PAHMIR

Hochschule für Angewandte Wissenschaften Hamburg
Hamburg University of Applied Sciences

DEPARTMENT FAHRZEUGTECHNIK UND FLUGZEUGBAU

Development of a system for signal analysis and location detection in the aircraft

Definition of a *project* according to examination regulations.

Background

The aim of the project PAHMIR (Preventive Aircraft Health Monitoring for Integrated Reconfiguration) is to design a new approach for location and failure detection. Both tasks need a hardware platform to perform calculations, sensing and communication. The location detection and the sensing shall be implemented as a prototype system to evaluate the accuracy and to perform calibration of the algorithms. A prototype is needed to be able to verify the concepts.

Task

The task is to develop a device, which contains an RFID and an ultrasonic sound transmitter, interfaces for sensors and memory as well as a programmable processor for signal analysis.
The design should use the available concepts and designs from PAHMIR and the EVB (Electronic Vibration Box). At the end a prototype system should be available that implements the concepts.

The specific tasks are:

- Evaluate the EVB design and the PAHMIR location detection design.
- Enhance the project with hardware components (processors, transmitter etc.) for a prototype
- Draw a circuit design.
- Built a prototype system.

The report has to be written in English or German based on German or international standards on report writing.