



## Masterthesis

## RFID systems m/f/d

**SSP****Safety System Products**

Automation in the manufacturing sector has increased manyfold over the past decades. However, human intervention is still essential to maintain, repair and replace machinery. Many processes are a hybrid crossover of human and machine collaboration to achieve a certain level of production efficiency.

Access control to production machinery whether in a safety or a non-safety context, is beneficial, both in terms of diagnostic data and operator safety. This is usually achieved by employing door sensors, fixed to the enclosures placed around the machinery in question. Such sensors are preferably non-contact in nature, so that tampering with the sensors is minimized.

RFID has been extensively used in non-contact sensing for a multitude of applications, including access control. The aim of this project is to develop a non-contact door sensor using RFID technology, with a fast response time.

### Qualifications

- Technical background in telecommunications and electronics.
- Experience in handling test equipment such as spectrum analyzer, vector network analyzer, oscilloscope etc.
- Experience in soldering and handling SMD electronics
- Experience in running simulations on RFID antennas and design optimization
- Experience in developing microcontroller firmware is an advantage
- Good spoken and written English skills



**Starting date**  
Spring semester  
2022

### Project responsibilities

- Performing a thorough literature review of current RFID systems used for access control in industrial environments
- Designing and simulating RFID antennas, keeping cost per unit for production volumes in view
- Prototyping and testing the designed antennas
- Antenna matching and optimization for industrial environments

### We offer



#### New company building

Modern and ergonomic workplaces, fitness room and mother-child room.



#### Innovations

Innovative products and a motivated team in an up-and-coming company.



#### Flexibility

Individual working time models, room for creative and free work.



#### Benefits

Holiday and Christmas bonuses, capital-forming benefits, company pension scheme and team events.

### Contact

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We look forward to receiving your application documents:

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