

Analysis of Wireless System Operation in HetNet Scenarios

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Context aware environments are moving towards HetNet communication systems, in order to provide large scale information gathering and transmission capabilities. In this context, wireless communication systems play a key role in order to enable high levels of interactivity, required for example for wearables or Device to Device connections within 5G systems. Such scenarios pose challenges in terms of transceiver limitations in terms of size and energy restrictions, as well as by coverage/capacity demands, which are strongly dependent on interference distribution. In this work, operation of devices in the context of multisystem HetNet operation is analyzed for complex indoor scenarios, as a function of transceiver location and profile, with the aid of in-house 3D Ray Launching code, enabling the estimation of coverage/capacity relations for the complete scenarios under analysis in order to optimize system operation.

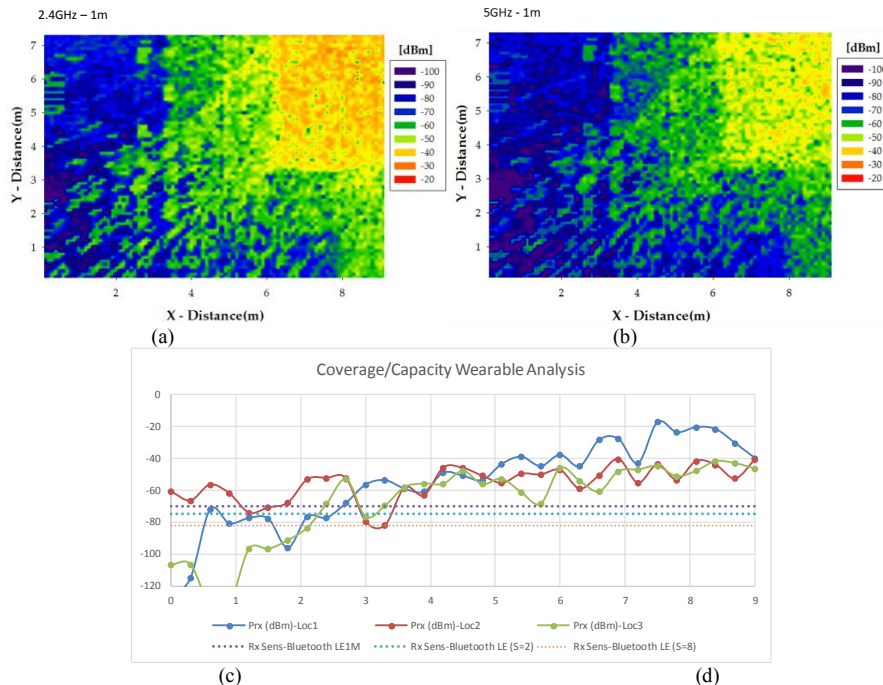


Figure 1. (a) Received power distribution for wearable devices within an indoor scenario at 2.4GHz, (b) operation at 5.8GHz (c) Coverage/Capacity estimation for specific Bluetooth transceivers.