**3GPP TSG-RAN WG4 Meeting # 100-e R4-211xxxx**

**Electronic Meeting, 16th – 27th Aug, 2021**

**Agenda item:** 9.17.1, 9.17.2

**Source:** Moderator (Samsung)

**Title:** Email discussion summary for [100-e][316] NR\_eIAB

**Document for:** Information

# Introduction

According to discussion in previous meeting, it’s expected to discuss further on RF impact due to timing enhancement and simultaneous operation of IAB node’s child and parent links within this meeting in RF session. It’s suggested to collect view on each topic in 1st round and seek for consensus to be captured in WF in 2nd round.

# Topic #1: RAN4 workplan on NR eIAB

## Companies’ contributions summary

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| **T-doc number** | **Company** | **Proposals / Observations** |
| R4-2112866 | Samsung, Qualcomm  | Proposal on RAN4 dedicated Work plan for endorsement  |

## Open issues summary

There is no RAN4 work plan on this WI endorsed before since update needed for the RAN4 scope and timeline, which is revised in RAN#92e meeting. Consequently, according to RAN4 leadership recommendation, RAN4 dedicated work plan with requested content is provided in this meeting based on the latest scope and timeline.

### Sub-topic 1-1: RAN4 work plan

Sub-topic description: Companies are encouraged to provide the comments/view on work plan

**Issue 4-1: Work plan**

* Proposals
	+ Option 1: Work plan in R4-2112866
* Recommended WF
	+ Endorsed Work plan based on companies’ comments.

## Companies views’ collection for 1st round

### Open issues

Sub topic 1-1: RAN4 work plan

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| **Company** | **Comments** |
| Nokia  | Fine with propose work plan. |
| Samsung  | Fine with this as proponent. Would like to check companies’ view if update needed.  |
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### CRs/TPs comments collection

N/A

## 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.*

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|  | **Status summary**  |
| **Sub-topic #1-1** | *Tentative agreements:**No comment received to update the proposed RAN4 workplan**Considering the feedback, the workplan should be acceptable.**Recommendations for 2nd round:**Endorsed the workplan in R4-2112866* |

### CRs/TPs

N/A

## Discussion on 2nd round (if applicable)

N/A

# Topic #2: RF impact discussion for NR eIAB

## Companies’ contributions summary

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| **T-doc number** | **Company** | **Proposals / Observations** |
| [R4-2112867](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2112867.zip) | Samsung | **Proposal 1**: it is suggested to exclude the multiplexing scenario of simultaneous MT TX/DU RX and simultaneous MT RX/DU TX by shared antenna array solution under FDM mode. Then for timing difference due to IAB-MT TA we reviewed the RAN1 latest agreement with below observation 1:**Observation 1**: RAN1 discussion on guard symbols, which can be applied to resolve IAB-MT TA collision, is still open.Besides that, we also notice that guard band has been considered in RAN1 for FDM which may be transparent in RAN4.**Observation 2**: guard band for FDM is under discussion in RAN1.**Observation 3**: usually except channel edge guard band no other guard band specified in RAN4. For power imbalance the RAN1 discussion on power control with solution of assistant information which can mitigate the issue. But we still provide a brief summary on status for related requirement based on Rel-16 IAB RF specification with below observations.**Observation 4**: There is discussion in RAN1 regarding power control should be applicable to mitigate power imbalance issue. **Observation 5**: For Rel-16 IAB TX dynamic range for both MT and DU defined.**Observation 6:** in Rel-16 IAB specification, the ACS requirement is verified the RX power imbalance case with the other signal on adjacent channel for both DU and MT.**Observation 7:** in Rel-16 IAB specification, the ICS requirement is verified the RX power imbalance case with the other signal within the same channel for IAB-DU. Based on above discussion we present our suggestion for further study as proposal 2. However, it’s not precluded other reasonable suggestion if raised during discussion. **Proposal 2**: It's suggested to decide whether existing power dynamic range and ACS requirement can be applied as starting point to be modified for purpose to verify IAB-node behaviour for simultaneous transmission and simultaneous reception.  |
| [R4-2112868](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2112868.zip) | Samsung | For timing case#6: **Proposal 1**: there is no need to define TAE between IAB-DU TX and IAB-MT TX as RF requirement for Rel-17 IAB. **Proposal 2**: Time alignment accuracy discussion if needed should be triggered by RAN1 decision.  |
| [R4-2113198](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2113198.zip) | ZTE Corporation | For RX power imbalance:**Observation 1:** Based on the simulation result, the Rx power differences between parent link and child link is very large which can be seen that the CDF of 0.5 corresponds to 40dB.**Proposal 1:** To use BS ICS requirement as a starting point for determining the range of Rx power imbalance between MT and DU when simultaneous RX is performed by a shared Rx chain. |
| [R4-2113199](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2113199.zip) | ZTE Corporation | For timing:**Proposal 1:** To postpone the discussion of TAE between MT UL TX and DU DL TX for RAN 1 input. |
| [R4-2113681](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2113681.zip) | Nokia, Nokia Shanghai Bell | For timing enhancement:**Observation 1:** TAE requirement is needed for timing case #6 to limit cross-link interference between IAB-Nodes operating in the same area when case #6 timing is used.**Proposal 1:** Consider 3us TAE requirement between IAB-MT and IAB-DU transmissions for both SDM and FDM operation when case #6 timing is used.**Proposal 2:** Specify clearly new test configuration(s) and test model(s) to verify TAE between IAB-MT and IAB-DU transmission for both SDM and FDM operation when case #6 timing is used. |
| [R4-2113682](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2113682.zip) | Nokia, Nokia Shanghai Bell | For shared antenna for each link:**Observation 1:** Isolation between beams can be expected to be guaranteed to be at most 13 dB in FR2, assuming beams are pointing in clearly different directions.**Observation 2:** Same 13 dB isolation can be assumed for FR1.**Observation 3:** Implementation specific beams are available for both FR1 and FR2 to improve the isolation.**Observation 4**: FDM of IAB-MT and IAB-DU transmissions may impact RF performance, especially if IAB-MT transmission is power controlled.**Observation 5:** With 13 dB beam isolation, different power levels of IAB-DU and IAB-MT transmissions are not problematic for signal quality. This may not be the case when transmission power capabilities are different.**Observation 6:** When simultaneous IAB-MT and IAB-DU transmissions take place in DL slots and emissions are aligned with IAB-DU specifications, they do not cause co-existence issues.**Observation 7:** CLI-study conclusions from TR 38.828 and in [4] need to be taken into account also for IAB deployments.For simultaneous MT TX and DU TX operation:**Proposal 1:** During simultaneous IAB-DU and IAB-MT transmissions IAB-DU emission requirements are applied for both transmissions and relative ACLR is not required to be met for power controlled transmissions.**Proposal 2:** For single beam operation minimizing throughput loss is left for implementation and no minimum requirement is specified.For simultaneous MT RX and DU RX operation:**Proposal 3:** Power imbalance in Rx side does not need additional specification efforts.**Observation 8:** FDM of IAB-MT and IAB-DU transmissions may impact IAB-MT signal quality, if relatively large timing advance is applied to IAB-MT. It is not clear if there is specification impact.**Proposal 4:** No specification efforts are required for simultaneous MT TX/DU RX and/or MT RX/DU TX as also RAN1 is not defining any enhancements for these scenarios. |
| [R4-2114329](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2114329.zip) | Ericsson | **Observation 1**: MT TX/DU RX or MT RX/DU Tx simultaneous operation requires enough isolation between MT and DU transceiver which could possibly be achieved through site deployment. High level of needed isolation could be possibly achieved by increasing the antenna isolation by large physical separation between antennas. **Proposal 1**: No RF specification impact in Rel-17 for MT RX/ DU Tx or MT TX/DU RX simultaneous operation.**Observation 2**: MT RX/DU RX simultaneous receiving does not necessitate the additional RF requirement.**Observation 3**: MT RX/DU RX simultaneous receiving imply child IAB-MT transmitting only in downlink time slot as the parent IAB-DU can only transmit in down time slot.**Proposal 2**: There is no RF specification impact for MT RX/DU RX receiving.**Observation 4**: IAB-MT and co-located IAB-DU could coexist when IAB-MT transmitting in DL time slots. **Proposal 3**: No new RF requirement is required for FDM operation. |
| [R4-2114330](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2114330.zip) | Ericsson | **Observation#1:** Parent IAB-DU does not need to be aware about the TAE between its DL timing and the DL timing of child IAB-DU for case#6 timing operation.**Observation-2:** For the case of child IAB-MT synchronizing with co-located child IAB-DU, Parent IAB-DU needs to be aware about the TAE between its DL timing and the DL timing of child IAB-DU for case#6 timing operation. so the correct setting of the receiving timing on parent IAB-DU will be possible**Observation-3:** Parent IAB-DU set its receiving timing differently depending on the child IAB-MT synchronization implementation.**Observation-4:** The TAE between DL TX of child IAB-DU and parent IAB-DU could be signalled to parent IAB-DU. Alternatively, the parent IAB-DU receiving timing needs to tolerate the maximum TAE.**Proposal-1:** For shared hardware architecture, the parent IAB node should tolerate the maximum 3 us timing error uncertainty between its child IAB node and its own DL timing.**Observation-5:** child IAB node clock status needs to be signalled to the parent IAB node to facilitate parent IAB node timing mode switching.**Proposal-2:** RAN4 discuss whether to add the condition of IAB-DU synchronization clock status as one of condition to enable the case 6 timing.**Observation-6:** Alt 1 of setting case 6 timing in RAN1 could disrupt the IAB-DU traffic and thus should be avoided for shared architecture IAB node.**Proposal-3:** RAN4 should discuss the network impact on the Alt 1 of current RAN1 agreement and send a LS to RAN1 if RAN4 sees the risk of the Alt1. |

## Open issues summary

### Sub-topic 2-1: Simultaneous operation

In May RAN4 meeting we have below agreement regarding NR eIAB simultaneous operation. In this meeting four contributions provide views regarding the remaining issue on FDM mode. As moderator it is suggested to collect view and clarification for options on each issue in 1st round.

**Simultaneous operation of IAB-node’s child and parent links by SDM**

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| **Agreement:**No RF requirement impact identified on simultaneous operation including MT TX/DUTX, MT RX/DU RX, MT TX/DU RX and MT RX/DU TX. |

**Simultaneous operation of IAB-node’s child and parent links by FDM**

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| **Way forward**:Discuss further scenario of IAB-MT and IAB-DU share the same antenna array to support IAB simultaneous operation by FDM way includes but not limits to below aspects:* For case different beams applied for MT and DU FFS on feasible isolation between beams and associated RF impact.
* For case one beam shared between MT and DU FFS on
	+ Tx power imbalance between MT and DU for simultaneous MT TX and DU TX
	+ RX power imbalance between MT and DU for simultaneous MT RX and DU RX
	+ Timing difference due to IAB-MT TA if any impact
	+ Whether simultaneous MT TX/DU RX and/or MT RX/DU TX can be removed for this scenario
* Others
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**Issue 2-1-1: RAN4 RF specification impact due to Simultaneous MT TX/DU RX and Simultaneous MT RX/DU TX**

* Proposals: Companies are encouraged to provide the comments/view on below option
	+ Option 1: No RF specification impact in Rel-17 for MT RX/ DU Tx or MT TX/DU RX simultaneous operation.
* Recommended WF
	+ TBA

**Issue 2-1-2: RAN4 RF specification impact due to Simultaneous MT TX/DU TX for FDM operation**

* Proposals: Companies are encouraged to provide the comments/view on below options
	+ Option 1: No RF specification impact in Rel-17 for MT TX/DU TX simultaneous operation in FDM mode
	+ Option 2: Exception only allowed for relative ACLR which is suggested to not be applied for power controlled transmission.
	+ Option 3: Detail on how to verify the simultaneous TX operation is FFS in conformance part with below further agreement:
		- No verification on single beam case which left as purely implementation
		- FFS on whether RAN4 verification is assumed as same power capability of each link for shared antenna array case
* Recommended WF
	+ TBA

**Issue 2-1-3: RAN4 RF specification impact due to Simultaneous MT RX/DU RX for FDM operation**

* Proposals: Companies are encouraged to provide the comments/view on below option
	+ Option 1: No RF specification impact in Rel-17 for MT RX/DU RX simultaneous operation in FDM mode.
	+ Option 2: Detail on how to verify the simultaneous RF operation is FFS in conformance part with below requirement as candidate:
		- ACS
		- ICS
* Recommended WF
	+ TBA

### Sub-topic 2-2: timing enhancement

In May RAN4 meeting we have below agreement regarding timing enhancement on case#6 and case#7. In this meeting four contributions provide views regarding this issue. There are also proposals from one contribution which brings suggestions on items under RAN1 discussion. As moderator it is suggested to collect view and clarification for options on each issue in 1st round.

**Timing case#6**

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| **Agreement:**No RF requirement impact identified for IAB which supports timing case#6 except TAE **Way forward**:* Regarding implication on donor BS and parent IAB: postpone the discussion for RAN1 input
* Regarding the TAE within IAB: FFS whether TAE between MT UL TX and DU DL TX needs to be defined

Note: the TX power imbalance is merged in discussion on Simultaneous operation of IAB-node’s child and parent links by FDM. |

**Timing case#7**

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| **Agreement:**No RF requirement impact identified at least for IAB node which supports timing case#7 by separated RF chains between its own MT and DU. For IAB node supports timing case#7 with shared RF chain solution, regarding RX power imbalance no LS to RAN1 needed. Note: the RX power imbalance is merged in discussion on Simultaneous operation of IAB-node’s child and parent links by FDM. |

**Issue 2-2-1: TAE between own MT TX and DU TX**

* Proposals: Companies are encouraged to provide the comments/view on below options
	+ Option 1: No need to define
	+ Option 2: 3us to be defined in core spec with associated update on conformance testing specification
	+ Option 3: Postpone for RAN1 input
* Recommended WF
	+ TBA

**Issue 2-2-2: Timing error between parent IAB DU and Child IAB -DU**

* Proposals: Companies are encouraged to provide the comments/view on below option
	+ Option 1: For shared hardware architecture, the parent IAB node should tolerate the maximum 3 us timing error uncertainty between its child IAB node and its own DL timing.
* Recommended WF
	+ TBA

**Issue 2-2-3: Implication by RAN1 discussion**

* Proposals: Companies are encouraged to provide the comments/view on below options
	+ Option 1: RAN4 discuss whether to add the condition of IAB-DU synchronization clock status as one of condition to enable the case 6 timing to facilitate adaptation between multiplexing operation modes
	+ Option 2: RAN4 should discuss the network impact on the Alt 1 of current RAN1 agreement and send a LS to RAN1 if RAN4 sees the risk of the Alt1.
* Recommended WF
	+ TBA

## Companies views’ collection for 1st round

### Open issues

Sub topic 2-1

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| **Company** | **Comments** |
| Nokia | Issue 2-1-1: We support option 1.Issue 2-1-2: We are not yet confident option 1 is the correct way forward, as in the legacy co-existence study Tput impact to other networks in adjacent channels was evaluated, but there was no emphasis on IAB-DU->IAB-MT interference.Option 2 would take it into account in the specifications that there may be intra-system interference and impact to signal quality within own network. In option 3 we would like to keep all verification details as FFS as e.g. test system limitations in OTA environment specific to these multiplexing modes have not yet been considered. Issue 2-1-3: We support option 1. |
| Ericsson | Issue 2-1-1: Option 1Issue 2-1-2: Option 1. We need first agree the RF requirement/impact.The coexisting simulation is done Rel-16 with scenario 2 (simultaneous transmission of the IAB-DU and IAB-MT). We provide analysis that the coexisting simulation does not need to be done again in rel-17. If companies agree with it, there is no ACLR or other RF parameter impact. This needs to be confirmed firstly. For testing aspects once RF impact would be agreed, this is separately discussion, so it would be good to separate the RF impact and test aspect differently and not mixed between each other. Issue 2-1-3: option 1.  |
| Samsung  | Issue2-1-1: we support option 1Issue 2-1-2: Our assumption is there is no core RF impact for this case since the power imbalance can be controlled of which the mechanism is being discussed in RAN1. Then there is no difference compared with simultaneous transmission within one BS node for MT TX and DU TX. For inter node co-existence, similar to CLI discussion, there is also no RF impact according to study except the recommended restriction on applicable scenarios. But we agree that specification update could be considered to address this scenario especially for applicability rule for emission related requirements. We are open to discuss this further. We are also open to discuss how to verify this functionality of such scenario in conformance testing For example, EVM for both links active with configuration based on existing requirement of each link on selected condition(s) besides necessary update on emission requirement according to workplan to be agreed. Issue 2-1-3: We share the same view of option 1. And would like to discuss the conformance testing aspect further. |
| ZTE | Issue 2-1-1: We support option 1.Issue 2-1-3: We support option 2. It is hoped that the Rx power difference for simultaneous Rx can be discussed due to the large difference observed in our contribution. |

Sub topic 2-2

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| **Company** | **Comments** |
| Nokia | Issue 2-2-1: We prefer option 2. The requirement is set to avoid harmful cross-link interference in cases where neighboring cells would have different UL-DL switch point. Following the same principle, there needs to be an accuracy requirement to align IAB-MT transmission with IAB-DU transmission in timing case #6, as otherwise there is negative impact to co-existence between different nodes operating in the same area. The requirement is needed independent of IAB-MT and IAB-DU RF configuration i.e. whether they use the same antenna array or operate in FDM or SDM mode.We do not see a need to postpone and wait for RAN1 input as RAN1 discussion is about switching between multiplexing modes whereas TAE requirement is about normal operation in the same multiplexing mode.Issue 2-2-2: In our view parent-DU can get an estimate of child-MT already from PRACH when child-MT is connecting to parent-DU. Being fixed network nodes, the propagation delay between nodes is fairly constant, so it can be assumed that the timing uncertainty remains at the same level as TAE. Parent-DU can tolerate this uncertainty.Issue 2-2-3: We do not see the necessity of neither option 1 nor option 2. It seems RAN1 is already considering the dependency of DL synchronization schemes. |
| Ericsson | Issue 2-2-1: 3us is also a RRM requirement between different cell in TDD operation. So simply put, 3us between IAB-MT and IAB-DU cannot guarantee the 3us cell sync requirement. If companies only concern this 3 us in this meeting, we could discuss the implication of 3 us and relation to the RRM cell sync requirements. But we also ok to wait RAN1 progress.Issue 2-2-2: This is tightly related to the RAN1 agreement how the IAB-MT TX timing is set, if Alt\_2 would be agreed, then option 1 should be considered. Issue 2-2-3: For some RAN1 agreement has RAN4 implications, Ran4 could discuss them also in this meeting. But we also understand if companies want to rely on RAN1, in this case, maybe a simple view on RAN1 potential agreement decision impact to RAN4 is needed. For example, if we see the potential agreement impact RAN4, we could send LS to let them know.  |
| Samsung  | Issue2-2-1: We share the same understanding that 3us should be the achievable boundary or assumption of maximum timing misalignment between MT TX and DU TX within one IAB under timing case#6. However, whether requirement should be defined as RF requirement to be verified again should be clarified firstly. For this we are open to hear other companies’ view regarding the necessity. But our concern as pointed in contribution is to define this requirement with name as TAE which may bring in confusion of the purpose with related BS and IAB-DU requirement. Issue 2-2-2: in Rel-16 there is Cell phase synchronization accuracy requirement defined for IAB-DU as 3us. Hence the assumption in option1 should be valid since Rel-16 and no requirement impact with that. Issue2-2-3: it is not suggested to take parallel discussion on RAN1 led issues. It’s not precluded the discussion requested by RAN1 with dedicated LS to RAN4.  |
| ZTE | Issue2-2-1: How to determine the Tx timing of MT for simultaneous Tx operation is still under discussion in RAN1. If MT Tx is under control by parent node, the parent node know the Rx timing from child node, so defining TAE between MT Tx and DU Tx will be meaningless, at least from parent Rx timing point of view.We prefer to postpone for RAN1 input, and we also admit that 3us in option 2 is a conservative value and can work well from parent Rx timing point of view.Issue 2-2-2: Agree with Ericsson.Issue 2-2-3: Option 2 is supported. If RAN1 potential agreement affects RAN4 an LS to RAN1 is needed. |

### CRs/TPs comments collection

N/A

## 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.*

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|  | **Status summary**  |
| **Sub-topic#2-1: simultaneous operation**  | *Tentative agreements:*For **Issue 2-1-1:** RAN4 RF specification impact due to Simultaneous MT TX/DU RX and Simultaneous MT RX/DU TX, all companies provided feedback to support option 1. Hence should be agreeable as Option 1: No RF specification impact in Rel-17 for MT RX/ DU Tx or MT TX/DU RX simultaneous operation*Candidate options:*For **issue 2-1-2***:* RAN4 RF specification impact due to Simultaneous MT TX/DU TX for FDM operation, companies’ s feedback is not converged yet. It seems more discussion and clarification on this is needed. Regarding the option 3 on preliminary criterion to be considered in conformance testing which two companies have concern to touch it in core phase, it could be discussed further in the performance phase. For**issue 2-1-3***:* RAN4 RF specification impact due to Simultaneous MT RX/DU RX for FDM operation, three companies agree with option 1. And two companies would like to discuss further based on option 2 in conformance testing part. One company points that the RX power imbalance is quite large according to their evaluation. However, the proposal in contribution is not clear what the suggested update is for core part or perf part, which may be clarified further in the 2nd round. *Recommendations for 2nd round:*Discuss based on WF to be assigned in 2nd round to capture tentative agreement and options deserved further discussion/clarification further.  |
| **Sub-topic#2-2: timing enhancement**  | *Candidate options:***Issue 2-2-1: TAE between own MT TX and DU TX**Two companies are fine to postpone decision to wait RAN1 progress and also point that suggested level of 3us may not enough depending on decision on RAN1 mechanism. One company supports to define this requirement as option 2. One company shares the concern to define requirement with name of TAE. Hence it’s suggested to clarify the understanding further in 2nd round. **Issue 2-2-2: Timing error between parent IAB DU and Child IAB -DU**Two companies believe suggested level of 3us in option 1 is tolerance level for parent IAB-DU. However, the other two companies believe that this have implication with RAN1 alternative discussion. Hence it should be clarified further what to be agreed and how to capture the agreement in accurate wording. **Issue 2-2-3: Implication by RAN1 discussion** Two companies propose to wait for RAN1 decision for those items under discussion in RAN1 already. But two companies share the view to prefer check certain impact further. Hence no consensus on this topic. *Recommendations for 2nd round:*Discuss based on WF to be assigned in 2nd round to capture tentative agreement and options deserved further discussion/clarification further. |

### CRs/TPs

N/A

## 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”.*

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|  | **Status summary**  |
| **Draft WF discussion**  | We have constructive discussion in 2nd round for WF part. And the V05 shared before 2nd round comment deadline should be stable as it is taken into account all comments. Hence the clean version according to this is uploaded as final draft should be agreeable. Below is the detail discussion during 2nd round for reference. No further comment received on agreement achieved in 1st round as below:No RF requirement impact identified on Rel-17 IAB simultaneous operation including MT TX/DU RX and MT RX/DU TX.**RAN4 RF specification impact due to Simultaneous MT TX/DU TX for FDM operation**:Nokia provided revision in V02 with comment as ”The candidate exception should be for both absolute and relative ACLR. We think signal quality also needs to be considered, in case we do not agree only same output power (or PSD) is agreed for IAB-MT and IAB-DU.”Ericsson provided revision in V03 regarding implication on co-existence study to clarify the case for further study is intra-node self-interference. Samsung and Nokia provided revision in V04 and V05 respectively on this part with editorial changes for clarity. For the case of MT and DU using different panels Samsung commented that “This is not pure FDM mode but SDM+FDM, which is supposed to be concluded as no RF impact in last meeting. But if no other concern it’s fine from our side to check it further.”**RAN4 RF specification impact due to Simultaneous MT RX/DU RX for FDM operation**:ZTE provided editorial changes in V01 with comment as “It would be better to clarify the legacy requirement such as ICS or ACS.” which is addressed in updated V04 from Samsung. **Timing error between IAB-DU and IAB-MT transmission within one node for timing case#6**Still different views on this should be considered as RF or RRM requirement hence this is open in final version as FFS. In additional, there is concern to confirm the conformance testing impact without final conclusion on core part. Hence this is mentioned as to be studied in perf part if core spec agreed. Comment from Nokia: This needs to be specified in RF clause but we are open to discuss if the requirement name is TAE or something else. No company proposed to specify this in RRM so we suggest to remove that option. As we currently have no test for simultaneous IAB-DU and IAB-MT operation, associated test configuration and test model work needs to be done in performance part.Comment 1 from Ericsson: If I read correct for Nokia paper, the 3 us is cell sync requirement which is in RRM spec, we are not sure we want to introduce as RF requirement, putting FFS in WF so we can bring papers next meeting.Comment 2 from Ericsson: Do we need to discuss/agree the testing aspect even without agree what requirement will be? **Timing error between parent IAB-DU and child node IAB-DU transmission:** Nokia remove “maximum 3 us” in V02.Ericsson provided revision V03 with related comments as below:Ericsson’s comment 1: We need associate a number with tolerance so design to start with. Are we not sure the number, we could discuss further next meeting.Ericsson’s comment 2: Let us say RF for now, UE has power control tolerance requirement, maybe this depend on the TAE between IAB-Du and IAB-MT within the node which is the first issue. |

# Recommendations for Tdocs

## 1st round

**New tdocs**

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| --- | --- | --- |
| **Title** | **Source** | **Comments** |
| WF on RF impact for Rel-17 eIAB | Samsung |  |

**Existing tdocs**

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| **Tdoc number** | **Title** | **Source** | **Recommendation**  | **Comments** |
| R4-2112866 | RAN4 workplan for Rel-17 IAB enhancement | Samsung, Qualcomm  | Endorsed  |  |
| [R4-2112867](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2112867.zip) | Simultaneous operation on IAB-node’s child and parent links | Samsung | Noted |  |
| [R4-2112868](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2112868.zip) | Timing enhancement on Rel-17 IAB | Samsung | Noted |  |
| [R4-2113198](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2113198.zip) | Simultaneous operation of IAB child and parent links | ZTE Corporation | Noted |  |
| [R4-2113199](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2113199.zip) | Timing enhancement for eIAB | ZTE Corporation | Noted |  |
| [R4-2113681](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2113681.zip) | Requirements related to different IAB timing cases | Nokia, Nokia Shanghai Bell | Noted |  |
| [R4-2113682](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2113682.zip) | RF requirements for simultaneous IAB-MT and IAB-DU operation | Nokia, Nokia Shanghai Bell | Noted |  |
| [R4-2114329](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2114329.zip) | RF impact analysis for simultaneous DU and MT operation | Ericsson | Noted |  |
| [R4-2114330](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2114330.zip) | IAB MT /DU case 6 timing | Ericsson | Noted |  |

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

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| --- | --- | --- | --- | --- |
| **Tdoc number** | **Title** | **Source** | **Recommendation**  | **Comments** |
| R4-2115645 | WF on RF impact for Rel-17 eIAB | Samsung | Agreeable  |  |

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

Contact information

|  |  |  |
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Note:

1. Please add your contact information in above table once you make comments on this email thread.
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