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MOTIVATION FOR LTE DL 4RX WITH CA

Ericsson

4RX CA DEPLOYMENT SCENARIOS

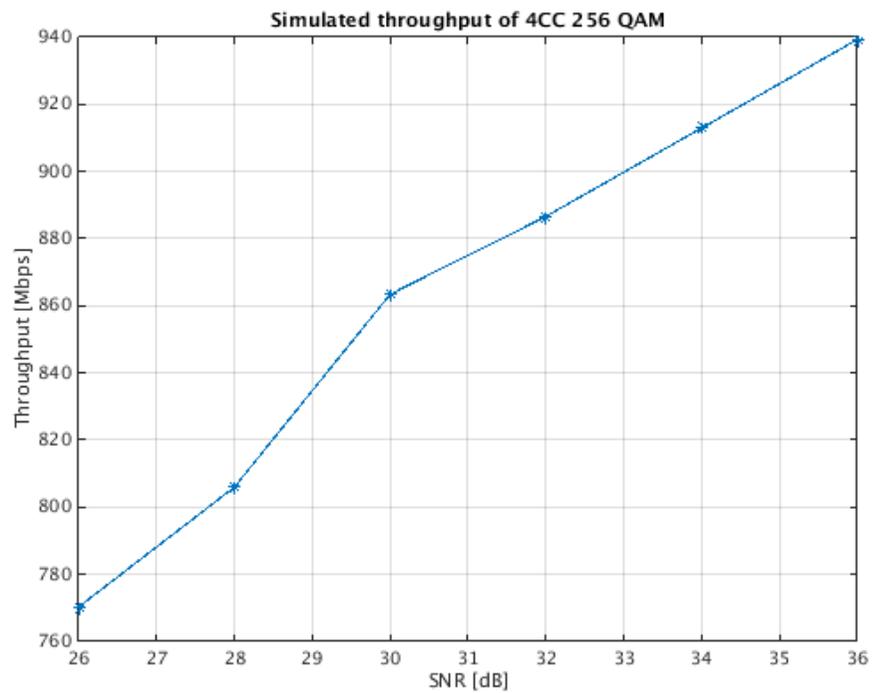
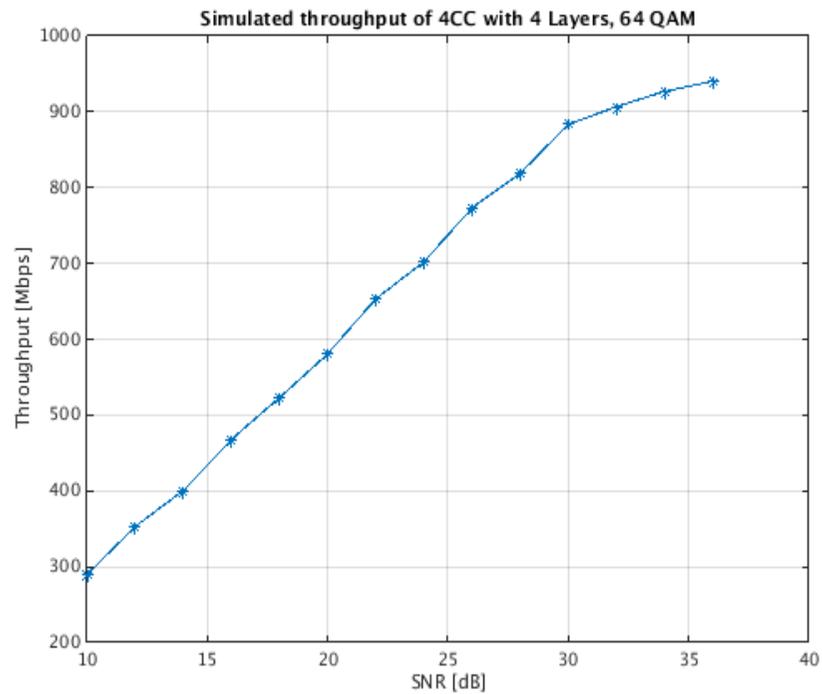


- › For the 4Rx AP WI in Rel-13 the performance part only covers single carrier demodulation requirement and SDR requirements for CA with 4Rx with limited scope.
- › In Rel-14 timeline it is a crucial deployment need to reach 1Gbps from global operators for DL UE categories until 16. Also new DL UE categories 18, 19 can reach 1.2Gbps and 1.6Gbps maximum throughput respectively.
- › SDR tests need complete test coverage to verify any possible 4Rx Ues.
- › 4Rx feature is release independent from Rel-10 which will allow Ues from earlier releases to better fit into the market need with CA deployment.

CA COMBINATION EXAMPLES



- › 64QAM, 4 carriers with 4 Layers
- › 256QAM, 3 carriers with 3 Layers and 1 carrier with 1 Layer



WORK ITEM OBJECTIVES: CORE



- › The objective for RF core requirements for this work item is the following
- › Define UE RF requirements for 4Rx + DC.
 - MSD requirements for 2 UL.

WORK ITEM OBJECTIVES: PERF.



- › For the performance part, the general objective of this work item is to specify **DL UE PDSCH demodulation and CSI requirements**. The detailed objectives are the following.
- › Specify performance requirements for the following deployment scenarios with multi-carriers **up to 5 CCs** with the same methodology by applying single carrier requirement to each carrier of multi-carrier scenarios: **FDD/TDD CA, TDD-FDD CA and DC**:
 - Extend existing CA (including FDD/TDD CA, TDD-FDD CA, DC) tests from 2Rx to 4Rx
 - Extend existing 2RX and/or 4RX tests with MMSE-IRC receiver from single carrier to CA (including FDD/TDD CA, TDD-FDD CA, DC)
 - Study to extend existing 4Rx with 3 and 4 layers tests from single carrier to CA (including FDD/TDD CA, TDD-FDD CA, DC)
 - Study to extend existing 4Rx and 256QAM with 1 and 2 layers tests from single carrier to CA (including FDD/TDD CA, TDD-FDD CA, DC)
 - Specify SDR tests to cover all applicable UE categories with combination of MIMO layers, number of carriers and CA (including FDD/TDD CA, TDD-FDD CA, DC) bandwidth combinations
 - Specify **applicability rule for CA** (including FDD/TDD CA, TDD-FDD CA, DC) and SDR tests to ensure the test coverage for **all 4Rx capable UEs**.



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