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Testing performance for several use cases with an indoor OpenAirInterface USRP-Based base station

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Abstract

This paper presents the early phases of the implementation of a Radio Access Network (RAN) based on OpenAirInterface (OAI) for a fifth-generation (5G) mobile network. Because the availability of full OAI 5G support was delayed, we initially built a fourth generation (4G) RAN using an OAI RAN with an NI 2944R Universal Software Radio Peripheral (USRP) hardware and a Fraunhofer 5G core network software. This paper presents measurement results of the 4G performance in various use cases. Measurement methods and results for Internet browsing, data calls and video streaming at different distances are presented, showing the currently achievable levels of performance.