

Dissertação de Mestrado em Engenharia Informática (2016/2017)

Title: Measurement of biosignals using Radar-on-a-Chip systems.

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Summary

Radar-on-a-Chip (ROACH) systems have evolved to the point where they are able to sense the breathing rate of a person who is sitting in the room across the wall. This dissertation will focus on using such a device to perform some basic biosignal measurements such as amount of movement, respiratory patterns, and also investigate what conditions are necessary to make these biosignals usable in the context of Ambient Assisted Living.

Objectives

The main objective is to use a ROACH to perform some basic biosignal measurements such as amount of movement, respiratory patterns, and also investigate what conditions are necessary to make these biosignals usable in the context of Ambient Assisted Living. It will also focus on the study of the definition of a set of ROACH systems to address the issue of collecting data from several persons who may be in a room, in a non intrusive manner.

Tasks

- T1 – Technological background study;
- T2 – Review the State-of-the-art;
- T3 – Definition and submission to approval of the collection data protocol;
- T4 – Data and radar image recording *in vivo*;
- T5 – Assessment of the validity of the captured data;
- T6 – The writing of the dissertation.

Expected result

In this research work the following deliverables are expected:

- A data collection protocol;
- A database containing the radar signals;
- A conference paper describing the process;
- The dissertation.

Timeline

	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul
T1	X	X									
T2		X	X								
T3			X	X							
T4				X	X	X	X				
T5							X	X	X		
T6						X	X	X	X	X	