make
the **world** a
better place!

Through seamlessly integrated
technology that automates
healthcare

