3GPP TSG-RAN WG4 Meeting #111 R4-240xxxx

Fukuoka City, Fukuoka , Japan, 20th – 24th May, 2024

**Agenda item:** 5.4

**Source:** Moderator (Apple)

**Title:** Topic summary for [111][202] Maintenance\_R18

**Document for:** Information

# Introduction

*Briefly introduce background, the scope of this email discussion (e.g. list of treated agenda items) and provide some guidelines for email discussion if necessary.*

In this section, the following topics are included

* [NR\_ATG-Core](https://portal.3gpp.org/desktopmodules/WorkItem/WorkItemDetails.aspx?workitemId=950175)

# Topic #1: R18 [NR\_ATG-Core](https://portal.3gpp.org/desktopmodules/WorkItem/WorkItemDetails.aspx?workitemId=950175)

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

## Companies’ contributions summary

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| --- | --- | --- | --- |
| **T-doc number** |  **Title** | **Company** | **Proposals / Observations** |
| [**R4-2407479**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_111/Docs/R4-2407479.zip) | Discussion on core requirements for Rel-18 ATG maintenance | CATT | **Observation 1: When there is larger ISD and the propagation delay difference for ATG, the NW will know and correspondingly decide not to enable the IE, it is up to the NW and UE need to trust the decision of NW.****Observation 2: The ISD is relatively large and the network still enables IE by error, resulting in UE being unable to search for SSBs of neighbor cell on the corresponding symbols, which is a corner case, so it has little impact on UE.****Proposal 1: Prefer not to add any applicability rules for existing tolerance requirement of deriveSSB-IndexFromCell/Inter-r17.****Proposal 2: If needed to add clarification of the applicable scenario for deriveSSB-IndexFromCell/Inter-r17, suggest the following wording in Section 9 in TS 38.133.*** **The requirements for enabling deriveSSB-IndexFromCell/Inter-r17 only apply when RTD from UE between serving and neighbour cell is smaller than X.**
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| [**R4-2407927**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_111/Docs/R4-2407927.zip) | (NR\_ATG-Core) Discussion on the maintenance issues for NR ATG core requirement | CMCC | ***Proposal 1: No need to further clarify the applicable scenario for deriveSSB-IndexFromCell/Inter-r17.******Proposal 2: For ATG inter-frequency SSB based measurements without measurement gaps requirement, remove the assumption that when UE performs inter-frequency measurements without measurement gaps in a TDD bands on FR1, SFN and frame boundary across serving cell and inter-frequency neighbor cells is aligned.******Proposal 3: The transmission scheduling restriction impact from deriveSSB-IndexFromCell/Inter-r17 should be applied to both ATG UE with antenna array and ATG UE with one or multiple omni-directional antennas in TDD network.******Proposal 4: For ATG UE with antenna array in both FR1 FDD and TDD band, UE could not perform the reception of data and RS during the scheduling restriction period.*** |
| [**R4-2408241**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_111/Docs/R4-2408241.zip) | Discussion on the maintenance of ATG | ZTE Corporation, Sanechips | **Observation 1: Bsed on the agreements achieved in previous meetings, some further adaption regarding deriveSSB-IndexFromCell/deriveSSB-IndexFromCellInter-r17 has already been introduced for ATG scenario compared with legacy.****Observation 2: In current spec, the condition of RTD can only be applicable to the case of CA/DC, i.e. the RTD is the receiving time difference between multiple serving cells, RAN4 has never consider any condition of RTD to restrict the receiving tmie difference between serving cell and neighbour cell, since RAN4 does not have relevant requirements to refer to.****Observation 3: Whether UE can estimate RTD accurately, which depends on multiple factors.****Observation 4: If the UE decision is always consistent with NW decision, it is good but it seems no need to do such UE detection. If the UE decision is not consistent with NW decision, what is the UE behavior? Perform the RRM measurement and just ignore the indication of deriveSSB-IndexFromCell/deriveSSB-IndexFromCellInter-r17? Or not perform RRM measurement and wait for the next time that the RTD condition met?****Proposal 1: Not need to add additional applicability condition on the NW indication of deriveSSB-IndexFromCell/deriveSSB-IndexFromCellInter-r17.**  |
| [**R4-2408556**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_111/Docs/R4-2408556.zip) | Discussion on RRM requirements maintenance for R18 ATG | Huawei, HiSilicon | **Proposal 1a: Do not clarify the applicable scenario for deriveSSB-IndexFromCell/Inter-r17****Proposal 1b: Clarify in the measurement requirements that requirements don't apply when the deriveSSB-IndexFromCell/Inter-r17 are set as true but the RTD from UE is larger than the required tolerance.** |
| [**R4-2409055**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_111/Docs/R4-2409055.zip) | Core maintenance paper related to deriveSSB-IndexFromCell and deriveSSB-IndexFromCellInter-r17 | Ericsson | **Observation 1:** **A fundamental change of whether to change the reference point of the tolerance for deriveSSB-IndexFromCell and deriveSSB-IndexFromCellInter-r17 should preferably not be done in maintenance phase of WI.****Observation 2: The agreement “Do not change the existing tolerance requirement of deriveSSB-IndexFromCell/Inter-r17” is fine for Ericsson.****Observation 3: The rule “UE does not expect the deriveSSB-IndexFromCell/Inter-r17 to be set as true when RTD from UE between serving and neighbour cell is large than X”, is a consistency rule regarding parameter setting. Such a consistency rule is up to the operator parameter setting and should not be part of the standard.****Proposal 1: A consistency rule like “UE does not expect the deriveSSB-IndexFromCell/Inter-r17 to be set as true when RTD from UE between serving and neighbour cell is large than X”, is not needed.** |
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## Applicability rule for *deriveSSB-IndexFromCell/Inter-r17.*

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

***Should the applicable rules for deriveSSB-IndexFromCell/Inter-r17 be introduced?***

* + Yes: Huawei
		- Clarify in the measurement requirements that requirements don't apply when the deriveSSB-IndexFromCell/Inter-r17 are set as true but the RTD from UE is larger than the required tolerance
	+ No: CATT, CMCC, ZTE, Ericsson, Huawei

## Other proposals

***Proposal 1(CMCC): For ATG inter-frequency SSB based measurements without measurement gaps requirement, remove the assumption that when UE performs inter-frequency measurements without measurement gaps in a TDD bands on FR1, SFN and frame boundary across serving cell and inter-frequency neighbor cells is aligned.***

***Proposal 2(CMCC): The transmission scheduling restriction impact from deriveSSB-IndexFromCell/Inter-r17 should be applied to both ATG UE with antenna array and ATG UE with one or multiple omni-directional antennas in TDD network.***

***Proposal 3(CMCC): For ATG UE with antenna array in both FR1 FDD and TDD band, UE could not perform the reception of data and RS during the scheduling restriction period***