3GPP TSG-RAN WG2 #119-e R2-22xxxxx

Electronic meeting, 17th – 29th August 2022

Agenda Item: 6.4.2

Source: Ericsson

Title: Summary of [AT119-e][017][IAB17] Control Plane

Document for: Discussion, Decision

# 1 Introduction

This paper addresses the following email discussion:

* [AT119-e][017][IAB17] Control Plane (Ericsson)

Scope: Treat R2-2206929, R2-2206935, R2-2207190, R2-2207783, R2-2208642, R2-2208101,

Determine agreeable parts. For agreeable parts, agree CRs.

Intended outcome: Report, Agreed CRs, Reply LS if applicable

Deadline: Schedule 1

According to the schedule:

A first round with Deadline for comments W1 Friday Aug 19th 1400 UTC to settle scope what is agreeable etc.

A final round with Final deadline W2 Thursday Aug 25th 1200 UTC to settle details / agree CRs etc.

# 2 Contact information

|  |  |  |
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# 3 Discussion of control plane contributions

## 3.1 [R2-2208101](http://www.3gpp.org/ftp//tsg_ran/WG2_RL2/TSGR2_119-e/Docs/%0dR2-2208101.zip) – Rapporteur miscellaneous RRC corrections

The CR includes few miscellaneous editorial corrections. Companies are invited to comment on the proposed changes plus suggest more, if identified:

**Q1**: Do companies agree with the changes proposed in R2-2208101?

|  |  |  |
| --- | --- | --- |
| Company | Yes/No | Detailed comments |
| Huawei, HiSilicon | Yes |  |
| Ericsson | Yes |  |
| LGE | Yes |  |
| Samsung | Yes |  |
| Intel | Yes |  |
| Qualcomm | Yes |  |
| ZTE | Yes |  |
| Nokia | Yes | But editorial (Cat D) can be considered, otherwise merging with more essential changes |

**Rapporteur summary**: According to the comments, the CR is basically fine. Will be used also as baseline for incorporating the other agreed changes.

1. The CR is R2-2208101 is agreeable and used as baseline for incorporating the rest of the agreed changes.

## 3.2 [R2-2207190](http://www.3gpp.org/ftp//tsg_ran/WG2_RL2/TSGR2_119-e/Docs/%0dR2-2207190.zip) – Correction on the release of BAP configuration

The CR proposes to clarify that when bap-Config is set to release the UE should release the BAP configuration.

Rapporteur´s view:

Rapporteur notes that the *bap-config* is a setup/release type, and thus it seems obvious that when the UE receives a release indication for a CG, the UE should release the BAP configuration previously configured in that CG. Since the release happens already for a parent UE, it does not seem necessary to specify it also for a child IE.

Rapporteur also notes that the original intention of the legacy text was to clarify that the UE should not release the entire BAP entity if there is a BAP configuration still configured in the MCG or SCG.

**Q2**: Do companies agree that the changes proposed in R2-2207190 are not necessary?

|  |  |  |
| --- | --- | --- |
| Company | Yes/No | Detailed comments |
| Huawei, HiSilicon | Yes (CR is not needed) | It is already clear if you set the Setup/Release field as “release”, as mentioned by rapporteur. |
| Ericsson | Yes |  |
| LGE | No | The change may be helpful to clarify bap-Config release behaviour. |
| Samsung | No | The change helps and makes consistency in the spec. |
| Intel | See comment | Agree with the intention, but we have a comment on the change.  Current change will seem to imply to release all bap-config for both MCG and SCG, which is not intended. Suggest to add some descritption/clarification (e.g. “corresponding”) after bap-Config to clarify which one to be released. |
| Qualcomm | Yes (not necessary) |  |
| ZTE | No | Without this change, the BAP entity can not be really released. It is suggested to add the release of bap-config description when the *bap-Config* is set to *release,* which help to make the specification clear without ambiguity. |
| Nokia | See comment | Seems helpful and resolves potential ambiguity |

**Rapporteur summary**: According to the input received, there is a slight majority to have this clarification. However, as correctly pointed out by one company a further clarification is needed in order to mention that only the bap-Config related to the concerned cell group should be released. The rapporteur will try to formulate a suitable clarification in the Rapporteur’s CR.

1. The intention of CR in R2-2207190 is agreeable and actual change can be discussed in phase 2.

## 3.3 [R2-2207783](http://www.3gpp.org/ftp//tsg_ran/WG2_RL2/TSGR2_119-e/Docs/%0dR2-2207783.zip) – Corrections on availabilityCombinations and IAB-ResourceConfig for eIAB

The CR includes two proposed changes:

1. If the new table availabilityCombinationsRBGroups-r17 is configured, the legacy availabilityCombinations table configuration should be ignored
2. It is proposed to clarify in the field description of slotListSubcarrierSpacing that the new Rel.17 IAB MAC CEs only applies to the BWP with the same subcarrier spacing as this field, associated with the IAB-ResourceConfigID included in the MAC CE

Rapporteur´s view:

*On the first change*: RAN1 agreed in RAN1#109 that “An IAB node can be configured with two availabilityCombinations tables, one for TDM and one for FDM”.

There is no RAN1 agreement saying that the new FDM availabilityCombination tables (provided in availabilityCombinationsRBGroups-r17) should override the legacy TDM availabilityCombination tables (provided in the legacy availabilityCombinations). Rapporteur´s view is that if a slot applies TDM H/S/NA, the legacy TDM availabilityCombination table should be used; if a slot applies FDM H/S/NA, the new Rel.17 FDM availabilityCombination table (in availabilityCombinationsRBGroups-r17) should be used. Right now, there seems to be no RAN1 agreement supporting the proposed correction.

*On the second change*: Rapporteur´s note that the IAB-ResourceConfig is for the sake of DU operations not for the sake of MT operations. Since the RRC specification is written from the point of view of the UE/MT, this change would imply that the MT needs to do something, but this would not be correct. In our view, the IAB resource configurations just provide a bunch of possible configurations that are activated via the MAC CE. Obviously, the DU will make sure to apply a configuration which is compatible with the BWP in use towards a UE. There seems to be no need to specify DU behaviours in RRC specifications.

**Q3**: Do companies agree that the changes proposed in R2-2207783 are not necessary?

|  |  |  |
| --- | --- | --- |
| Company | Yes/No | Detailed comments |
| Huawei, HiSilicon | No (some clarification is needed) | 1st change: when rb-SetGroups-r17 is absent in availabilityCombinationsRBGroups-r17, it becomes TDM.  AvailabilityCombination-r16 ::= SEQUENCE {  availabilityCombinationId-r16 AvailabilityCombinationId-r16,  resourceAvailability-r16 SEQUENCE (SIZE (1..maxNrofResourceAvailabilityPerCombination-r16)) OF INTEGER (0..7)  }  AvailabilityCombinationRB-Groups-r17 ::= SEQUENCE {  availabilityCombinationId-r17 AvailabilityCombinationId-r16,  rb-SetGroups-r17 SEQUENCE (SIZE (1..maxNrofRB-SetGroups-r17)) OF RB-SetGroup-r17 OPTIONAL, -- Need R  resourceAvailability-r17 SEQUENCE (SIZE (1..maxNrofResourceAvailabilityPerCombination-r16)) OF INTEGER (0..7) OPTIONAL -- Need R  }  So, it is not clear for IAB on how to handle the mandatory availabilityCombinations-r16 and the availabilityCombinationsRBGroups-r17 if not including rb-SetGroups-r17.  2nd change: “*the DU will make sure to apply a configuration which is compatible with the BWP in use towards a UE.*” But different BWP may have the same or different SCS. IAB-node should not apply the MAC CE to the BWP with different SCS as slotListSubcarrierSpacing in IAB-ResourceConfig. |
| Ericsson | Yes | We already expressed our view but we are open for discussion on whether some clarification is needed. |
| LGE | Yes | Agree with rapporteur’s analysis. Change may not be needed. |
| Samsung | Yes | Proposed CR seems to clarify the situation which can be allowed in the signalling, but the smart network will handle appropriately, and rapporteur explain this case. We have the similar view with rapporteur. |
| Intel | OK to clarify |  |
| Qualcomm | Yes for 1st change; No for 2nd change | * Support the 1st change: “*if availabilityCombinationsRBGroups-r17 is configured, the availabilityCombinations-r16 is to be ignored*”. Note that the Rel-17 configuration is flexible to cover all different cases: TDM only, FDM only, mixed TDM/FDM across different availabilityCombinationIds, therefore, if Rel-17 configuration is present, it should override the Rel-16 mandatory configuration. * Regarding Huawei’s above comment on “*when rb-SetGroups-r17 is absent in availabilityCombinationsRBGroups-r17, it becomes TDM*”, this is true only if rb-SetGroups-r17 is absent for each availabilityCombinationId. The Rel-17 configuration can support the mixed case cross different availabilityCombinationIds, where the configuration for some availabilityCombinationIds (without *rb-SetGroups-r17*) reduces to TDM while the configuration for other availabilityCombinationIds (with *rb-SetGroups-r17*) is FDM.   The IAB-ResourceConfig specifies the applicable slot indices with respective to the indicated SCS. The IAB-DU can derive the corresponding applicable slot indices for a BWP with a different SCS, and there is no need to restrict applicable BWP with same SCS. |
| ZTE | Yes | Agree with rapporteur’s analysis. |
| Nokia |  | Our thinking was that some clarification maybe helpful. Also alternatively, it could be clarified on the field: availabilityCombinationsRBGroups-r17 - that the “r-17” applies when configure, while the r-16 version would become self-explanatory for the node |

**Rapporteur summary**: According to the input received, is seems that this CR does not have convergence. There is an equal number of companies that believe that the changes proposed in R2-2207783 while the same number of companies believe that a clarification is needed, even if not strictly what is proposed in the CR. Given this input, the rapporteur suggestion would be to rely on IAB-node implementation to solve this issue, given also that the handling of the *availabilityCombination* fields should be clear from the RAN1 spec.

1. The CR in R2-2207783 is not pursued (we rely on IAB-node implementation for the handling of the *availabilityCombination* field(s), and IAB-node implementation to derive the corresponding applicable slot indices for a BWP with a different SCS as slotListSubcarrierSpacing in IAB-ResourceConfig.).

## 3.4 [R2-2208642](http://www.3gpp.org/ftp//tsg_ran/WG2_RL2/TSGR2_119-e/Docs/%0dR2-2208642.zip) - Corrections to the AI index configuration

The CR proposes to introduce a new positionInDCI-AI-RBGroups which is applicable only to the new configuration provided in the availabilityCombinationsRB-Groups table.

Rapporteur´s view:

As indicated in the LS R2-2206929 (second agreement indicated therein), RAN1 agreed in RAN1#109 that “if an IAB node is configured with two availabilityCombinations tables, both shared and separate AI index fields are supported by introducing positioninDCI-AI-rel17”. According to this, the current RAN2 specification just includes the legacy positionInDCI-AI-r16, hence it is NOT aligned with the above RAN1 agreement. The CR in R2-2208642 proposes to align the specification with the second RAN1 agreement in the LS R2-2206929

**Q4**: Do companies agree that the changes proposed in R2-2208642 are not necessary?

|  |  |  |
| --- | --- | --- |
| Company | Yes/No | Detailed comments |
| Huawei, HiSilicon | Maybe (CR is not needed) | The change seems too late, since the spec also works with only shared AI index.  We are thinking in R1 spec the max value is still INTEGER(0..maxAI-DCI-PayloadSize-1-r16), which is not extended. So, adding one more IE is actually not useful, unless we change the R1 spec. |
| Ericsson | NO (CR is needed) | RAN1 agreed in RAN1#109 that “if an IAB node is configured with two availabilityCombinations tables, both shared and separate AI index fields are supported by introducing positioninDCI-AI-rel17”  The current RAN2 specification just includes the legacy positionInDCI-AI-r16. Hence from the current specification it is not clear whether the positionInDCI-AI-r16 can be applied in some cases to both the legacy table availabilityCombinations-r16 and to the new Rel.17 availability combination table availabilityCombinationsRB-Groups-r17. Additionally, in case the AI index should not be shared, it is not clear which AI index should be adopted for the new Rel.17 availability combination table availabilityCombinationsRB-Groups-r17 |
| LGE | No | Change may be needed to capture RAN1 agreement properly. |
| Samsung | No | If this is wrongly captured, we think the CR is needed. |
| Intel | OK to have the CR |  |
| Qualcomm | Not necessary | Though RAN1 agreed to support both shared and separate AI index fields, we didn’t see much benefits with new AI index field of “positioninDCI-AI-rel17”. |
| Nokia |  | Change maybe needed |

**Rapporteur summary**: According to the input received, there is a good majority of companies that believe that the clarification is necessary.

1. The CR is R2-2208642 is agreeable and merged in the Rapporteur’s CR.

# 4 Handling of received LSs

RAN2 received two LSs by RAN1 in [R2-2206929](http://www.3gpp.org/ftp//tsg_ran/WG2_RL2/TSGR2_119-e/Docs/%0dR2-2206929.zip) and by RAN4 in [R2-2206935](http://www.3gpp.org/ftp//tsg_ran/WG2_RL2/TSGR2_119-e/Docs/%0dR2-2206935.zip). However, rapporteur thinks that both LSs can be noted as in one RAN2 is only in Cc, and in the other previous contribution already address the new RAN1 agreements.

**Q5**: Do companies agree to note LSs in R2-2206929 and R2-2206935 (no reply needed)?

|  |  |  |
| --- | --- | --- |
| Company | Yes/No | Detailed comments |
| Huawei, HiSilicon | Yes |  |
| Ericsson | Yes |  |
| LGE | Yes | No reply is needed. |
| Samsung | Yes |  |
| Intel | Yes |  |
| Qualcomm | Yes |  |
| ZTE | Yes |  |

1. The LSs in R2-2206929 and R2-2206935 are noted.

# 5 Conclusion

Based on the discussion in the previous sections we propose the following:

[Proposal 1 The CR is R2-2208101 is agreeable and used as baseline for incorporating the rest of the agreed changes.](#_Toc112227882)

[Proposal 2 The intention of CR in R2-2207190 is agreeable and actual change can be discussed in phase 2.](#_Toc112227883)

[Proposal 3 The CR in R2-2207783 is not pursued (we rely on IAB-node implementation for the handling of the *availabilityCombination* field(s), and IAB-node implementation to derive the corresponding applicable slot indices for a BWP with a different SCS as slotListSubcarrierSpacing in IAB-ResourceConfig.).](#_Toc112227884)

[Proposal 4 The CR is R2-2208642 is agreeable and merged in the Rapporteur’s CR.](#_Toc112227885)

[Proposal 5 The LSs in R2-2206929 and R2-2206935 are noted.](#_Toc112227886)