3GPP TSG-RAN WG2 Meeting #119 electronic R2-2208906

Online, August, 2022

Agenda Item: 6.17.2

Source: Ericsson

Title: [Pre119-e][002][feMIMO] RRC centric summary (Ericsson)

Document for: Discussion, Decision

# Incoming LS

RAN2 received the following LS R2-2206926 from RAN1:

RAN1 would like to inform RAN2 of the following agreements made in RAN1#109-e.

**2. Agreements**

***Agreement***

*To introduce RRC parameter “additionalPCI-r17” in “PUSCH-PathlossReferenceRS”.*

*-     additionalPCI-r17 can be optionally configured only when the PL-RS is SSB.*

This was already taken into account in RAN2#118 and is in TS 38.331:

PUSCH-PathlossReferenceRS-v1710 ::= SEQUENCE {

 pusch-PathlossReferenceRS-Id-r17 PUSCH-PathlossReferenceRS-Id-r17,

 additionalPCI-r17 AdditionalPCIIndex-r17 OPTIONAL -- Need R

}

That is, LS can be noted.

# RRC centric corrections

R2-2207127 M Clarification on search space link id and others OPPO

Summary of change:

Change 1:
To correct the field description of p0-PUSCH-SetList2 so that when this parameter is configured, p0-PUSCH-SetLis is associated with 1st SRS resource set

Change 2:
To remove the reference to 2nd SRI in the field description of sri-PUSCH-MappingToAddModList

Change 3:
To align the definition of SearchSpaceLinkingId to what is specified in section 10.1 of 38213 including the parameter name

Change 4:
To define maxNrofSearchSpacesLinks-1-r17 as the same as maxNrofSearchSpaces-1 i.e. 39

Change 1 seems editorial and fine. Also Change 2 seems noncontroversial..

1. RAN2 to agree to adopt Change 1 and 2 from R2-2207127

Change 3 suggests ASN.1 change. Rapporteur view is that the Change 3 does not change anything technically and would be an equal editorial change in 38.213. Further the field name SearchSpaceLinkingId in 38.331 is more descriptive than SearchSpaceLinking and the current description also seems better. It is suggested that the change is adopted in 38.213 and RAN2 can send LS to RAN1 on this if needed.

1. RAN2 to agree not to adopt Change 3 from R2-2207127 and discuss whether LS to RAN1 is needed.

Change 4 suggests to define maxNrofSearchSpacesLinks-1-r17 as 39 which is same as maxNrofSearchSpaces-1. The same had been adopted in rapporteur input CR in R2-2207923. However, probably half of that ID space could be enough to link each search space to another search space. That is 20 could be enough.

1. RAN2 to discuss the value for maxNrofSearchSpacesLinks-1-r17, either 39 or 20.

R2-2207369 M Correction on 38.331 for feMIMO Langbo

The following changes are made:

* Delete the *BeamFailureRecoverySCellConfig IE* and *BeamFailureRecoveryServingCellConfig IE* in Contents part.
* Change *candidateBeamRSList2* to *candidateBeamRS-List2.*
* Change *BeamfailureRSConfig* to *BeamFailureRecoveryRSConfig.*SRS resource configured to follow the unified TCI state. This can be (1) aperiodic SRS for BM (2) Any time domain behaviour of SRS for CB/NCB/Ant Switching

The first change is something only Juha has control over. This was pointed out earlier by CATT and has been communicated to Juha. Second and third change are editorial and can be taken into account in next rapporteur RRC CR update.

1. RAN2 to agree on editorial Change 2 and 3 from R2-2207369.

R2-2207773 M Miscellaneous RRC corrections for feMIMO CATT

Summary of change:

Clarify BeamFailureRecoveryRSConfig could be used only when two BFD RS sets are configured for SpCell in BWP-DownlinkDedicated IE.

Change “csi-rs” to “csi-RS-Index” in explanation of cond CSI-RSorSRS-Indicated.

Add the following clarification in the field description of field unifiedTCI-StateType.

“Network should not configure the field in the serving cell that are configured with a BWP with two different values for the coresetPoolIndex.”

Correct “additionalPCIList” to “additionalPCI-ToAddModList” in field description of additionalPCI-ToAddModList, servingAdditionalPCIList and failureDetectionSet1, failureDetectionSet2.

Correct “candidateBeamRSList2” to “candidateBeamRS-List2” and correct “BeamfailureRSConfig” to “BeamFailureRecoveryRSConfig” in field description of “additionalPCI ” in RadioLinkMonitoringConfig field descriptions.

Add “-r17” for “beamfailure” and “BeamFailureDetection” in RadioLinkMonitoringConfig IE.

Changes in the CR seem all noncontroversial and suggestion is to agree on those.

1. RAN2 to agree to adopt the changes in R2-2207773

R2-2207810 M Clarification on the initial state of BFD RS Xiaomi

Summary of change:

Alternative 1: The gNB can indicate the activation state (i.e. activated/deactivated) of the BFD-RS via RRC.

Alternative 2: The BFD-RS configured in failureDetectionSet1-r17 and failureDetectionSet2-r17 is activated when when the number of BFD-RS configured per Set is less than or equal to 2.

Addition of parameter suggested in alternative 1 does not seem needed. Discuss further the Alternative 2 and discuss in which specification this should be captured.

1. RAN2 to discuss further how to capture the initial activated state for RSs in failureDetectionSet1-r17 and failureDetectionSet2-r17.

R2-2208557 M CR on 38.331 for TCI-state ZTE Corporation,Sanechips

Summary of change: 1: Correct the field description of addtionalPCI in TCI-state as ‘The SSB present in each QCL-Info refers to a cell identified by this field that is associated with the serving cell identified by cell in each QCL-Info.’

2: Correct the field description of the cell as ‘The UE's serving cell in which the referenceSignal is configured. If the field is absent, it applies to the serving cell in which the TCI-State is configured. The RS can be located on a serving cell other than the serving cell in which the TCI-State is applied only if the qcl-Type is configured as typeC or typeD. See TS 38.214 [19] clause 5.1.5.’

The Change 1 seems ok. Additionally, seems -r17 is missing from PUSCH-PathlossReferenceRS-Id:

TCI-State ::= SEQUENCE {

 tci-StateId TCI-StateId,

 qcl-Type1 QCL-Info,

 qcl-Type2 QCL-Info OPTIONAL, -- Need R

 ...,

 [[

 additionalPCI-r17 AdditionalPCIIndex-r17 OPTIONAL, -- Need R

 pathlossReferenceRS-Id-r17 PUSCH-PathlossReferenceRS-Id OPTIONAL, -- Cond JointTCI

 ul-powerControl-r17 Uplink-powerControlId-r17 OPTIONAL -- Cond JointTCI

 ]]

}

1. RAN2 to adopt Change 1 from R2-2208557 and add -r17 to PUSCH-PathlossReferenceRS-Id in IE TCI-State.

The Change 2 needs to be checked with RAN1. Either RAN2 sends LS to RAN1 or waits for RAN1 discussion on this. This discussion should be combined with discussion needed on Change 3 of R2-2208558(next CR)

1. RAN2 to discuss whether to send LS to RAN1 on checking the field description of “cell” in IE QCL-Info and “servingCellId” in IE TCI-UL-State.

R2-2208558 M CR on 38.331 for TCI-UL-state ZTE Corporation,Sanechips

Summary of change: 1: Correct the description of TCI-UL-State as ‘The IE TCI-UL-State indicates the TCI state information for UL transmission’

2: Correct the field description of addtionalPCI in TCI-UL-state as’ The SSB identified by the present ssb-Index-r17 refers to a cell identified by this field, this field is associated with the serving cell identified by seringCellId-r17.’

3:Correct the field description of servingCellId as ‘The UE's serving cell in which the referenceSignal is configured. If the field is absent, it applies to the serving cell in which the TCI-UL-State is configured.’

4: Correct the field description of the ‘ul-powerControl’ as ‘Configures power control parameters for PUCCH, PUSCH and SRS for this TCI state. The field is present here only if ul-powerControl is not configured in any BWP-Uplink-Dedicated of the serving cell where the TCI-UL-State is applied.’

Change 1 seems correct.

1. RAN2 to adopt Change 1 from R2-2208558

Change 2 seems not to be needed as the existing is correct. The field additionalPCI does give the PCI of the SSB.

1. RAN2 not to adopt Change 2 from R2-2208558

Change 3 needs RAN1 discussion with respect to deleting the restriction. Editorials of change 3 should be adopted.

1. RAN2 to adopt two first editorials of Change 3 from R2-2208558. Removal of the restriction to be discussed separately (see Prop 8)

Change 4 is related to Proposal 3 of next paper R2-2208652. It is suggested to discuss together, see Proposal

R2-2208652 M FeMIMO RRC corrections Huawei, HiSilicon

Proposal 1: Add the field followUnifiedTCIstate in PDCCH-ConfigCommon to indicate whether the UE applies the "indicated" DL only TCI state or joint TCI state when receiving PDCCH in CORESET 0.

Proposal 2: Change the need code from Need R to Need S for alpha-r17. In Uplink-PowerControl field description, clarify:

a) When the field alpha-r17 is absent in p0AlphaSetforPUSCH, the UE applies the value 1 for PUSCH power control.

b) When the field alpha-r17 is absent in p0AlphaSetforSRS, the UE applies the value 1 for SRS power control.” in Uplink-PowerControl field description.

Proposal 3: RAN2 support the configuration that ul-powerControl-r17 is present in some TCI states and is absent in other TCI states.

Proposal 4: Rename twoPHRModeSCG-r17 to twoPHRModeMCG-r17, and revise the field description accordingly.

Proposals 1 and 2 seem correct and it is suggested to be adopted.

1. RAN2 to agree Proposals 1 and 2 of R2-2208652.

Discuss further Proposal 3 taking into account also Change 4 from R2-2208558

1. RAN2 to discuss ul-powerControl-r17 configuration based on Prop 3 of R2-2208652 and Change 4 from R2-2208558.
2. RAN2 to discuss whether rename twoPHRModeSCG-r17 to twoPHRModeMCG-r17.

# Conclusion

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

[Proposal 1 RAN2 to agree to adopt Change 1 and 2 from R2-2207127](#_Toc111556383)

[Proposal 2 RAN2 to agree not to adopt Change 3 from R2-2207127 and discuss whether LS to RAN1 is needed.](#_Toc111556384)

[Proposal 3 RAN2 to discuss the value for maxNrofSearchSpacesLinks-1-r17, either 39 or 20.](#_Toc111556385)

[Proposal 4 RAN2 to agree on editorial Change 2 and 3 from R2-2207369.](#_Toc111556386)

[Proposal 5 RAN2 to agree to adopt the changes in R2-2207773](#_Toc111556387)

[Proposal 6 RAN2 to discuss further how to capture the initial activated state for RSs in failureDetectionSet1-r17 and failureDetectionSet2-r17.](#_Toc111556388)

[Proposal 7 RAN2 to adopt Change 1 from R2-2208557 and add -r17 to PUSCH-PathlossReferenceRS-Id in IE TCI-State.](#_Toc111556389)

[Proposal 8 RAN2 to discuss whether to send LS to RAN1 on checking the field description of “cell” in IE QCL-Info and “servingCellId” in IE TCI-UL-State.](#_Toc111556390)

[Proposal 9 RAN2 to adopt Change 1 from R2-2208558](#_Toc111556391)

[Proposal 10 RAN2 not to adopt Change 2 from R2-2208558](#_Toc111556392)

[Proposal 11 RAN2 to adopt two first editorials of Change 3 from R2-2208558. Removal of the restriction to be discussed separately (see Prop 8)](#_Toc111556393)

[Proposal 12 RAN2 to agree Proposals 1 and 2 of R2-2208652.](#_Toc111556394)

[Proposal 13 RAN2 to discuss ul-powerControl-r17 configuration based on Prop 3 of R2-2208652 and Change 4 from R2-2208558.](#_Toc111556395)

[Proposal 14 RAN2 to discuss whether rename twoPHRModeSCG-r17 to twoPHRModeMCG-r17.](#_Toc111556396)