

Department of Electrical and Computer Engineering

Title: «Accident and Emergency Center Intelligent Monitoring Systems»

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Room ΠΤΕΡ E113, Old Campus
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Abstract:

There is currently a worldwide trend to bring healthcare services as close as possible to the patient through telemedicine. This may be described in many scenarios, such as assistance to the doctor or first aider in an emergency setting or assistance to the patient at home. Other research in telemedicine addresses organizational aspects such as rising costs, effective medical care in rural areas, Triage or innovative new approaches like automatic heart sound analysis for tele-cardiac auscultation. Triage (coming from the French word “trier” = to sort) is a stratification procedure to allocate limited medical recourses e.g. in disaster situations.

In an emergency setting, the attending personnel will initially assess the, so-called, ABCs, i.e. airway-breathing-circulation. If any of these vital functions are lacking the patient is considered to be in grave danger and is attended immediately. Otherwise, if these functions are stable, the patient is triaged, i.e. monitored and attended to after more critical patients are considered. Triage and monitoring is based largely on a range of vital signs and signals measured at regular intervals. According to an emergency case protocol the most important vital parameters that can be monitored by standalone mobile equipment focus on cardiovascular and respiratory system

This study is aimed at developing a mobile electrical system to acquire and interpret body sounds and human vital emergency parameters. The innovative approach is the combination of tele-cardiac auscultation with traditional monitoring to improve the performance of the monitoring system.

Biography:

Mr. Beck is currently a PhD student at the University of Cyprus. He received his diploma degree in Electrical Engineering in 2006, majoring communication systems and data processing from the Hochschule Furtwangen University, Germany. He joined the University of Cyprus as part time PhD-student in 2008 and changed to a full-time commitment in March 2013. His recent research interests include body sounds, embedded systems and medical device development focusing on mobile systems to acquire human vital signs in the field of *Accident and Emergency Center Intelligent Monitoring Systems*.

In 2006 Mr. Beck started his first employment as hardware and software engineer at corscience GmbH, Erlangen Germany, an engineering company highly specialized in cardiology and telemedicine. In 2007 he joined Cerbomed GmbH, Erlangen Germany, focusing in medical device development, (MDD) manufacturing and approval (CE/FDA) of neurostimulation handheld devices. In his last position Mr. Beck was part of the management team. He owns 17 patents.