

Radio channel modeling for urban scenarios: validation and model of real-world fading

Collaboration Rhode & Schwarz and TI Institute

Research Area

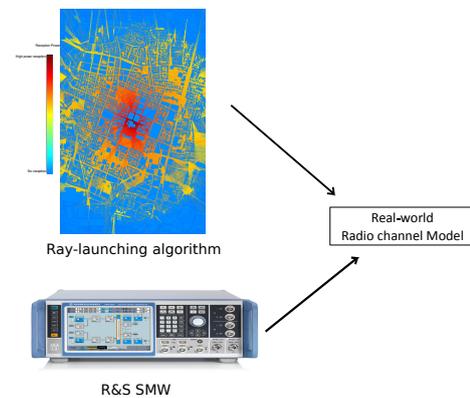
Radio Channel Modeling and Signal Propagation

Keywords

Radio wave propagation in urban scenarios, measurement data, LTE.

Description

During the recent years, the number of devices connected to the mobile networks has been increasing. The majority of these mobile networks and devices are located in urban scenarios where the connectivity and signal strength is degraded by the surrounding environment. Therefore, it is critical to obtain the precise impact on the communication link due to the surrounding scenario. The site-specific nature of the radio channel can be modeled using a deterministic ray-launching algorithm to obtain the Large-Scale parameters of the radio channel, i.e., pathloss, delay and angle of arrival and departure. In addition, using R&S equipment, the obtained parameters from simulations can be validated and tuned to obtain a precise characterization of the channel model.



Scheme for real-world channel model

Goal

The aim of this study is to create and validate a radio channel model using real-world measurements. Moreover, different characteristics of the UE channel for LTE will be obtained, such as throughput or CQI.

Requirements

This Master Thesis is a collaboration between TI and R&S in Munich. The duration of the thesis is six months and it will be conducted in Munich.

- Strong knowledge in radio wave propagation and channel modeling.
- Skills in MATLAB and basic knowledge of C++
- Knowledge of LTE and physical layer schemes

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