3GPP RAN #73
New Orleans, U.S.A., September 19-22, 2016
Agenda item: 10.1.1

RP-161500

Motivation for WID for Downlink 1024QAM in LTE

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General motivation

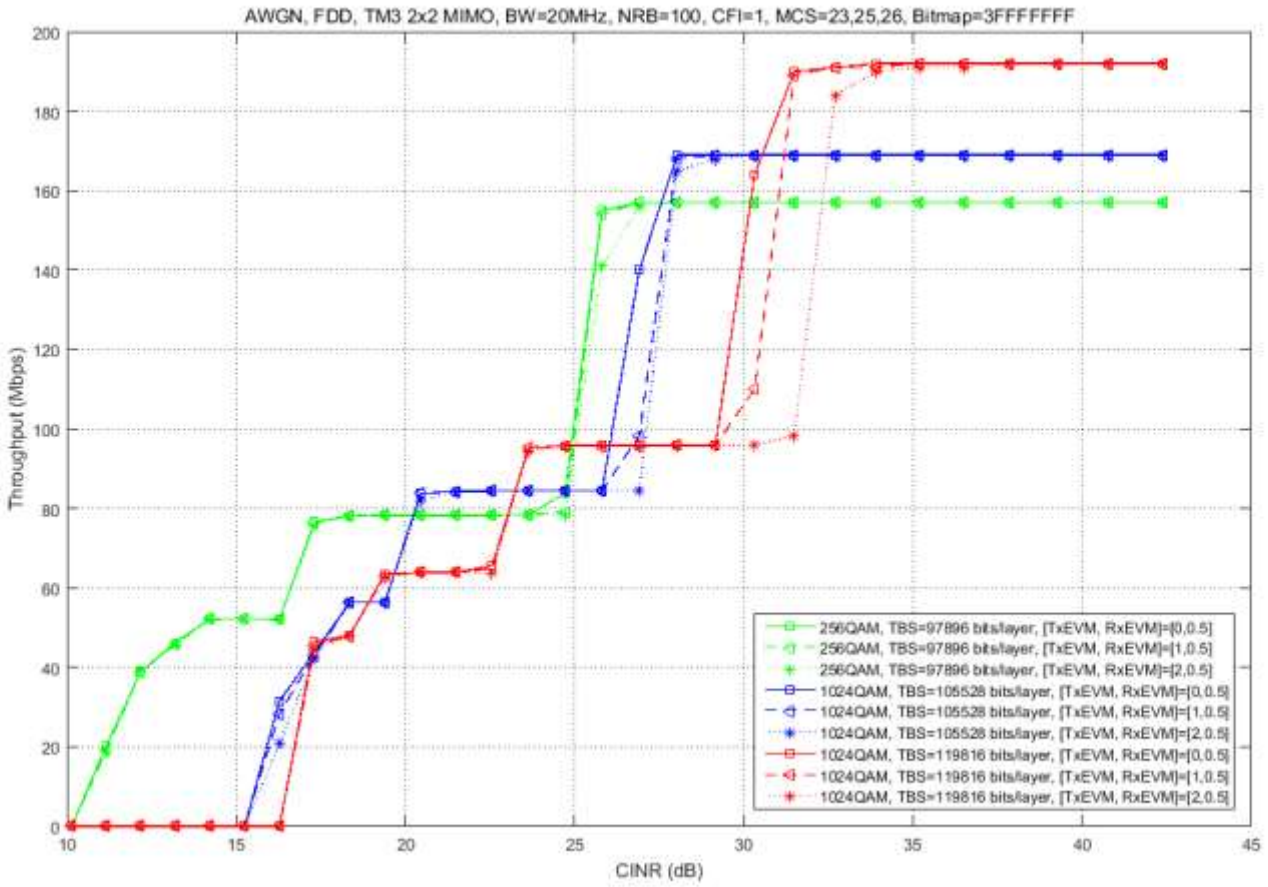
- 3GPP are defining many features to help support the growing data demand
- For the DL, the spectral efficiency of LTE was enhanced in Rel-12 by the introduction of 256QAM. This was found to be beneficial in various types of deployments
- It can be also observed that there are other existing technologies that operate with even higher modulation order, e,g. 1024QAM, which can be utilised primarily in small cell deployments
- Especially in indoor small cell deployments, the DL SINR is sufficiently high to support such higher order modulation

1024QAM

- AWGN with fixed modulation and coding

Rx EVM = 0.5%

Tx EVM = [0, 1, 2]%

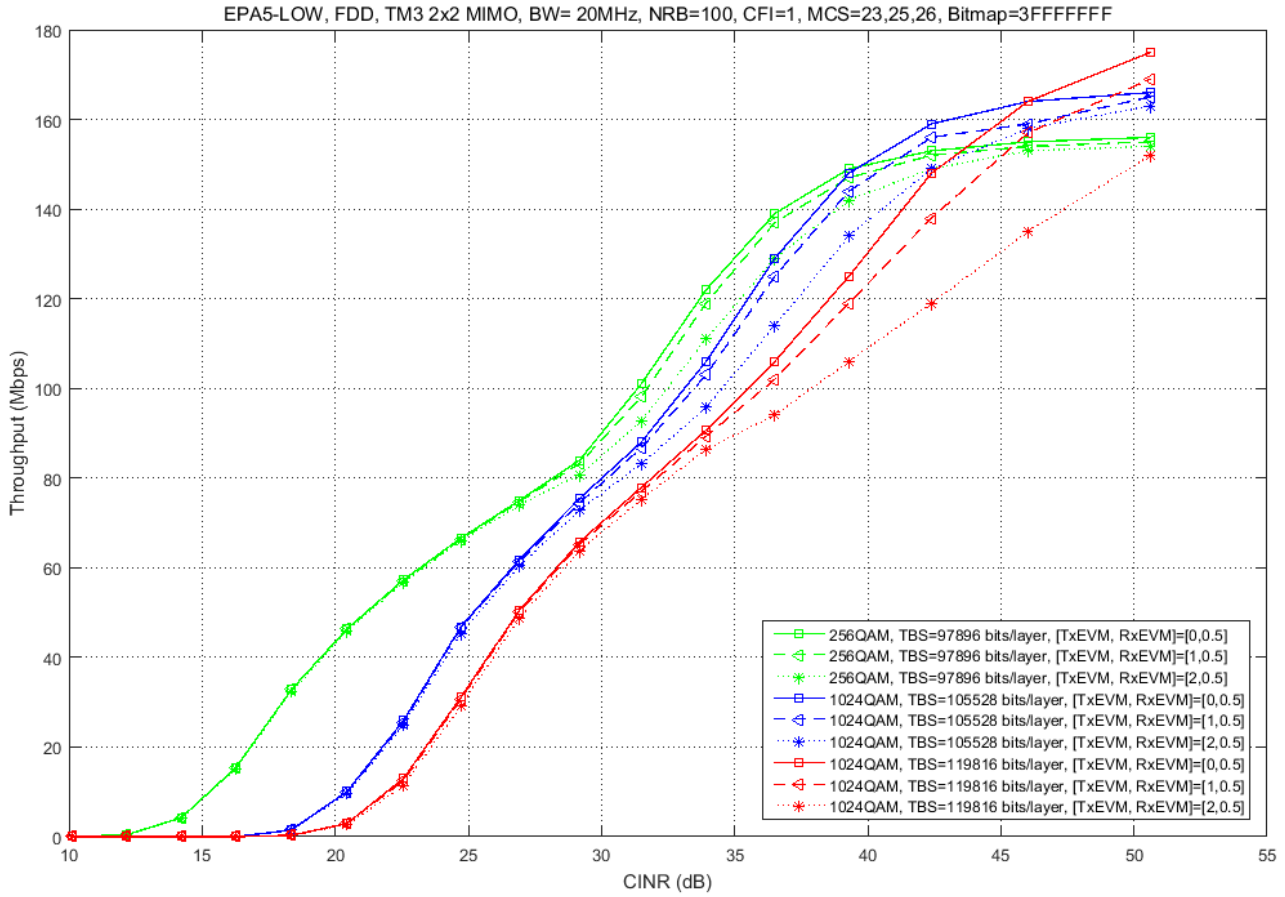


1024QAM

- EPA5 with fixed modulation and coding

Rx EVM = 0.5%

Tx EVM = [0, 1, 2]%

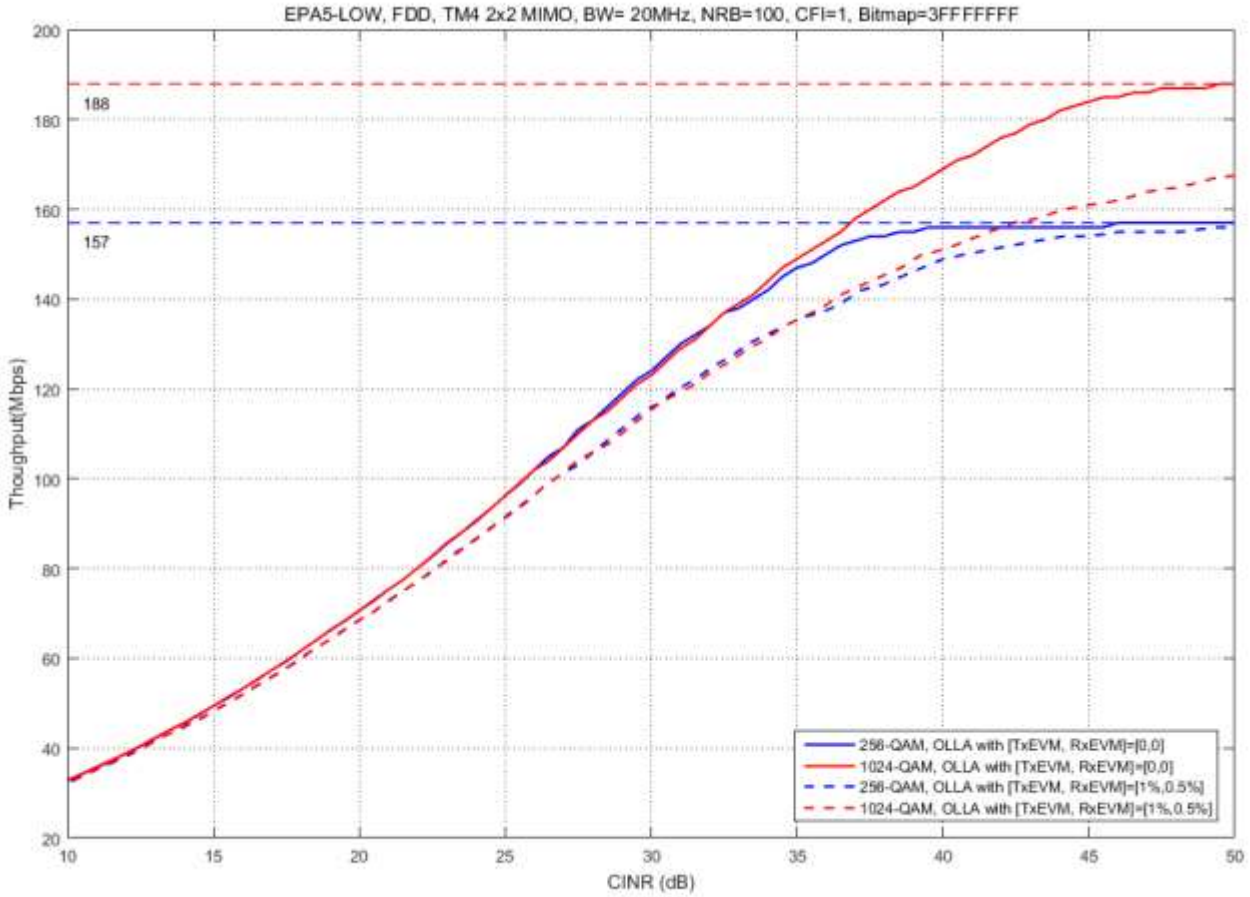


1024QAM

- EPA5 with adaptive modulation and coding

Rx EVM = 0.5%

Tx EVM = [0, 1]%



Summary of objectives

- Introduce new MCS table and signalling to support 1024QAM in DL [RAN1]
- Define applicable RRC signalling, UE capability and potential new UE categories [RAN2, RAN1]
- Introduce RF requirements [RAN4]

Thank you

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