

Project abstract

Title: Millimeter-Wave Massive MIMO systems with Smart Beamforming

Objective

Prototyping a millimeter-wave massive multiple-input multiple-output systems with smart beamforming capability for 5th generation new radio

Abstract

The aim of this project is to build a millimeter-wave (mmWave) multiple-input multiple-out (MIMO) testbed including smart beamforming capability for 5th generation (5G) new radio (NR). This work includes 1) investigation of the overall system architecture, 2) design and implementation of the beamforming system with commercial software-defined radio (SDR) platforms and in-house radio frequency (RF) components, 3) system integration, and 4) design verification through field trial. To attain the objective of this project, we propose tight collaboration between Lund University and Sony Mobile Communications AB in Lund and bring in experts in both wireless communication and electronics systems. The developed testbed will provide Lund University a powerful tool to make theoretical potentials a viable reality. Further, it can also be used as a flexible platform for full-scale development and verification of 5G NR devices from Sony Mobile Communications. This collaborative project ensures that the core competence is developed and kept at both academia and industry and contributes to Sweden's continuation as a leading country in the area of mobile communication for 5G evolution.

Co-ordinator: Lund University

Project manager: MinKeun Chung

E-mail project manager: minkeun.chung@eit.lth.se

Phone: +46 46 222 7518

Other project partners: Sony Mobile Communications AB

Total cost of project: 4 080 000 kronor

Total grant: 2 040 000 kronor

With support from:



STRATEGIC
INNOVATION
PROGRAMMES