

Motivation for DSS enhancements in Rel- 18

RWS-210308



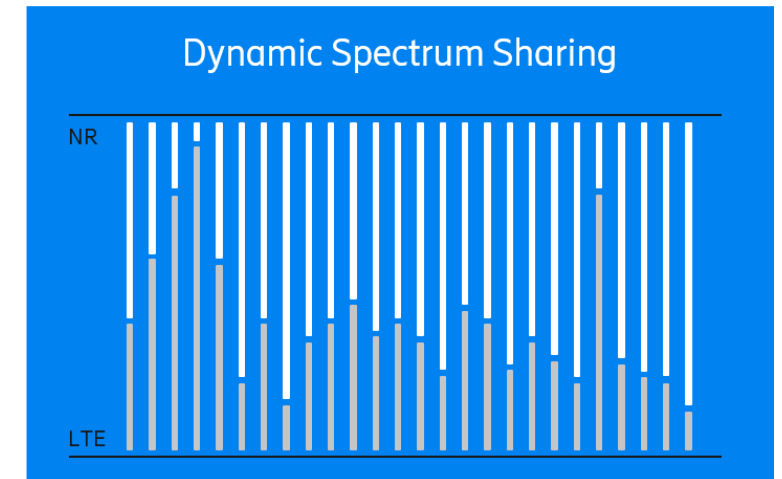
3GPP TSG RAN Rel-18 workshop
Electronic Meeting
June 28 - July 2, 2021

Agenda item: 4.1
Source: Ericsson
Document for: Discussion

Dynamic spectrum sharing



- Features enabling Dynamic Spectrum Sharing (DSS) were introduced in NR to enable LTE and NR in the same spectrum. With DSS, NR in LTE bands can efficiently share the same channel and dynamically allocate available resources to NR and LTE on need basis.
- Status
 - Rel-15
 - CRS rate matching for NR
 - Adjustments to DMRS position Type A scheduling
 - Flexible PDCCH symbol allocation for Type B scheduling
 - Rel-16
 - Multiple LTE-CRS-RateMatching patterns per carrier
 - Additions to Type A and Type B PDSCH scheduling
 - Rel-17, ongoing WI to enable
 - Cross-carrier scheduling from SCell to schedule PDSCH/PUSCH on P(S)Cell



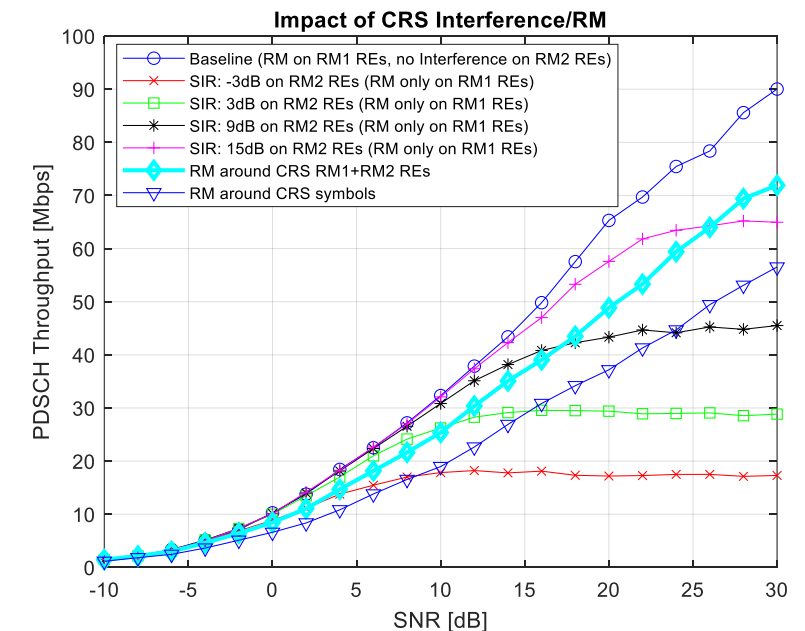
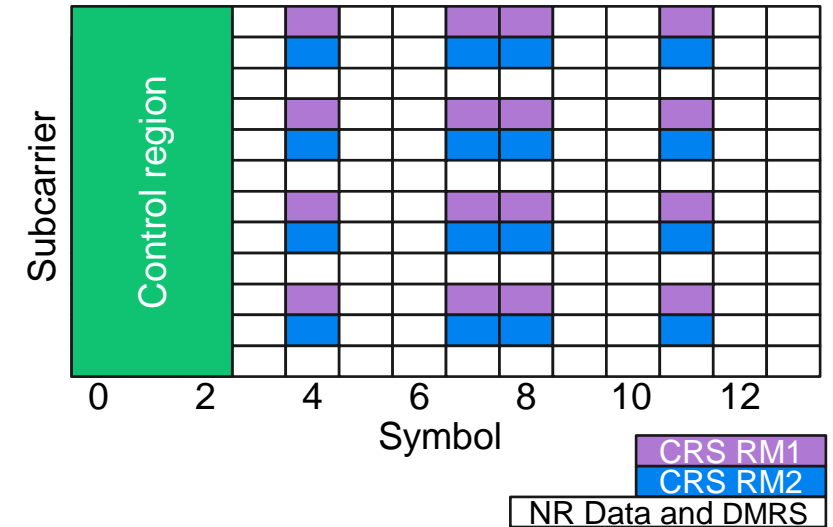
CRS Rate-matching Enhancement

● Background

- DCI based adaptation of symbol/RB level rate-matching (RM) patterns supported in Rel-15
- RRC configuration for multiple CRS RM patterns introduced in Rel-16
- Dynamic adaptation between different CRS RM patterns avoids frequent RRC reconfigurations and enables fast adaptation of CRS RM e.g. to turn on/off/adapt RM around LTE CRS pattern(s) according to the interference

● Proposal

- Support DCI based dynamic adaptation of rate-matching around LTE CRS pattern(s)



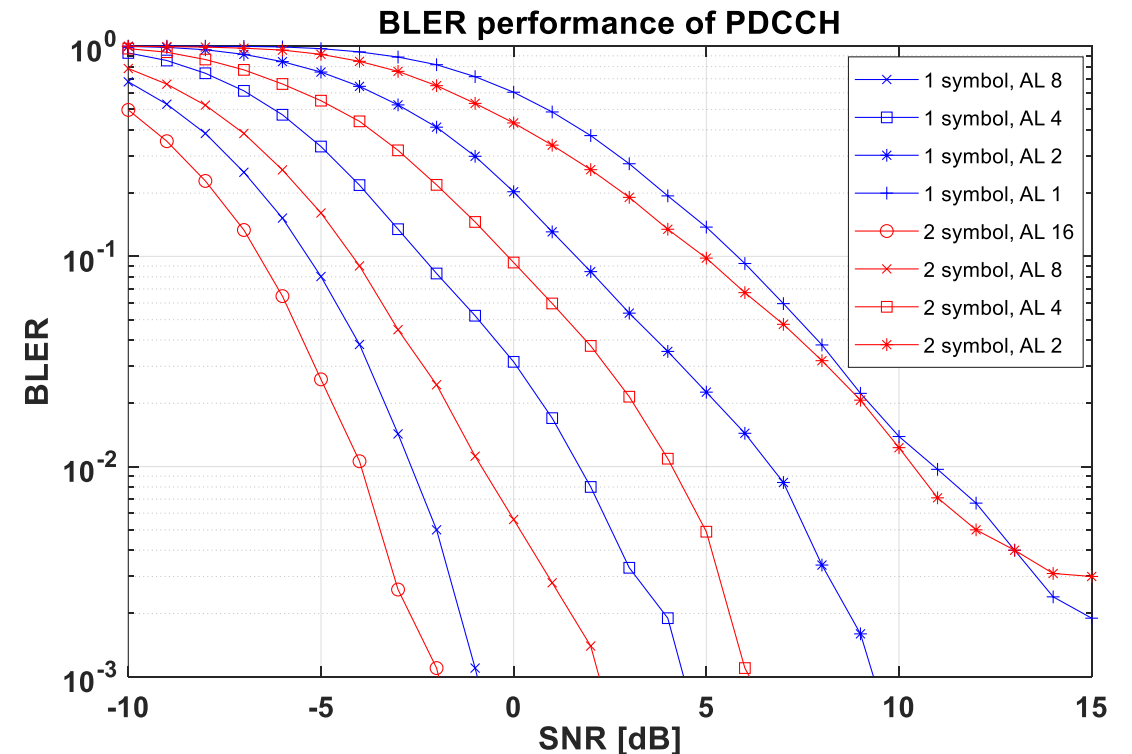
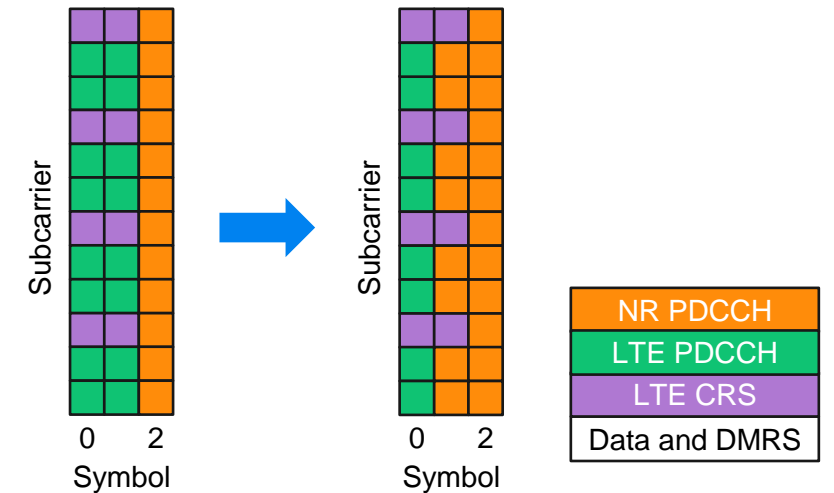
NR PDCCH Enhancement

● Background

- Rel-15: UEs are not expected to decode NR PDCCH if it overlaps with LTE CRS
- Allowing NR PDCCH in symbols 1 and 2 can increase NR PDCCH capacity even after accounting for performance loss due to puncturing by CRS in symbol 1

● Proposal

- Support NR PDCCH reception in symbols overlapping with LTE CRS
 - Remove the restriction that UEs are not expected to decode NR PDCCH if it overlaps with LTE CRS
 - CRS is allowed to puncture NR PDCCH



Cross-carrier scheduling Enhancement

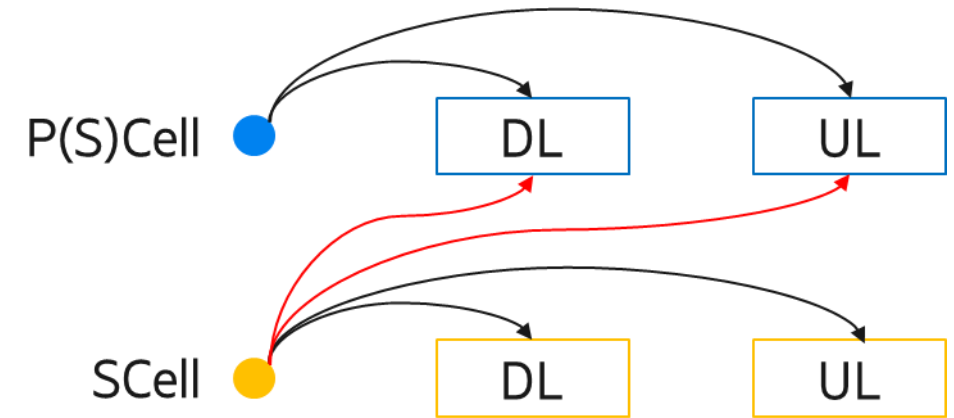


- Background

- Cross-carrier scheduling (CCS) from SCell to P(S)Cell being introduced in Rel-17 (WI limited to FR1 only)
- Allowing CCS from FR2 SCell to FR1 P(S)Cell provides similar benefits for FR1-FR2 CA (Natural extension of Rel-17 WI)

- Proposal

- Support FR2 SCell scheduling PDSCH/PUSCH on FR1 P(S)Cell



Summary



- To further enhance DSS in Rel-18
 - Support DCI based dynamic adaptation of rate-matching around LTE CRS pattern(s)
 - Support NR PDCCH reception in symbols overlapping with LTE CRS
 - Support FR2 SCell scheduling PDSCH/PUSCH on FR1 P(S)Cell