

mmW-Networks Coordination and Rivalry

M.Sc. Thesis

Background

One strong trend in the future 5G networks is to build extensions to mm-Wave frequency bands. This is required in order to provide extremely high bit-rates for the future applications. However, these very high frequencies (> 28 GHz) are very challenging to operate due to high directivity of communications links and challenging channel conditions. Thus a lot of research is required to understand optimal deployment and engineering conditions.

Tasks

In this thesis work you will analyze the suitability of different access methods for dense 60 GHz network deployments. You will first learn basics on mmW communications, which is highly directive compared to the traditional cellular networks. You will then familiarize yourself with the state of the art propagation simulator in order to build highly detailed interference maps for mmW communications systems. Finally you will analyze the results from the perspective of different medium access methods and economical viability. The thesis works gives you a full exposure to learn about the future 5G and beyond 5G communications concepts on very high frequencies providing ultra high data rates.

Other Information

The thesis work is a part of our larger mm-Wave research program that studies very high frequency communications systems. This is an excellent opportunity to learn about mmW-propagation and channel access methods in the context of the future 5G and beyond 5G concepts that are starting to shape up in the industry.



Contact

Aleksandar Ichkov, M.Sc.

Institute for Networked Systems

0241 80-209 00

aic@inets.rwth-aachen.de

Dr Ljiljana Simić

Institute for Networked Systems

0241 80-209 25

lsi@inets.rwth-aachen.de