**3GPP TSG-RAN WG4 Meeting # 104-e draftR4-2214232**

**Electronic Meeting, 15– 26 August 2022**

**Agenda item:** 10.1 Issues arising from basket WIs but not subject to block approval

**Source:** Dominique Brunel (Skyworks Solutions Inc.)

**Title:** DraftRound2 Email discussion summary for [104-e][115] NR\_Baskets\_Part\_1

**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.*

Two Topics are to be covered:

* Topic1: Handling of fallbacks and BC in basket WIDs
* Topic 2: Triple beat MSD
* Topic 3: CRs on new Delta TIB and Delta RIB 38.101-1 and 38.101-3 specifications

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

* 1st round:
	+ Topic 1: Discuss input between experts input
	+ Topic 2: Discuss test point and MSD value
	+ Topic 3: Confirm CR are in line with R17 agrements
* 2nd round:
	+ Topic 1: Agee set of actions in a WF
	+ Topic 2: Agree on value or WF
	+ Topic 3: Agree CR w/wo revision

It is appreciated that the delegates for this topic put their contact information in the table below.

Contact information

|  |  |  |
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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)

# Topic #1: Handling of fallbacks and BC in basket WIDs

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

## Companies’ contributions summary

|  |  |  |
| --- | --- | --- |
| **T-doc number** | **Company** | **Proposals / Observations** |
| [**R4-2212017**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104-e/Docs/R4-2212017.zip) On how to handle the fallbacks of the proposed band combination | Samsung | **Proposal 1: *In the basket WID, rapporteur is supposed to clearly list the precondition to propose the band combination, at least including all the fallback types of this WID, while all the fallbacks shall be completed and specified in advance or at least at the same meeting.*****Proposal 2: *Proponents should follow the approved guideline in TR 38.862, i.e.******#4 Proponents should prepare and submit the corresponding contributions, e.g. draft CR, TP before RAN4#X meeting. If a draft CR or TP is depending on approval of lower order fallbacks submitted at the same meeting, this need to be clearly mentioned in the cover sheet of the draft CR or in the heading of the TP.*** |
| [**R4-2212380**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104-e/Docs/R4-2212380.zip) On Fallbacks for Basket WIDs | Apple | *Observation 1: In 36.101 and 38.101-x specs it is mandatory to support all the lower order fallbacks of the higher order combination according to the fallback requirements mentioned in the specs.**Observation 2: To support lower order fallback combinations of higher order combinations specified in 36.101 and 38.101-x specs, it is required to specify all the fallback combinations in 36.101 and 38.101-x as well.**Observation 3: For EN-DC or NE-DC configurations the constituent E-UTRA and NR configurations need to be specified as fallbacks as well.**Observation 4: In RAN4 it has been agreed long time ago, that a new combination can only be added, once all the fallbacks have already been specified**Observation 5: Fallbacks do not necessarily need to be in the same basket WID, they may also need to be specified in other lower order basket WIDs**Observation 6: The proponent of the higher order combination is responsible to request all fallbacks as well, otherwise the rapporteur should reject that combination.****Proposal 1: RAN4 to confirm the agreement that all fallbacks down to a dual carrier configuration need to be requested together with a higher order configuration and no configuration shall be added to the specification with a CR without having added all the lower order fallbacks previously******Proposal 2: All rapporteurs of a Basket WID are required to add the following text to each of the Basket WIDs in the Objective in 4.1 of the WID:*** * **The proponent of a combination needs to check for all fallback configurations down to a dual carrier configuration, if they are already specified. If not, the proponent needs to request the fallbacks and their missing fallbacks to be added to the appropriate basket WIDs. The rapporteur should refrain from adding combinations to the CRs, for which the proponent hasn’t shown that all fallbacks are already in the specification or are specified together with the higher order combination.**

***Proposal 3:*** ***All rapporteurs of a Basket WID shall not add configurations to the big CRs, for which the proponent has not shown that all lower order fallbacks have already been added to the specification or are added together with that configuration to the same specification*** |
| [**R4-2213167**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104-e/Docs/R4-2213167.zip) Discussion on the fallback configurations | Huawei, HiSilicon | Observation 1: In total, from network deployment, UE implementation and completeness of specification, it’s very important to finish all the possible fallback configurations before a higher order band combination is studied or introduced into spec. And working group is responsible to guarantee specification’s quality to achieve the goal that there is no missing fallback configurations in the spec.Observation 2: some key checkpoints of fallback configurations are set according to the latest workflow of band combination. The contact person is responsible to carefully analyse the fall back configurations when requesting. Companies are also encouraged to comment the missing fall back configurations in any stage once they find the issues.**Proposal 1: In order to make fallback rules clear and more visible, the following rules are suggested to be captured into each R18 Basket WI revision.** **A) When contact person requests a new band combination, all the next level fallback configurations should be listed and recorded into request template and the status (“New”, “Ongoing”, “Completed”) of all the fallback configurations should be declared accurately and clearly. For “New” fallback configurations, contact person should request these fallback configurations together with the higher order band combination in the same meeting.** **B) A band combination configuration can only be considered as completed when ALL fallback mode configurations (which may be in different baskets or different releases) are completed. It is the responsibility of the contact person/rapporteurs to verify the status of the fallback mode configurations. Other companies are encouraged to check the status of fallback configurations once the higher order band combinations are declared as completed.****Proposal 2: In order to improve RAN4’s work efficiency and spec’s quality, it’s proposed to elaborate how to analyse and list all the possible fallback configurations for some general cases and special cases in TR of R18 SI of study on simplification of band combination specification for NR and LTE. And some examples can be listed to help others understand the methods.**Observation 3: Considering the specific cases, some ENDC band combinations which include SDL bands or DL only Scell bands should be considered as exception for some fall back configurations. |
| [**R4-2213208**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104-e/Docs/R4-2213208.zip) On band combination guidance in basket WIDs | Nokia, Nokia Shanghai Bell | **Proposal 1: RAN4 shall confirm that new band combinations shall be requested one week prior to the RAN4 submission deadline****Proposal 2:** **Clarify in the basket WIDs that band combinations shall be requested via an agreed template to the corresponding email reflector.**Observation 1: Band combinations shall not enter specification without all its fallbacks also specified.Observation 2: The proponent of a band combinations is obligated to check all required fallbacks and if needed request missing fallbacks together with the proposed new band combination.**Proposal 3:** **Clarify in the basket WIDs that band combinations shall be requested together with fallbacks if they are not completed yet.****Proposal 4: RAN4 shall discuss in the dedicated Rel-18 SI for simplification of band combination specification for NR and LTE (FS\_SimBC) if band combinations and its fallbacks can be submitted for inclusion to the standard in the same RAN4 meeting or the fallbacks first shall be completed sequentially.****Proposal 5: Basket band combination WIDs shall include guidance on fallbacks.****-------------------------------- Start of TP#1 -----------------------------------------------**Request for additions of band combinations to this WI shall be provided using an agreed template and send to the 3GPP\_TSG\_RAN\_WG4\_CA email reflector one week (7 days) before a RAN4 meeting submission deadline. When submitting a request, the proponent is obligated to verify the needed fallbacks as described under the preconditions. In case one or more fallbacks are missing the proponent shall ensure these are also requested to corresponding WI(s) and completed.**-------------------------------- End of TP#1-------------------------------------------------****Proposal 6: RAN4 to agree adding the paragraph in TP#1 to the band combination basket WIDs where applicable.**  |

## 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 1-1

*Sub-topic description:* Ensuring that all fallbacks are properly requested and specified before requesting/specifying higher order combinations

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

Multiple proposal around:

* rules for proponents, rapporteurs
* guidelines in TP, TR, Request file, new WI

**Issue 1-1a: Guidelines to proponents and rapporteurs**

* Proposals
	+ Option 1: In the basket WID, rapporteur is supposed to clearly list the precondition to propose the band combination, at least including all the fallback types of this WID, while all the fallbacks shall be completed and specified in advance or at least at the same meeting.
	+ Option 2: Proponents should follow the approved guideline in TR 38.862, i.e.

#4 Proponents should prepare and submit the corresponding contributions, e.g. draft CR, TP before RAN4#X meeting. If a draft CR or TP is depending on approval of lower order fallbacks submitted at the same meeting, this need to be clearly mentioned in the cover sheet of the draft CR or in the heading of the TP.

* + Option 3: All rapporteurs of a Basket WID shall not add configurations to the big CRs, for which the proponent has not shown that all lower order fallbacks have already been added to the specification or are added together with that configuration to the same specification
* Recommended WF
	+ Discuss the multiple options and try to focus on those that can act as reminders
	+ Moderator: re-stating the rules did not work so far…

**Issue 1-1b: Adding guidelines in TP, TR, WID, request sheets…**

* Proposals
	+ Option 1: All rapporteurs of a Basket WID are required to add the following text to each of the Basket WIDs in the Objective in 4.1 of the WID: The proponent of a combination needs to check for all fallback configurations down to a dual carrier configuration, if they are already specified. If not, the proponent needs to request the fallbacks and their missing fallbacks to be added to the appropriate basket WIDs. The rapporteur should refrain from adding combinations to the CRs, for which the proponent hasn’t shown that all fallbacks are already in the specification or are specified together with the higher order combination
	+ Option 2: In order to make fallback rules clear and more visible, the following rules are suggested to be captured into each R18 Basket WI revision.

A) When contact person requests a new band combination, all the next level fallback configurations should be listed and recorded into request template and the status (“New”, “Ongoing”, “Completed”) of all the fallback configurations should be declared accurately and clearly. For “New” fallback configurations, contact person should request these fallback configurations together with the higher order band combination in the same meeting.

B) A band combination configuration can only be considered as completed when ALL fallback mode configurations (which may be in different baskets or different releases) are completed. It is the responsibility of the contact person/rapporteurs to verify the status of the fallback mode configurations. Other companies are encouraged to check the status of fallback configurations once the higher order band combinations are declared as completed.

* + Option 3: Clarify in the basket WIDs that band combinations shall be requested via an agreed template to the corresponding email reflector.
	+ Option 4: Clarify in the basket WIDs that band combinations shall be requested together with fallbacks if they are not completed yet.
	+ Option 5: Basket band combination WIDs shall include guidance on fallbacks. RAN4 to agree adding the paragraph in TP#1 to the band combination basket WIDs where applicable.

-------------------------------- Start of TP#1 -----------------------------------------------

Request for additions of band combinations to this WI shall be provided using an agreed template and send to the 3GPP\_TSG\_RAN\_WG4\_CA email reflector one week (7 days) before a RAN4 meeting submission deadline. When submitting a request, the proponent is obligated to verify the needed fallbacks as described under the preconditions. In case one or more fallbacks are missing the proponent shall ensure these are also requested to corresponding WI(s) and completed.

-------------------------------- End of TP#1-------------------------------------------------

* Recommended WF
	+ Discuss the multiple options and try to merge them

**Issue 1-1c: Clarify guidelines further**

* Proposals
	+ Option 1: RAN4 to confirm the agreement that all fallbacks down to a dual carrier configuration need to be requested together with a higher order configuration and no configuration shall be added to the specification with a CR without having added all the lower order fallbacks previously
	+ Option 2: RAN4 shall confirm that new band combinations shall be requested one week prior to the RAN4 submission deadline
* Recommended WF
	+ Discuss the multiple options and try to merge them

**Issue 1-1d: How to manage and contribute on this topic in R18**

* Proposals
	+ Option 1: In order to improve RAN4’s work efficiency and spec’s quality, it’s proposed to elaborate how to analyse and list all the possible fallback configurations for some general cases and special cases in TR of R18 SI of study on simplification of band combination specification for NR and LTE. And some examples can be listed to help others understand the methods
	+ Option 2: RAN4 shall discuss in the dedicated Rel-18 SI for simplification of band combination specification for NR and LTE (FS\_SimBC) if band combinations and its fallbacks can be submitted for inclusion to the standard in the same RAN4 meeting or the fallbacks first shall be completed sequentially.
* Recommended WF
	+ Discuss what objectives may be added to the dedicated Rel-18 SI for simplification of band combination specification for NR and LTE (FS\_SimBC) to progress on the topic
	+ Moderator: it would be useful that this overall topic is discussed in a dedicated R18 WI rather than this AI but it is fine to start here.

## Companies views’ collection for 1st round

### Open issues

*One of the two formats, i.e. either example 1 or 2 can be used by moderators.*

**Example 2**

Sub topic 1-1a: **Guidelines to proponents and rapporteurs**

|  |  |
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| **Company** | **Comments** |
| Apple | We agree with the moderator that just re-iterating the rules may not help, so it may be more useful to introduce a rule that the rapporteurs shall not introduce new combinations in the Big CR, unless the proponent has proven all fallbacks are there. Then the proponents are urged to really check for the fallbacks in advance. This is mentioned in Option 3. |
| Huwei | We can combine these options to reach a good way forward. |
| ZTE | We agree with the moderator that just re-iterating the rules may not help. RAN4 have already done the basket WID work for 10 year+. But anyway, Option 1 is helpful.For Option 3, it may too strict to say ‘Option 3: All rapporteurs of a Basket WID shall not add configurations to the big CRs, for which the proponent has not shown that all lower order fallbacks have already been added to the specification...’, there are a lot of companies didn’t add such information in their Tdoc. Also, it would be added addtional option like ‘All rapporteurs of a Basket WID shall not add configurations to the revised WID if the corresponding fallbacks are missing’Also proponent should be the 1st responsibility company to self-check their own configurations.BTW, it seems some similar discussion will happen in thread [[104-e][131] FS\_SimBC](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_104-e/Inbox/Drafts/%5B104-e%5D%5B131%5D%20FS_SimBC). Meanwhile, it would foresee that more rules will be developped in Rel-18. |
| Skyworks | We suggest we try to formalize a way forward collecting rules and guidelines. How they are introduced in the WI/request templates…But we also need to be prepared to discuss what happens when a case is flagged because it did not follow the rules. Some companies are spending a lot of time to flags issues in CRs/TPs and the spec and it is frustrating that basic rules are not followed. Now, we also understand we all make errors (including missing flags or non-valid flags). One key aspect in the WF will be to clarify what should be checked for fallbacks in terms of DL config, UL config, BCS and also which MSD may need review when a new BCS is introduced. |
| Nokia | We are fine with option 1 and 2. For option 3 we struggle to see how the rapporteurs shall enforce this without checking all the fallbacks themselves. When a proponent submits a combination for inclusion in specification our assumption has been that they have performed this check. If we are to require the rapporteurs to be the “enforcers” or “gatekeepers” we need more discussion on how to formulate guidelines and procedures for this. |
| CHTTL | Maybe option 1 can be merged to Sub topic 1-1b,since the practice in this meeting is to discuss what text needs to be added in the basket WID. Actually the precondition to propose a band combination is already described in each basket WID, and different basket WID has different conditions.Option 2 seems a good proposal to be discussed, maybe it can also be mentioned in the “abstract” field of the TP/draft CR when requesting the Tdoc number, so that the moderator can handle them easily. But still if the proponent didn’t mention the dependency of the lower order fallbacks contributions, probably still the contribution will be treated, also it create another issue that someone also need to check whether there exist lower order fallbacks contributions but not be mentioned.Regarding Option 3 probably it will not be easy to check when the rapporteur implementing the big CR. |
| Ericsson | To enforce fallback check on rapporteurs is not possible due to time constraints and workload for rapporteurs. And generally, the problem is not in the requests of the band combinations either since the potential problem occurs during implementation of band combinations. We need more discussions on how to handle the fallback check in a practical way.Time of checking big CR’s and how they work together is actually a big issue in other aspects too. The really good way forward would be to implement draft specs using the big CR’s before the plenaries to smoke out a lot of other quality aspects and to check fallbacks. |

Sub topic 1-1b: **Adding guidelines in TP, TR, WID, request sheets…**

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| **Company** | **Comments** |
| Apple | Option 1 looks ok, for Option 2 there is the issue in part A) that only the next level fallbacks need to be listed, but we have seen combinations where multiple fallback levels have been missing, so it would be better to check for all fallbacks instead of only the next lower level. The template in Option 3 may be helpful in some cases but doesn’t solve the issue of missing fallbacks. Option 4 seems to be a bit weak and not clear enough. Option 5 is generally fine, but it should more clearly emphasize that combinations with any missing fallbacks will not be added.We would also like to elaborate that having the fallbacks specified together with the higher order combination alone may not be sufficient. In this meeting, we have observed one possible cause on why some fallback combinations were unintentionally missed. The reason is that RAN4 allows BC proponents to propose lower and higher order combinations in the same meeting. However, for 2 and 3-band combinations, they are started with a TP in TR to capture the technical aspects/analysis. After the TP is approved, draft CR is then proposed in the following meeting. However, for higher order combinations, since all the technical aspects/analysis have been done in the 2 and 3-band fallback combinations, they are proposed in a draft CR directly. If both TP for fallback combinations and draft CR for higher order combinations are approved in the same meeting, the higher order combinations would enter the technical specifications one revision earlier than the fallback combinations if the WG meeting is a non-bis meeting. This would cause the fallback combinations missing issue in certain revision of technical specifications.To prevent this from happening, we propose not to endorse the draft CR for any higher order combinations if not all the lower order combinations are in the spec or in endorsed/agreed draft CRs/CRs instead of TPs.  |
| Huawei | Thanks Apple for your good suggestion and comments. The reason why we just need to list all the next level fallbacks is based on the assumption that all the fallbacks have been completed to reduce the proponents’ workloads. Anyway, at least in order to make fallback rules clear and more visible, some rules are suggested to be captured into each R18 Basket WI revision. |
| ZTE | Some overlapping discussion in thread [[104-e][131] FS\_SimBC](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_104-e/Inbox/Drafts/%5B104-e%5D%5B131%5D%20FS_SimBC).Request with completed information (min. 3 companies, fallbacks, BCS tables, etc) for additions of band combinations to this WI shall be provided using an agreed template and send to the 3GPP\_TSG\_RAN\_WG4\_CA email reflector one week (7 days) before a RAN4 meeting submission deadline. When submitting a request, the proponent is obligated to verify the needed fallbacks as described under the preconditions. In case one or more fallbacks are missing the proponent shall ensure these are also requested to corresponding WI(s) and completed.BTW, if the resquesting is smaller than one week (7 days) before a RAN4 meeting submission deadline, what should we do? Or any opportunity to correct the requesting within 7 days, even during the meeting? |
| Skyworks | We suggest we try to formalize a way forward collecting rules and guidelines. How they are introduced in the WI/request template. One key aspect in the WF will be to clarify what should be checked for fallbacks in terms of DL config, UL config, BCS and also which MSD may need review when a new BCS is introduced. |
| Nokia | We believe option 5 covers the essential guides for a proponent and remind that the added text to the WIDs shall be concise and cover all the baskets. We are nevertheless open to discuss improvements of the wording |
| CHTTL | We also share the similar view as Huawei that the reason why we just need to list all the next level fallbacks is based on the assumption that all the next level fallbacks of the next level fallbacks have been completed when specifying the next level fallbacks, and so as the next next level fallbacks… Suggest that the discussion focus on adding the text to the basket WID only, and the text focus on the fallback rule only. Maybe some of the text can be merged.Comment on option 2:Also we think that it is the responsibility of the contact person to verify the status of the fallback mode configurations. Suggest to remove “rapporteurs” to the next sentence, rapporteurs and other companies can help to check.Comment on option 5:Note that based on the TR 38.862, 3GPP\_TSG\_RAN\_WG4\_CA is for LTE CA only, for NR CA, MR DC and SUL band combinations, 3GPP\_TSG\_RAN\_WG4\_NR\_BANDS reflector is used. (Anyway the rapporteurs of the NR baskets can change it) Also we have comment regarding the request deadline as in sub topic 1-1c. |

Sub topic 1-1c: **Clarify guidelines further**

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| **Company** | **Comments** |
| Apple | It is good to confirm that all fallbacks down to a dual carrier configuration need to be added to the specification as in Option 1, that the combinations should be requested until one week before the RAN4 submission deadline is helpful but of lower importance. |
| Huawei | OK with this proposals. |
| Skyworks | Agree with option 1 but in the WF we clarify what should be checked for fallbacks in terms of DL config, UL config, BCS and also which MSD may need review when a new BCS is introduced. |
| Nokia | We are fine with both options but remind that procedure and improvements of these are also discussed in the Rel-18 SI so perhaps no further discussion is needed under this agenda. |
| CHTTL | Option 1: Option 1 is common understanding, but cross-check between CRs for different baskets are needed during the post meeting.Option 2: we suggest to consider the new band combinations’ request to be provided before RAN4 submission deadline instead of one week prior to the RAN4 submission deadline, to allow more time for companies to check their internal request, also the request quality can also be approved. Similar discussion and more background provided in thread [131]. |

Sub topic 1-1d: **How to manage and contribute on this topic in R18**

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| --- | --- |
| **Company** | **Comments** |
| Apple | We agree that it seems helpful to further elaborate on the fallback procedures in the SI for simplification of band combinations. |
| Huawei | Option 1 is our proposal. But we are open to further improve this in FS\_SimBC WI. |
| Skyworks | If we are fine to start with A WF in this AI we believe it is better suited to have the discussion in only one place for R18. If soe specific issues are spotted in this AI we can provide input to the R18 dedicated WI |
| Nokia | We believe both the mentioned options are already covered by discussion in the Rel-18 SI so perhaps no further discussion is needed under this agenda. |
| CHTTL | Regarding option 1, in the request, we only list all of the “next level” fallback combos, would like to clarify this aspect on this option whether it is related to the request or not.Maybe in this meeting we focus on the task from the chair to discuss on what text regarding the fallback aspects needs to be added in the basket WID.  |
| Ericsson | Option 2. Fallbacks are already discssed in the Band Combo Improvements in agenda 11.3, so we agree with Nokia that discussion is not needed in two parallel threads. |

## 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** | *Tentative agreements:* In general, there is a large consensus amongst companies that there are too many cases of band combinations request and introductions where the rules on fallbacks are not followed. There are proposals to further enforce/develop rules but there is also a common understanding that re-stating rules may not change things like it has been observed in the past. One suggested way is to insert the rules and guidelines in the documents used for band combinations: WI, Request sheets, TPS, TRs skeletonThere is also consensus that rather than using this “not for block approval” AI, this topic will be better handled in the R18 FS\_SimBC SI. It has been suggested that both proponents and rapporteurs should check the correctness of requests, but it is clear this is an extra load that is difficult for rapporteurs to handle, thus it should be the main responsibility of proponents (contact person), other can only help. Enforcing od deadline for band combination request 3weeks before Tdoc submission deadline will allow more checks and possibly feedback to proponents if needed.In the meantime, we can use the second round to capture the elements of solutions, descriptions of fallbacks, and possibly the objective that could be added to the R18 FS\_SimBC SI.*Candidate options:* *Recommendations for 2nd round:* capture the complete set of rules in a way forward with the description of how the proper fallback should be in place (DL config, UL config, BCS…). Other input on band combinations can also be captured (Nokia input). The aim is that this can be an input for next meeting in the FS\_SimBC AI and possibly help define further objectives in the SI. |

## Discussion on 2nd round

A way forward is discussed amongst companies in a specific [115] email thread.

|  |  |  |  |
| --- | --- | --- | --- |
| **New Tdoc number** | **Title** | **Source** | **Comments** |
| R4-2214425 | WF on band combinations request and fallback rules | Apple, Huawei, Nokia, Samsung | Captures fallback rules and guidelines for requests |

### Companies views’ collection for 2nd round

*One of the two formats, i.e. either example 1 or 2 can be used by moderators.*

Moderator: We encourage to comment directly with change marks in the WF when available but please still collect your final comments below

Comments on WF on band combinations request and fallback rules

|  |  |
| --- | --- |
| **Company** | **Comments** |
| Skyworks | Fallback checks: In our view all fallback down to two band are needed whatever the higher order since the two band combination are the UL configuration for any higher order case. In order to avoid >3 band issues, since the key MSD specification come from the 2/3band cases (plus intra UL when applicable), we should forbid requests for >3band until intra/2band and 3 band combinations are finalized. Then proponents of >3 band combination will have to point at the 2 and 3 band combinations status in their request. |
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# Topic #2: Triple beat MSD

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

## Companies’ contributions summary

|  |  |  |
| --- | --- | --- |
| **T-doc number** | **Company** | **Proposals / Observations** |
| [**R4-2213132**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104-e/Docs/R4-2213132.zip) Discussion on triple beat MSD of UL DC\_3C\_n28A | Huawei, HiSilicon | Proposal 1: **It’s recommended to adopt the following test configuration for triple beat MSD of DC\_3C\_n28A.****Table 2-1: Reference sensitivity exception due to triple beat intermodulation**

|  |  |
| --- | --- |
| Band / Channel bandwidth / NRB / Duplex mode | Source of IMD |
| ENDC band combination | NR/LTE band | UL Fc (MHz) | UL/DL BW (MHz) | UL LCRB | DL Fc (MHz) | MSD (dB) | Duplex mode |  |
|  | n28 | 718 | 30 | 25(RBSTART=135) | 773 | TBA | FDD | 1st order triple beat α (TX22TX1) |
| DC\_3C\_n28A | 3 | 1720 | 20 | 1 (RBSTART=0) | 2550 | N/A | FDD | N/A |
|  |  | 1739.8 | 20 | 1 (RBSTART=99) | 2645 |  |  |  |

Proposal 2: **It’s recommended to specify triple beat MSD of DC\_3C\_n28A as 4.6dB** |
| R4-2214069 On Triple Beat Detection Equations | Murata Manufacturing Co Ltd. | Moderator: the contribution is not available |

## 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:* Triple beat MSD for DC\_3C\_n28

*Open issues and candidate options before e-meeting:* Agree on MSD test point and MSD value

**Issue 2-1a: MSD test point**

* Proposals
	+ Option 1: adopt proposed MSD test point:

**Table 2-1: Reference sensitivity exception due to triple beat intermodulation**

|  |  |
| --- | --- |
| Band / Channel bandwidth / NRB / Duplex mode | Source of IMD |
| ENDC band combination | NR/LTE band | UL Fc (MHz) | UL/DL BW (MHz) | UL LCRB | DL Fc (MHz) | MSD (dB) | Duplex mode |  |
|  | n28 | 718 | 30 | 25(RBSTART=135) | 773 | TBA | FDD | 1st order triple beat α (TX22TX1) |
| DC\_3C\_n28A | 3 | 1720 | 20 | 1 (RBSTART=0) | 2550 | N/A | FDD | N/A |
|  |  | 1739.8 | 20 | 1 (RBSTART=99) | 2645 |  |  |  |

* + Option 2: Propose a different MSD test point
* Recommended WF
	+ Option 1 if the MSD test point is valid

**Issue 2-1b: MSD value**

* Proposals
	+ Option 1: 4.6dB
	+ Option 2: Other values or need for evaluation by other experts
* Recommended WF
	+ Agree assumptions/architecture, then discuss proposed value

## Companies views’ collection for 1st round

### Open issues

**Example 1**

|  |  |
| --- | --- |
| **Company** | **Comments** |
| Skyworks | Thank you Huawei for bringing a detailed Triple Beat (TB) MSD analysis for DC\_3C\_n28A.Sub topic 1-1a MSD test point: Editorial for Table 2-1:- Carrier frequencies for DL band 3 need to be corrected.- Should the source of interference be changed to “IMD3” to avoid creating a new source type in Table 7.3B.2.3.5.1-1?Question on selecting n28 30MHz CBW:MSD due to dual UL IMD is usually specified for the smallest CBW of the DL affected band. For DC\_3C\_n28A, we agree that 1st order TB product can not be centered on any of the n28 5,10,15, or 20MHz CBW. But it can for 25MHz CBW. Was there any reason for choosing 30MHz DL CBW?Sub topic 1-1b MSD value:Question for clarification: 1. is it correct understanding that the 4.6dB has been calculated assuming uncorrelated MRC combining?
2. In this analysis, the dominating source of interference is the LNA IMD interference. If that’s the case, could we consider that the noise source is correlated? Should the MSD be updated accordingly?
3. For diversity path, the diagram shows a Rx filter. Could you clarify what filter type is assumed?
4. Could you clarify the assumptions used to calculate the LNA IMD levels?
 |
| Murata | Sub topic 1-1b MSD value:Thank you, Huawei, for initiating triple beat MSD evaluation.TXMBW is the maximum transmission bandwidth and not the allocation bandwidth. So triple beat detection should occur for a 20MHz channel BW. The requirement should be evaluated at the nominal duplex offset since MSD is calculated with respect to REFSENS, with the allocation closest to DL.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| TX NRB | TX\_MBW | ULCA\_aggBW | RXBW | Duplex | Detection |  | Overlap |
| 79 | 14.22 | 39.8 | 15 | 55 | 54.41 |  | No Hit |
| 106 | 19.08 | 39.8 | 20 | 55 | 59.34 |  |  |
| 133 | 23.94 | 39.8 | 25 | 55 | 64.27 |  |  |
| 160 | 28.8 | 39.8 | 30 | 55 | 69.2 |  |  |

 |
| Apple | Thanks to Huawei for the TB MSD analysis on this combination.**Issue 2-1a: MSD test point:**1. We are okay with the UL center frequency selection. Agree with Skyworks that B3 DL Fc need to be corrected.
2. Agree with Skyworks that both 25MHz and 30MHz for n28 will have DL BW completely enclose the IMD3 from triple beat. 25MHz may be a better choice to observe higher MSD as 30MHz is exposed more self-interference from n28 UL.

**Issue 2-1b: MSD value:**1. We tend to agree that the MSD would be dominated by LNA 3rd order non-linearity based on the filter isolation assumptions.
2. Need a clarification on the diversity Rx path duplexer filter isolation assumption.
3. Need a clarification on the LNA IIP3 assumption.
4. Need a clarification on whether B3 REFSENS would be tested simultaneously. If yes, the MSD implication on B3 DL due to (1RB+1RB) B3 UL IMD needs to be addressed.
 |
| Huawei | **Issue 2-1a: MSD test point:**To Skyworks, I can correct the band 3 DL frequency. For the name, we can introduce both IMD3 and 1st order triple beat to distinguish with other conventional IMD. I just use the formula specified in TR 38.862. But if we allocate the UL RB closest to DL band, Maybe we can consider 20 or 25MHz.To Murata, maybe we can further clarify this case in TR 38.862 in case companies misunderstand this.To Apple, I can correct the band 3 DL frequency. As explained by Murata, maybe we can consider 20MHz.**Issue 2-1b: MSD value:**To skyworks:1 and 2. I think the MRC method is same as what we analysis in the past. But uncorrelated MRC seems more general.3. I think this filter can be multi Rx-band filter. One for low band, the other for mid-high band. Besides, multi-on with dual filters are feasible as well.4. General assumption -6dBm IIP3.To Apple,2, As we discussed in contribution, **Band n28 filter Rx rejection at n28 Tx can be 50dB and Band n28 filter Rx rejection at B3 Tx can be 33dB.****3.** General assumption -6dBm IIP3.4. I think this test point only focus on Rx of band n28.I just check LTE spec 36.101, there is no such serious case (corner case) for UL CA\_3C as below.C:\Users\z00471447\AppData\Roaming\eSpace_Desktop\UserData\z00471447\imagefiles\385A776A-ADE6-49F6-B7DD-71816F86E86A.pngI’m not sure whether we need to specify this test case in LTE spec for CA\_3C. I’d like to hear your experts’ view. |
| Murata | **Issue 2-1a: MSD test point:**Thanks Huawei. My colleague may bring a contribution next meeting to clarify detection in TR38.862. For progress, we can all agree that for 25MHz and 30MHz the triple beat allocation is fully enclosed in the RXBW. For 20MHz, there is partial enclosure (~50% by my estimation), and we can further discuss whether to include this test point.**Sub topic 1-1b MSD value**:IT would be nice to get other company contribution to the MSD value with the agreed test point(s). |
| CHTTL | Although it seems that there are a lot of discussions on the MSD, but actually DC\_3C\_n28A is not yet requested in the Rel.18 WID.Though I am aware that UL DC\_3C\_n28A is removed from Rel.17 in the last meeting, but UL DC\_3C\_n28A is also not existed in Rel.17 WID…? |
| Skyworks | To Huawei: Thank you for the clarifications and proposal on corrections.It seems we have consensus that the TB product can be fully integrated within the n28 DL 25MHz CBW. Our preference is to adopt an n28 MSD test point using 25MHz CBW. We have concerns with 20MHz CBW because our evaluation also shows that the TB is more than half-way “outside” the DL CBW. To CHTTL: Thank you for the information on WID. For information, we saw TPs in thread [116] for DC\_3C-38A\_n28A-n78A and for DC\_1A-3C-38A\_n28A-n78A (R4-2213118, 3119) which specify UL DC\_3C\_n28A. We have requested to postpone the approval of these TPs until DC\_3C\_n28A is completed. |
| XXX | Sub topic 1-1a MSD test point: Sub topic 1-1b MSD value: |

## 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** | *Tentative agreements:* the DC\_3C\_n28 is a leftover from R17 as the triple beat MSD was missing*Candidate options:* Expert companies have provided inputs to correct the MSD test point*Recommendations for 2nd round:* Proponent captures MSD test point agreement with experts. If possible a value can be discussed but it should be validated at next meeting and inputs from other companies are welcomed |

## 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”.*

A way forward is discussed amongst companies in a specific [115] email thread.

|  |  |  |  |
| --- | --- | --- | --- |
| **New Tdoc number** | **Title** | **Source** | **Comments** |
| R4-2214426 | WF on triple beat MSD of UL DC\_3C\_n28A | Huawei, HiSilicon | Captures inputs from experts on MSD test point and values |

Moderator will provide comment section in Rd2 summary, and a specific email thread can be also used for comments.

### Companies views’ collection for 2nd round

*One of the two formats, i.e. either example 1 or 2 can be used by moderators.*

Moderator: We encourage to comment directly with change marks in the WF when available but please still collect your final comments below

Comments on WF on triple beat MSD of UL DC\_3C\_n28A

|  |  |
| --- | --- |
| **Company** | **Comments** |
| Skyworks | Thank you for the draft WF. For the RF parameters, if some companies wish to evaluate the MSD using measurements, it is possible that not all of the RF parameter assumptions can be met. So, we’d like to suggest adding a 3rd WF on “MSD evaluation” to broaden the scope. We hope this is acceptable and helpful. |
| Apple | Thanks to Huawei for the draft WF. The proposed test configuration looks good to us. One clarification which may be needed is that when testing n28 MSD, the Band 3 DL signal level needs to be high enough to avoid the impact of IMD5 (which could be relatively high) from 3C UL to its own DL.  |
| Huawei | To Skyworks, we are fine with your revision.To Apple, I understand your intention. But I’m not sure why and how to capture this clarification. Maybe we can further discuss it in next meeting. |
|  |  |

# Topic #3: CRs on new Delta TIB and Delta RIB 38.101-1 and 38.101-3 specifications

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

Moderator: CRs are according to agreed simplifications in R17 for early introduction in R18, review and comment directly in the CR section 3.3.1

## Companies’ contributions summary

|  |  |  |
| --- | --- | --- |
| **T-doc number** | **Company** | **Proposals / Observations** |
| R4-2213607, R4-2213608, R4-2213609, R4-2213610, R4-2213611 | ZTE Corporation | CR for Delta RIB for 38.101-3Moderator: Review and comment directly in the CR section |
| R4-2213612, R4-2213613, R4-2213614, R4-2213615, R4-2213616 | ZTE Corporation | CR for Delta TIB for 38.101-3Moderator: Review and comment directly in the CR section |
| R4-2213603, R4-2213602R4-2213601 | ZTE Corporation | CR for Delta RIB for 38.101-1Moderator: Review and comment directly in the CR section |
| R4-2213606, R4-2213605, R4-2213604 | ZTE Corporation | CR for Delta TIB for 38.101-1Moderator: Review and comment directly in the CR section |

## 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:*

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

## Companies views’ collection for 1st round

### 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** |
| [**R4-2213607**](https://urldefense.proofpoint.com/v2/url?u=https-3A__www.3gpp.org_ftp_TSG-5FRAN_WG4-5FRadio_TSGR4-5F104-2De_Docs_R4-2D2213607.zip&d=DwMFAg&c=VYRDWu-sKuQrybEAJ2u-dYX_FK6X1lTrDf-PKXUa2P4&r=pRthG0xxDB77vg4aSNBQn5JOtJLs0OZjgw-oylT0McK0oow-yPNwujyHTOyyY1lN&m=WFkjlXHxUZmnO-o_rgP2617a8aR7lnk1lzhXLQayxGDBMOl-hoCYniOlNFxpu-al&s=KfW6M2VD7pxH9y7eZk-BBo3Z4TN34Yihhz9yMRMuVMc&e=)Draft CR for TS 38.101-3 on updates to delta RIB for DC configurations of six bands | Skyworks: agree with the CR that is according to R17 agreements |
| [**R4-2213608**](https://urldefense.proofpoint.com/v2/url?u=https-3A__www.3gpp.org_ftp_TSG-5FRAN_WG4-5FRadio_TSGR4-5F104-2De_Docs_R4-2D2213608.zip&d=DwMFAg&c=VYRDWu-sKuQrybEAJ2u-dYX_FK6X1lTrDf-PKXUa2P4&r=pRthG0xxDB77vg4aSNBQn5JOtJLs0OZjgw-oylT0McK0oow-yPNwujyHTOyyY1lN&m=WFkjlXHxUZmnO-o_rgP2617a8aR7lnk1lzhXLQayxGDBMOl-hoCYniOlNFxpu-al&s=3w9wY-mBdb602vo0pMQEQ-LqPcNcIBm5gHD2ApbEj60&e=)Draft CR for TS 38.101-3 on updates to delta RIB for DC configurations of five bands | Skyworks: agree with the CR that is according to R17 agreements |
| [**R4-2213609**](https://urldefense.proofpoint.com/v2/url?u=https-3A__www.3gpp.org_ftp_TSG-5FRAN_WG4-5FRadio_TSGR4-5F104-2De_Docs_R4-2D2213609.zip&d=DwMFAg&c=VYRDWu-sKuQrybEAJ2u-dYX_FK6X1lTrDf-PKXUa2P4&r=pRthG0xxDB77vg4aSNBQn5JOtJLs0OZjgw-oylT0McK0oow-yPNwujyHTOyyY1lN&m=WFkjlXHxUZmnO-o_rgP2617a8aR7lnk1lzhXLQayxGDBMOl-hoCYniOlNFxpu-al&s=K0RVYLtxIaaD4_qNQKPtAubEJh25_0xHnE8lXKROZr8&e=)Draft CR for TS 38.101-3 on updates to delta RIB for DC configurations of four bands | Skyworks: agree with the CR that is according to R17 agreements |
| [**R4-2213610**](https://urldefense.proofpoint.com/v2/url?u=https-3A__www.3gpp.org_ftp_TSG-5FRAN_WG4-5FRadio_TSGR4-5F104-2De_Docs_R4-2D2213610.zip&d=DwMFAg&c=VYRDWu-sKuQrybEAJ2u-dYX_FK6X1lTrDf-PKXUa2P4&r=pRthG0xxDB77vg4aSNBQn5JOtJLs0OZjgw-oylT0McK0oow-yPNwujyHTOyyY1lN&m=WFkjlXHxUZmnO-o_rgP2617a8aR7lnk1lzhXLQayxGDBMOl-hoCYniOlNFxpu-al&s=nRG7E8ign0Di5BJUcRB7i9KzT-7a9X4vVtJEVFZQ4PY&e=)Draft CR for TS 38.101-3 on updates to delta RIB for DC configurations of three bands | Skyworks: agree with the CR that is according to R17 agreements |
| [**R4-2213611**](https://urldefense.proofpoint.com/v2/url?u=https-3A__www.3gpp.org_ftp_TSG-5FRAN_WG4-5FRadio_TSGR4-5F104-2De_Docs_R4-2D2213611.zip&d=DwMFAg&c=VYRDWu-sKuQrybEAJ2u-dYX_FK6X1lTrDf-PKXUa2P4&r=pRthG0xxDB77vg4aSNBQn5JOtJLs0OZjgw-oylT0McK0oow-yPNwujyHTOyyY1lN&m=WFkjlXHxUZmnO-o_rgP2617a8aR7lnk1lzhXLQayxGDBMOl-hoCYniOlNFxpu-al&s=1rrYMJtlc9okFnoQDXA7NgaTCf282JWIl-djnOJQDsc&e=)Draft CR for TS 38.101-3 on updates to delta RIB for DC configurations of 1 band LTE and 1 band NR band | Skyworks: agree with the CR that is according to R17 agreements |
| [**R4-2213612**](https://urldefense.proofpoint.com/v2/url?u=https-3A__www.3gpp.org_ftp_TSG-5FRAN_WG4-5FRadio_TSGR4-5F104-2De_Docs_R4-2D2213612.zip&d=DwMFAg&c=VYRDWu-sKuQrybEAJ2u-dYX_FK6X1lTrDf-PKXUa2P4&r=pRthG0xxDB77vg4aSNBQn5JOtJLs0OZjgw-oylT0McK0oow-yPNwujyHTOyyY1lN&m=WFkjlXHxUZmnO-o_rgP2617a8aR7lnk1lzhXLQayxGDBMOl-hoCYniOlNFxpu-al&s=oekmoY7gn4ZXruRt-s8c8e924O6IwzyRfpR-CmSugBM&e=)Draft CR for TS 38.101-3 on updates to delta TIB for DC configurations of six bands | Skyworks: agree with the CR that is according to R17 agreements |
| [**R4-2213613**](https://urldefense.proofpoint.com/v2/url?u=https-3A__www.3gpp.org_ftp_TSG-5FRAN_WG4-5FRadio_TSGR4-5F104-2De_Docs_R4-2D2213613.zip&d=DwMFAg&c=VYRDWu-sKuQrybEAJ2u-dYX_FK6X1lTrDf-PKXUa2P4&r=pRthG0xxDB77vg4aSNBQn5JOtJLs0OZjgw-oylT0McK0oow-yPNwujyHTOyyY1lN&m=WFkjlXHxUZmnO-o_rgP2617a8aR7lnk1lzhXLQayxGDBMOl-hoCYniOlNFxpu-al&s=mPSY6I24Dvhhb_dy2eDF2OT8C0zpGjbuENCA7U4hHkU&e=)Draft CR for TS 38.101-3 on updates to delta TIB for DC configurations of five bands | Skyworks: agree with the CR that is according to R17 agreements |
| [**R4-2213614**](https://urldefense.proofpoint.com/v2/url?u=https-3A__www.3gpp.org_ftp_TSG-5FRAN_WG4-5FRadio_TSGR4-5F104-2De_Docs_R4-2D2213614.zip&d=DwMFAg&c=VYRDWu-sKuQrybEAJ2u-dYX_FK6X1lTrDf-PKXUa2P4&r=pRthG0xxDB77vg4aSNBQn5JOtJLs0OZjgw-oylT0McK0oow-yPNwujyHTOyyY1lN&m=WFkjlXHxUZmnO-o_rgP2617a8aR7lnk1lzhXLQayxGDBMOl-hoCYniOlNFxpu-al&s=l0jGn9hE-U6HG6zkqEUf3fTh1z_iCbBlRyXTS0OWqJM&e=)Draft CR for TS 38.101-3 on updates to delta TIB for DC configurations of four bands | Skyworks: agree with the CR that is according to R17 agreements |
| [**R4-2213615**](https://urldefense.proofpoint.com/v2/url?u=https-3A__www.3gpp.org_ftp_TSG-5FRAN_WG4-5FRadio_TSGR4-5F104-2De_Docs_R4-2D2213615.zip&d=DwMFAg&c=VYRDWu-sKuQrybEAJ2u-dYX_FK6X1lTrDf-PKXUa2P4&r=pRthG0xxDB77vg4aSNBQn5JOtJLs0OZjgw-oylT0McK0oow-yPNwujyHTOyyY1lN&m=WFkjlXHxUZmnO-o_rgP2617a8aR7lnk1lzhXLQayxGDBMOl-hoCYniOlNFxpu-al&s=25hsoZkMH0kAgzlG-lsexSpymDuOh5X9QppLD0JPrgo&e=)Draft CR for TS 38.101-3 on updates to delta TIB for DC configurations of three bands | Skyworks: agree with the CR that is according to R17 agreements |
| [**R4-2213616**](https://urldefense.proofpoint.com/v2/url?u=https-3A__www.3gpp.org_ftp_TSG-5FRAN_WG4-5FRadio_TSGR4-5F104-2De_Docs_R4-2D2213616.zip&d=DwMFAg&c=VYRDWu-sKuQrybEAJ2u-dYX_FK6X1lTrDf-PKXUa2P4&r=pRthG0xxDB77vg4aSNBQn5JOtJLs0OZjgw-oylT0McK0oow-yPNwujyHTOyyY1lN&m=WFkjlXHxUZmnO-o_rgP2617a8aR7lnk1lzhXLQayxGDBMOl-hoCYniOlNFxpu-al&s=PpNwgOkzmWcP3Sn760jrivlhn-dORHukcgsccHiv80k&e=)Draft CR for TS 38.101-3 on updates to delta TIB for DC configurations of 1 band LTE and 1 band NR band | Skyworks: agree with the CR that is according to R17 agreements |
| [**R4-2213603**](https://urldefense.proofpoint.com/v2/url?u=https-3A__www.3gpp.org_ftp_TSG-5FRAN_WG4-5FRadio_TSGR4-5F104-2De_Docs_R4-2D2213603.zip&d=DwMFAg&c=VYRDWu-sKuQrybEAJ2u-dYX_FK6X1lTrDf-PKXUa2P4&r=pRthG0xxDB77vg4aSNBQn5JOtJLs0OZjgw-oylT0McK0oow-yPNwujyHTOyyY1lN&m=GLbwd4pSx1JB8rmkBi2eJRpdoDdg1NQVeumoff87XP8IO_X-9u-6REeotDWesHA6&s=QGU6Qpjxl1uCWGSQ-IiTNledty1E52h6dH9vmdqexug&e=)Draft CR for TS 38.101-1 on updates to delta RIB for inter-band CA configurations of two bands | Skyworks: agree with the CR that is according to R17 agreements |
| [**R4-2213606**](https://urldefense.proofpoint.com/v2/url?u=https-3A__www.3gpp.org_ftp_TSG-5FRAN_WG4-5FRadio_TSGR4-5F104-2De_Docs_R4-2D2213606.zip&d=DwMFAg&c=VYRDWu-sKuQrybEAJ2u-dYX_FK6X1lTrDf-PKXUa2P4&r=pRthG0xxDB77vg4aSNBQn5JOtJLs0OZjgw-oylT0McK0oow-yPNwujyHTOyyY1lN&m=GLbwd4pSx1JB8rmkBi2eJRpdoDdg1NQVeumoff87XP8IO_X-9u-6REeotDWesHA6&s=6Q5zNgTP6DHFqmx5Nvk3mlf8XKFU-y5-dYW4wKEnFaY&e=)Draft CR for TS 38.101-1 on updates to delta TIB for inter-band CA configurations of two bands | Skyworks: agree with the CR that is according to R17 agreements |
| [**R4-2213602**](https://urldefense.proofpoint.com/v2/url?u=https-3A__www.3gpp.org_ftp_TSG-5FRAN_WG4-5FRadio_TSGR4-5F104-2De_Docs_R4-2D2213602.zip&d=DwMFAg&c=VYRDWu-sKuQrybEAJ2u-dYX_FK6X1lTrDf-PKXUa2P4&r=pRthG0xxDB77vg4aSNBQn5JOtJLs0OZjgw-oylT0McK0oow-yPNwujyHTOyyY1lN&m=GLbwd4pSx1JB8rmkBi2eJRpdoDdg1NQVeumoff87XP8IO_X-9u-6REeotDWesHA6&s=0zgEZbgSNP3fCZ1pvUdYa1wOEMjPHEZ3dzGWEIDF6rM&e=)Draft CR for TS 38.101-1 on updates to delta RIB for inter-band CA configurations of three bands | Skyworks: agree with the CR that is according to R17 agreements |
| [**R4-2213605**](https://urldefense.proofpoint.com/v2/url?u=https-3A__www.3gpp.org_ftp_TSG-5FRAN_WG4-5FRadio_TSGR4-5F104-2De_Docs_R4-2D2213605.zip&d=DwMFAg&c=VYRDWu-sKuQrybEAJ2u-dYX_FK6X1lTrDf-PKXUa2P4&r=pRthG0xxDB77vg4aSNBQn5JOtJLs0OZjgw-oylT0McK0oow-yPNwujyHTOyyY1lN&m=GLbwd4pSx1JB8rmkBi2eJRpdoDdg1NQVeumoff87XP8IO_X-9u-6REeotDWesHA6&s=GUfPy9Syfi9hCOZP6ncBZT4BjspBrKYb6oPATDtWr20&e=)Draft CR for TS 38.101-1 on updates to delta TIB for inter-band CA configurations of three bands | Skyworks: agree with the CR that is according to R17 agreements |
| [**R4-2213601**](https://urldefense.proofpoint.com/v2/url?u=https-3A__www.3gpp.org_ftp_TSG-5FRAN_WG4-5FRadio_TSGR4-5F104-2De_Docs_R4-2D2213601.zip&d=DwMFAg&c=VYRDWu-sKuQrybEAJ2u-dYX_FK6X1lTrDf-PKXUa2P4&r=pRthG0xxDB77vg4aSNBQn5JOtJLs0OZjgw-oylT0McK0oow-yPNwujyHTOyyY1lN&m=GLbwd4pSx1JB8rmkBi2eJRpdoDdg1NQVeumoff87XP8IO_X-9u-6REeotDWesHA6&s=ofNmP2bHoDc-0MRKhv403Ta4y3aA25eLs1hvERd3q4w&e=)Draft CR for TS 38.101-1 on updates to delta RIB for inter-band CA configurations of four and five bands | Skyworks: agree with the CR that is according to R17 agreements |
| [**R4-2213604**](https://urldefense.proofpoint.com/v2/url?u=https-3A__www.3gpp.org_ftp_TSG-5FRAN_WG4-5FRadio_TSGR4-5F104-2De_Docs_R4-2D2213604.zip&d=DwMFAg&c=VYRDWu-sKuQrybEAJ2u-dYX_FK6X1lTrDf-PKXUa2P4&r=pRthG0xxDB77vg4aSNBQn5JOtJLs0OZjgw-oylT0McK0oow-yPNwujyHTOyyY1lN&m=GLbwd4pSx1JB8rmkBi2eJRpdoDdg1NQVeumoff87XP8IO_X-9u-6REeotDWesHA6&s=LAMgJ2J6jpxkYjyB-5Hho_UP9kplZkMdRVR7ajdsnuQ&e=)Draft CR for TS 38.101-1 on updates to delta TIB for inter-band CA configurations of four and five bands | Skyworks: agree with the CR that is according to R17 agreements |

## Summary for 1st 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**  |
| [**R4-2213607**](https://urldefense.proofpoint.com/v2/url?u=https-3A__www.3gpp.org_ftp_TSG-5FRAN_WG4-5FRadio_TSGR4-5F104-2De_Docs_R4-2D2213607.zip&d=DwMFAg&c=VYRDWu-sKuQrybEAJ2u-dYX_FK6X1lTrDf-PKXUa2P4&r=pRthG0xxDB77vg4aSNBQn5JOtJLs0OZjgw-oylT0McK0oow-yPNwujyHTOyyY1lN&m=WFkjlXHxUZmnO-o_rgP2617a8aR7lnk1lzhXLQayxGDBMOl-hoCYniOlNFxpu-al&s=KfW6M2VD7pxH9y7eZk-BBo3Z4TN34Yihhz9yMRMuVMc&e=) | *Based on 1st round of comments collection, moderator can recommend the next steps such as “agreeable”, “to be revised”* |
| [**R4-2213608**](https://urldefense.proofpoint.com/v2/url?u=https-3A__www.3gpp.org_ftp_TSG-5FRAN_WG4-5FRadio_TSGR4-5F104-2De_Docs_R4-2D2213608.zip&d=DwMFAg&c=VYRDWu-sKuQrybEAJ2u-dYX_FK6X1lTrDf-PKXUa2P4&r=pRthG0xxDB77vg4aSNBQn5JOtJLs0OZjgw-oylT0McK0oow-yPNwujyHTOyyY1lN&m=WFkjlXHxUZmnO-o_rgP2617a8aR7lnk1lzhXLQayxGDBMOl-hoCYniOlNFxpu-al&s=3w9wY-mBdb602vo0pMQEQ-LqPcNcIBm5gHD2ApbEj60&e=) | The CR is simplifying the delta RIB and delta TIB according in agreements in R17 and is needed to be implemented as soon as possible in R18 specification |
| [**R4-2213609**](https://urldefense.proofpoint.com/v2/url?u=https-3A__www.3gpp.org_ftp_TSG-5FRAN_WG4-5FRadio_TSGR4-5F104-2De_Docs_R4-2D2213609.zip&d=DwMFAg&c=VYRDWu-sKuQrybEAJ2u-dYX_FK6X1lTrDf-PKXUa2P4&r=pRthG0xxDB77vg4aSNBQn5JOtJLs0OZjgw-oylT0McK0oow-yPNwujyHTOyyY1lN&m=WFkjlXHxUZmnO-o_rgP2617a8aR7lnk1lzhXLQayxGDBMOl-hoCYniOlNFxpu-al&s=K0RVYLtxIaaD4_qNQKPtAubEJh25_0xHnE8lXKROZr8&e=) | The CR is simplifying the delta RIB and delta TIB according in agreements in R17 and is needed to be implemented as soon as possible in R18 specification |
| [**R4-2213610**](https://urldefense.proofpoint.com/v2/url?u=https-3A__www.3gpp.org_ftp_TSG-5FRAN_WG4-5FRadio_TSGR4-5F104-2De_Docs_R4-2D2213610.zip&d=DwMFAg&c=VYRDWu-sKuQrybEAJ2u-dYX_FK6X1lTrDf-PKXUa2P4&r=pRthG0xxDB77vg4aSNBQn5JOtJLs0OZjgw-oylT0McK0oow-yPNwujyHTOyyY1lN&m=WFkjlXHxUZmnO-o_rgP2617a8aR7lnk1lzhXLQayxGDBMOl-hoCYniOlNFxpu-al&s=nRG7E8ign0Di5BJUcRB7i9KzT-7a9X4vVtJEVFZQ4PY&e=) | The CR is simplifying the delta RIB and delta TIB according in agreements in R17 and is needed to be implemented as soon as possible in R18 specification |
| [**R4-2213611**](https://urldefense.proofpoint.com/v2/url?u=https-3A__www.3gpp.org_ftp_TSG-5FRAN_WG4-5FRadio_TSGR4-5F104-2De_Docs_R4-2D2213611.zip&d=DwMFAg&c=VYRDWu-sKuQrybEAJ2u-dYX_FK6X1lTrDf-PKXUa2P4&r=pRthG0xxDB77vg4aSNBQn5JOtJLs0OZjgw-oylT0McK0oow-yPNwujyHTOyyY1lN&m=WFkjlXHxUZmnO-o_rgP2617a8aR7lnk1lzhXLQayxGDBMOl-hoCYniOlNFxpu-al&s=1rrYMJtlc9okFnoQDXA7NgaTCf282JWIl-djnOJQDsc&e=) | The CR is simplifying the delta RIB and delta TIB according in agreements in R17 and is needed to be implemented as soon as possible in R18 specification |
| [**R4-2213612**](https://urldefense.proofpoint.com/v2/url?u=https-3A__www.3gpp.org_ftp_TSG-5FRAN_WG4-5FRadio_TSGR4-5F104-2De_Docs_R4-2D2213612.zip&d=DwMFAg&c=VYRDWu-sKuQrybEAJ2u-dYX_FK6X1lTrDf-PKXUa2P4&r=pRthG0xxDB77vg4aSNBQn5JOtJLs0OZjgw-oylT0McK0oow-yPNwujyHTOyyY1lN&m=WFkjlXHxUZmnO-o_rgP2617a8aR7lnk1lzhXLQayxGDBMOl-hoCYniOlNFxpu-al&s=oekmoY7gn4ZXruRt-s8c8e924O6IwzyRfpR-CmSugBM&e=) | The CR is simplifying the delta RIB and delta TIB according in agreements in R17 and is needed to be implemented as soon as possible in R18 specification |
| [**R4-2213613**](https://urldefense.proofpoint.com/v2/url?u=https-3A__www.3gpp.org_ftp_TSG-5FRAN_WG4-5FRadio_TSGR4-5F104-2De_Docs_R4-2D2213613.zip&d=DwMFAg&c=VYRDWu-sKuQrybEAJ2u-dYX_FK6X1lTrDf-PKXUa2P4&r=pRthG0xxDB77vg4aSNBQn5JOtJLs0OZjgw-oylT0McK0oow-yPNwujyHTOyyY1lN&m=WFkjlXHxUZmnO-o_rgP2617a8aR7lnk1lzhXLQayxGDBMOl-hoCYniOlNFxpu-al&s=mPSY6I24Dvhhb_dy2eDF2OT8C0zpGjbuENCA7U4hHkU&e=) | The CR is simplifying the delta RIB and delta TIB according in agreements in R17 and is needed to be implemented as soon as possible in R18 specification |
| [**R4-2213614**](https://urldefense.proofpoint.com/v2/url?u=https-3A__www.3gpp.org_ftp_TSG-5FRAN_WG4-5FRadio_TSGR4-5F104-2De_Docs_R4-2D2213614.zip&d=DwMFAg&c=VYRDWu-sKuQrybEAJ2u-dYX_FK6X1lTrDf-PKXUa2P4&r=pRthG0xxDB77vg4aSNBQn5JOtJLs0OZjgw-oylT0McK0oow-yPNwujyHTOyyY1lN&m=WFkjlXHxUZmnO-o_rgP2617a8aR7lnk1lzhXLQayxGDBMOl-hoCYniOlNFxpu-al&s=l0jGn9hE-U6HG6zkqEUf3fTh1z_iCbBlRyXTS0OWqJM&e=) | The CR is simplifying the delta RIB and delta TIB according in agreements in R17 and is needed to be implemented as soon as possible in R18 specification |
| [**R4-2213614**](https://urldefense.proofpoint.com/v2/url?u=https-3A__www.3gpp.org_ftp_TSG-5FRAN_WG4-5FRadio_TSGR4-5F104-2De_Docs_R4-2D2213614.zip&d=DwMFAg&c=VYRDWu-sKuQrybEAJ2u-dYX_FK6X1lTrDf-PKXUa2P4&r=pRthG0xxDB77vg4aSNBQn5JOtJLs0OZjgw-oylT0McK0oow-yPNwujyHTOyyY1lN&m=WFkjlXHxUZmnO-o_rgP2617a8aR7lnk1lzhXLQayxGDBMOl-hoCYniOlNFxpu-al&s=l0jGn9hE-U6HG6zkqEUf3fTh1z_iCbBlRyXTS0OWqJM&e=) | The CR is simplifying the delta RIB and delta TIB according in agreements in R17 and is needed to be implemented as soon as possible in R18 specification |
| [**R4-2213615**](https://urldefense.proofpoint.com/v2/url?u=https-3A__www.3gpp.org_ftp_TSG-5FRAN_WG4-5FRadio_TSGR4-5F104-2De_Docs_R4-2D2213615.zip&d=DwMFAg&c=VYRDWu-sKuQrybEAJ2u-dYX_FK6X1lTrDf-PKXUa2P4&r=pRthG0xxDB77vg4aSNBQn5JOtJLs0OZjgw-oylT0McK0oow-yPNwujyHTOyyY1lN&m=WFkjlXHxUZmnO-o_rgP2617a8aR7lnk1lzhXLQayxGDBMOl-hoCYniOlNFxpu-al&s=25hsoZkMH0kAgzlG-lsexSpymDuOh5X9QppLD0JPrgo&e=) | The CR is simplifying the delta RIB and delta TIB according in agreements in R17 and is needed to be implemented as soon as possible in R18 specification |
| [**R4-2213616**](https://urldefense.proofpoint.com/v2/url?u=https-3A__www.3gpp.org_ftp_TSG-5FRAN_WG4-5FRadio_TSGR4-5F104-2De_Docs_R4-2D2213616.zip&d=DwMFAg&c=VYRDWu-sKuQrybEAJ2u-dYX_FK6X1lTrDf-PKXUa2P4&r=pRthG0xxDB77vg4aSNBQn5JOtJLs0OZjgw-oylT0McK0oow-yPNwujyHTOyyY1lN&m=WFkjlXHxUZmnO-o_rgP2617a8aR7lnk1lzhXLQayxGDBMOl-hoCYniOlNFxpu-al&s=PpNwgOkzmWcP3Sn760jrivlhn-dORHukcgsccHiv80k&e=) | The CR is simplifying the delta RIB and delta TIB according in agreements in R17 and is needed to be implemented as soon as possible in R18 specification |
| [**R4-2213603**](https://urldefense.proofpoint.com/v2/url?u=https-3A__www.3gpp.org_ftp_TSG-5FRAN_WG4-5FRadio_TSGR4-5F104-2De_Docs_R4-2D2213603.zip&d=DwMFAg&c=VYRDWu-sKuQrybEAJ2u-dYX_FK6X1lTrDf-PKXUa2P4&r=pRthG0xxDB77vg4aSNBQn5JOtJLs0OZjgw-oylT0McK0oow-yPNwujyHTOyyY1lN&m=GLbwd4pSx1JB8rmkBi2eJRpdoDdg1NQVeumoff87XP8IO_X-9u-6REeotDWesHA6&s=QGU6Qpjxl1uCWGSQ-IiTNledty1E52h6dH9vmdqexug&e=) | The CR is simplifying the delta RIB and delta TIB according in agreements in R17 and is needed to be implemented as soon as possible in R18 specification |
| [**R4-2213606**](https://urldefense.proofpoint.com/v2/url?u=https-3A__www.3gpp.org_ftp_TSG-5FRAN_WG4-5FRadio_TSGR4-5F104-2De_Docs_R4-2D2213606.zip&d=DwMFAg&c=VYRDWu-sKuQrybEAJ2u-dYX_FK6X1lTrDf-PKXUa2P4&r=pRthG0xxDB77vg4aSNBQn5JOtJLs0OZjgw-oylT0McK0oow-yPNwujyHTOyyY1lN&m=GLbwd4pSx1JB8rmkBi2eJRpdoDdg1NQVeumoff87XP8IO_X-9u-6REeotDWesHA6&s=6Q5zNgTP6DHFqmx5Nvk3mlf8XKFU-y5-dYW4wKEnFaY&e=) | The CR is simplifying the delta RIB and delta TIB according in agreements in R17 and is needed to be implemented as soon as possible in R18 specification |
| [**R4-2213602**](https://urldefense.proofpoint.com/v2/url?u=https-3A__www.3gpp.org_ftp_TSG-5FRAN_WG4-5FRadio_TSGR4-5F104-2De_Docs_R4-2D2213602.zip&d=DwMFAg&c=VYRDWu-sKuQrybEAJ2u-dYX_FK6X1lTrDf-PKXUa2P4&r=pRthG0xxDB77vg4aSNBQn5JOtJLs0OZjgw-oylT0McK0oow-yPNwujyHTOyyY1lN&m=GLbwd4pSx1JB8rmkBi2eJRpdoDdg1NQVeumoff87XP8IO_X-9u-6REeotDWesHA6&s=0zgEZbgSNP3fCZ1pvUdYa1wOEMjPHEZ3dzGWEIDF6rM&e=) | The CR is simplifying the delta RIB and delta TIB according in agreements in R17 and is needed to be implemented as soon as possible in R18 specification |
| [**R4-2213605**](https://urldefense.proofpoint.com/v2/url?u=https-3A__www.3gpp.org_ftp_TSG-5FRAN_WG4-5FRadio_TSGR4-5F104-2De_Docs_R4-2D2213605.zip&d=DwMFAg&c=VYRDWu-sKuQrybEAJ2u-dYX_FK6X1lTrDf-PKXUa2P4&r=pRthG0xxDB77vg4aSNBQn5JOtJLs0OZjgw-oylT0McK0oow-yPNwujyHTOyyY1lN&m=GLbwd4pSx1JB8rmkBi2eJRpdoDdg1NQVeumoff87XP8IO_X-9u-6REeotDWesHA6&s=GUfPy9Syfi9hCOZP6ncBZT4BjspBrKYb6oPATDtWr20&e=) | The CR is simplifying the delta RIB and delta TIB according in agreements in R17 and is needed to be implemented as soon as possible in R18 specification |
| [**R4-2213601**](https://urldefense.proofpoint.com/v2/url?u=https-3A__www.3gpp.org_ftp_TSG-5FRAN_WG4-5FRadio_TSGR4-5F104-2De_Docs_R4-2D2213601.zip&d=DwMFAg&c=VYRDWu-sKuQrybEAJ2u-dYX_FK6X1lTrDf-PKXUa2P4&r=pRthG0xxDB77vg4aSNBQn5JOtJLs0OZjgw-oylT0McK0oow-yPNwujyHTOyyY1lN&m=GLbwd4pSx1JB8rmkBi2eJRpdoDdg1NQVeumoff87XP8IO_X-9u-6REeotDWesHA6&s=ofNmP2bHoDc-0MRKhv403Ta4y3aA25eLs1hvERd3q4w&e=) | The CR is simplifying the delta RIB and delta TIB according in agreements in R17 and is needed to be implemented as soon as possible in R18 specification |
| [**R4-2213604**](https://urldefense.proofpoint.com/v2/url?u=https-3A__www.3gpp.org_ftp_TSG-5FRAN_WG4-5FRadio_TSGR4-5F104-2De_Docs_R4-2D2213604.zip&d=DwMFAg&c=VYRDWu-sKuQrybEAJ2u-dYX_FK6X1lTrDf-PKXUa2P4&r=pRthG0xxDB77vg4aSNBQn5JOtJLs0OZjgw-oylT0McK0oow-yPNwujyHTOyyY1lN&m=GLbwd4pSx1JB8rmkBi2eJRpdoDdg1NQVeumoff87XP8IO_X-9u-6REeotDWesHA6&s=LAMgJ2J6jpxkYjyB-5Hho_UP9kplZkMdRVR7ajdsnuQ&e=) | The CR is simplifying the delta RIB and delta TIB according in agreements in R17 and is needed to be implemented as soon as possible in R18 specification |

## 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”.*

All above CR are agreable but new Tdocs moved from baskets to 115 will be treated here

|  |  |  |  |
| --- | --- | --- | --- |
| **New Tdoc number** | **Title** | **Source** | **Comments** |
| R4-2214427 RevR4-2213102 | TP for TR 38.818-02-01 to include CA\_n3-n26 | Ericsson, Telstra | Moved from basket to add harmonic mixing MSD |
| R4-2214428 RevR4-2213103 | TP for TR 38.818-02-01 to include CA\_n7-n26 | Ericsson, Telstra | Moved from basket to add harmonic mixing MSD |
| R4-2214429 RevR4-2213126 | TP for 38.718-02-01 CA\_n3A-n41C with UL\_n41C | Huawei, HiSilicon | Clarify IMD9 intra ULCA MSD and request |

### Open issues

**Issue 1-1: Harmonic mixing MSD for CA\_n3A-n26A**

* Issue
	+ There is harmonic mixing issue for 2xn26 DL=1xn3 UL
	+ Although this is 2nd order harmonic mixing for a LB if fall direct on the other band UL
* Recommended WF
	+ Expert discuss the MSD test point and value in view to revise TP with MSD value in [] ideally. To be checked at next meeting

**Issue 1-2: Just missed harmonic mixing MSD for CA\_n7A-n26A**

* Issue
	+ 3xn26 DL is only 7MHz away 1xn7 UL and thus with have a parasitic RX response to the band n7 ACLR
	+ Although this is just missed, it is the 3nd order harmonic mixing for a LB (worst) if fall direct on the other band UL ACLR (only 30dB reduction)
* Recommended WF
	+ Expert discuss this MSD case and decide if MSD is added to revised TP with MSD in []. To be checked at next meeting

**Issue 1-3: IMD 9 of CA\_n41C falling on n3 for CA\_n3A-n41C**

* Issue
	+ Capture IMD9 of CA\_n41C UL into n3 DL, check if proposed MSD in TP is valid
* Recommended WF
	+ Capture MSD properly in TP or CR

### Companies views’ collection for 2nd round

*One of the two formats, i.e. either example 1 or 2 can be used by moderators.*

Issue 1-1: **Harmonic mixing MSD for CA\_n3A-n26A**

|  |  |
| --- | --- |
| **Company** | **Comments** |
| Skyworks | This is a 2xn26DL=n3UL. We could not find an example of a 2xDL=UL in the spec but 2xDL=3UL cases have MSD in the order of 8dB for 10MHz UL and DL. the true UL can be much larger than its 3rd harmonic, more than 30dB. However this is attenuated by a lower 3rd order receiver response in LB compared to Band n40/n41 3UL=2DL cases. In any case it is clear that an MSD is needed as we do not see that the improved 2nd order LB Rx response can cancel the interference of a 23dBm UL. At this point I suggest we capture the following test point with TBD MSD to be finalized at next meeting. |
| Skyworks | The draft revised TPs are correctly capturing the test points and MSD evaluation can be done for next meeting |
| Ericsson | please find draft updated TP’s: [draft R4-2215017 TP for TR 38.818-02-01 to include CA\_n3-n26](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_104-e/Inbox/Drafts/%5B104-e%5D%5B115%5D%20NR_Baskets_Part_1/Round2/draft%20R4-2215017%20TP%20for%20TR%2038.818-02-01%20to%20include%20CA_n3-n26.docx) |

Issue 1-2: **Just missed harmonic mixing MSD for CA\_n7A-n26A**

|  |  |
| --- | --- |
| **Company** | **Comments** |
| Skyworks | This is a near missed 3xn26DL=1xn7UL by 7MHz thus there is an overlap of 3xDL with ACLR1 of UL if DL UW is >5MHz and then ACLR 30dB below wanted signal and since the duplex distance of n7 is 50MHz we may not see much attenuation of ACLR1 at 7MHz offset. The closest NRCA direct hit case is:Note that same harmonic mixing for DC\_26\_n41 is also captured at 24.3dB in 38.101-3.With CA\_n18-n41 as baseline, UL may be kept to 15MHz and DL changed to 5MHz so that half of ACLR1 of UL is overlapping. This would then result in below test point:Moving form 15MHz DL to 5MHZ DL will increase MSD by 5dB => 27.5dBInterference of upper half of ACLR1 will reduce interference by at least 33dB => interference will be ~ 6dB below REFSENS => this is about 1dB MSD. I suggest we capture this value in [] and confirm next meeting with a different value or remove if MSD is found negligible. |
| Skyworks | The draft revised TPs are correctly capturing the test points and MSD evaluation can be done for next meeting |
| Ericsson | please find the draft updated TP:[draft R4-2215018 TP for TR 38.818-02-01 to include CA\_n7-n26](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_104-e/Inbox/Drafts/%5B104-e%5D%5B115%5D%20NR_Baskets_Part_1/Round2/draft%20R4-2215018%20TP%20for%20TR%2038.818-02-01%20to%20include%20CA_n7-n26.docx) |

Issue 1-3: **IMD 9 of CA\_n41C falling on n3 for CA\_n3A-n41C**

|  |  |
| --- | --- |
| **Company** | **Comments** |
| Skyworks | After crosschecking, the IMD9 analysis and test point in R4-2213126 Table 6.X.1.3-1 is valid and MSD value is OK so the only change needed is to put this MSD table in the 6.X.1.5 REFSENs requirements chapter and remove the statement “There is no MSD exception requirement.” And replace by “thee is IMD9 interference of CA\_n41C UL configuration in band n3 DL with the following MSD” + added table. |
| Huawei | To Skyworks, thanks for your carefully checking. Since we received the comments from ZTE that this band combination hasn’t been included into the basket WID. Thus, the revision can be withdraw and original Tdoc can be noted. Thanks. |
|  |  |

# Recommendations for Tdocs

## 1st round

**New tdocs**

|  |  |  |  |
| --- | --- | --- | --- |
| **New Tdoc number** | **Title** | **Source** | **Comments** |
| R4-2214425 | WF on band combinations request and fallback rules | Apple, Huawei, Nokia, Samsung | Captures fallback rules and guidelines for requests |
| R4-2214426 | WF on triple beat MSD of UL DC\_3C\_n28A | Huawei, HiSilicon | Captures inputs from experts on MSD test point and values |
| R4-2214427 RevR4-2213102 | TP for TR 38.818-02-01 to include CA\_n3-n26 | Ericsson, Telstra | Moved from basket to add harmonic mixing MSD |
| R4-2214428 RevR4-2213103 | TP for TR 38.818-02-01 to include CA\_n7-n26 | Ericsson, Telstra | Moved from basket to add harmonic mixing MSD |
| R4-2214429 RevR4-2213126 | TP for 38.718-02-01 CA\_n3A-n41C with UL\_n41C | Huawei, HiSilicon | Clarify IMD9 intra ULCA MSD and request |

**Existing tdocs**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Tdoc number** | **Revised to** | **Title** | **Source** | **Recommendation**  | **Comments** |
| [**R4-2212017**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104-e/Docs/R4-2212017.zip) |  | On how to handle the fallbacks of the proposed band combination | Samsung | Noted | A way forward is prepared to capture the complete set of rules in a way forward with the description of how the proper fallback should be in place (DL config, UL config, BCS…). Other input on band combinations can also be captured (Nokia input). The aim is that this can be an input for next meeting in the FS\_SimBC SI and possibly help define further objectives. |
| [**R4-2212380**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104-e/Docs/R4-2212380.zip) |  | On Fallbacks for Basket WIDs | Apple | Noted |
| [**R4-2213167**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104-e/Docs/R4-2213167.zip) |  | Discussion on the fallback configurations | Huawei, HiSilicon | Noted |
| [**R4-2213208**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104-e/Docs/R4-2213208.zip) |  | On band combination guidance in basket WIDs | Nokia, Nokia Shanghai Bell | Noted |
| [**R4-2213132**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104-e/Docs/R4-2213132.zip) |  | Discussion on triple beat MSD of UL DC\_3C\_n28A | Huawei, HiSilicon | Noted | A way forward is allocated in round 2 for the proponent to collect input from experts |
| [**R4-2213607**](https://urldefense.proofpoint.com/v2/url?u=https-3A__www.3gpp.org_ftp_TSG-5FRAN_WG4-5FRadio_TSGR4-5F104-2De_Docs_R4-2D2213607.zip&d=DwMFAg&c=VYRDWu-sKuQrybEAJ2u-dYX_FK6X1lTrDf-PKXUa2P4&r=pRthG0xxDB77vg4aSNBQn5JOtJLs0OZjgw-oylT0McK0oow-yPNwujyHTOyyY1lN&m=WFkjlXHxUZmnO-o_rgP2617a8aR7lnk1lzhXLQayxGDBMOl-hoCYniOlNFxpu-al&s=KfW6M2VD7pxH9y7eZk-BBo3Z4TN34Yihhz9yMRMuVMc&e=) |  | Draft CR for TS 38.101-3 on updates to delta RIB for DC configurations of six bands | ZTE Corporation | agreeable | The CR is simplifying the delta RIB and delta TIB according in agreements in R17 and is needed to be implemented as soon as possible in R18 specification |
| [**R4-2213608**](https://urldefense.proofpoint.com/v2/url?u=https-3A__www.3gpp.org_ftp_TSG-5FRAN_WG4-5FRadio_TSGR4-5F104-2De_Docs_R4-2D2213608.zip&d=DwMFAg&c=VYRDWu-sKuQrybEAJ2u-dYX_FK6X1lTrDf-PKXUa2P4&r=pRthG0xxDB77vg4aSNBQn5JOtJLs0OZjgw-oylT0McK0oow-yPNwujyHTOyyY1lN&m=WFkjlXHxUZmnO-o_rgP2617a8aR7lnk1lzhXLQayxGDBMOl-hoCYniOlNFxpu-al&s=3w9wY-mBdb602vo0pMQEQ-LqPcNcIBm5gHD2ApbEj60&e=) |  | Draft CR for TS 38.101-3 on updates to delta RIB for DC configurations of five bands | ZTE Corporation | agreeable |
| [**R4-2213609**](https://urldefense.proofpoint.com/v2/url?u=https-3A__www.3gpp.org_ftp_TSG-5FRAN_WG4-5FRadio_TSGR4-5F104-2De_Docs_R4-2D2213609.zip&d=DwMFAg&c=VYRDWu-sKuQrybEAJ2u-dYX_FK6X1lTrDf-PKXUa2P4&r=pRthG0xxDB77vg4aSNBQn5JOtJLs0OZjgw-oylT0McK0oow-yPNwujyHTOyyY1lN&m=WFkjlXHxUZmnO-o_rgP2617a8aR7lnk1lzhXLQayxGDBMOl-hoCYniOlNFxpu-al&s=K0RVYLtxIaaD4_qNQKPtAubEJh25_0xHnE8lXKROZr8&e=) |  | Draft CR for TS 38.101-3 on updates to delta RIB for DC configurations of four bands | ZTE Corporation | agreeable |
| [**R4-2213610**](https://urldefense.proofpoint.com/v2/url?u=https-3A__www.3gpp.org_ftp_TSG-5FRAN_WG4-5FRadio_TSGR4-5F104-2De_Docs_R4-2D2213610.zip&d=DwMFAg&c=VYRDWu-sKuQrybEAJ2u-dYX_FK6X1lTrDf-PKXUa2P4&r=pRthG0xxDB77vg4aSNBQn5JOtJLs0OZjgw-oylT0McK0oow-yPNwujyHTOyyY1lN&m=WFkjlXHxUZmnO-o_rgP2617a8aR7lnk1lzhXLQayxGDBMOl-hoCYniOlNFxpu-al&s=nRG7E8ign0Di5BJUcRB7i9KzT-7a9X4vVtJEVFZQ4PY&e=) |  | Draft CR for TS 38.101-3 on updates to delta RIB for DC configurations of three bands | ZTE Corporation | agreeable |
| [**R4-2213611**](https://urldefense.proofpoint.com/v2/url?u=https-3A__www.3gpp.org_ftp_TSG-5FRAN_WG4-5FRadio_TSGR4-5F104-2De_Docs_R4-2D2213611.zip&d=DwMFAg&c=VYRDWu-sKuQrybEAJ2u-dYX_FK6X1lTrDf-PKXUa2P4&r=pRthG0xxDB77vg4aSNBQn5JOtJLs0OZjgw-oylT0McK0oow-yPNwujyHTOyyY1lN&m=WFkjlXHxUZmnO-o_rgP2617a8aR7lnk1lzhXLQayxGDBMOl-hoCYniOlNFxpu-al&s=1rrYMJtlc9okFnoQDXA7NgaTCf282JWIl-djnOJQDsc&e=) |  | Draft CR for TS 38.101-3 on updates to delta RIB for DC configurations of 1 band LTE and 1 band NR band | ZTE Corporation | agreeable |
| [**R4-2213612**](https://urldefense.proofpoint.com/v2/url?u=https-3A__www.3gpp.org_ftp_TSG-5FRAN_WG4-5FRadio_TSGR4-5F104-2De_Docs_R4-2D2213612.zip&d=DwMFAg&c=VYRDWu-sKuQrybEAJ2u-dYX_FK6X1lTrDf-PKXUa2P4&r=pRthG0xxDB77vg4aSNBQn5JOtJLs0OZjgw-oylT0McK0oow-yPNwujyHTOyyY1lN&m=WFkjlXHxUZmnO-o_rgP2617a8aR7lnk1lzhXLQayxGDBMOl-hoCYniOlNFxpu-al&s=oekmoY7gn4ZXruRt-s8c8e924O6IwzyRfpR-CmSugBM&e=) |  | Draft CR for TS 38.101-3 on updates to delta TIB for DC configurations of six bands | ZTE Corporation | agreeable |
| [**R4-2213613**](https://urldefense.proofpoint.com/v2/url?u=https-3A__www.3gpp.org_ftp_TSG-5FRAN_WG4-5FRadio_TSGR4-5F104-2De_Docs_R4-2D2213613.zip&d=DwMFAg&c=VYRDWu-sKuQrybEAJ2u-dYX_FK6X1lTrDf-PKXUa2P4&r=pRthG0xxDB77vg4aSNBQn5JOtJLs0OZjgw-oylT0McK0oow-yPNwujyHTOyyY1lN&m=WFkjlXHxUZmnO-o_rgP2617a8aR7lnk1lzhXLQayxGDBMOl-hoCYniOlNFxpu-al&s=mPSY6I24Dvhhb_dy2eDF2OT8C0zpGjbuENCA7U4hHkU&e=) |  | Draft CR for TS 38.101-3 on updates to delta TIB for DC configurations of five bands | ZTE Corporation | agreeable |
| [**R4-2213614**](https://urldefense.proofpoint.com/v2/url?u=https-3A__www.3gpp.org_ftp_TSG-5FRAN_WG4-5FRadio_TSGR4-5F104-2De_Docs_R4-2D2213614.zip&d=DwMFAg&c=VYRDWu-sKuQrybEAJ2u-dYX_FK6X1lTrDf-PKXUa2P4&r=pRthG0xxDB77vg4aSNBQn5JOtJLs0OZjgw-oylT0McK0oow-yPNwujyHTOyyY1lN&m=WFkjlXHxUZmnO-o_rgP2617a8aR7lnk1lzhXLQayxGDBMOl-hoCYniOlNFxpu-al&s=l0jGn9hE-U6HG6zkqEUf3fTh1z_iCbBlRyXTS0OWqJM&e=) |  | Draft CR for TS 38.101-3 on updates to delta TIB for DC configurations of four bands | ZTE Corporation | agreeable |
| [**R4-2213614**](https://urldefense.proofpoint.com/v2/url?u=https-3A__www.3gpp.org_ftp_TSG-5FRAN_WG4-5FRadio_TSGR4-5F104-2De_Docs_R4-2D2213614.zip&d=DwMFAg&c=VYRDWu-sKuQrybEAJ2u-dYX_FK6X1lTrDf-PKXUa2P4&r=pRthG0xxDB77vg4aSNBQn5JOtJLs0OZjgw-oylT0McK0oow-yPNwujyHTOyyY1lN&m=WFkjlXHxUZmnO-o_rgP2617a8aR7lnk1lzhXLQayxGDBMOl-hoCYniOlNFxpu-al&s=l0jGn9hE-U6HG6zkqEUf3fTh1z_iCbBlRyXTS0OWqJM&e=) |  | Draft CR for TS 38.101-3 on updates to delta TIB for DC configurations of three bands | ZTE Corporation | agreeable |
| [**R4-2213615**](https://urldefense.proofpoint.com/v2/url?u=https-3A__www.3gpp.org_ftp_TSG-5FRAN_WG4-5FRadio_TSGR4-5F104-2De_Docs_R4-2D2213615.zip&d=DwMFAg&c=VYRDWu-sKuQrybEAJ2u-dYX_FK6X1lTrDf-PKXUa2P4&r=pRthG0xxDB77vg4aSNBQn5JOtJLs0OZjgw-oylT0McK0oow-yPNwujyHTOyyY1lN&m=WFkjlXHxUZmnO-o_rgP2617a8aR7lnk1lzhXLQayxGDBMOl-hoCYniOlNFxpu-al&s=25hsoZkMH0kAgzlG-lsexSpymDuOh5X9QppLD0JPrgo&e=) |  | Draft CR for TS 38.101-3 on updates to delta TIB for DC configurations of 1 band LTE and 1 band NR band | ZTE Corporation | agreeable |
| [**R4-2213616**](https://urldefense.proofpoint.com/v2/url?u=https-3A__www.3gpp.org_ftp_TSG-5FRAN_WG4-5FRadio_TSGR4-5F104-2De_Docs_R4-2D2213616.zip&d=DwMFAg&c=VYRDWu-sKuQrybEAJ2u-dYX_FK6X1lTrDf-PKXUa2P4&r=pRthG0xxDB77vg4aSNBQn5JOtJLs0OZjgw-oylT0McK0oow-yPNwujyHTOyyY1lN&m=WFkjlXHxUZmnO-o_rgP2617a8aR7lnk1lzhXLQayxGDBMOl-hoCYniOlNFxpu-al&s=PpNwgOkzmWcP3Sn760jrivlhn-dORHukcgsccHiv80k&e=) |  | Draft CR for TS 38.101-3 on updates to delta TIB for DC configurations of 1 band LTE and 1 band NR band | ZTE Corporation | agreeable |
| [**R4-2213603**](https://urldefense.proofpoint.com/v2/url?u=https-3A__www.3gpp.org_ftp_TSG-5FRAN_WG4-5FRadio_TSGR4-5F104-2De_Docs_R4-2D2213603.zip&d=DwMFAg&c=VYRDWu-sKuQrybEAJ2u-dYX_FK6X1lTrDf-PKXUa2P4&r=pRthG0xxDB77vg4aSNBQn5JOtJLs0OZjgw-oylT0McK0oow-yPNwujyHTOyyY1lN&m=GLbwd4pSx1JB8rmkBi2eJRpdoDdg1NQVeumoff87XP8IO_X-9u-6REeotDWesHA6&s=QGU6Qpjxl1uCWGSQ-IiTNledty1E52h6dH9vmdqexug&e=) |  | Draft CR for TS 38.101-1 on updates to delta RIB for inter-band CA configurations of two bands | ZTE Corporation | agreeable |
| [**R4-2213606**](https://urldefense.proofpoint.com/v2/url?u=https-3A__www.3gpp.org_ftp_TSG-5FRAN_WG4-5FRadio_TSGR4-5F104-2De_Docs_R4-2D2213606.zip&d=DwMFAg&c=VYRDWu-sKuQrybEAJ2u-dYX_FK6X1lTrDf-PKXUa2P4&r=pRthG0xxDB77vg4aSNBQn5JOtJLs0OZjgw-oylT0McK0oow-yPNwujyHTOyyY1lN&m=GLbwd4pSx1JB8rmkBi2eJRpdoDdg1NQVeumoff87XP8IO_X-9u-6REeotDWesHA6&s=6Q5zNgTP6DHFqmx5Nvk3mlf8XKFU-y5-dYW4wKEnFaY&e=) |  | Draft CR for TS 38.101-1 on updates to delta TIB for inter-band CA configurations of two bands | ZTE Corporation | agreeable |
| [**R4-2213602**](https://urldefense.proofpoint.com/v2/url?u=https-3A__www.3gpp.org_ftp_TSG-5FRAN_WG4-5FRadio_TSGR4-5F104-2De_Docs_R4-2D2213602.zip&d=DwMFAg&c=VYRDWu-sKuQrybEAJ2u-dYX_FK6X1lTrDf-PKXUa2P4&r=pRthG0xxDB77vg4aSNBQn5JOtJLs0OZjgw-oylT0McK0oow-yPNwujyHTOyyY1lN&m=GLbwd4pSx1JB8rmkBi2eJRpdoDdg1NQVeumoff87XP8IO_X-9u-6REeotDWesHA6&s=0zgEZbgSNP3fCZ1pvUdYa1wOEMjPHEZ3dzGWEIDF6rM&e=) |  | Draft CR for TS 38.101-1 on updates to delta RIB for inter-band CA configurations of three bands | ZTE Corporation | agreeable |
| [**R4-2213605**](https://urldefense.proofpoint.com/v2/url?u=https-3A__www.3gpp.org_ftp_TSG-5FRAN_WG4-5FRadio_TSGR4-5F104-2De_Docs_R4-2D2213605.zip&d=DwMFAg&c=VYRDWu-sKuQrybEAJ2u-dYX_FK6X1lTrDf-PKXUa2P4&r=pRthG0xxDB77vg4aSNBQn5JOtJLs0OZjgw-oylT0McK0oow-yPNwujyHTOyyY1lN&m=GLbwd4pSx1JB8rmkBi2eJRpdoDdg1NQVeumoff87XP8IO_X-9u-6REeotDWesHA6&s=GUfPy9Syfi9hCOZP6ncBZT4BjspBrKYb6oPATDtWr20&e=) |  | Draft CR for TS 38.101-1 on updates to delta TIB for inter-band CA configurations of three bands | ZTE Corporation | agreeable |
| [**R4-2213601**](https://urldefense.proofpoint.com/v2/url?u=https-3A__www.3gpp.org_ftp_TSG-5FRAN_WG4-5FRadio_TSGR4-5F104-2De_Docs_R4-2D2213601.zip&d=DwMFAg&c=VYRDWu-sKuQrybEAJ2u-dYX_FK6X1lTrDf-PKXUa2P4&r=pRthG0xxDB77vg4aSNBQn5JOtJLs0OZjgw-oylT0McK0oow-yPNwujyHTOyyY1lN&m=GLbwd4pSx1JB8rmkBi2eJRpdoDdg1NQVeumoff87XP8IO_X-9u-6REeotDWesHA6&s=ofNmP2bHoDc-0MRKhv403Ta4y3aA25eLs1hvERd3q4w&e=) |  | Draft CR for TS 38.101-1 on updates to delta RIB for inter-band CA configurations of four and five bands | ZTE Corporation | agreeable |
| [**R4-2213604**](https://urldefense.proofpoint.com/v2/url?u=https-3A__www.3gpp.org_ftp_TSG-5FRAN_WG4-5FRadio_TSGR4-5F104-2De_Docs_R4-2D2213604.zip&d=DwMFAg&c=VYRDWu-sKuQrybEAJ2u-dYX_FK6X1lTrDf-PKXUa2P4&r=pRthG0xxDB77vg4aSNBQn5JOtJLs0OZjgw-oylT0McK0oow-yPNwujyHTOyyY1lN&m=GLbwd4pSx1JB8rmkBi2eJRpdoDdg1NQVeumoff87XP8IO_X-9u-6REeotDWesHA6&s=LAMgJ2J6jpxkYjyB-5Hho_UP9kplZkMdRVR7ajdsnuQ&e=) |  | Draft CR for TS 38.101-1 on updates to delta TIB for inter-band CA configurations of four and five bands | ZTE Corporation | agreeable |
| [**R4-2213102**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104-e/Docs/R4-2213102.zip) |  | TP for TR 38.818-02-01 to include CA\_n3-n26 | Ericsson, Telstra | To be revised | Moved from basket to add harmonic mixing MSD |
| [**R4-2213103**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104-e/Docs/R4-2213103.zip) |  | TP for TR 38.818-02-01 to include CA\_n7-n26 | Ericsson, Telstra | To be revised | Moved from basket to add harmonic mixing MSD |
| [**R4-2213108**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104-e/Docs/R4-2213108.zip) |  | TP for TR 38.818-03-01 to include CA\_n1-n7-n26 | Ericsson, Telstra | Return to | Pending lower order BC in R4-2213103 |
| [**R4-2213110**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104-e/Docs/R4-2213110.zip) |  | TP for TR 38.818-03-01 to include CA\_n3-n7-n26 | Ericsson, Telstra | Return to | Pending lower order BC in R4-2213103 |
| [**R4-2213112**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104-e/Docs/R4-2213112.zip) |  | TP for TR 38.818-03-01 to include CA\_n7-n26-n78 | Ericsson, Telstra | Return to | Pending lower order BC in R4-2213103 |
| [**R4-2213113**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104-e/Docs/R4-2213113.zip) |  | draft CR 38.101-1 to add new NR CA combinations | Ericsson, Telstra | Return to | Pending lower order BC in R4-2213103 |
| [**R4-2213126**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104-e/Docs/R4-2213126.zip) |  | TP for 38.718-02-01 CA\_n3A-n41C with UL\_n41C | Huawei, HiSilicon | To be revised | Clarify IMD9 intra ULCA MSD and request |

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** | **Revised to** | **Title** | **Source** | **Recommendation**  | **Comments** |
| R4-2214425 |  | WF on band combinations request and fallback rules | Apple, Huawei, Nokia, Samsung |  |  |
| R4-2214426 |  | WF on triple beat MSD of UL DC\_3C\_n28A | Huawei, HiSilicon |  |  |
| RevR4-2213102 | R4-2214427 | TP for TR 38.818-02-01 to include CA\_n3-n26 | Ericsson, Telstra |  |  |
| RevR4-2213103 | R4-2214428 | TP for TR 38.818-02-01 to include CA\_n7-n26 | Ericsson, Telstra |  |  |
| RevR4-2213126 | R4-2214429 | TP for 38.718-02-01 CA\_n3A-n41C with UL\_n41C | Huawei, HiSilicon |  |  |
| [**R4-2213108**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104-e/Docs/R4-2213108.zip) |  | TP for TR 38.818-03-01 to include CA\_n1-n7-n26 | Ericsson, Telstra |  |  |
| [**R4-2213110**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104-e/Docs/R4-2213110.zip) |  | TP for TR 38.818-03-01 to include CA\_n3-n7-n26 | Ericsson, Telstra |  |  |
| [**R4-2213112**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104-e/Docs/R4-2213112.zip) |  | TP for TR 38.818-03-01 to include CA\_n7-n26-n78 | Ericsson, Telstra |  |  |
| [**R4-2213113**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104-e/Docs/R4-2213113.zip) |  | draft CR 38.101-1 to add new NR CA combinations | Ericsson, Telstra |  |  |

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