

iNEMO Challenge Winner 2015,

STMicroelectronics

DAPHNE PROJECT

ACCORDO DI PROGRAMMA QUADRO MIUR-MIDE-REGIONE TOSCANA DGRT 758/2013 PAR FAS 2007-2013



PCB CAD Layout

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C/C++

Scuola Superiore Sant'Anna

Design Concept & Prototype

Firmware Programming

Data Processing

HANDi - wearable sensor devices: finger posture/movement measure and analysis upper and lower limbs motor assessment

- Interaction
- ✓ gesture recognition



Cloud Computing

HANDi-G

- One coordinator located on the wrist/forearm
- with a 9-axis IMU and microcontroller (STM32F103xE)
- 3 finger units with a 9-axis IMU and microcontroller
- 100/50Hz sampling frequency
- Digital and Kalman filtering
- Battery supply
- Bluetooth standard of communication





HANDi-F

• 9-axis IMU and microcontroller (STM32F103xE)

- 100/50Hz sampling frequency
- Digital and Kalman filtering
- Battery supply

DAPHNE

- Bluetooth standard of communication
- Single/double foot gait analysis

Objectives

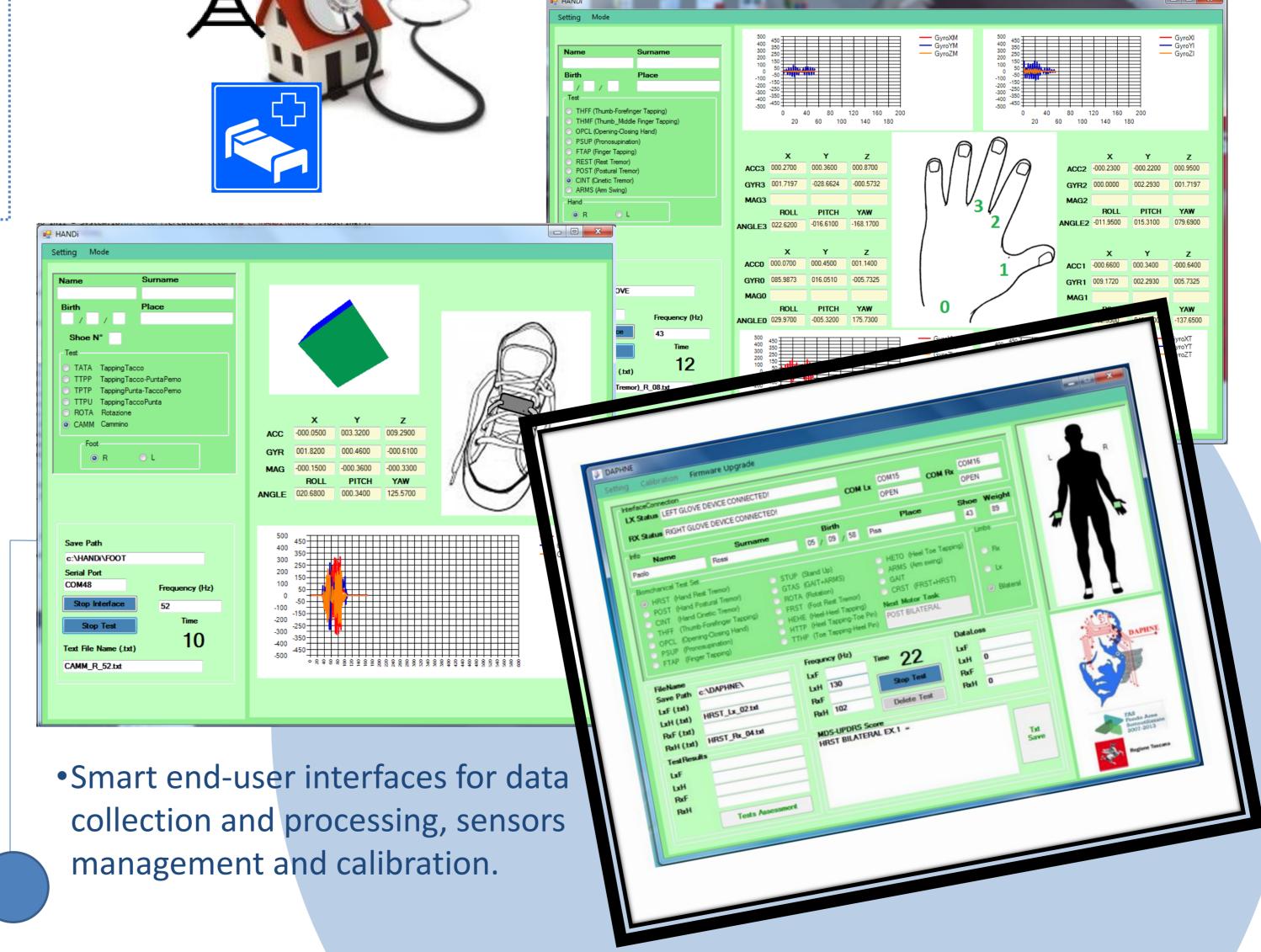
 \checkmark Personalized solutions of (early) diagnosis, therapy guidance, rehabilitation in Hospital and at home

HANDi-R

- •9-axis IMU and microcontroller (STM32F103xB)
- Proximity/gesture sensors
- 100/50Hz sampling frequency
- Digital and Kalman filtering
- Bluetooth standard of communication
- Battery supply
- Single ring or multipoint sensor network
- •Flexible multilayers board

Innovative sensors with mature technology for precise medicine

- ✓ Identification of innovative scales and features coming from the real life;
- Empowering patients with advanced immersive **interfaces** (adaptive, robots, etc.)





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- G06F 3/01 (2006.01), G06K 7/10 (2006.01), H04B 1/10 (2006.01) IPC:
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