Development and Evaluation of Positioning Techniques in LTE

Background
An accurate indoor positioning of users for emergency call localization as well as understanding wireless network performance over the deployed network area has become one of the challenges of today’s wireless networks. There already exist a number of indoor and outdoor positioning methods to address this challenge. The purpose of this thesis is to investigate how these methods perform in realistic indoor and outdoor 3D-scenarios.

This work is carried out at Ericsson Research, which provides Ericsson with system concepts, technology and methodology, to secure long term competitive products. We drive world-class innovation through cooperation within Ericsson and with partners, customers, universities and research institutes.

Thesis Description
This Master Thesis aims at investigating and evaluating the performance of the existing device-based and network-based methods and scenarios in order to address a proper 3D indoor positioning solution. Since the work will focus on theoretical work on signal processing along with simulation, evaluation and verification of different models and scenarios, a strong theoretical background in this area is recommended.

Qualifications
This project aims at Master of Science (civilingenjör) students in electrical engineering, computer science, or computer engineering. Matlab is our primary tool for modeling and simulation work, hence excellent Matlab programming skills is a must. Background in telecommunication is preferred.

Extent
This position is for one student. Scope is 30 points (högskolepoäng).

Preferred starting date
Jan 2015.

Keywords
Positioning, Simulation, Wireless Networks, LTE, 4G

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