Robot

Description:

In a critical situation (for instance fall of user) the Robot will try to find a way to the user and will start a simple conversation. By a few questions the robot will find out if an emergency case happened or if a false alarm was trigged off throughout the data analysis.
To communicate with the user or to find the way to the patient the robot is equipped with different types of sensor and actuator. For instance video camera, speakers and microphone. During daily life the sensors can be turned off, which gives the user the feeling not to be observed, which increases the user's acceptance of the robot.

Participants

Participants:

- Johannes Kepler University (Institute for Design and Control of Mechatronical Systems) – Upper Austria (A)
- Italian National Research Council, Institute of Electronic Information and Communication Technology - Lombardy (I)

Consiglio Nazionale delle Ricerche
Istituto di Elettronica e di Ingegneria dell'Informazione e delle Telecomunicazioni

- Fontys University of Applied Sciences – North Brabant (NL)
- University of South Bohemia CB (Pedagogical faculty, Department of Physics) – South West Bohemia (CZ)
- University of Tartu (Bioinformatics, Algorithmics and Data Mining Group, Department of Computer Sciences) – Tartu (EST)

UNIVERSITY OF TARTU
Institute of Computer Science

Interested Parties:

intelesens
RESPONSIVE HEALTHCARE

INTERREG IVC
INNOVATION & ENVIRONMENT
REGIONS OF EUROPE SHARING SOLUTIONS

Robo M.D.

Home-care Robot for monitoring and detection of critical situations

European Union
European Regional Development Fund

INNOVATION 4 WELFARE

Vital Signs

Monitoring of vital signs:

- Wearable: To establish high acceptance of the user, the sensor – which measures the vital parameters – must be unobtrusive to wear. Also a wireless connection to the basic station has to be possible to guarantee mobility of the user.
- Live streaming: For triggering an alarm in an acute critical situation (for instance fall) the data must be continuously sent to the basic station, where they are permanently analyzed.
- Measured vital signs with the VS 100 device (Intelesens):

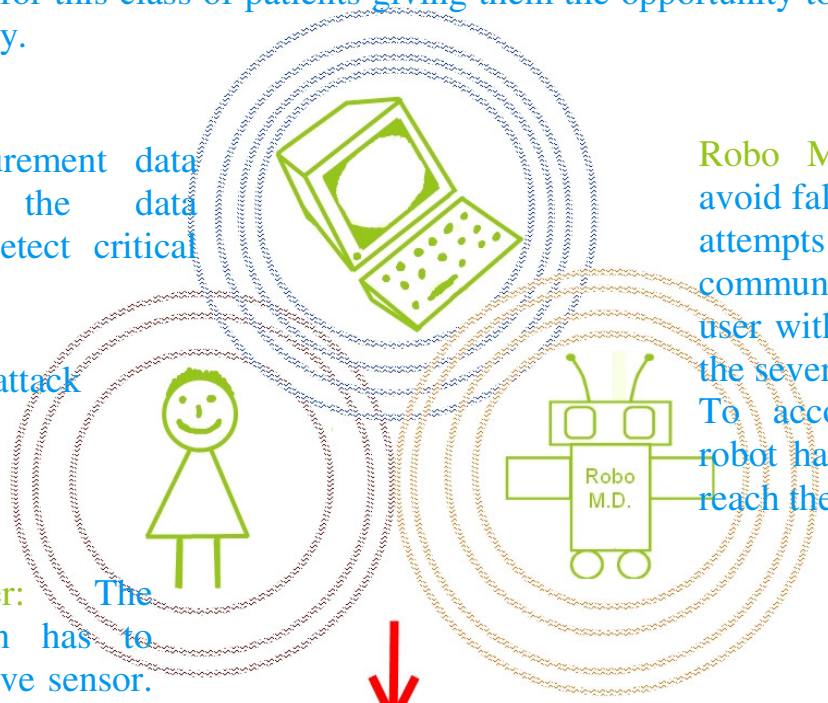
  Single lead ECG

  3 Axis Acceleration

  Skin surface temperature

Project overview

Description: Robo M.D. is one of eight sub-projects in the Interreg IVC project Innovation 4 Welfare. A home-care robot for monitoring and detection of critical situations is developed to improve quality of life of risk patients like elderly people and also to reduce costs of home care-systems. This robot allows a monitoring of risk patients without the need of a caregiver and thus provides important benefits for this class of patients giving them the opportunity to stay at home independently.



Terminal:
Stores the measurement data and analyzes the data continuously to detect critical situations such as:

- Fall
- Acute heart attack

Robo M.D.: In order to avoid false alarms the robot attempts to establish a communication with the user with the aim to assess the severity of the situation. To accomplish this, the robot has to find a way to reach the person.

Monitored user: The monitored person has to wear an unobtrusive sensor. This sensor carries out two roles: measuring vital signs and sending them to the basic station.

Alert: Different alerts will be triggered depending on what kind of episode occurred. E.g., in a fall event it might be enough to call a neighbour. However the emergency medical doctor has to be notified in case of an acute heart attack.

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