

## Master Thesis - “System Design of Industrial IOT solutions” (30 credits/20 weeks – 2 students)

### Project Background

One of the corner stones in Industry 4.0 and the state of the art industrial shop floor connectivity is to use standardized protocols, system architectures, design pattern and interfaces. This is fundamental to realize the flexibility and interoperability that is required to simplify design, commissioning and maintenance of IOT enabled manufacturing solutions that require both horizontal (machine-to-machine) and vertical (machine-to-higher level systems) integration. There are however, many different alternatives for the same or similar type of functionality that makes the choice of building blocks for Industrial IOT challenging

This thesis idea aims to investigate and benchmark different system alternative solutions for the Inspection of components. The use case will be an automation solution that consists of devices that are distributed over a network. The devices on the network puts different requirement on connectivity and data transfer. The assignment is to propose relevant alternatives system design, build the necessary test set-up and evaluate the proposals. The results will be evaluated against the use case requirements. Lessons learned should be documented to provide guidelines for further studies and act as a Best practices for different Use cases.

The assignment offers a unique opportunity to work in a creative environment at The Production Technology Center in Trollhättan . The work will be done in collaboration with the Global Technology Centre at GKN Aerospace in Trollhättan.

### Assignment Description

- Familiarize with the Use case
- Define the requirements and metrics for the evaluation
- Investigation and selection of alternative technologies based the requirements
- Set-up and perform tests
- Demonstration and workshops with users/stakeholders (Industry & Academia)
- Analyze and evaluate results
- Recommendations and guidelines
- Document and present results

### Qualifications

Student in the final year of their M.Sc. studies in the field of Signals and Systems, IT, Computer Science, Production Systems, Industrial engineering and management or similar with a strong interest in IOT, Networking and data analysis.

### Contact

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