

Investigation of channel parameters in a production hall with Ray Tracing (External, f/m/d)

Bachelor's Thesis/Master's Thesis

Project

This thesis is offered in cooperation with SEW EURODRIVE, department Research and Technology.

The basis for the next generation of mobile communications (6G) is formed by revolutionary technology components that require new measurement and simulation procedures. Ray tracing methods can be used to simulate environment-specific and physically accurate channel realizations for a specific scene. Such simulations are particularly valuable in a production hall, where communication with high reliability and low latency is necessary.

In this project you will further develop a simulation using ray tracing to examine the channel properties in a production hall.

Tasks

1. Introducing Sionna: a TensorFlow-based open source library.
2. Evaluation of channel parameters using the ray tracing method
3. Creation of a time variant coverage map in the 3D model.
4. Evaluation and analysis of the results.

Requirements



Study electrical engineering, computer science, mechatronics or comparable.

- ✓ Programming knowledge in Python.
- ✓ Knowledge of mobile communications.
- ✓ Knowledge of 3D modeling/rendering (Blender) is an advantage.

Institute

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