amsys **11**(1): e5

Research Article

FM-CW radar sensors for vital signs and motor activity monitoring

Octavian Adrian Postolache[1,*], Pedro Manuel Brito da Silva Girão[2], José Miguel Costa Dias Pereira[1], Gabriela Postolache[3]
1: Instituto de Telecomunicações/LabIM/EST/IPS, Portugal
2: Instituto de Telecomunicações/DEEC/IST/UTL, Av. Rovisco Pais, Lisbon, Portugal
3: Escola Superior de Saúde, Universidade Atlântica, Oeiras, Portugal
*Contact email: octavian.postolache@gmail.com

Abstract
The article summarizes on-going research on vital signs and motor activity monitoring based on radar sensors embedded in wheelchairs, walkers and crutches for in home rehabilitation. Embedded sensors, conditioning circuits, real-time platforms that perform data acquisition, auto-identification, primary data processing and data communication contribute to convert daily used objects in home rehabilitation into smart objects that can be accessed by caregivers during the training sessions through human–machine interfaces expressed by the new generation of smart phones or tablet computers running Android OS or iOS operating systems. The system enables the management of patients in home rehabilitation by providing more accurate and up-to-date information using pervasive computing of vital signs and motor activity records.

Keywords FM-CW Doppler radar, smart phone, smart walker, smart wheelchair

Received 2011-08-15 Published 2011-12-12 Publisher ICST

http://dx.doi.org/10.4108/trans.amsys.2011.e5