



# WaveComBE

mmWave Communications in the Built Environments

## WaveComBE\_D4.9

### Year 2 Project Workshop

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## Executive Summary

Millimetre-wave frequencies have been extensively studied during the recent years as the potential candidate bands for allocating mobile access services in 5G and beyond. A future with dense deployments of mobile network nodes working at such frequency bands is foreseen, mainly for environments where demand of extreme mobile broadband connectivity is concentrated, like in the built environments, either indoors or urban outdoors.

WaveComBE ([www.wavecombe.eu](http://www.wavecombe.eu)) is an Industrial and Training Network of the Marie Skłodowska-Curie Action, dealing with the ultra-dense deployment of millimetre-wave (mmW) small-cells (SCs) in conjunction with massive multiple-input multiple output (MIMO) in 5G and beyond 5G (B5G) wireless networks.

Is3DMIMO ([www.is3dmimo.com](http://www.is3dmimo.com)) is an Research and Innovation Staff Exchange Evaluations (RISE) of the Marie Skłodowska-Curie Action, dealing with advance indoor 3D MIMO channel characterization and modeling, 3D MIMO array antenna design and testing for small cells,

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<sup>1</sup> CO = Confidential, only members of the consortium (including the Commission Services)

PU = Public

understanding of fundamental performance limits of 3D MIMO small-cell networks, and network planning and optimization of indoor 3D MIMO small cells.

WaveComBE and is3DMIMO Committees are offering this joint training workshop on the current advances on millimetre-wave radio channel modelling that both communities have produced recently. The objective of the workshop is to provide a comprehensive insight of the propagation aspects of mm-Wave frequencies, the various techniques for channel modelling in these bands, and the system level aspects of implementation and practical aspects, mainly on antennas and MIMO systems when applied above 30GHz.

## Organization details

The Joint is3DMIMO-WaveComBE Training Workshop was held in Sheffield, the 12<sup>th</sup> of July, at the University of Sheffield. The title of this workshop is “*is3DMIMO – WAVECOMBE Joint Workshop*”.

## Agenda

This event is a one-day workshop, starting at 9:30 am and finishing at 16:30 pm. It is divided in two sessions (morning and afternoon), and each session is made up of four presentations (30 minutes including questions). Therefore, the schedule of the workshop is:

Joint is3DMIMO-WaveComBE Training Workshop	
9:30 – 10:00	Workshop Opening and coffee break
10:00-12:00	Morning session
12:00-14:00	Lunch break
14:00-16:00	Afternoon session
16:00-16:30	Open Discussion and Closing

## Speakers

The speakers confirmed to attend this event are both from WaveComBE project and external people.

- Xiaoli Chu
- Jiliang Zhang
- Hu Tao
- Jiaqi Wang
- Amar Al-Jzari (*WaveComBE ESR4*)
- Mengxin Zhou
- Chunxia Qin (*WaveComBE ESR10*)
- Mohammad Poordaraee (*WaveComBE ESR2*)

## ESR attendance

The following WaveComBE ESRs attended the workshop:

- Mohammad Poordaraee (ESR2)
- Amar Al-Jzari (ESR4)
- Othman Zahid (ESR5)
- Danaisy Prado (ESR7)
- Chunxia Qin (ESR10)