3GPP TSG RAN Meeting #71
Göteborg, Sweden, March 7 - 10, 2016

RP-160430

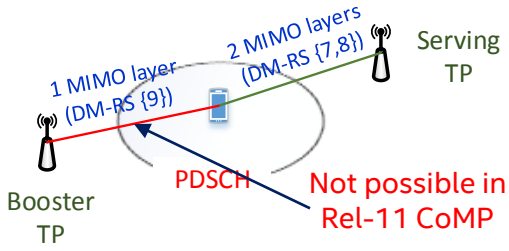
Rel-14 SID proposal: Further enhancements to CoMP operation

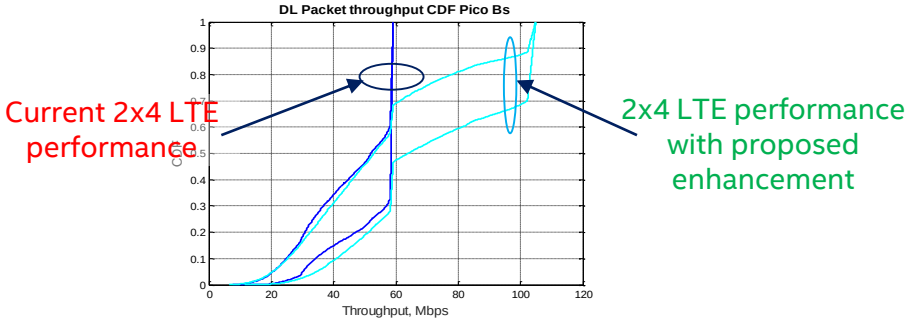
Intel Corporation, ZTE

Objectives of the Rel-14 FeCoMP SID proposal

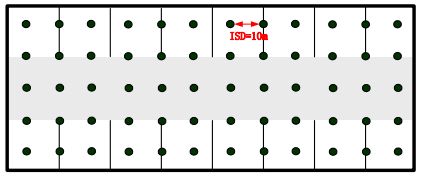
Support of joint transmission (JT) including enhancements to coherent and non-coherent JT schemes (e.g. support of MIMO layers transmission by the different transmission points in the single-user MIMO)

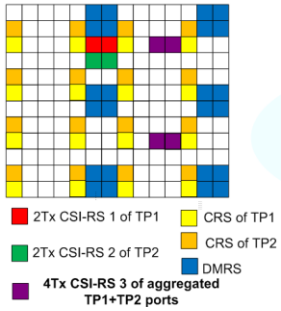
- More flexible transmission of the MIMO layers from different transmission points (non coherent JT) may increase the realizable MIMO transmission rank in the LOS scenarios and deployments with small number of antennas at the eNB (e.g. 2)

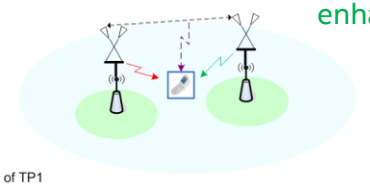




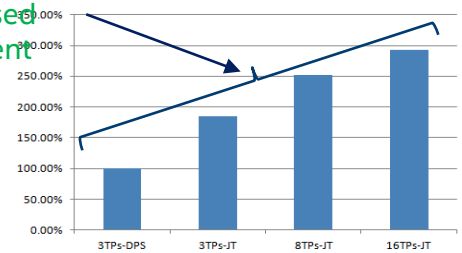
- Enhancements to support coherent JT (e.g. QCL, PDSCH resource element mapping) can improve the LTE performance especially in the dense deployment scenarios such as indoor hotspot







Performance gains
with proposed
enhancement

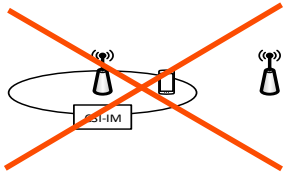


Objectives of the Rel-14 FeCoMP SID proposal (cont'd)

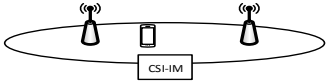
Enhancements related to interference and channel measurements on the CSI resources to reduce the overhead and the higher layer re-configurations

- The enhancements may be useful to reduce overhead from CSI-IM and CSI-RS measurement resources which is currently limiting factor in the dense deployment network, reduce L2 latency associated with high layer re-configuration and overall minimize the planning efforts for operators

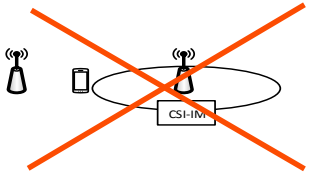
With proposed enhancements only 1 CSI-IM configuration is needed for 2 TPs instead of 3



CSI-IM configuration 1



CSI-IM configuration 2



CSI-IM configuration 3

Beamforming and scheduling coordination on the transmission points

- Beam coordination instead of blanking may be useful in the FD-MIMO deployment scenarios with narrow beamforming

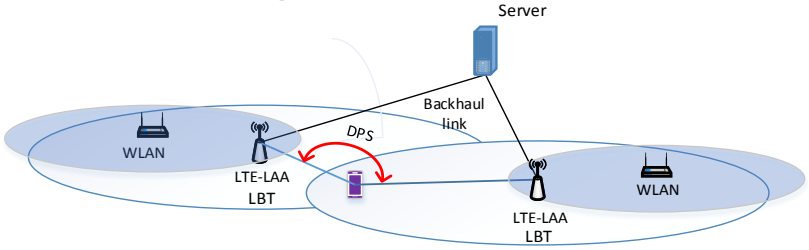
Objectives of the Rel-14 FeCoMP SID proposal (cont'd)

Enhancements to the reference signals including coordination of the uplink SRS

- Coordination of the uplink SRS resources, virtual cell ID for uplink SRS, larger number of orthogonal antenna ports for uplink DM-RS for JR may be useful to increase the capacity and the channel estimation performance for the uplink and downlink (in TDD systems)

Enhancements to coordinated multi-point operation in the unlicensed spectrum

- The downlink performance may be improved by using dynamic point switching to increase probability of the downlink scheduling in the presence of LBT transmission constraints



Note: For evaluation of the enhancements two and four receive antennas at UEs, 1D/2D antenna port layouts, ideal and non ideal backhaul links are assumed.

Possible timelines for completion of the SI