RAN94e-R18Prep-06 - Version 0.0.1

RAN

3GPP TSG-RAN Meeting #94e RP-212666

Electronic, 6 – 17 December 2021

Agenda Item: 8A.1

Source: Moderator (Intel)

Title: Moderator's summary for [RAN94e-R18Prep-06] on Expanded and improved positioning

Document for: Discussion and decision

1 Introduction

This document reports on the pre-RAN#94e email discussion on Rel-18 Expanded and improved positioning.

The starting point of the discussion is the result from the pre-RAN#93e email discussion that was reported in RP-211660. This discussion will follow the guidance provided by the RAN chair in RP-212657 and, as indicated in that guidance, the expectation is that the final outcome of this discussion should be text that is appropriate to from the objectives of a WI/SI.

2 Sidelink positioning/ranging

2.1 Initial Round

In the outcome of the previous discussion, the topic on sidelink positioning/ranging was captured as follows:

- Study/specify solutions (including reference signals, measurements, procedures, etc) for sidelink positioning considering the following: [RAN1, RAN2]
  - To include ranging (i.e. relative positioning) and absolute positioning
  - Coverage scenarios to cover: in-coverage, partial-coverage and out-of-coverage
  - Requirements: Based on requirements identified in TR38.845 and TS22.261 and TS22.104
  - Use cases: V2X (TR38.845), public safety (TR38.845), commercial (TS22.261), IIOT (TS22.104)
    - Note: The next phase of discussion will include selection of use cases to be used for evaluation and design. This does not restrict use of the solutions for other use cases.
  - Spectrum: ITS, licensed
  - Coordination with SA2 as required (e.g. architecture aspects)

It was also noted in the outcome of the previous discussion that some aspects were still controversial to some degree. These were:

1. Reference to the word ‘sidelink’ in the first bullet - one company preferred to remove this as in their view it implied a solution.
2. Reference to the word ’ranging’ in the first first bullet - one company preferred to remove the word ’ranging’ as they consider that ranging and relative positioning are not necessarily equivalent.
3. Whether to consider unlicensed wan controversial with strong views on both sides

In providing feedback for the initial round, I would like companies to specifically comment on the following:

1. How should the work be structured in terms of study item, work item or a study phase within a work item.
2. Identification of a specific use case (or use cases) from the identified references that will be used for the evaluation and design (noting that this in no way limits the final use of the feature).
3. Sufficiently detailed objectives with clear identification of WG responsibilities.
4. Any further detail regarding anticipated interaction with SA/CT.
5. Views on whether to consider unlicensed spectrum in scope.

Other comments may also be provided.

Feedback Form 1: Sidelink positioning/ranging - initial round comments

3 Improved accuracy, integrity and power efficiency

3.1 Initial Round

In the outcome of the previous discussion, the topic on improved accuracy, integrity and power efficiency was captured as follows:

- Improved accuracy, integrity, and power efficiency:
  - Study/Specify solutions for Integrity for RAT dependent positioning techniques [RAN2, RAN1, Coordination with SA2 as required]
  - Study/Specify solutions for accuracy improvement based on PRS/SRS bandwidth aggregation and NR carrier phase measurements [RAN1, RAN4, RAN2]
  - Study the requirements on LPHAP as developed by SA1 and evaluate whether existing RAN functionality can support these power consumption and positioning requirements. Based on the evaluation, identify potential enhancements to help address any limitations [RAN1, RAN2]

It was also noted in the outcome of the previous discussion that some aspects were still controversial to some degree. These were:

1. The list of topics in the second sub-bullet may still be controversial
2. A number of companies considered that the LPHAP bullet was not yet sufficiently motivation to be included

In providing feedback for the initial round, I would like companies to specifically comment on the following:

1. How should the work be structured in terms of study item, work item or a study phase within a work item.
2. Sufficiently detailed objectives with clear identification of WG responsibilities.
3. Any further detail regarding anticipated interaction with SA/CT.
4. Further views on the specific accuracy improvements to be considered
5. Further views on whether to include an objective on LPHAP. It may also be helpful to identify a specific use case or use cases from SA1's work on which focus the studies in RAN.

Other comments may also be provided.

Feedback Form 2: Improved accuracy, integrity and power efficiency - initial round comments

4 Redcap positioning

4.1 Initial Round

In the outcome of the previous discussion, the topic on improved accuracy, integrity and power efficiency was captured as follows:

- Define positioning support for RedCap UEs, considering the following:
  - Evaluate performance of existing positioning procedures and measurements with RedCap UEs[RAN1, RAN4]
  - Based on the evaluation, identify potential enhancements to help address possible limitations associated with for RedCap UEs [RAN1, RAN2]
  - Define performance requirements for positioning by RedCap UEs [RAN4]

In providing feedback for the initial round, I would like companies to specifically comment on the following:

1. The moderator's assumption is that the RedCap work is suitable to be handled as a work item objectives but companies may comment if they consider that any study is required.
2. Sufficiently detailed objectives with clear identification of WG responsibilities.

Other comments may also be provided.

Feedback Form 3: Redcap positioning - initial round comments

5 Other comments

5.1 Initial Round

Companies are invited to make any other comments that do not fall into the scope of the earlier sections. This might include views on the overall lead WG of the WI/SI if different from RAN1 as indicated in RP-212608.

Feedback Form 4: Other comments - initial round