



“Gheorghe Asachi” Technical University of Iasi, Romania



WIRELESS MONITORING SYSTEM FOR PATIENTS HAVING CARDIAC PACEMAKERS WITH ATRIAL FIBRILLATION DETECTORS

Cristian Rotariu^{1,2*}, Hariton Costin^{2,3}

¹*“Gheorghe Asachi” Technical University of Iasi, Faculty of Automatic Control and Computer Engineering, Department of Computer Engineering, D. Mangeron 27, 700050 Iasi, Romania*

²*“Grigore T. Popa” University of Medicine and Pharmacy of Iasi, Faculty of Medical Bioengineering, Department of Biomedical Sciences, M. Kogălniceanu 9-13, 700454 Iasi, Romania*

³*Institute of Computer Science, Romanian Academy – Iasi Branch, T. Codrescu 2, 700481 Iasi, Romania*

Abstract

This paper describes an integrated system of wireless temporary pacemakers for remote monitoring of patients suffering from cardiac arrhythmias, especially atrial fibrillation. The system is built around a low power cardiac pacemaker with wireless data transmission capability, used for patient monitoring into a limited area. The proposed system is designed to be used in emergency situations, in healthcare institutes, helping to keep the patient’s heartbeat stable. Each wireless pacemaker attached on patient contains a custom developed hardware connected to a commercially microcontroller based wireless module. The status of each heartbeat is wirelessly transmitted to a central monitoring station via a wireless sensors network. The central monitoring station runs a patient monitor application that receives the data from wireless sensors network and activates the alerts when these values exceed the preset limits or an episode of heart arrhythmia is detected. An experimental temporary wireless pacemaker was implemented and tested.

Key words: atrial fibrillation detection, low power, remote patient monitoring, wireless temporary pacemaker, wireless sensors network

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*Author to whom all correspondence should be addressed: E-mail: cristian.rotariu@bioinginerie.ro; cr.rotariu@yahoo.com; Fax: +40-232-231343