

A Method for Uplink Split Bearer Implementation and Evaluation in 5G Non-Standalone Mode

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Abstract - In recent years, the evolution of mobile networks has seen a significant transition from 4th LTE to 5th generations. Among all the deployment scenarios of 5th generation mobile network, the Non-Standalone mode (NSA) takes advantage of existing 4th LTE infrastructure while integrating 5G capabilities into the system to improve overall performance. One of many features driving this enhancement is the implementation of Split Bearers. User Equipment can transfer data to both 4G and 5G base station at the same time. This function allows us to utilize the wider range of LTE mobile station antennas, improving data throughput and optimizing radio resources. This paper explores split bearer mechanisms in the uplink path, our new channel quality monitoring method and our modifications in mobility scenario in case User Equipment moves between base stations. Finally, Uplink Split Bearer is integrated into our 5G Network with numerous 4G & 5G base stations to evaluate the benefits in the real-world system

Keywords - 5G split bearer, uplink split bearer, mobility scenario with uplink split bearer, uplink data switch path algorithm, uplink dual-connectivity



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