WI: CRS-IM FOR HOMOGENEOUS NETWORK

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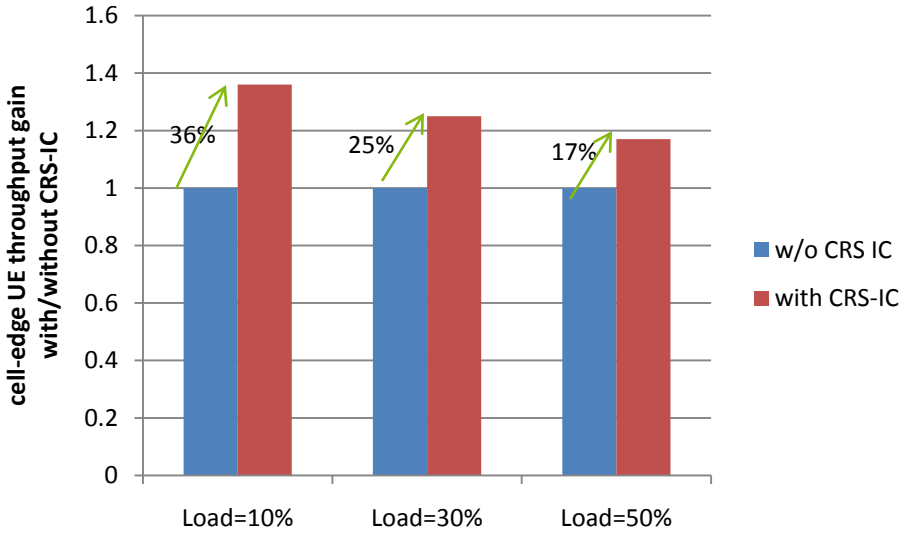
INTRODUCTION

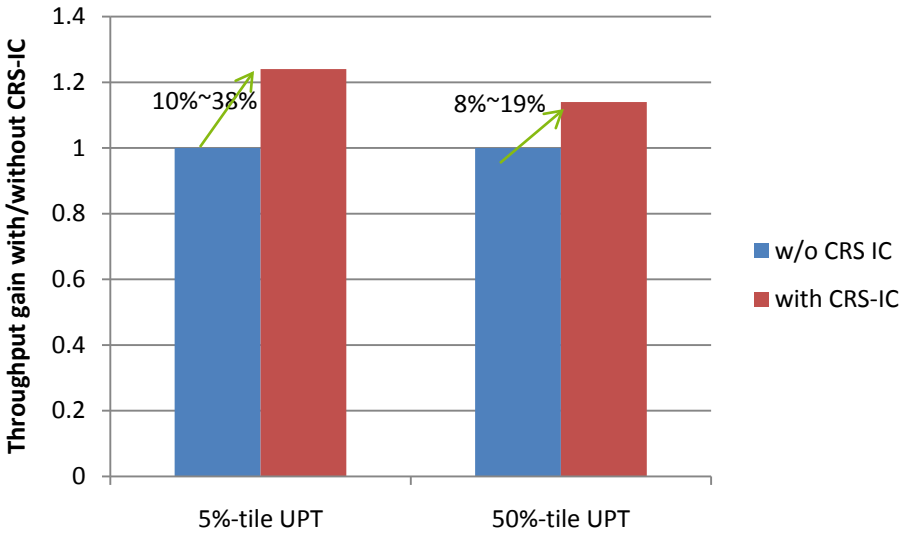
- Interference Mitigation (IM) of Cell-Specific Reference Signals (CRS) has been studied in the Rel-11 Work Item on FeICIC
- MMSE-IRC receiver were extensively studied and specified in Release 11
- A study item (SI), “CRS interference mitigation for homogeneous deployment” was approved at the 3GPP RAN #59 meeting in RP-130393 to study the feasibility of using CRS IM also in a synchronized homogenous network

CONCLUSION ON LINK LEVEL GAIN FOR CRS-IM IN HOMOGENEOUS NETWORK



SI conclusion from link level: significant link level gain can be obtained for cell-edge UE by CRS-IM receiver in LTE homogeneous network under low traffic loading

CONCLUSION ON SYSTEM LEVEL GAIN FOR CRS-IM IN HOMOGENEOUS NETWORK



SI conclusion from System level: For the 5% UPT, the gain is in the order of 10-38% when resource utilization is 30%, additionally approximately 8 – 19 % gain for 50% UPT would be obtained

CONCLUSION ON UE RECEIVER COMPLEXITY

- With regard to UE implementation issues, the CRS-IM receiver is based upon well-defined receivers used for meeting existing MMSE-IRC and FeICIC performance requirements. The reuse of these receivers' structure minimizes the UE complexity.

THE OBJECTIVES FOR THIS WI

- The reference receiver defined in study item shall be considered as baseline receiver
- Network deployment scenarios and interference modeling should be considered according to the conclusion and evaluation results of study item
- Both CRS and DM-RS based transmission modes should be covered on both serving and interfering cells.
- Both colliding CRS and non-colliding CRS should be covered
  - RAN4 is to first initiate the work for the case of non-colliding CRS.

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