

3GPP TSG RAN Rel-19 workshop
Taipei, June 15 - 16, 2023

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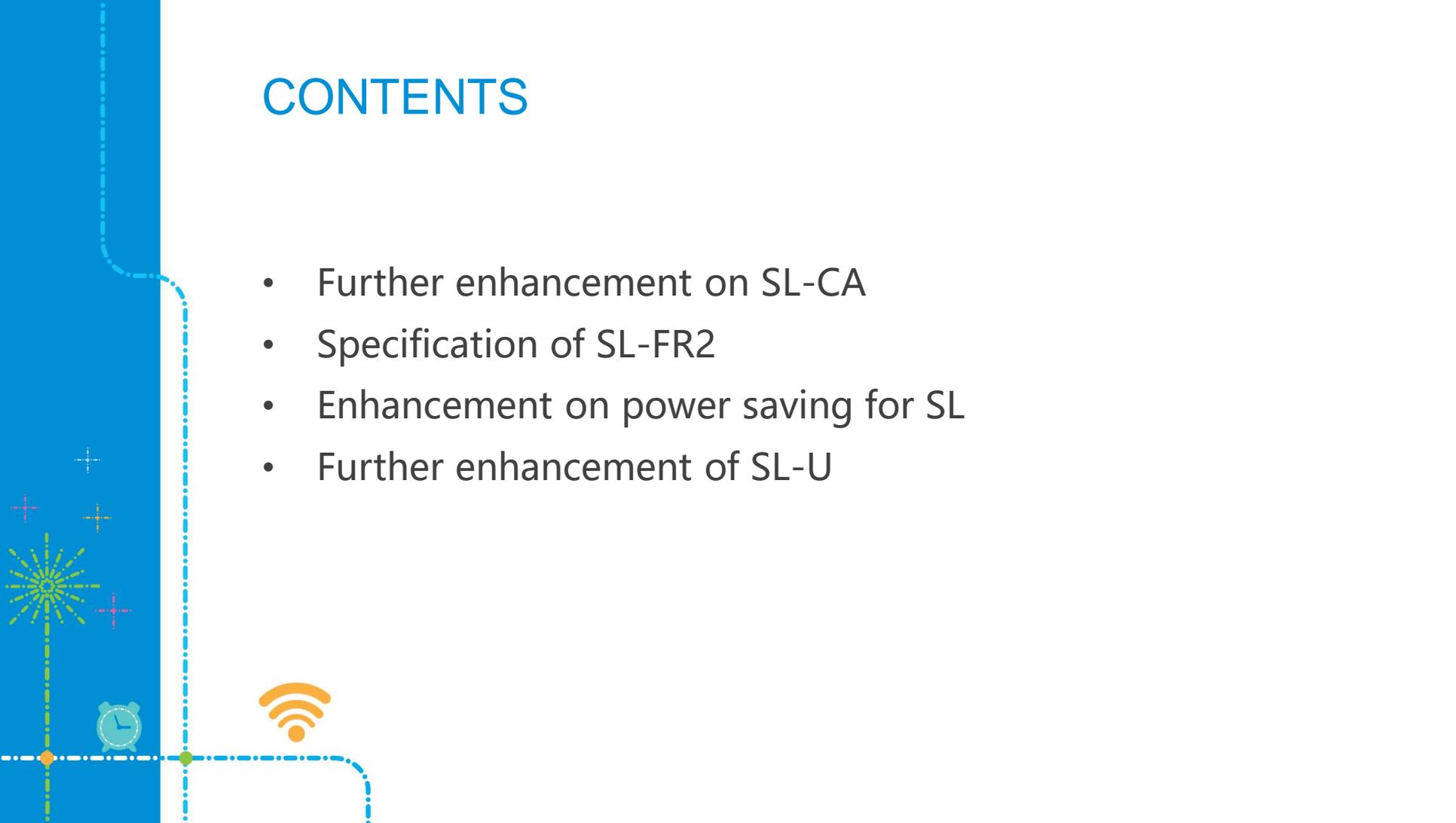
Agenda: 5

Views on Rel-19 Sidelink enhancement



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- Further enhancement on SL-CA
- Specification of SL-FR2
- Enhancement on power saving for SL
- Further enhancement of SL-U



Further enhancement of SL-CA

Motivation

- In Rel-18, a simplified version of sidelink CA is specified with a lot of limitations,
 - only Mode 2 operation, only intra-band CA for the ITS band in FR1, same SCS among CA carriers, no consideration for limited transmission and reception capability, etc.
- In Rel-19, in order to make sidelink more competitive, both licensed and unlicensed band, and both FR1 and/or FR2 spectrum should be considered for SL-CA.
- A complete and comprehensive CA is proposed to support SL-CA without limitation in Rel-18.

Scope

- Study and specify intra-band/inter-band CA, including:
 - Intra-band CA on FR2/unlicensed band;
 - Inter-band CA on Licensed band and unlicensed band or FR1 + FR2.
- Support different subcarrier spacing (SCS) among CA carriers
 - Potential enhancement on physical structure and/or resource selection/allocation;
 - Mechanism for PSFCH transmission addressing AGC issue.
- Support SL Mode 1, including e.g. carrier indication in DCI
- Note: UE with limited transmission and reception capability should be taken into account.

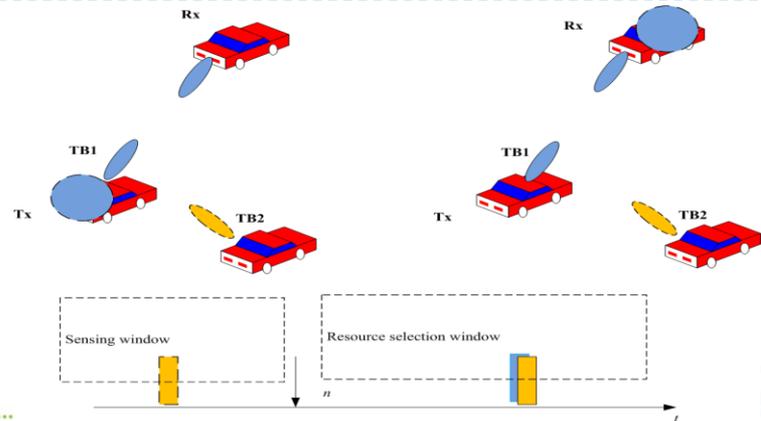
Specification of SL-FR2

Motivation

- After the study of sidelink operation on FR2 licensed spectrum in R18, it is natural to specify the SL-FR2 on licensed spectrum in Rel-19.
- In Rel-18, beam management only considers sidelink unicast communication. In Rel-19, further expansion to groupcast/broadcast can be considered.
- Operation over spectrum of FR2-2 (52.6GHz ~ 71GHz) can also be considered in Rel-19 SL-FR2 scope.

Scope

- Specify sidelink beam management for unicast based on outcome in Rel-18;
- Support beam management mechanism for groupcast/broadcast communication;
- Consider beam based sensing for resource selection in Mode 2, TX vs RX based sensing.



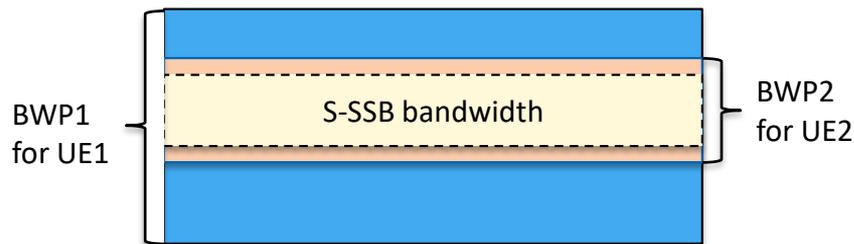
Enhancement on power saving for SL

Motivation

- For commercial use cases, e.g. wearable devices, implanted medical equipment etc., power saving mechanism is a key feature for UEs with battery constraint.
- In Rel-17, SL DRX, partial sensing, random resource selection and IUC mechanism were introduced for power saving. To further save power, the other mechanism can be considered, e.g. WUS, dedicated bandwidth.

Scope

- Support SL wake-up signal;
- Support of flexible BWP operation for SL devices with battery constraint or limited capability, e.g. dedicated BWP for power sensitive UE;
- Note: Support different UE capabilities.



Further enhancement of SL-U

Motivation

- In Rel-18, sidelink on unlicensed spectrum considers the use case that Uu operation for mode 1 is limited to licensed spectrum only, and the coexistence for SL-U and NR-U on same carrier is not considered.

Scope

- Support necessary mechanism(s) for co-channel coexistence of SL-U and NR-U
 - Study specification impact for SL-U and NR-U operation on same carrier, and specify the enhancement(s) if necessary.
 - Support COT sharing by gNB in mode 1 when gNB operates on same carrier as sidelink;

Proposed scope for Rel-19 sidelink enhancement

Proposal: The following objectives can be considered in Rel-19 sidelink scope:

- Further enhancement of SL-CA
 - Inter band CA, including licensed band and unlicensed band, FR1 + FR2.
 - Support of different subcarrier spacing (SCS) among CA carriers
 - Support of SL Mode 1, etc.
- Specification of SL-FR2
 - Specify sidelink beam management based on outcome in Rel-18
 - Support beam management mechanism for groupcast/broadcast communication
 - Study and specify beam based sensing for resource selection in Mode 2, etc.
- Enhancement on power saving for SL
 - Support SL wake-up signal
 - Support of flexible BWP operation for SL devices with battery constraint or limited capability, e.g. dedicated BWP for power sensitive UE, etc.
- Further enhancement of SL-U
 - Support co-channel coexistence for SL-U and NR-U; Support COT sharing by gNB in mode;

Thank you



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