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

RWS-210471

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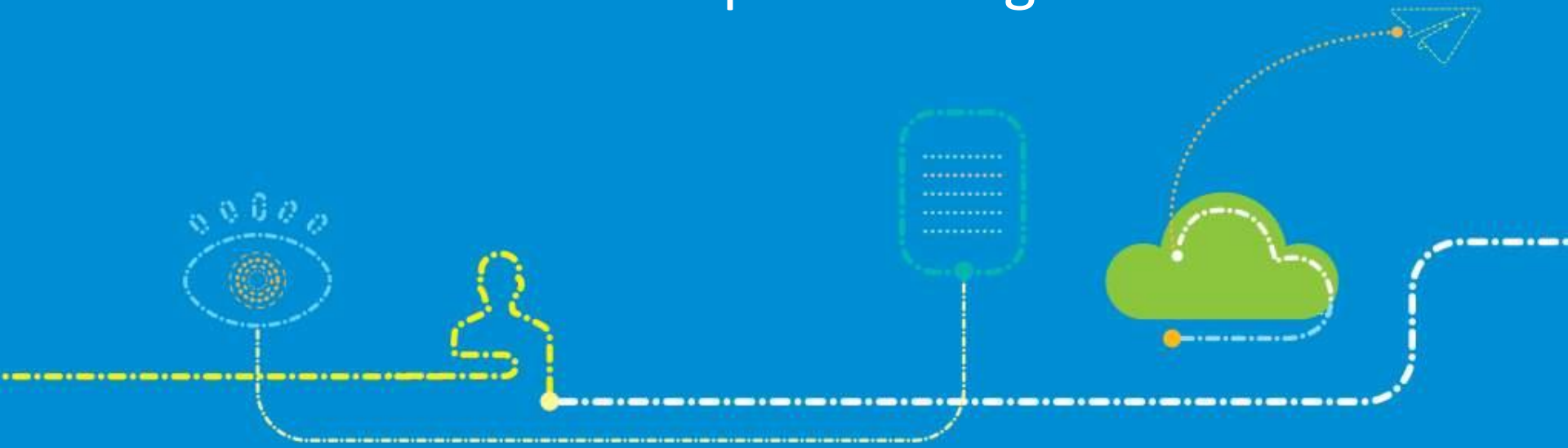
Source: ZTE, Sanechips
Agenda: 4.2

Evolution of NR positioning in Rel-18



Overview

- A small scope for enhancements on regular positioning in Rel-18
  - Further accuracy enhancement for general use cases
  - Extend positioning integrity for more positioning methods
- Sidelink positioning in Rel-18
  - Enable sidelink positioning in both out-of-coverage (OoC) and in-coverage (InC) scenarios

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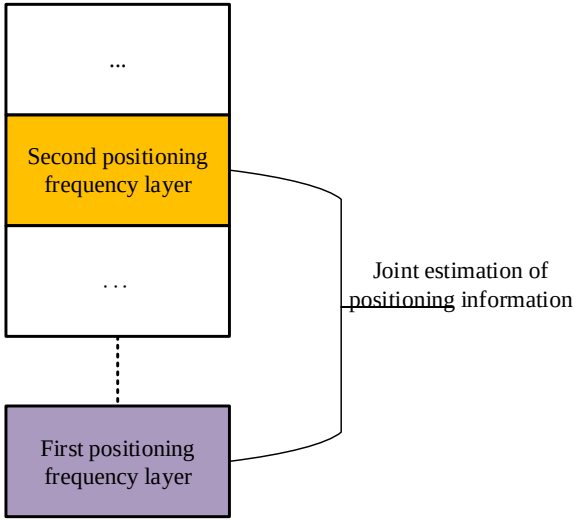
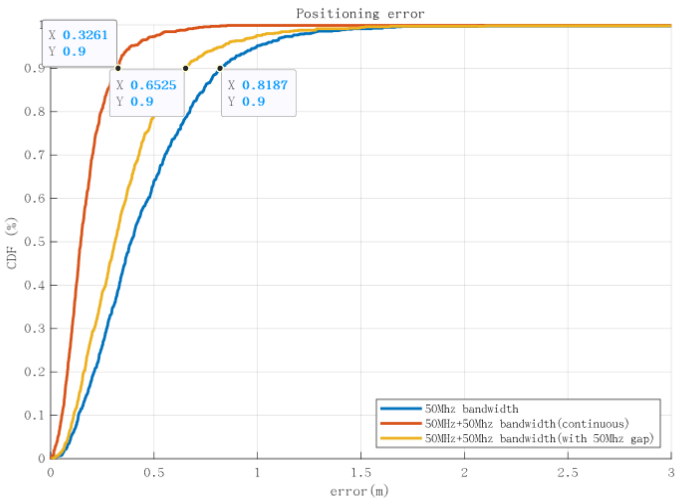
Further accuracy enhancement

- Motivation
  - Pursue higher positioning accuracy for UEs supporting multiple frequency layers or carriers
- Potential enhancements
  - Multiple PFLs for DL PRS transmission & reception
  - Multiple carriers aggregation for UL SRS transmission & reception





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Extend integrity for more positioning methods

- Status
  - Positioning integrity is supported only for A-GNSS in Rel-17
  - Positioning integrity for other positioning methods is not included in Rel-17 WI
- Motivation
  - Specify the positioning integrity for other positioning methods, e.g.
    - » RAT-dependent: DL-TDOA, UL-TDOA, DL-AoD, UL-AoA, multi-RTT
    - » RAT-independent: WLAN, Bluetooth, Sensor, TBS
- Potential Further Study and Normative Work
  - Strive to reuse procedures and signaling for Rel-17 defined integrity
  - Study whether new requirements are needed
  - Introduce new feared events for new involved positioning methods

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SL Positioning

- Status
  - RAN SI expected to deliver TR38.845 by RAN#93-e (Sept. 2021)
    - » Focus on requirements/deployment scenarios
    - » Public Safety use cases featuring OoC, V2X with both InC and OoC
    - » Quite some interest in terms of other KPIs than accuracy/latency/availability e.g. power saving at least for public safety
- Motivation
  - Positioning in OoC : Network independent, GNSS is not reliable in some cases
  - Positioning in InC : Complement to Uu positioning for better accuracy/low latency absolute positioning
  - Low latency/high accuracy relative positioning for both OoC and InC
- Potential Further Study and Normative Work
  - Target to fulfill the requirements captured in TR 38.845
    - » Functional components to enable positioning in OoC, Uu-like positioning RS/ channel for SL
    - » InC positioning : Uu positioning solutions + sidelink positioning solutions (similar to the solutions for OoC)
    - » Support absolute positioning and relative positioning.
    - » Solution to reduce positioning latency while maintain reliability.

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Potential WID proposal for Rel-18 positioning

- Motivation
  - Pursue higher positioning accuracy for UEs supporting multiple frequency layers or carriers
  - Extend positioning integrity for more positioning methods
  - Study and if needed, enabling sidelink positioning
- A work item with study phase can be considered:
  - Specify multiple PFLs for DL PRS transmission/reception and specify multiple carriers aggregation for UL SRS transmission/reception [RAN1]
  - Support positioning integrity for positioning methods not specified in Rel-17 [RAN2]
    - » Strive to reuse procedures and signaling for Rel-17 defined integrity
    - » Study whether new requirements are needed
    - » Introduce new feared events for new involved positioning methods
  - Study and if needed, specify the functional components, procedures, signaling, etc. to enable positioning in both OoC and InC for Sidelink [RAN1, RAN2]
    - » Strive to reuse Uu-like positioning solutions and RS
    - » Support absolute positioning and relative positioning

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Thanks

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