

## **I-DONT-FALL**

***Integrated prevention and Detection  
solutions Tailored to the population and  
risk factors associated with FALLs***

CIP - Pilot type B

## Project Identity Card

- **Acronym:** I-DONT-FALL
- **Full Title:** *Integrated prevention and Detection sOlutioNs Tailored to the population and risk factors associated with FALLs*
- **Objective 3.1:** *ICT solutions for fall prevention and detection and ICT and ageing network*
- **Funding Scheme:** CIP - Pilot Type B
- **Duration:** *36 months*
- **EU Maximum financial grant:** 2.634.000,00 €
- **Partners:** 15
- **Country coverage:** *Italy, Spain, Greece, United Kingdom, The Netherlands, Denmark, Serbia*

# I-DONT-FALL Consortium

**2 Academy/R&D**  
UPC, SSSA

**5 Industrial Players:**  
ICT Players (ENG, SiLO,  
DOCOBO)  
Care Service Providers  
(TESAN)  
Medical Informatics (CIDK)

**8 Pilot sites**  
FSL, AUSL (Italy)  
TUD (The Netherlands),  
FRONTIDA, SPC (Greece)  
HGG, SERMAS (Spain)  
MoSG (Serbia)

# Objectives and Goals

## Objectives

- to assemble and pilot integrated **fall prevention, detection and management** ICT-based services able to be **flexibly configured** and **personalized** to the needs and risk factors of different target groups of elderly people

## Impact

- GO1: To improve the quality of life (QoL) through the efficient prevention and detection of falls
- GO2: To contribute to EU wide policy development for active ageing on the basis of best practices
- GO3: To reduce societal (Healthcare and community) costs

## Deployed and Piloted Services

- **Fall Prevention Services**
  - Physical training (i-Walker)
  - Cognitive Training (IDF-Sociable)
- **Fall Detection Services**
  - Fall detection Alarms (WIMU)
- **Fall Management Services**
  - Fall Knowledge Management Services (Areas, Doc@Home)
  - Decision Support Services for Fall Management (Doc@Home)
  - Telecare/Teleassistance Services (TESAN)

## Physical Training (i-Walker)

- i-Walker
  - Performs physical training
  - Performs assessment tests
    - 100 meter walking test
  - Provides data logging
    - E.g. Distance, Speed
    - Data stored at the IDF server
- Technology used
  - Sensors and actuators



## Cognitive Training (IDF-Sociable)

- Computer-based cognitive training games
  - Cover all the cognitive skills
    - E.g. Orientation, Attention, logical reasoning
    - IDF-Sociable includes three new games especially designed for practicing cognitive skills related to falls
  - Use simple interfaces, i.e. surface computing equipment.



# Fall detection (Wearable IMU)

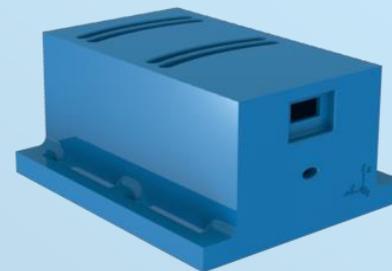
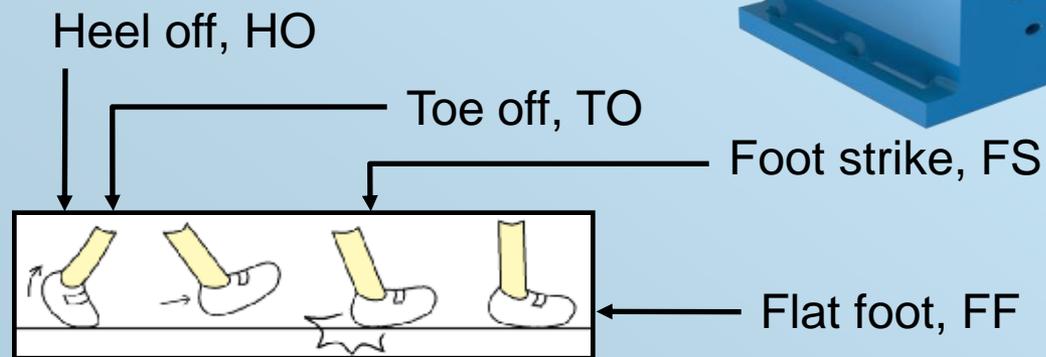


## WIMU used for

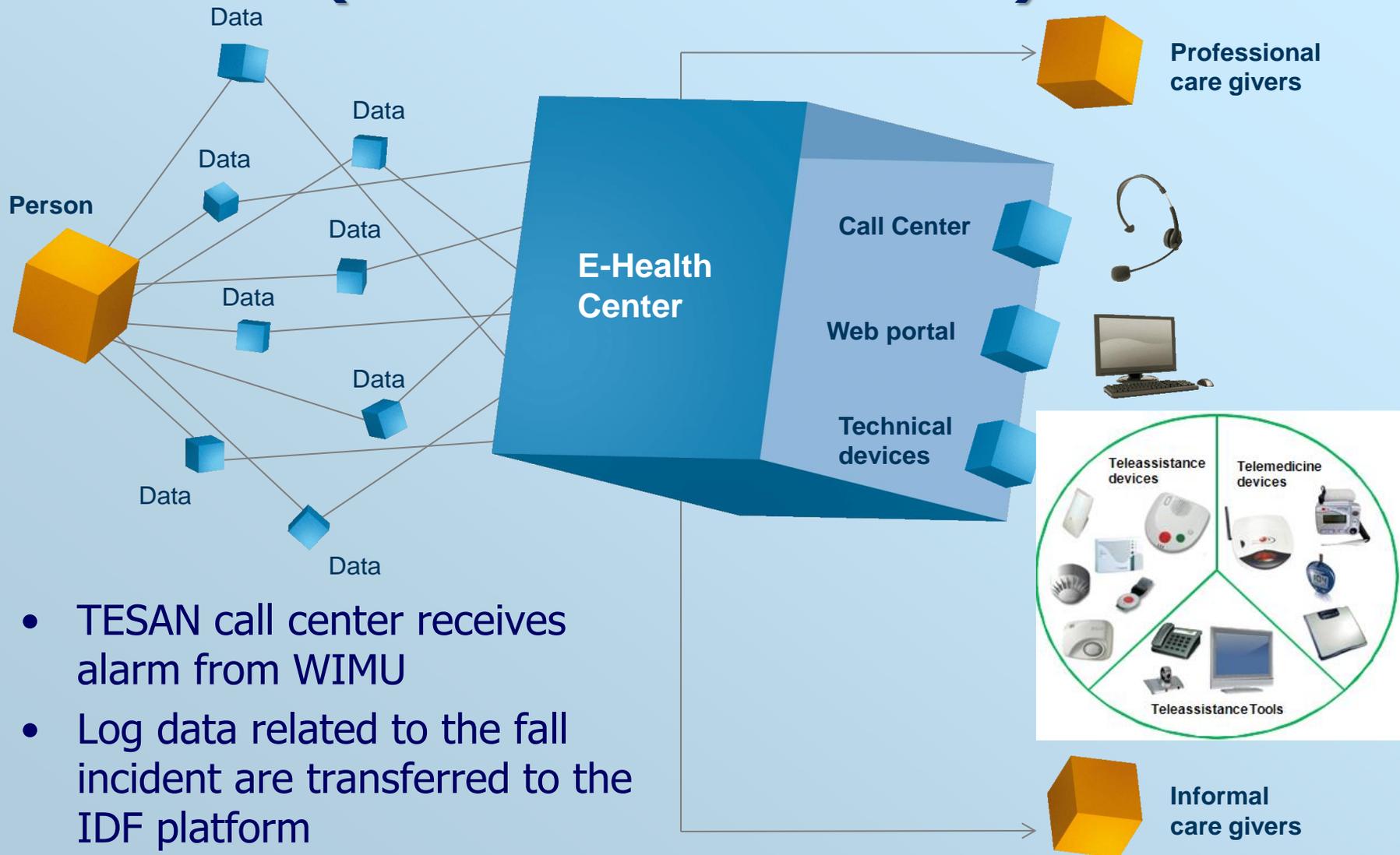
- Fall detection
- Assessment (through 6 minutes walking test)

## Characteristics

- sensor data captured from WIMU
- classification accuracy > 99% (walking/jogging)
- systematic error < 10 ms
- time latency < 100 ms



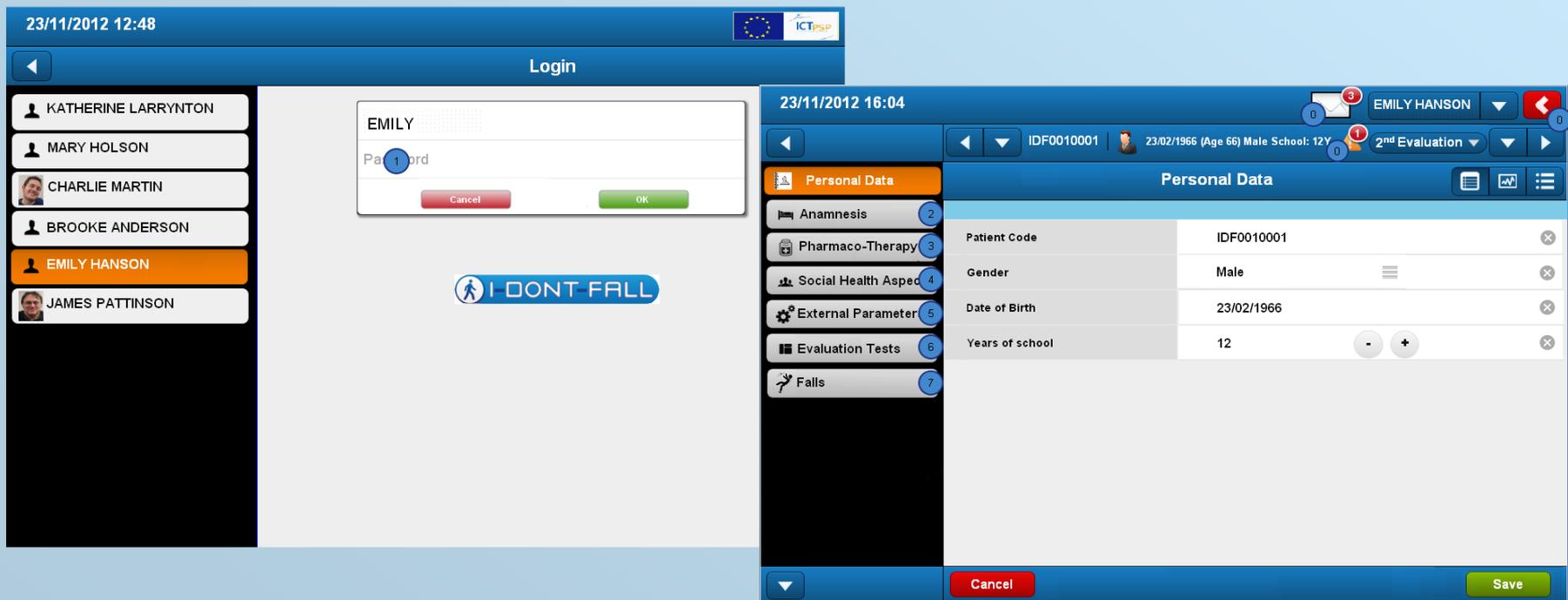
# Telecare/Teleassistance services (TESAN E-health center)



- TESAN call center receives alarm from WIMU
- Log data related to the fall incident are transferred to the IDF platform

# Patient Management: AREAS<sup>®</sup> EHR

- Primary Clinicians' interface for patient management
  - Access to data collected
    - Patient's data end evaluation tests' results
    - Pharmacological Therapy, Social Health Aspect, Falls diary data



The screenshot displays two overlapping windows from the AREAS EHR system. The background window is a login screen with a list of clinicians on the left and a login form in the center. The foreground window shows a patient record for Emily Hanson, with a sidebar menu and a main data table.

**Login Screen (Background):**

- Header: 23/11/2012 12:48, I-DONT-FALL logo, ICTPSP logo.
- Header: Login
- Clinician List:
  - KATHERINE LARRYNTON
  - MARY HOLSON
  - CHARLIE MARTIN
  - BROOKE ANDERSON
  - EMILY HANSON** (selected)
  - JAMES PATTINSON
- Login Form:
  - EMILY
  - Pa 1 ord
  - Buttons: Cancel, OK

**Patient Record View (Foreground):**

- Header: 23/11/2012 16:04, EMILY HANSON, 2nd Evaluation
- Header: IDF0010001, 23/02/1966 (Age 66) Male School: 12Y
- Sidebar Menu:
  - Personal Data (1)
  - Anamnesis (2)
  - Pharmaco-Therapy (3)
  - Social Health Aspect (4)
  - External Parameter (5)
  - Evaluation Tests (6)
  - Falls (7)
- Main Data Table:
 

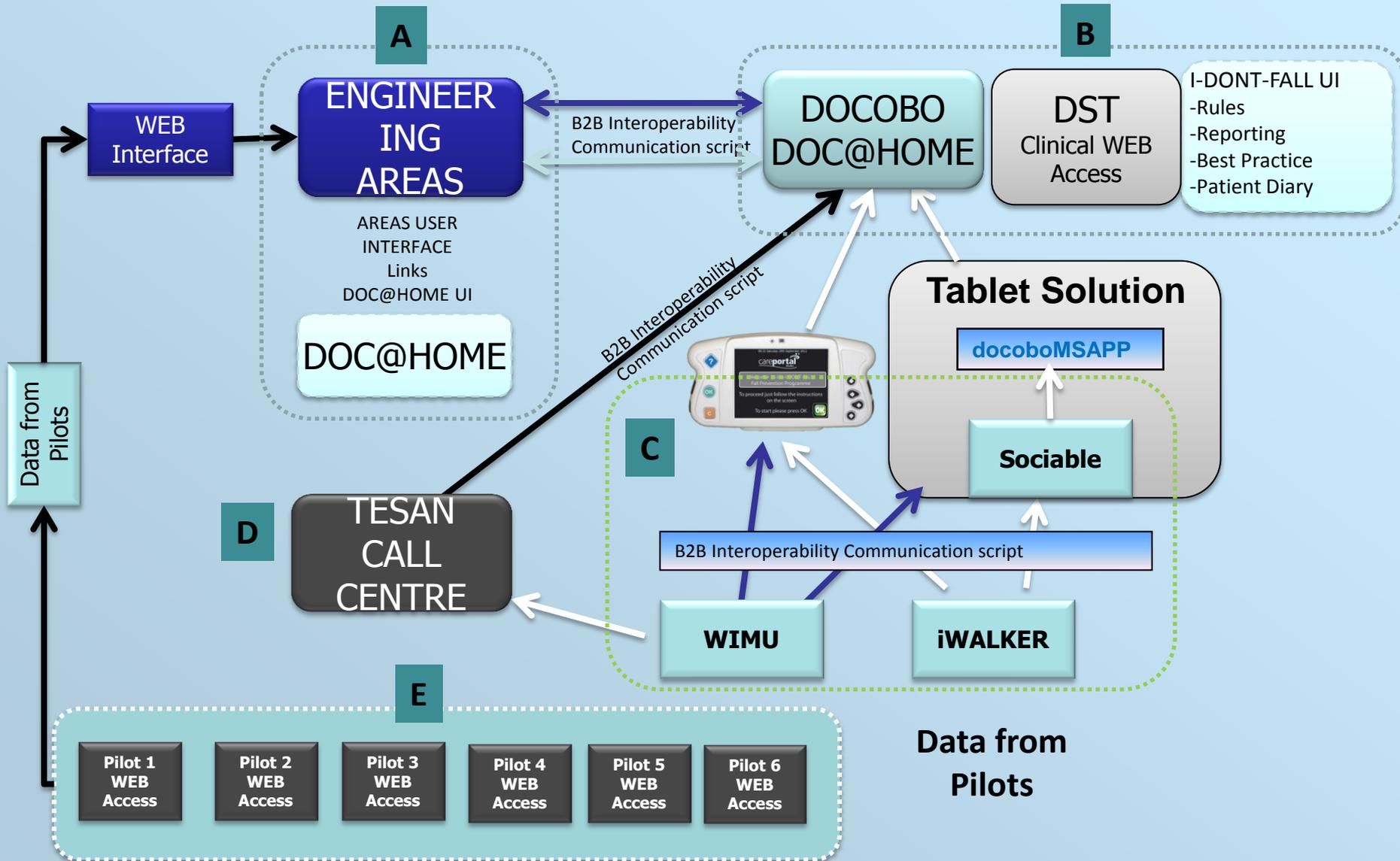
Personal Data	
Patient Code	IDF0010001
Gender	Male
Date of Birth	23/02/1966
Years of school	12
- Buttons: Cancel, Save

# Falls Diary & Data Collection: Doc@HOME, Careportal

- Doc@HOME is the gateway of I-DONT-FALL Platform
  - It provides a unique point for data collection
- Careportal implements
  - Falls diary (Questions to be answered in case of fall)
  - Act as a gateway for data collection from iWalker and WIMU



# IDF Architecture



# I-DONT-FALL Pilot

A **Randomised Clinical Trial** supported by a sound and recognised methodology

**~500 Users:**

- Secondary fallers
- Elderly 65+ (mainly 80)
- Patients suffering cognitive decline
- Stroke patients
- Patients suffering of clinical disease

Pilot sites in 5 European Countries

- Italy
- The Netherlands
- Greece
- Spain
- Serbia

Patients will be divided in 4 groups:

(a) Walking Training b) Cognitive Training c) combined training d) Placebo

**Pilot operations** at home/Clinical care/Hospital

# **Current Project Status**

*... From the LAB to the pilots*

- Technology integration completed
- Technical validation completed
- Pilot deployment under progress - 2 /8 pilot sites set up and ready to start testing with real end users

## Expected tangible outcomes

- I-DONT-FALL **Configurable Platform** for prevention, detection and management of falls improving the QoL of elderly and/or patients susceptible to falls
- Improvement in Individual's fall prevention
- **Best Practices** associated with fall management solutions development and deployment
- **Guidelines** on how to personalise the cares and blueprints on how to deploy and customise effectively ICT based solutions
- **New Medical Knowledge** on effectiveness, sustainability and wider applicability/use of fall management solutions

For more information visit our web site:

[www.idontfall.eu](http://www.idontfall.eu)

**THANK YOU FOR YOUR  
ATTENTION!**