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Agenda Item: 5
Source: Xiaomi
Document for: Discussion

Views on Rel-19 Positioning

Xiaomi

Sidelink Positioning enhancement - Motivation

- Higher SL positioning/ranging accuracy is required
 - In Rel-18, RAN1 studied use cases and corresponding requirements and defined the Set A and Set B accuracy requirements respectively.
 - In order to satisfy the Set B requirements, further enhancement shall be considered.
- More spectrum and wider bandwidth can be available for SL PRS if unlicensed spectrum and FR2 can be supported to improve the accuracy.
- The carrier phase positioning was introduced in Rel 18 NR positioning to improve the accuracy.
 - Given the limited spectrum available for SL positioning on ITS band, introducing CPP for SL is helpful to enhance the accuracy of SL positioning.
- Power consumption reduction for SL positioning is significantly important, especially for the IIoT and commercial use cases.

Sidelink Positioning enhancement - objective

■ SL positioning in unlicensed band

- Consider R18 SL communication design in unlicensed band as the baseline.
 - ✓ The LBT, CPE, MCSt, COT sharing, Multi-channel, etc. for SL PRS signal transmissions shall be investigated.

■ SL positioning in FR2 spectrum

- Support beam management for SL PRS

■ CPP for SL positioning

- Taking Carrier Phase Positioning (CPP) in NR positioning as the baseline, the following enhancements are considered:
 - ✓ Definition of SL PRS carrier phase
 - ✓ Measurement and report of SL PRS carrier phase
 - ✓ Integer Ambiguity
 - ✓ Phase error mitigation

■ Power saving for SL positioning

- Partial sensing based SL resource selection for scheme 2
- Consider the SL-DRX impact on SL positioning

PPW enhancement for NR positioning

■ Motivation

- Positioning frequency layers aggregated was introduced in R18, but PPW is not supported for aggregated PFLs.
- The PPW is significant for reducing latency and power consumption.

■ Objective

- Taking PPW in Rel-18 as the baseline, the following enhancements are considered:
 - ✓ PPW configuration for PRS across aggregated PFLs
 - ✓ MAC CE activation of PPW for PRS across aggregated PFLs
 - ✓ Priority configuration in PPW for PRS across aggregated PFLs

Power reduction for NR positioning

■ Motivation

- Only DL positioning is supported for RRC idle UE in Rel-18.
- The UL positioning for RRC idle UE has the potential to significantly reduce power consumption.

■ Objective

- Signalling and procedure for UL positioning for RRC idle UE, including
 - ✓ SRS transmission for RRC idle UE
 - ✓ SRS configuration for RRC idle UE
 - ✓ SRS activation/deactivation for RRC idle UE



Thanks