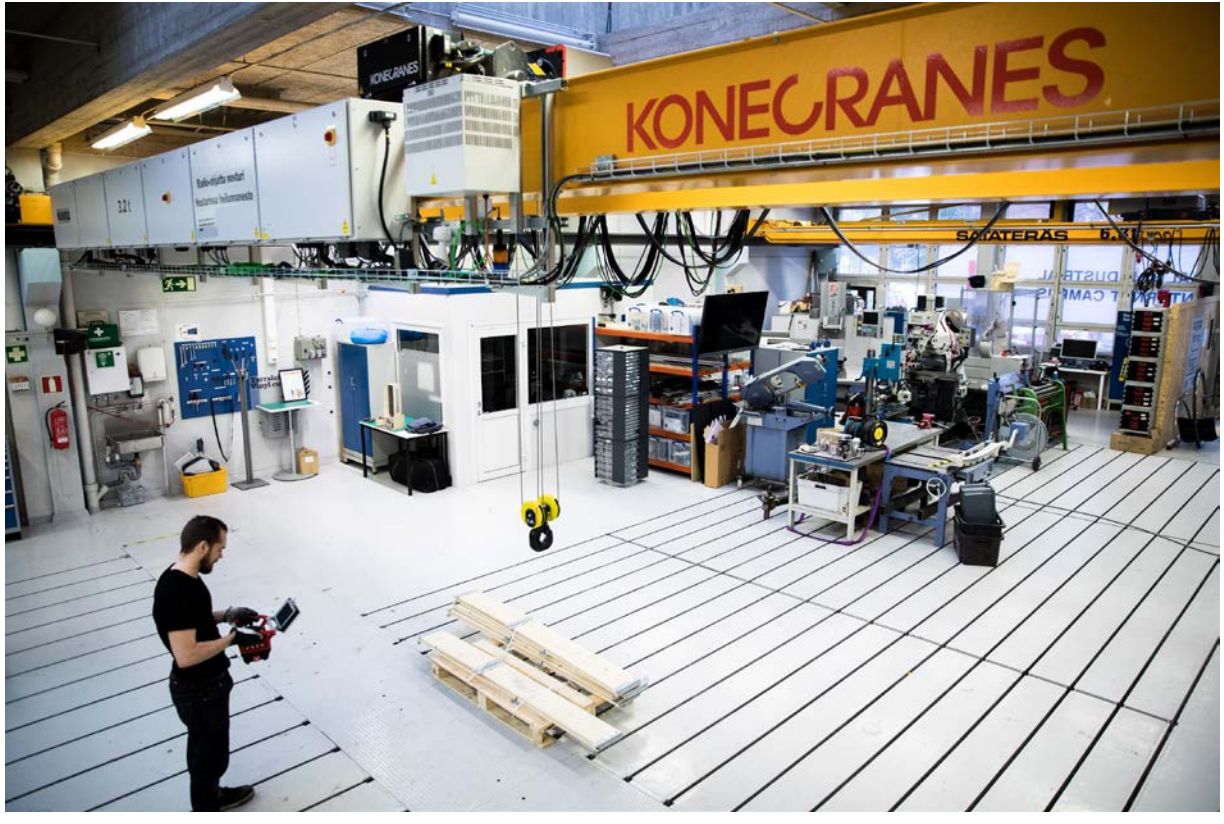
Aalto University
School of Engineering

Overhead Crane Positioning Uncertainty - OCPU

Project topic for MEC-E5002 - Mechatronics project

Working environment: Ilmatar crane

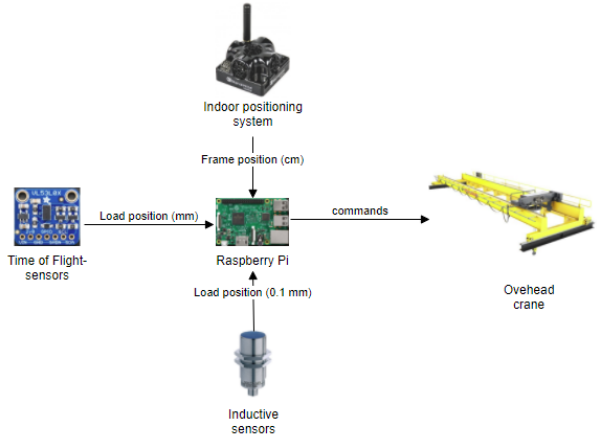


Current state

The Ilmatar crane knows its position through sensors and actuators connected to its PLC system.

- **The position is available through OPC UA interface via Python library.**
- **The uncertainty of the position is not known.**

Results of previous work on high accuracy lifting innovation (HALI) projects are available.



System developed in Mechatronics project 2018

Related publications:

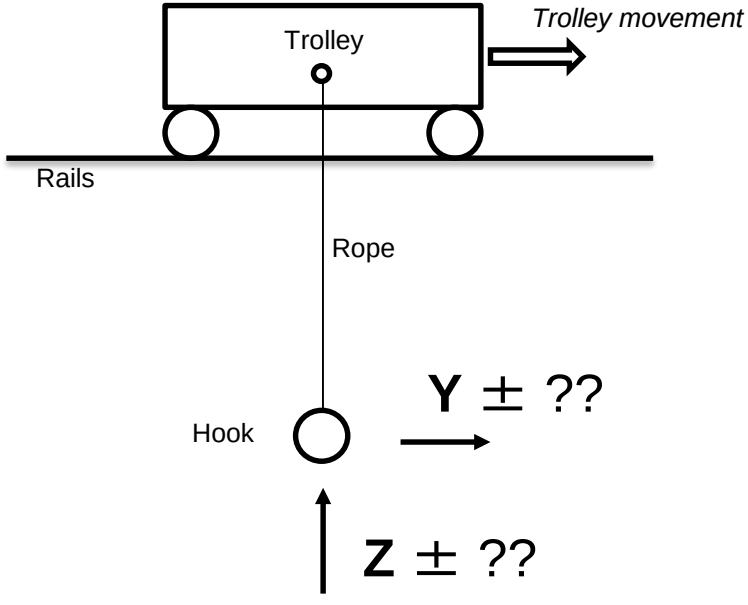
https://doi.org/10.3390/s18103328

https://doi.org/10.1109/WF-IoT.2018.8355217

Goals for the project

Develop a method and a device for defining overhead crane positioning uncertainty in X, Y and Z directions.

Possibly some additional goals from industrial collaborator (Konecranes).



Learning outcomes

Basics of metrology and industrial internet

1. **Defining measurement uncertainty**
2. **Dimensional sensor technology**
3. **OPC UA (a well-established Industrial Internet protocol)**
4. **Programming language of your own choice (Python)**

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Questions?

Additional info from project advisors:

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