**3GPP TSG-RAN WG4 Meeting #94-e R4-20xxxxx**

**Electronic Meeting, Feb.24th – Mar.6th 2020**

**Agenda item: 8.4.5, 8.4.5.1, 8.4.5.2, 8.4.5.5, 8.4.5.6**

**Source: Moderator (LG Electronics)**

**Title:** Email discussion summary for RAN4#94e\_#51\_5G\_V2X\_NRSL\_RRM\_Part\_1

**Document for:** Information

# Introduction

In this e-mail discussion following open issues will be discussed for NR V2X RRM in yellow-highlighted agenda below.

* 8.4.5 RRM core requirements (38.133) [5G\_V2X\_NRSL-Core]
  + 8.4.5.1 Transmit timing requirements [5G\_V2X\_NRSL-Core]
  + 8.4.5.2 Synchronization requirements [5G\_V2X\_NRSL-Core]
  + 8.4.5.3 Measurement requirements [5G\_V2X\_NRSL-Core]
  + 8.4.5.4 Interruption requirements [5G\_V2X\_NRSL-Core]
  + 8.4.5.5 Unicast, groupcast related [5G\_V2X\_NRSL-Core]
  + 8.4.5.6 Others [5G\_V2X\_NRSL-Core]

List of candidate target of email discussion for 1st round and 2nd round

* 1st round: Focus remaining issues in following Topics and makes tentative agreements
  + Topic #1: Transmit timing requirements
    - CR comment collection
      * 12.1 Introduction & 12.8 Reliability of GNSS signal(R4-2000943)
      * 12.2 UE Transmit Timing (R4-2001575)
  + Topic #2: Synchronization requirements
    - 2-1 : Rx Dropping Rate for selection/reselection of NR V2X synchronization reference source
    - 2-2 : Ping-Pong effect when gNB is timing reference source
    - 2-3 : S-RSRP measurement for initiation/cease SLSS transmissions
      * 2-3-1 : Side condition of S-RSRP measurement for initiation/cease SLSS transmissions
      * 2-3-2 : Terminology ‘S-RSRP’ vs ‘PSBCH-RSRP’
    - 2-4 : Terminology ‘V2X’ vs ‘SideLink’ in Rel-16 RAN4’s all requirements
    - 2-5 : CR for 12.4 Selection / Reselection of V2X Synchronization Reference Source
    - CR comment collection
      * 12.3 Initiation/Cease of SLSS Transmissions(R4-2001032)
  + Topic #3: Unicast, groupcast related
    - 3-1 : Distance-based HARQ feedback option 1
    - 3-2 : Sidelink RLM requirement
  + Topic #4: Others(Annex for side condition)
    - 4-1 : Annex.B.4 for NR V2X RRM side conditions
* 2nd round: TBA

# Topic #1: Transmit timing requirements

*Main technical topic overview. The structure can be done based on sub-agenda basis.*

## Companies’ contributions summary

|  |  |  |
| --- | --- | --- |
| **T-doc number** | **Company** | **Proposals / Observations** |
|  |  |  |

## Open issues summary

## Companies views’ collection for 1st round

### Open issues

### CRs/TPs comments collection

*Major close-to-finalize WIs and Rel-15 maintenance, comments collections can be arranged for TPs and CRs. For Rel-16 on-going WIs, suggest to focus on open issues discussion on 1st round.*

|  |  |
| --- | --- |
| **CR/TP number** | **Comments collection** |
| R4-2000943 |  |
|  |
|  |
| R4-2001575 |  |
|  |
|  |

## Summary for 1st round

### Open issues

### CRs/TPs

*Moderator tries to summarize discussion status for 1st round and provides recommendation on CRs/TPs Status update*

|  |  |
| --- | --- |
| **CR/TP number** | **CRs/TPs Status update recommendation** |
|  | *Based on 1st round of comments collection, moderator can recommend the next steps such as “agreeable”, “to be revised”* |

## Discussion on 2nd round (if applicable)

## Summary on 2nd round (if applicable)

*Moderator tries to summarize discussion status for 2nd round and provided recommendation on CRs/TPs/WFs/LSs Status update suggestion*

|  |  |
| --- | --- |
| **CR/TP/LS/WF number** | **T-doc Status update recommendation** |
| XXX | *Based on 2nd round of comments collection, moderator can recommend the next steps such as “agreeable”, “to be revised”* |

# Topic #2: Synchronization requirements

*Main technical topic overview. The structure can be done based on sub-agenda basis.*

## Companies’ contributions summary

|  |  |  |
| --- | --- | --- |
| **T-doc number** | **Company** | **Proposals / Observations** |
| R4-2000768 | Qualcomm | Proposal 1: Set the following requirement for NR-V2X synchronization source search:   * When GNSS synchronization reference source is configured as the highest priority, and UE is not synchronized to any of the following sources (1) GNSS (2) a SyncRef UE that is synchronized to GNSS directly or in-directly * UE is allowed to drop up to 2 slots of its V2X data reception per PSBCH monitoring occasion and overall drop rate shall not exceed 0.2% of its V2X data reception during Tdetect,SyncRef UE\_V2X for the purpose of selection / reselection to the SyncRef UE * When serving cell/PCell synchronization reference source is configured as the highest priority * UE is allowed to drop up to 2 slots of its V2X data reception per PSBCH monitoring occasion and overall drop rate shall not exceed 0.2% of its V2X data reception during Tdetect,SyncRef UE\_V2X for the purpose of selection / reselection to the SyncRef UE   Proposal 2: The following limitations should be considered when designing the test to verify Rx dropping requirement:   * Interruption due to AGC gain state change: if receive power from new synchronization source is much different from the simultaneously received data, gain state adjustment for S-SSS and PSBCH decoding might be needed, which can introduce interruption to SL data reception. * Decoding capability: when UE is required to simultaneous detect/decode SLSS while decoding data on SL, the number of SL decoding that UE can support might be reduced. * Prior knowledge on frequency domain: if UE needs to search for SyncRef UEs on both frequency and time domain (for asynchronized SyncRef UEs), S-PSS/S-SSS may take too much computation resources and may interrupt demodulation functions. However, since we consider n47 band only in Rel-16, as long as the UE is currently communicating with another SL UE, it has full knowledge of carrier frequency to correct its XO drift   Observation 1: With 5% false alarm rate, Rx dropping rate during 8 second detection time is 0.2%. |
| R4-2000770 | Qualcomm | Proposal 1: No additional handling is needed for decision of initiation/cease of SLSS Tx to avoid ping-pong between gNB synchronization source  Proposal 2: Follow LTE to apply side conditions from Uu cell (re)selection to SL synchronization source measurement when gNB is the synchronization source  Proposal 3: Follow LTE to apply side conditions from SyncRef UE selection/reselection to SL synchronization source measurement when SyncRef UE is the synchronization source |
| R4-2001027 | MediaTek inc. | Proposal 1: Use terminology ‘sidelink’ to replace ‘V2X’ in all RAN4’s sidelink requirement  Proposal 2: Similar to NR IDLE mode, the measurement margin should be introduced when reselecting the sync. reference source and initiation of SLSS transmission.  Proposal 3: UE is allowed to drop up to 2 slots of its V2X data reception per PSBCH monitoring occasion and overall drop rate shall not exceed [0.3%] of its V2X data reception during Tdetect,SyncRef UE\_V2X for the purpose of selection / reselection to the SyncRef UE. Tdetect,SyncRef UE\_V2X is defined as follow   |  |  | | --- | --- | | SCS(KHz) | Tdetect,SyncRef UE\_V2X(s) | | 15 | 8 | | 30 | 4 | | 60 | 2 | | 120 | 1 |   Proposal 4: The same side conditions -6dB as NR Uu and LTE V2X measurements shall be used in NR sidelink.  Observation 1: From RAN4’s view, the measurement uncertainty will result in ping-pong initiation of SLSS transmission  Observation 2: In NR IDLE mode, a measurement margin is added to the RSRP velue to avoid the ping-pong selection between serving cell and target best cell.  Observation 3: In LTE V2X, 2 subframes data reception dropping is permitted when UE is monitoring the PSBCH of potential SyncRef source. |
| R4-2001576 | Huawei | Proposal 1: The UE is allowed to drop up to 2 slots of its V2X data reception per PSBCH monitoring occasion for SyncRef UE identification  Proposal 2: The side condition of S-RSRP measurement for initiation/cease SLSS transmissions is defined as -6dB |
| R4-200939 | LG Electronics | Proposal 1: Do not specify Ping-Pong effect for transmitting SLSS when gNB is timing reference source  Proposal 2: UE is allowed to drop up to 2 slots of its V2X data reception per PSBCH monitoring occasion.  Proposal 3: Reuse -6dB same as LTE-V2X for SL-RSRP related side condition |
| R4-200940 | LG Electronics | Proposal 1: Replace S-RSRP with PSBCH-RSRP.  Proposal 2: Reuse -6dB same as LTE-V2X for PSBCH-RSRP side condition. |

## Open issues summary

*Before e-Meeting, moderators shall summarize list of open issues, candidate options and possible WF (if applicable) based on companies’ contributions.*

### Sub-topic 2-1

*Sub-topic description:* Rx Dropping Rate for selection/reselection of NR V2X synchronization reference source

RAN4#93 agreements:

* UE is allowed to drop up to X slots of its V2X data reception per PSBCH monitoring occasion and overall drop rate shall not exceed Y% of its V2X data reception during Tdetect,SyncRef UE\_V2X for the purpose of selection / reselection to the SyncRef UE
* Y = [0.3]
* Define X value in next meeting

*Open issues and candidate options before e-meeting:*

**Issue 2-1: Rx drop rate for selection/reselection of NR V2X synchronization reference source**

* Proposals

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | X (slots) | Y(%) | SCS(kHz) | Tdetect,SyncRef UE\_V2X(sec) |
| Option 1 | 2 | 0.3 | 15/30/60 | 8/8/8 |
| Option 2 | 2 | 0.3 | 15/30/60 | 8/4/2 |
| Option 3 | 2 | 0.2 | 15/30/60 | 8/8/8 |
| Option 4 | 2 | 0.2 | 15/30/60 | 8/4/2 |

* Recommended WF
  + TBA

### Sub-topic 2-2

*Sub-topic description:* Ping-Pong effect when gNB is timing reference source

*Open issues and candidate options before e-meeting:*

**Issue 2-2: Ping-Pong effect when gNB is timing reference source**

* Proposals
  + Option 1: Not specify related RRM requirement
  + Option 2: Specify related RRM requirement
* Recommended WF
  + TBA

### Sub-topic 2-3

*Sub-topic description:* S-RSRP measurement for initiation/cease SLSS transmissions

*Open issues and candidate options before e-meeting:*

**Issue 2-3-1: Side condition of S-RSRP measurement for initiation/cease SLSS transmissions**

* Proposals
  + Option 1: Reuse -6dB same as LTE-V2X
* Recommended WF
  + Reuse -6dB same as LTE-V2X

**Issue 2-3-2: Terminology ‘S-RSRP’ vs ‘PSBCH-RSRP’**

* Proposals
  + Option 1: Replace S-RSRP with PSBCH-RSRP
* Recommended WF
  + Replace S-RSRP with PSBCH-RSRP

### Sub-topic 2-4

*Sub-topic description:* Terminology V2X vs SideLink

*Open issues and candidate options before e-meeting:*

**Issue 2-4: Terminology ‘V2X’ vs ‘SideLink’ in Rel-16 RAN4’s all requirements**

* Proposals
  + Option 1: use V2X
  + Option 2: use SideLink instead of V2X
* Recommended WF
  + TBA

### Sub-topic 2-5

*Sub-topic description:* Related CR

In RAN4#93 meeting, draft CR(R4-1915922(QC)) was endorsed. Based on it, CR needs to be requested.

*Open issues and candidate options before e-meeting:*

**Issue 2-5: CR for 12.4 Selection / Reselection of V2X Synchronization Reference Source**

* Proposals
  + Option 1: Request CR based on endorsed draft CR(R4-1915922) and agreement of Rx dropping(Issue2-1) for 2nd Round Email discussion.
* Recommended WF
  + TBA

## Companies views’ collection for 1st round

### Open issues

**Issue 2-1: Rx drop rate for selection/reselection of NR V2X synchronization reference source**

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| --- | --- |
| **Company** | **Comments** |
| MTK | It is suggested to re-use the dropping rate of legacy LTE V2X because there is no difference for PSBCH decoding and data reception between LTE and NR V2X. Considering the different numerology, it’s better to extend the LTE V2X requirement (which is based on 15KHz SCS) with the same dropping rate but shorten the overall evaluation time. Thus, our suggestion is Option 2. |
| CATT | Support option 1 |
| LG | Preference is Option2 |
| QC | We can support option 1.  Comment for option 2: T\_detect also determines Tx dropping rate, have to keep it as 8 seconds. |

**Issue 2-2: Ping-Pong effect when gNB is timing reference source**

|  |  |
| --- | --- |
| **Company** | **Comments** |
| MTK | The reason why UE can avoid the ping-pong affection in gNB deployment is the measurement margin is added.  In IDLE mode inter-frequency, there is an additional margin already added for both relative and absolute accuracy.   |  | | --- | | 4.2.2.4  ….the reselection criteria is met by a margin of at least 5 dB in FR1 or 6.5 dB in FR2 for reselections based on ranking  or 6 dB in FR1 or 7.5 dB in FR2 for SS-RSRP reselections based on absolute priorities or 4 dB in FR1 and 4 dB in FR2 for SS-RSRQ reselections based on absolute priorities. | |
| CATT | Support option 1 |
| LG | Preference is Option 1(Not specify related RRM requirement) |
| QC | We support option 1, do not introduce margin.  Handover ping pong in Uu has much larger system performance impact than initiation/cease of SLSS Tx. With the requirement agreed in previous meeting, UE can take up to 10 measurement to average, ping-pong happens only when SNR is right one the threshold and SNR still fluctuate with 10 measurement average. From channel statistic perspective, 400ms is much larger than coherence time in vehicular scenario, 10 measurement average is more than enough to prevent fluctuation. We can’t guarantee that ping-pong doesn’t happen, but since the system performance impact is small, we don’t think it worth the implementation complexity to add the margin. |

**Issue 2-3-1: Side condition of S-RSRP measurement for initiation/cease SLSS transmissions**

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| --- | --- |
| **Company** | **Comments** |
| MTK | Reuse -6dB same as LTE-V2X |
| CATT | -6dB |
| LG | Reuse -6dB same as LTE-V2X |
| QC | WF of following LTE V2X is agreeable to us |

**Issue 2-3-2: Terminology ‘S-RSRP’ vs ‘PSBCH-RSRP’**

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| --- | --- |
| **Company** | **Comments** |
| MTK | RAN1 hasn’t finished the final definition of SSB-RSRP. Based on RAN1 FL, this issue will be discussed in this RAN1. Thus, it is suggested RAN4 don’t need to make any change so urgent. Just wait RAN1’s final agreement.   |  | | --- | | RAN1 FL comments:   * Okay, will capture the SSB-RSRP measurement as an open issue for further discussion during the following meetings. | |
| CATT | Question for clarification:  There is no S-RSRP definition?  S-RSRP is measured on SSSS signal?  PSBCH-RSRP is measured on DMRS signal? |
| LG | Currently, according to RAN1 agreements, NR SL related RSRP and RSSI were defined as below  PSBCH-RSRP (based on PSBCH DMRS)  PSSCH-RSRP (based on PSSCH DMRS)  PSCCH-RSRP (based on PSCCH DMRS)  SL-RSSI  LTE V2X S-RSRP is based on PSBCH DMRS. The terminology ‘S-RSRP’ needs to be replace with ‘PSBCH-RSRP’ based on the current RAN1 definition. |
| QC | Need more discussion, but suggest to focus on other more critical issue than terminology |

**Issue 2-4: Terminology ‘V2X’ vs ‘SideLink’ in Rel-16 RAN4’s all requirements**

|  |  |
| --- | --- |
| **Company** | **Comments** |
| MTK | It’s better to follow RAN1. |
| CATT | No strong view |
| LG | Preference is Option1(V2X), because this Rel-16 WI is 5G V2X and ‘V2X’ is aligned with LTE V2X in RAN4 specification. It should be discussed with RF session together. |
| QC | Need more discussion, but suggest to focus on other more critical issue than terminology |

**Issue 2-5: CR for 12.4 Selection / Reselection of V2X Synchronization Reference Source**

|  |  |
| --- | --- |
| **Company** | **Comments** |
| LG | There are 2 options to cover the missed CR for 12.4.  Option1 is to request new CR for it in second round.  Option 2 is to add this section in LG’s CR and to revise the LG’s CR. |
| QC | Both are fine for us, thanks for the help |

### CRs/TPs comments collection

*Major close to finalize WIs and Rel-15 maintenance, comments collections can be arranged for TPs and CRs. For Rel-16 on-going WIs, suggest to focus on open issues discussion on 1st round.*

|  |  |
| --- | --- |
| **CR/TP number** | **Comments collection** |
| R4-2001032 | LG : need editorial change   1. Replace S-RSRP with PSBCH-RSRP 2. Correct referenced section number below : 13.4🡪12.4   - S-RSRP related side conditions given in Section 13.4 for a corresponding Band are fulfilled,   1. Annex [B.6.4] 🡪 Annex[B.4] |
|  |
|  |

## Summary for 1st round

### Open issues

*Moderator tries to summarize discussion status for 1st round, list all the identified open issues and tentative agreements or candidate options and suggestion for 2nd round i.e. WF assignment.*

|  |  |
| --- | --- |
|  | **Status summary** |
| **Sub-topic#2-1** | *Tentative agreements:*  *Candidate options:*  *Recommendations for 2nd round:* |

*Suggestion on WF/LS assignment*

|  |  |  |
| --- | --- | --- |
|  | **WF/LS t-doc Title** | **Assigned Company,**  **WF or LS lead** |
| #1 |  |  |

### CRs/TPs

*Moderator tries to summarize discussion status for 1st round and provided recommendation on CRs/TPs Status update suggestion*

|  |  |
| --- | --- |
| **CR/TP number** | **CRs/TPs Status update recommendation** |
| XXX | *Based on 1st round of comments collection, moderator can recommend the next steps such as “agreeable”, “to be revised”* |

## Discussion on 2nd round (if applicable)

## Summary on 2nd round (if applicable)

*Moderator tries to summarize discussion status for 2nd round and provided recommendation on CRs/TPs/WFs/LSs Status update suggestion*

|  |  |
| --- | --- |
| **CR/TP/LS/WF number** | **T-doc Status update recommendation** |
| XXX | *Based on 2nd round of comments collection, moderator can recommend the next steps such as “agreeable”, “to be revised”* |

# Topic #3: Unicast, groupcast related

*Main technical topic overview. The structure can be done based on sub-agenda basis.*

## Companies’ contributions summary

|  |  |  |
| --- | --- | --- |
| **T-doc number** | **Company** | **Proposals / Observations** |
| R4-2000769 | Qualcomm | Proposal 1: Introduce the following requirement for distance-based HARQ feedback option 1:   * NACK based PFSCH demod requirement: under FRC with MCS x, SL Rx UE has decoding failure rate > y % when SNR is z dB. * When groupcast HARQ feedback option 1 is configured, the Rx UE shall be capable of extract the Tx Zone ID and communication range from successfully decoded SCI, compare the Rx UE’s own Zone ID with Tx Zone ID to derive the distance, and compare the distance with communication range to decide whether to transmit NACK when the receiver UE fails to decode the corresponding data. * Test requirement: Set SNR as z dB. With performance requirement of decoding failure rate > y%, when Rx UE is inside the communication range, the NACK transmission rate should be > y%; on the other hand, when Rx UE is outside of the communication range, the NACK transmission rate should be 0%.   Proposal 2: Introduce the following test procedure and requirement to verify distance-based HARQ procedure:   * 1. Initially, Tx UE and Rx UE are within communication range. Only two SL UEs (Tx and Rx) are in the system, TE emulates the Tx SL UE. * 2. T1: Tx UE transmission to Rx UE is with good SNR and low MCS, Rx can successfully decode both SCI and data. Requirement in T1: no feedback is sent. * 3. T2: Tx UE transmission to Rx UE is with SNR z dB and x MCS, Rx can successfully decode SCI but fails to decode data. Requirement: NACK is sent with rate > y%. * 4. T3: TE changes Tx UE Zone ID, now Tx UE and Rx UE are out of communication range. Tx UE transmission to Rx UE is with SNR z dB and MCS x, same as T2, Rx UE can successfully decode SCI but fails to decode data. Requirement: no feedback is sent   Observation 1: Requirement and corresponding test for this HARQ feedback mechanism is needed to ensure UE follows HARQ feedback procedures to avoid too many simultaneous transmissions  Observation 2: The following feedback actions are taken in different cases when implementing distance-based HARQ feedback option 1:   * When receiver UE successfully decodes the data, no feedback is transmitted, since option 1 is configured. * When receiver UE fails to decode the data, and receiver UE and transmitter UE are within communication range, NACK is transmitted on PSFCH. * When receiver UE fails to decode the data, and receiver UE and transmitter UE are outside of communication range, no feedback is transmitted. |
| R4-2001030 | MediaTek | Proposal 1: RAN4 doesn’t define core requirement for HARQ feedback on sidelink and HARQ feedback on uplink, but RAN4 can discuss whether and how to define the Demod test cases to verify these procedures  Proposal 2: RAN4 won’t define sidelink RLM requirement on R16 if RAN1/RAN2 cannot finalize the sidelink RLM procedure before April’s meeting.  Observation 1: RAN1 had introduced the new HARQ procedure on sidelink for groupcast, unicast sidelink communication.  Observation 2: RAN1 had introduced the new HARQ procedure on Uu uplink for groupcast, unicast sidelink communication in NR sidelink mode 1 UE |
| R4-2000939 | LG Electronics | Proposal 5: Specify RRM requirements for Tx-Rx distance based HARQ feedback for groupcast with general behavior. |

## Open issues summary

*Before e-Meeting, moderators shall summarize list of open issues, candidate options and possible WF (if applicable) based on companies’ contributions.*

### Sub-topic 3-1

*Sub-topic description:* Distance-based HARQ feedback option 1

*Open issues and candidate options before e-meeting:*

**Issue 3-1: Distance-based HARQ feedback option 1**

* Proposals

|  |  |  |  |
| --- | --- | --- | --- |
|  | RRM core | RRM TestCase | Demod. TestCase |
| Option 1 | Define | Define | Define |
| Option 2 | Not Define | Define | Define |
| Option 3 | Not Define | Define | Not Define |
| Option 4 | Not Define | Not Define | Define |

* Recommended WF
  + TBA

### Sub-topic 3-2

*Sub-topic description:* Sidelink RLM requirement

*Open issues and candidate options before e-meeting:*

**Issue 3-2: Sidelink RLM requirement**

* Proposals
  + Option 1: Not define sidelink RLM requirement on R16 if RAN1/RAN2 cannot finalize the sidelink RLM procedure before April’s meeting
* Recommended WF
  + TBA

## Companies views’ collection for 1st round

### Open issues

**Issue 3-1: Distance-based HARQ feedback option 1**

|  |  |
| --- | --- |
| **Company** | **Comments** |
| MTK | Firstly, We agree that the new HARQ based procedure is important in sidelink, but it’s not suitable to define a HARQ related requirement in a RRM spec. It’s actually a demod topic.  Secondly, both HARQ feedback on sidelink and HARQ feedback on uplink are important features introduced by RAN1. It’s better to consider to define the test cases for both of them. But whether need to define the test cases depends on the discussion in performance part. It’s too early to discuss the test cases now. |
| CATT | Not define for RRM Core and RRM test cases, FFS for Demod test case. |
| LG | RRM Test Case needs to be defined |
| QC | Our proposal is option 4, would like to know if companies can agree to option 4 and collect companies’ view on defining demod requirement |

**Issue 3-2: Sidelink RLM requirement**

|  |  |
| --- | --- |
| **Company** | **Comments** |
| MTK | Generally, RRM will define the requirement for RLM, but currently RAN1 and RAN2 still on-going the discussion. If they can’t finish the procedure design before the Apr’s meeting, there is no enough time for RAN4 to define this requirement. Thus, it’s better to not define RLM requirement in R16. |
| CATT | Not define RLM requirement in Rel-16 V2X. |
| LG | Not define RLM requirement in Rel-16 V2X. |
| QC | Option 1, not defining RLM requirement, is fine to use |

### CRs/TPs comments collection

*Major close-to-finalize WIs and Rel-15 maintenance, comments collections can be arranged for TPs and CRs. For Rel-16 on-going WIs, suggest to focus on open issues discussion on 1st round.*

|  |  |
| --- | --- |
| **CR/TP number** | **Comments collection** |
| XXX | Company A |
| Company B |
|  |

## Summary for 1st round

### Open issues

*Moderator tries to summarize discussion status for 1st round, list all the identified open issues and tentative agreements or candidate options and suggestion for 2nd round i.e. WF assignment.*

|  |  |
| --- | --- |
|  | **Status summary** |
| **Sub-topic#3-1** | *Tentative agreements:*  *Candidate options:*  *Recommendations for 2nd round:* |

*Recommendations on WF/LS assignment*

|  |  |  |
| --- | --- | --- |
|  | **WF/LS t-doc Title** | **Assigned Company,**  **WF or LS lead** |
| #1 |  |  |

### CRs/TPs

*Moderator tries to summarize discussion status for 1st round and provides recommendation on CRs/TPs Status update*

|  |  |
| --- | --- |
| **CR/TP number** | **CRs/TPs Status update recommendation** |
| XXX | *Based on 1st round of comments collection, moderator can recommend the next steps such as “agreeable”, “to be revised”* |

## Discussion on 2nd round (if applicable)

## Summary on 2nd round (if applicable)

*Moderator tries to summarize discussion status for 2nd round and provided recommendation on CRs/TPs/WFs/LSs Status update suggestion*

|  |  |
| --- | --- |
| **CR/TP/LS/WF number** | **T-doc Status update recommendation** |
| XXX | *Based on 2nd round of comments collection, moderator can recommend the next steps such as “agreeable”, “to be revised”* |

# Topic #4: Others(Annex for side condition)

*Main technical topic overview. The structure can be done based on sub-agenda basis.*

## Companies’ contributions summary

|  |  |  |
| --- | --- | --- |
| **T-doc number** | **Company** | **Proposals / Observations** |
| R4-2000942 | LG Electronics | Proposal 1: Introduce Annex.B.4 for NR V2X RRM side conditions.  Proposal 2: Consider the following Annex.B. for NR V2X RRM side conditions *(only capture skeleton below, see T-doc for details)*   * B.4 Conditions for V2X * B.4.1 Test parameters for GNSS signals * B.4.2 Conditions for Absolute PSBCH-RSRP Accuracy Requirements * B.4.3 Conditions for Relative PSBCH-RSRP Accuracy Requirements * B.4.4 Conditions for Absolute PSSCH-RSRP Accuracy Requirements * B.4.5 Conditions for Absolute PSCCH-RSRP Accuracy Requirements * B.4.6 Conditions for Selection/Reselection to Intra-frequency SyncRef UE |

## Open issues summary

*Before e-Meeting, moderators shall summarize list of open issues, candidate options and possible WF (if applicable) based on companies’ contributions.*

### Sub-topic 4-1

*Sub-topic description:* Annex.B.4 for NR V2X RRM side conditions

*Open issues and candidate options before e-meeting:*

**Issue 4-1: Annex.B.4 for NR V2X RRM side conditions**

* Proposals
  + Option 1: Introduce Annex.B.4 for NR V2X RRM side conditions
* Recommended WF
  + TBA

## Companies views’ collection for 1st round

### Open issues

**Issue 4-1: Annex.B.4 for NR V2X RRM side conditions**

|  |  |
| --- | --- |
| **Company** | **Comments** |
| MTK | 1. It’s too early to change S-RSRP to PSBCH-RSRP; 2. Please add the bracket to the values. The detail values needs to be further check. |
| LG | Fine to add the bracket to the values. |
| QC | Can LG explain why we choose band group A and G to define side conditions for S-RSRP? The methodology of deriving the conditions make sense to us since it follows LTE, but would like to know how the band groups are chosen. |

### CRs/TPs comments collection

*Major close-to-finalize WIs and Rel-15 maintenance, comments collections can be arranged for TPs and CRs. For Rel-16 on-going WIs, suggest to focus on open issues discussion on 1st round.*

|  |  |
| --- | --- |
| **CR/TP number** | **Comments collection** |
| XXX | Company A |
| Company B |
|  |

## Summary for 1st round

### Open issues

*Moderator tries to summarize discussion status for 1st round, list all the identified open issues and tentative agreements or candidate options and suggestion for 2nd round i.e. WF assignment.*

|  |  |
| --- | --- |
|  | **Status summary** |
| **Sub-topic#4-1** | *Tentative agreements:*  *Candidate options:*  *Recommendations for 2nd round:* |

*Recommendations on WF/LS assignment*

|  |  |  |
| --- | --- | --- |
|  | **WF/LS t-doc Title** | **Assigned Company,**  **WF or LS lead** |
| #1 |  |  |

### CRs/TPs

*Moderator tries to summarize discussion status for 1st round and provides recommendation on CRs/TPs Status update*

|  |  |
| --- | --- |
| **CR/TP number** | **CRs/TPs Status update recommendation** |
| XXX | *Based on 1st round of comments collection, moderator can recommend the next steps such as “agreeable”, “to be revised”* |

## Discussion on 2nd round (if applicable)

## Summary on 2nd round (if applicable)

*Moderator tries to summarize discussion status for 2nd round and provided recommendation on CRs/TPs/WFs/LSs Status update suggestion*

|  |  |
| --- | --- |
| **CR/TP/LS/WF number** | **T-doc Status update recommendation** |
| XXX | *Based on 2nd round of comments collection, moderator can recommend the next steps such as “agreeable”, “to be revised”* |