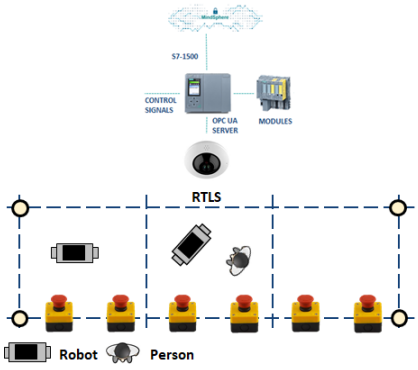
SCIENCE · PASSION · TECHNOLOGY

Open Thesis / Project
RTLS-based digital safety twin for production environments

Motivation

Future production processes aim for a closer collaboration of men and machine in dynamic work environments without structural restrictions. This blurs the strict separation of work areas and imposes new challenges to maintain functional safety in such environments.

Within this project a dynamic safety system for future production systems will be designed and implemented based on a real-time locating system (RTLS) in close cooperation with Siemens AG Österreich. The system should allow an operator to flexibly configure and safety aspects in his production environment. After configuration the system monitors the environment regarding defined safety aspects and continuously verifies the integrity of the system via simulations. In case a violation is detected affected parts of the production environment are put into fail-safe mode, without impacting the unaffected parts of the production system.



Target Group

Students in ICE/Telematics and Comp. Science.

Thesis Type

Bachelor Thesis / Master Project / Student Assistant.

Goals and Tasks

- Develop RTLS-based dynamic safety concept
- Implement and test concept in a real world demonstrator

Required Prior Knowledge

- Programming skills in Java, C++, Python
- Interest in Siemens Simatic automation components
- Interested in real time location systems
- Experience with IoT device integration

Used Tools & Equipment

- MindSphere - open IoT cloud based platform from Siemens.
- Simatic S7-1500 PLC as a data source

Contact Person

- Dr. Konrad Diwold
  kdiwold@tugraz.at
- Dipl.-Ing. Amer Kajmakovic
  amer.kajmakovic@pro2future.at

Institute for Technical Informatics
Networked Embedded Systems Group

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