**3GPP TSG-RAN WG4 Meeting # 102-e R4-22XXXXX**

**Electronic Meeting, 21 February – 03 March 2022**

**Agenda item:** 10.13.2

**Source:** Moderator (Samsung)

**Title:** Email discussion summary for [102-e][309] NTN\_Solutions\_Part2

**Document for:** Information

# Introduction

This summary document captures issues related to NR-NTN coexistence aspects. It contains a summary of the contributions under Agenda Item 10.13.2 at TSG-RAN WG4 #102-e, together with identified key open issues, and recommends topics/questions to be handled via email discussions. The goal of this document is to provide recommendations on prioritization of discussion and finalize this topic if agreed.

A total of 14 TDOCs have been received for this agenda (See Annex 2) and 4 topics are listed as below to cover proposals and contents in these documents as appropriate.

* Topic #1: Co-existence scenarios and assumptions
* Topic #2: Co-existence results handling
* Topic #3: ACLR and ACS
* Topic #4: HAPS coexistence scenarios and results

To progress the discussion, it is proposed that the meeting could:

* in 1st round: to discuss and conclude on issues in Topic #1,2 and try to consequently conclude on Topic#3 if possible; to discuss and conclude on issues in Topic #4 if any; to discuss and agree on draft TPs to update TR 38.863 if any;
* in 2nd round: to conclude on ACLR and ACS values in Topic#3; to discuss and agree on draft TPs to update TR 38.863; to conclude on Topic #4.

# Topic #1: Co-existence scenarios and assumptions

## Companies’ contributions summary

|  |  |  |
| --- | --- | --- |
| **T-doc number** | **Company** | **Proposals / Observations** |
| R4-22040502 | Qualcomm Incorporated | Observation 1: TN UE location can be outside the TN cluster and up to the isolation region. That assumption will not cause any changes to the current agreed NTN UE requirements. Proposal 1: Keep the current UE deployment assumptions for option 2 in case 1 and keep the current NTN UE ACLR and ACS requirements agreed in last meeting.Proposal 2: To add one note in TR38.863 to clarify the NTN UE deployment for case 1.Table 6.2.1.1-1 Network and UE deployment

| No. | Combination | Aggressor | Victim | Which NTN cell/UE to observe?  | Which TN/UE to observe? | Which TN cells in a TN to observe? |
| --- | --- | --- | --- | --- | --- | --- |
| 1 | TN with NTN | TN DL | NTN DL | NTN cell:Observe NTN central beam for SINR, 6 adjacent beams for inter-beam interference.NTN UE:NTN UEs dropped at the edge of TN clustersNote: An isolation region is considered for NTN UEs deployed (see Annex 2 in [2]) | One cluster with 19 TN cells (57 sectors) randomly placed in the central NTN beam | All active TN clusters which has the NTN UE(s) at its edge. |

Proposal 3: A clarification that “To simply the simulation, the TN UEs are not deployed in the isolation region.” should be added in clause Annex 2 of simulation assumptions document. |
| R4-2205045 | Ericsson | Observation 1: For case 6, it’s not realistic to consider that the satellite beam will be full of urban macro TNs.Proposal 1: For case 6, consider the following assumption: only 50% of the satellite beam area will occupied by urban macro TNs. |
| R4-2205925 | THALES | Proposal 1: RAN4 shall consider the rural TN deployment scenario is predominant in the case of GEO.Proposal 2: RAN4 shall consider the urban TN deployment for GEO as a mixture of urban and rural TN deployment.Proposal 3: RAN4 agrees that the urban TN deployment for GEO (as a mixture of urban and rural TN deployment) is predominantly a rural TN deployment. |

## Open issues summary

### Sub-topic 1-1

**Issue 1-1: Case 1 assumptions**

* Proposals
	+ Option 1: Adopt following
* Option 1a: Keep the current UE deployment assumptions for option 2 in Case 1.
* Option 1b: Add one note in TR38.863 (marked in yellow) to clarify the NTN UE deployment for case 1.

Table 6.2.1.1-1 Network and UE deployment

| No. | Combination | Aggressor | Victim | Which NTN cell/UE to observe?  | Which TN/UE to observe? | Which TN cells in a TN to observe? |
| --- | --- | --- | --- | --- | --- | --- |
| 1 | TN with NTN | TN DL | NTN DL | NTN cell:Observe NTN central beam for SINR, 6 adjacent beams for inter-beam interference.NTN UE:NTN UEs dropped at the edge of TN clustersNote: An isolation region is considered for NTN UEs deployed (see Annex 2 in [X]) | One cluster with 19 TN cells (57 sectors) randomly placed in the central NTN beam | All active TN clusters which has the NTN UE(s) at its edge. |

* Option 1c: A clarification that “To simplify the simulation, the TN UEs are not deployed in the isolation region.” should be added in clause Annex 2 of simulation assumptions document.
	+ Option 2: If isolation distance is adopted by all, option 1“no isolation”can be removed in Case 1 and corresponding edits can be made in assumption document and TR 38.863.
* Recommended WF
	+ TBA

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Company** | **Agree with Opt.1a?** | **Agree with Opt.1b?** | **Agree with Opt.1c?** | **Agree with Opt.2?** | **Comments** |
|  |  |  |  |  |  |

### Sub-topic 1-2

**Issue 1-2: Case 6 Urban TN deployment**

* Proposals
	+ Option 1: The Urban TN deployment for GEO in Case 5 is a mixture of urban and rural TN deployment, in which only 50% of the satellite beam area will occupied by urban macro TNs.
* Recommended WF
	+ TBA

|  |  |  |
| --- | --- | --- |
| **Company** | **Agree with Option 1?** | **Comments** |
|  |  |  |

**Issue 1-3: Case 6 dominant scenario**

* Proposals
	+ Option 1: Rural TN deployment scenario is predominant in the case of GEO, and the requirements to Rural scenario applies to Urban TN deployment scenario which is a mixture of urban and rural deployment.
* Recommended WF
	+ TBA

|  |  |  |
| --- | --- | --- |
| **Company** | **Agree with Option 1?** | **Comments** |
|  |  |  |

## Companies views’ collection for 1st round

### Open issues

**Issue 1-1: Case 1 assumptions**

**Issue 1-2: Case 6 Urban TN deployment**

**Issue 1-3: Case 6 dominant scenario**

### CRs/TPs comments collection

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

|  |  |
| --- | --- |
| **CR/TP number** | **Comments collection** |
| XXX | Company A |
| Company B |
|  |
| YYY | 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**  |
| **Issue 1-1: Case 1 assumptions** | *Tentative agreements:**Candidate options:**Recommendations for 2nd round:* |
| **Issue 1-2: Case 6 Urban TN deployment** |  |
| **Issue 1-3: Case 6 dominant scenario** |  |

### CRs/TPs

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

*Note: The tdoc decisions shall be provided in Section 3 and this table is optional in case moderators would like to provide additional information.*

|  |  |
| --- | --- |
| **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)

# Topic #2: Co-existence results handling

## Companies’ contributions summary

|  |  |  |
| --- | --- | --- |
| **T-doc number** | **Company** | **Proposals / Observations** |
| R4-2205044 | Ericsson | Preliminary results for coexistence with NB-IoT considering only the worst case scenarios identified during the NTN-TN coexistence study are provided. |
| R4-2205045 | Ericsson | Proposal 2: For case 6, considering the scenario with GEO satellite and an elevation angle of 45o, the needed ACIR value should be equal to 40dB to guarantee coexistence. |
| R4-2205924 | THALES | **Proposal 1:** RAN4 should consider defining a clear selection and averaging algorithm between different ACIR values (at 5% or 5%-tile throughput loss) from different companies.**Proposal 2:** RAN4 shall consider using the following algorithm for averaging throughput loss results between different companies:1. Consider only results that do not have much variance with respect to other companies’ results.
2. We should not take the worst value (of a company) into account if the value at 5% throughput loss is 10 dB higher (or lower) that the average of the other companies. For this particular case, the respective company throughput loss shall not be used to compute the average throughput loss.
3. We cannot have a conclusion if only one company submitted results. We need at least 2 companies providing results for a Case.
4. The correct average methodology between different companies should be (according e.g., to TR 36.942):
	1. independently done with respect to each scenario;
	2. the average should be done on throughput loss (based on different throughput loss between the companies), and not on ACIR (dB or linear, especially if the values are too different);
	3. a new curve representing the averaged throughput loss (between selected companies) should be obtained;
	4. finally, a (new) ACIR value is obtained at 5% throughput loss from the average throughput loss previously computed.

**Proposal 3:** RAN4 should not consider the worst case value (of a company) into account if the value at 5% throughput loss is 10 dB higher (or lower) that the average of the other companies. For this case, the throughput loss shall not be used to compute the average throughput loss. |

## Open issues summary

### Sub-topic 2-1

**Issue 2-1: Algorithm to average ACIR values**

* Proposals
	+ Option 1: use the following algorithm for averaging throughput loss results between different companies:
1. Consider only results that do not have much variance with respect to other companies’ results.
2. The worst value (of a company) should not be taken into account if the value at 5% throughput loss is 10 dB higher (or lower) that the average of the other companies. (For this particular case, the respective company throughput loss shall not be used to compute the average throughput loss.)
3. A conclusion should not be made if only one company submitted results. A valid case should have at least results provided by 2 companies.
4. The correct average methodology between different companies should be (according e.g. to TR 36.942):
	1. independently done with respect to each scenario;
	2. the average should be done on throughput loss (based on different throughput loss between the companies), and not on ACIR (dB or linear, especially if the values are too different);
	3. a new curve representing the averaged throughput loss (between selected companies) should be obtained;

finally, a (new) ACIR value is obtained at 5% throughput loss from the average throughput loss previously computed.

1. The worst-case value (of a company) should not be taken into account if the value at 5% throughput loss is 10 dB higher (or lower) that the average of the other companies. (For this case, the throughput loss shall not be used to compute the average throughput loss.)
* Recommended WF
	+ TBA

|  |  |  |
| --- | --- | --- |
| **Company** | **Agree with Option 1?** | **Comments** |
| Moderator |  | With regard to Proposal 1 in R4-2205924, it is proposed not to discuss it as it is the common approach in RAN4.  |

**Issue 2-2: ACIR range**

* Proposals: Legacy issue left from #101-bis-e meeting, with updates of Option 4 value to 40dB

|  |  |  |  |
| --- | --- | --- | --- |
| Case # / ACIR | Case 2 | Case 3 | Case 6 |
| Option 1 | 22~30 dB | 18~26 dB |  |
| Option 2 | 25~30 dB | 20 dB | 35~40 dB |
| Option 3 (Qualcomm) | 22~30 | 20~26dB | 46 dB |
| Option 4 (Ericsson) | 22~30 dB | 20~26dB | 40 dB |
| Option 5 (Thales) | 25~30 dB | 18~26 dB | 37~38 dB |

* Recommended WF
	+ TBA

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Company** | **Case 2****Which Option?** | **Case 3****Which Option?** | **Case 6****Which Option?** | **Comments** |
| Moderator |  |   |  | Any other values?  |

### Sub-topic 2-2

**Issue 2-3: TN(NB-IoT) and TN co-existence result**

* Proposals
	+ Option 1: Adopt results provided by R4-2205044 in co-existence result summary and TR 38.863
* Recommended WF
	+ Agree with Option 1.

|  |  |  |
| --- | --- | --- |
| **Company** | **Agree with WF?** | **Comments** |
|  |  |  |

## Companies views’ collection for 1st round

### Open issues

**Issue 2-1: Algorithm to average ACIR values**

**Issue 2-2: ACIR range**

**Issue 2-3: TN(NB-IoT) and TN co-existence result**

### 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 |
|  |
| YYY | 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#1** | *Tentative agreements:**Candidate options:**Recommendations for 2nd round:* |

### 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)

*Moderator can provide summary of 2nd round here. Note that recommended decisions on tdocs should be provided in the section titled ”Recommendations for Tdocs”.*

# Topic #3: ACLR and ACS

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

## Companies’ contributions summary

|  |  |  |
| --- | --- | --- |
| **T-doc number** | **Company** | **Proposals / Observations** |
| R4-22040545 | Ericsson | Proposal 2: For case 6, considering the scenario with GEO satellite and an elevation angle of 45o, the needed ACIR value should be equal to 40dB to guarantee coexistence.Proposal 3: Based on case 6 and the new assumption (50% TNs), the SAN ACS limit should be equal to 40dBc. |
| R4-2205104 | Ligado Networks, Inmarsat | Observation 1: For Case 3, the received signal strength at the TN UE from a GEO NTN satellite beam is expected to be ~10 dB lower than that received from the LEO NTN satellite beam.Observation 2: For Case 3, the noise floor rise at the TN UE as a result of ACI from the GEO NTN satellite beams is expected to be 1.1 dB lower than that received from the LEO NTN satellite beams when ACLR value of 24 dB is used for both.Observation 3: For Case 3, ACLR of 13.5 dBc for the GEO SAN will result in the same noise rise and degradation as that observed due to the LEO SAN.Proposal 1: Use separate ACLR values for GEO and LEO SANs.Proposal 2: Specify ACLR value of 13.5 dBc for a GEO SAN. |
| R4-2205925 | THALES | Proposal 4: RAN4 shall consider that the “rural” SAN ACS requirement (≤ 38 dB) identified in RAN4#101-bis-e as worst case is also applicable to “urban” deployment. |

## Open issues summary

### Sub-topic 3-1

**Issue 3-1: Case 6 SAN ACS value**

* Proposals
	+ Option 1(Ericsson): 40 dB
	+ Option 2(last meeting): [38dB]
* Recommended WF
	+ TBA

|  |  |  |
| --- | --- | --- |
| **Company** | **Which Option do you support?**  | **Comments** |
|  |  |  |

**Issue 3-2: Applicability of SAN ACS value**

* Proposals

The “rural” SAN ACS requirement (≤ 38 dB) identified in RAN4#101-bis-e as worst case is also applicable to “urban” deployment. As further interpreted by Moderator, in the case of “rural” SAN ACS requirement (≤ 38 dB) agreed, following options are proposed for discussion

* + Option 1: There should be a note in TR 38.863 and TS 38.101-5 indicating the SAC ACS value applies to both Rural and Urban scenarios.
	+ Option 2: There should be a note in TR 38.863 an TS 38.101-5 indicating the SAN ACS value only applies to Rural scenario
* Recommended WF
	+ TBA

|  |  |  |  |
| --- | --- | --- | --- |
| **Company** | **Agree with Opt.1?** | **Agree with Opt.2?** | **Comments** |
|  |  |  |  |

### Sub-topic 2-2

**Issue 3-3: Consideration of ACLR for GEO and LEO SAN**

* Proposals
	+ Option 1: Use separate ACLR values for GEO and LEO SANs.
	+ Option 2: Use the same ACLR values for GEO and LEO SANS
* Recommended WF
	+ TBA

|  |  |  |  |
| --- | --- | --- | --- |
| **Company** | **Agree with Opt.1?** | **Agree with Opt.2?** | **Comments** |
|  |  |  |  |

**Issue 3-4: GEO SAN ACLR value**

* Proposals
	+ Option 1: 13.5dBc for GEO SAN and 24dBc for LEO SAN.
	+ Option 2: 24dBc for both GEO and LEO SAN
* Recommended WF
	+ TBA

|  |  |  |  |
| --- | --- | --- | --- |
| **Company** | **Agree with Opt.1?** | **Agree with Opt.2?** | **Comments** |
|  |  |  |  |

## Companies views’ collection for 1st round

### Open issues

**Issue 3-1: Case 6 SAN ACS value**

**Issue 3-2: Applicability of SAN ACS value**

**Issue 3-3: Consideration of ACLR for GEO and LEO SAN**

**Issue 3-4: GEO SAN ACLR value**

### 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** |
| R4-2204333 |  |
|  |
|  |
| R4-2205913 |  |
|  |
|  |
| R4-2205914 |  |
|  |
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## 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#1** | *Tentative agreements:**Candidate options:**Recommendations for 2nd round:* |

### 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)

*Moderator can provide summary of 2nd round here. Note that recommended decisions on tdocs should be provided in the section titled ”Recommendations for Tdocs”.*

# Topic #4: HAPS coexistence scenarios and results

## Companies’ contributions summary

|  |  |  |
| --- | --- | --- |
| **T-doc number** | **Company** | **Proposals / Observations** |
| R4-2204503 | Qualcomm Incorporated | The HAPS and TN coexistence performance were presented with simulation results. Observation 1: The interference from HAPS to AAS TN is acceptable. Introducing HAPS will not impact current TN deployment.Observation 2: The edge performance of HAPS is vulnerable. It is difficult to measure the interference’s impact brought by other systems using 5-ile performance loss. The operators’ coordination mechanism is needed to enable the co-coverage of HAPS and TN, e.g., HAPS UE can handover/roam to TN network configured by network in this case. Proposal 1: The ACLR/ACS for TN UE is also applicable for HAPS UE. HAPS can support existing TN UE.Proposal 2: The frequency coordination measures are needed to enable HAPS and TN coexistence in the same coverage. The HAPS operator should plan its frequency deployment considering the ACI impact from TN but there is no need to specify the corresponding RAN4 requirements. |
| R4-2205284 | Huawei, HiSilicon | Observation 1: Since current RF module of WA BS working in the IMT bands can be used for HAPS, the RF requirement for WA BS can be used for HAPS.Observation 2: Based on the simulation assumptions [2] for HAPS co-existence, all of the BS RF parameters for HAPS are same with Macro (WA) BS, e.g. output power, antenna parameter, Noise Figure.Observation 3: HAPS based on WA BS RF requirements has been deployed in the current field and worked well.Observation 4: Some of RF requirements are related to the ACLR and ACS. As we have agreed to reuse the other WA BS RF requirements for HAPS, it’s impossible to change the ACLR and ACS requirements for HAPS.Observation 5: RAN4 should follow the similar baseline assumption that the ACLR/ACS for WA BS is also applicable for HAPS, as we have agreed this assumption for HAPS UE.Observation 6: Since current RF module of WA BS working in the IMT bands can be reused for HAPS, it’s feasible to achieve current ACLR and ACS requirements for HAPS. In order to maintain the unified industry, it’s better to reuse current WA BS ACLR and ACS requirements for HAPS.Observation 7: Even if MR or LA BS may need a relaxer requirement, we just specify one value for ACLR and ACS among different BS classes based on the worst case (WA scenario).Proposal 1: To reuse the current WA BS ACLR and ACS requirements for HAPS. |
| R4-2205556 | Nokia, Nokia Shanghai Bell | Simulation results for HAPS adjacent channel coexistence have been provided. Observation 1: The required ACIR for the HAPS DL aggressor scenarios is 23.0 dB.Observation 2: HAPS DL coexistence simulation results indicate the required ACLR for HAPS is about 24 dB.Observation 3: For HAPS UEs outside the TN coverage, the impact of ACI from TN DL is negligible. For HAPS UEs within the TN coverage, the DL throughput loss due to ACI from TN DL is about 9%.Observation 4: The impact of HAPS UL ACI is negligible for TN UL.Observation 5: Imposing a maximum CL of 140 dB makes little difference (≤ 0.3%) in mean throughput loss results for all cases, while it allows to evaluate 5%-tile throughput loss.Observation 6: For the same ACIR, a higher loss typically occurs at 5%-tile throughput. Using mean throughput alone to determine ACS requirement will result in a more relaxed requirement.Observation 7: To protect HAPS UL from ACI, simulation results indicate that 0 dB ACIR offset is required if the 5% loss criterion applies to both mean throughput and 5%-tile throughput, while -17 dB ACIR offset is required if only mean throughput is considered.Proposal 1: Existing TN UE’s ACLR/ACS requirements are applicable to HAPS UE.Proposal 2: Adopt a maximum CL of 140 dB for HAPS UE in adjacent channel coexistence simulations. |
| R4-2205558 | Nokia, Nokia Shanghai Bell | Proposal 1: The required ACLR for HAPS BS is 27 dB.Proposal 2: The required ACS for HAPS BS is 46 dB. |

## Open issues summary

### Sub-topic 4-1

**Issue 4-1: HAPS co-existence study results**

* Proposals
	+ Option 1: Update the document “Summary of HAPS co-existence study” (R4-2202994) with results from R4-2204503 and R4-2205556.
* Recommended WF
	+ Agree with Option 1.

|  |  |  |
| --- | --- | --- |
| **Company** | **Agree with WF?** | **Comments** |
| Moderator |  | Once agreed, input source company are invited to update the summary document in TMP folder on ftp.  |

### Sub-topic 4-2

**Issue 4-2: ACLR and ACS for HAPS UE**

* Proposals
	+ Option 1(Qualcomm, Nokia): Same requirements of existing TN UE apply to HAPS UE. Meanwhile, a Note should be added in TR 38.863 as following:

Note: The frequency coordination measures are needed to enable HAPS and TN coexistence in the same coverage. The HAPS operator should plan its frequency deployment considering the ACI impact from TN but there is no need to specify the corresponding RAN4 requirements.

* Recommended WF
	+ Agree with Option 1.

|  |  |  |
| --- | --- | --- |
| **Company** | **Agree with WF?** | **Comments** |
| Moderator |  | Wordings of the Note can be further refined.  |

**Issue 4-3: ACLR and ACS for HAPS BS**

* Proposals
	+ Option 1 (Nokia): Use following values

|  |  |
| --- | --- |
| ACLR for HAPS BS | ACS for HAPS BS |
| 27dB | 46dB |

* + Option 2 (Huawei): To reuse the current WA BS ACLR and ACS requirements for HAPS.
* Recommended WF
	+ TBA

|  |  |  |  |
| --- | --- | --- | --- |
| **Company** | **Agree with Opt.1?** | **Agree with Opt.2?** | **Comments** |
|  |  |  |  |

## Companies views’ collection for 1st round

### Open issues

**Issue 4-1: HAPS co-existence study results**

**Issue 4-2: ACLR and ACS for HAPS UE**

**Issue 4-3: ACLR and ACS for HAPS BS**

### 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** |
| R4-2205557 |  |
|  |
|  |

## 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#1** | *Tentative agreements:**Candidate options:**Recommendations for 2nd round:* |

### 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)

*Moderator can provide summary of 2nd round here. Note that recommended decisions on tdocs should be provided in the section titled ”Recommendations for Tdocs”.*

# Recommendations for Tdocs

## 1st round

**New tdocs**

|  |  |  |
| --- | --- | --- |
| **Title** | **Source** | **Comments** |
| WF on … | YYY |  |
| LS on … | ZZZ | To: RAN\_X; Cc: RAN\_Y |
|  |  |  |

**Existing tdocs**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Tdoc number** | **Title** | **Source** | **Recommendation**  | **Comments** |
| R4-2204333 | Draft text proposal to update TR 38.863 Chapter 6 | Samsung | Agreeable, Revised, Merged, Postponed, Not Pursued |  |
| R4-2205557 | TP to TR 38.863 on HAPS simulation update | Nokia, Nokia Shanghai Bell |  |  |
| R4-2205913 | Draft text proposal for Clauses 6.4 and 6.5 in TR 38.863 to correct conclusions from simulation results based on AAS antenna assumption | THALES |  |  |
| R4-2205914 | Draft text proposal for Clauses 6.4 and 6.5 in TR 38.863 to include simulation results based on Non-AAS antenna assumption | THALES |  |  |

Notes:

1. Please include the summary of recommendations for all tdocs across all sub-topics incl. existing and new tdocs.
2. For the Recommendation column please include one of the following:
	1. CRs/TPs: Agreeable, Revised, Merged, Postponed, Not Pursued
	2. Other documents: Agreeable, Revised, Noted
3. For new LS documents, please include information on To/Cc WGs in the comments column
4. Do not include hyper-links in the documents

## 2nd round

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Tdoc number** | **Title** | **Source** | **Recommendation**  | **Comments** |
| R4-22xxxxx | CR on … | XXX | Agreeable, Revised, Merged, Postponed, Not Pursued |  |
| R4-22xxxxx | WF on … | YYY | Agreeable, Revised, Noted |  |
| R4-22xxxxx | LS on … | ZZZ | Agreeable, Revised, Noted |  |
|  |  |  |  |  |

Notes:

1. Please include the summary of recommendations for all tdocs across all sub-topics.
2. For the Recommendation column please include one of the following:
	1. CRs/TPs: Agreeable, Revised, Merged, Postponed, Not Pursued
	2. Other documents: Agreeable, Revised, Noted
3. Do not include hyper-links in the documents

# Annex 1 Contact information

Contact information

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| --- | --- | --- |
| **Company** | **Name** | **Email address** |
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Note:

1. Please add your contact information in above table once you make comments on this email thread.
2. If multiple delegates from the same company make comments on single email thread, please add you name as suffix after company name when make comments i.e. Company A (XX, XX)

# Annex 2 TDOC list for Agenda Item 10.13.2

A total of 14 TDOCs have been received for this agenda and listed as below.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| ***TDoc No.*** | ***Title*** | ***Source*** | ***Type*** | ***For*** | ***Agenda Item*** | ***Status*** |
| R4-2204333 | Draft text proposal to update TR 38.863 Chapter 6 | Samsung | pCR | Approval | 10.13.2 | available |
| R4-2204502 | Coexistence simulation results for TN-NTN case 1 | Qualcomm Incorporated | discussion | Discussion | 10.13.2.1 | available |
| R4-2204503 | Coexistence simulation results for HAPS | Qualcomm Incorporated | discussion | Discussion | 10.13.2.2 | available |
| R4-2205044 | NTN - Coexistence simulation results | Ericsson | discussion | Discussion | 10.13.2.1 | available |
| R4-2205045 | NTN - SAN ACS and case 6 | Ericsson | other | Approval | 10.13.2.3 | available |
| R4-2205104 | Discussion on GEO SAN ACLR | Ligado Networks, Inmarsat | discussion | Approval | 10.13.2.3 | available |
| R4-2205284 | Discussion on HAPS requirements | Huawei, HiSilicon | other | Approval | 10.13.2.2 | available |
| R4-2205556 | HAPS coexistence simulation results | Nokia, Nokia Shanghai Bell | discussion | Approval | 10.13.2.2 | available |
| R4-2205557 | TP to TR 38.863 on HAPS simulation update | Nokia, Nokia Shanghai Bell | pCR | Approval | 10.13.2.2 | available |
| R4-2205558 | HAPS BS ACLR and ACS requirements | Nokia, Nokia Shanghai Bell | discussion | Approval | 10.13.2.3 | available |
| R4-2205913 | Draft text proposal for Clauses 6.4 and 6.5 in TR 38.863 to correct conclusions from simulation results based on AAS antenna assumption | THALES | pCR | Approval | 10.13.2.1 | available |
| R4-2205914 | Draft text proposal for Clauses 6.4 and 6.5 in TR 38.863 to include simulation results based on Non-AAS antenna assumption | THALES | pCR | Approval | 10.13.2.1 | available |
| R4-2205924 | On the ACIR selection and ACIR average computation between companies | THALES | discussion | Decision | 10.13.2.1 | available |
| R4-2205925 | On the applicability of rural SAN ACS requirements for urban TN deployment in the case of GEO | THALES | discussion | Decision | 10.13.2.3 | available |