

3GPP TSG RAN Rel-19 workshop
Taipei, June 15 -16, 2023
Agenda Item: 5

RWS-230244



Views on MIMO enhancements in Rel-19

Xiaomi

Overview



- Enhancement on beam management
- Further enhancement on massive MIMO
- Enhancement on CJT
- Enhancement on uplink Transmission

Enhancement on Beam Management

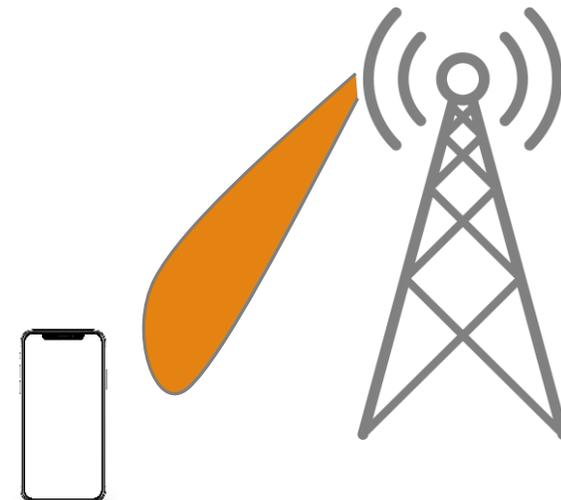


■ Motivation

- Multi-beam operation with reduced latency and signaling cost

■ Proposals

- Beam measurement/reporting before RRC connection
- UE-initiated beam selection/activation
- Beam measurement/reporting/refinement/selection triggered by beam indication
- Aperiodic beam measurement/reporting based on multiple resource sets



Further Enhancement on Massive MIMO

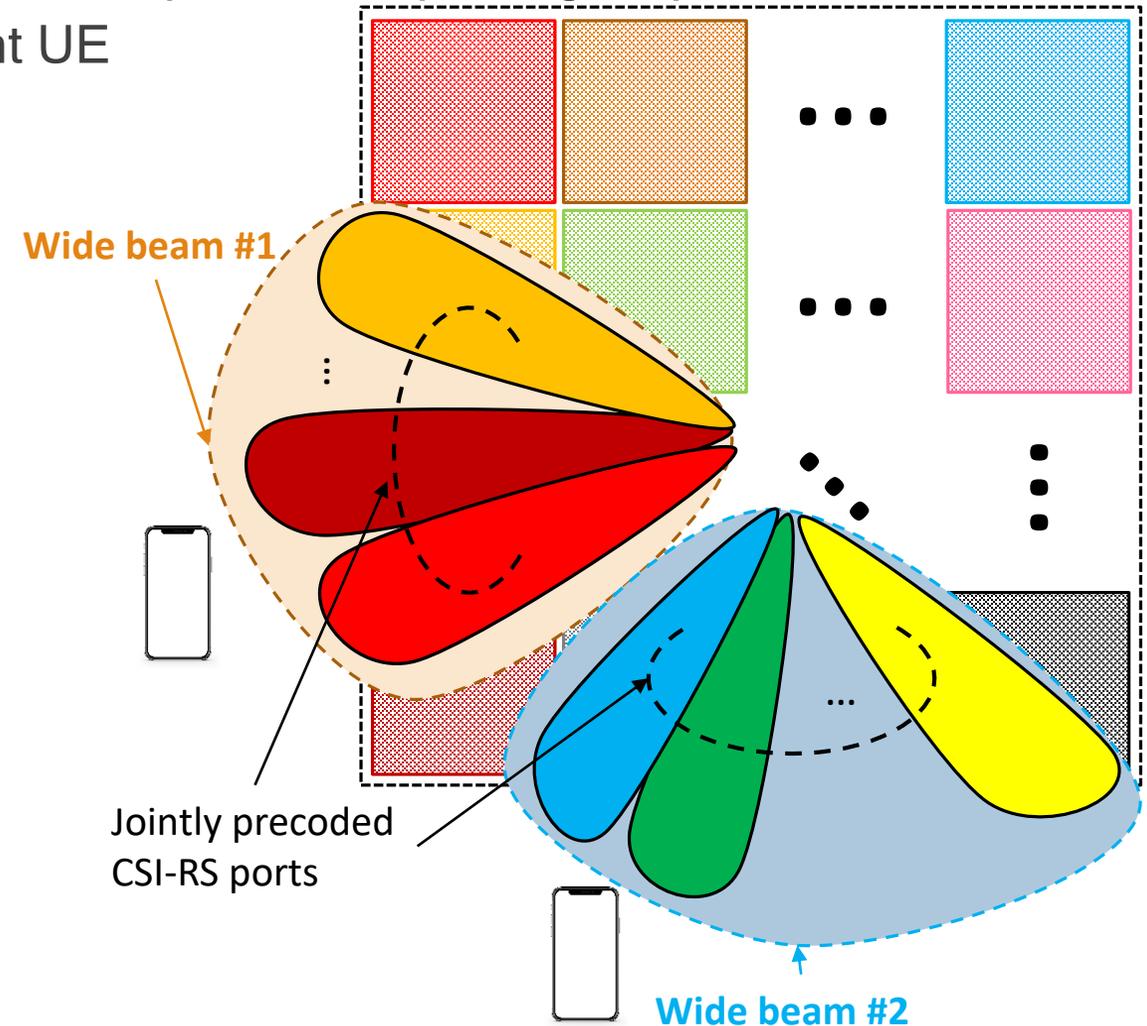


■ Motivation

- Larger antenna array with more TXRU for higher-order spatial multiplexing, esp. for MU-MIMO.
- Reduce CSI feedback overhead and complexity at UE

■ Proposals

- ≥ 64 -port CSI-RS design with limited overhead
- Joint spatial/frequency/temporal precoding for CSI-RS targeting UE with high/medium velocities
- UE reports the bases less frequently, or even reports the projected coefficients only.



Enhancement on CJT

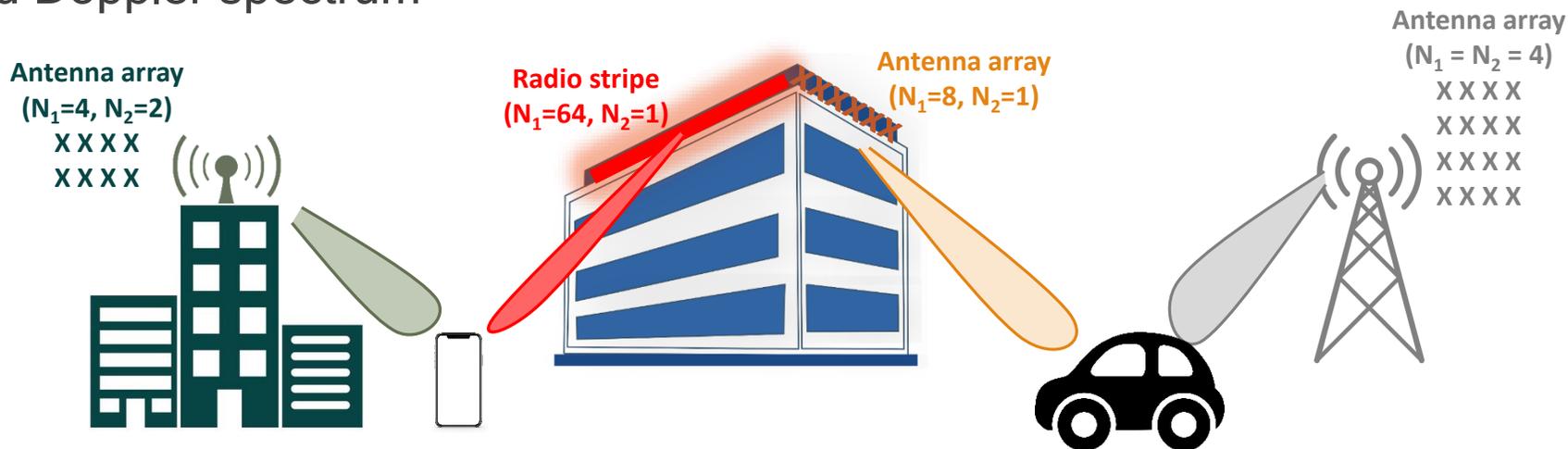


■ Motivation

- More flexible CJT across gNB sites or even heterogeneous TRP's
- Remarkable improvement of UE throughput is expected due to the increased CJT opportunities
- Deal with the severe CSI aging in CJT transmission.

■ Proposals

- Calibration of antenna arrays among TRP's with imperfect array synthesis
- CSI enhancement among TRP's with different antenna configurations or layouts
- Enhance R18 CJT Type II codebook to alleviate the time-domain selectivity of CJT channel with widened Doppler spectrum



Enhancement on Uplink Transmission



■ Motivation

- Further enhancements of UL throughput and coverage

■ Proposals

- Enhance STxMP transmission for multi-TRP with
 - asymmetric panels,
 - multi-DCI based PUCCH+PUCCH and PUCCH+PUSCH
- Frequency selective precoding
- DFT-s-OFDM based multi-layer transmission



Thanks!