



# Technical University of Lodz

Institute of Electronics

## PROPOSAL OF THESIS TOPIC FOR MGR INŻ. (MSE) PROGRAMME IN TELECOMMUNICATIONS AND COMPUTER SCIENCE

**1. Topic:** Synthesis of spatial audio on a DSP platform

**2. Supervisor:** Paweł Pełczyński, Ph.D.

**3. Auxiliary supervisor:** Michał Bujacz, MSc

### 4. Goals and scope of the work:

The goal of the project is presentation of virtual sound sources using a DSP platform. To obtain a spatial audio effect, monophonic sources will be filtered with HRIRs (head related impulse responses) which simulate the interaction of a sound wave with the human body.

A desirable addition would be implementation of a gyroscopic sensor that would register and compensate head rotations and use that information to enhance the spatial audio effects.

### 5. Prerequisites (e.g. experience in writing programs in a computer language or knowledge of a foreign language):

Digital signal processing. Programming microprocessors in C/C++.

### 6. Literature:

Basic references will be provided by the supervisor.

Lódź, 2010-05-26

*Supervisor's signature*

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## THESIS TOPIC SELECTION ACKNOWLEDGMENT

Student's name: \_\_\_\_\_ Student's ID \_\_\_\_\_

Faculty: \_\_\_\_\_

Main subject/major/module: \_\_\_\_\_

Date and student's signature

Supervisor's signature



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