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Representing real-time location of mobile plants inside their digital twin

Bachelorthesis

This thesis aims to provide a concept to include real-time location data of assets into their digital twin and implement it for an example real-time location system

Motivation

In todays fast changing manufaturing environment plants consist often of modules and mobile parts. These assets change their location much more frequently then in classical fixed production lines. To improve the utilization, this assets like modules and loading equipment need to be located and tracked. Placing those informations in different information silos does not provide real advantage other current asset tracking approaches. To have all asset relevant data in one place and leverage the potential of this data, all asset relevant data should be part of the digital twin of the asset.

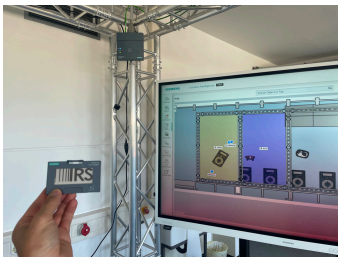

Figure 1: real-time location system with tag

Aims

The aim of this thesis is to evaluate ewhich approaches to integrate the location information intothe digital twin exist. Those should be evaluated and the best fitting concept should be implemented protoype wise in the IRS laboratory using the real-time location system installed there.

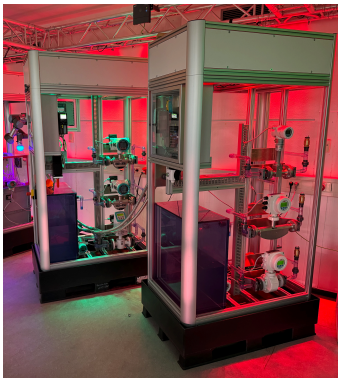

Figure 2: industrial asset

Helpful prior knowledge

- interest in digital twins and information modelling
- programming skills and fun at programming
- Lecture Cyber-Physical Production Systems

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