

Project abstract

Title: Higher-symmetric structures for future 5G Communication Systems (High-5)

Objective

The main goal of High-5 is to produce a technological breakthrough based on the concept of higher symmetries for generating highly efficient antenna systems for 5G.

Abstract

Mobile communications have evolved rapidly during the last few decades. In order to fulfil the users' broadband demands, the new generation of mobile communications, 5G, will be deployed after 2020. However, there are a number of technological challenges that must be solved first. In High-5, we will focus our attention in the existing challenges to produce efficient antenna systems for the new frequency bands, which are much higher than those of present mobile communications.

To overcome this challenge, we will explore the opportunities of higher symmetries, in which KTH is leading worldwide the research, to provide fully-metallic integrated antenna solutions for the expected 5G frequency bands: Ka- and U-band. These integrated solutions will be intended for base stations, with the support of Ericsson, and to terminals, with the support of Sunway. Finally, Digital Metal will support with the challenges that must be accomplished with the manufacturing of the prototypes.

The ambitious results at High-5 are aimed to contribute to position Sweden as the centre of the antenna research in the world for 5G. If High-5 successes, we will establish the ideal conditions for further development of small and medium size high-tech communications companies in Sweden.

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