

Modelling mmWave Channels for Fixed Wireless Access in Urban Environments

Abstract:

This talk is concerned with the topic of fixed wireless access in urban settings in mmWave bands. In particular, we will present the results of a measurement campaign where we transmitted and collected 60 GHz signals in urban environments, between lamppost-level nodes and business buildings of higher height that are located in the vicinity of the lampposts. The measurements are part of a worldwide campaign sponsored by TIP (Telecom Infra Project), and were performed in Athens, Greece, collaboratively with leading local operator Cosmote. The channel sounders were provided by the TIP consortium and the measurements were taken at AIT's campus in the northern part of the city. They constitute a complement of few other mmWave measurement campaigns worldwide that capture city-type effects (such as ground reflections, multipath / delay spread, window penetration loss, etc.) at such frequencies. They also contain directional channel information made possible by the narrow beams generated by the employed channel sounders. The talk will start with a description of the channel sounder features and measurement setup; then it will present the spatial channel measurements at three different frequency bands around 60 GHz and for various transmitter / receiver configurations. Finally, it will conclude with a modelling of the measured channels and plans for future work.