MoSHCA: Award for SME Success
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Project consortium
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Project rationale

- Number of people aged over 60 years in EU is increasing
- **Healthcare systems** are challenged to meet the growing demand
- Empowering patients with **self-management technology**
- Chronic disorders can be managed better in the **home environment** than in a clinic or hospital
- An ideal platform for delivering the “health care assistants” has matured in the form of **smartphones**: they are sophisticated, versatile, small, networked computing devices
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Project objective

Develop and demonstrate a “Mobile Smart Healthcare Assistant”

1. 7 use cases

2. Intelligent systems
   - Reasoning techniques
   - Probability methods

3. Innovative sensors
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Use Case Rationale – Examples

Mobility Use Case:
  - 600,000 hip fractures in Europe per year
  - Rehabilitation between 41 days and 125 days, or not at all
  - For many patients: hip fracture = end of independent living

Epilepsy Use Case:
  - Worldwide, about 50 million people are estimated to have epilepsy
  - Patients suffering from epileptic seizures are typically not able to alert care givers (family or medical personnel)
  - This results in either unnecessary health damage caused by a seizure or permanent monitoring to prevent that
  - The latter solution is an immense burden on a care giver and a massive invasion of the patient’s privacy and/or mobility
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Mobility use case

Target
- Complex Fractures
- Hip Fractures

Multi-sensor system
- Real-Time Weight Measurement
- Streaming over BLE – 50Hz
- Mobile and Ambulant

Predictive
- Patient rehabilitation duration
- Case-based reasoning
- Bayesian networks

SensiStep
MoSHCA Innovations
Mobility use case

![Graph showing step duration vs. max peak with different markers for steps before and during last 1 day, last steps center of gravity, and individual patient progression.](image-url)
MoSHCA Innovations
Epilepsy app

Sound patterns
- Monitor and analyse sound patterns on a Mobile Device

Recognition
- Recognition of patient specific epilepsy sounds
- Automatically alerts care providers via their mobile device after detection of relevant sounds
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Exploitation highlights

- Epilepsy detection technology used for monitoring 2000 patients at ‘s Heeren Loo care group (10 year contract)
- Mobile guaranteed messaging app for care providers in multiple Dutch hospitals (MCA, Heliomare, AMC)
- Sensistep (mobility use case) used in The Netherlands, Belgium and Sweden
- Clinical trials in 2 use-cases
Thank you for your attention