**3GPP TSG-RAN WG2 Meeting #109bis-e R2-20xxxx**

**20-30 April 2020**

**Agenda item: 6.2.1**

**Source: Qualcomm Incorporated**

**Title: [AT109bis-e][501][NR-U] CP Open and ASN.1 Issues (Qualcomm)**

**Document for: Discussion and decision**

# Introduction

This document will capture the open issues and suggested solutions identified during the following email discussion:

* [AT109bis-e][501][NR-U] CP Open and ASN.1 Issues (Qualcomm)

Scope:

* + - Identify/Summarize all remaining/identified CP and ASN.1 issues

Intended outcome:

* + - Set of proposals to agree by email
    - CR capturing agreements from week1 and then week2

Deadline for providing comments:

* + - Companies input: April 22nd
    - Rapporteur proposals: April 23rd
    - CR capturing agreements: April 27th

The open issues in R2-2002846 are copied here after taking into account the agreements during the first online session on April 20th 2020. The issues which were addressed in CR1528Rev0 and which were recommended to be moved to ASN.1 are not shown here as they are considered complete.

Additional issues come from submitted contributions to RAN2#109bis-e.

A format similar to the one used in ASN.1 discussion was used to enable merging with the list in that discussion. The guidelines for reporting issues are as follows:

**[Issue #]**: U + 3 digits

**[Class]**: Shall be set to value 2 or 3.

1. **Trivial** e.g. editorials, commas, colon, misspelling, missing/ double spaces, italics etc.   
   See procedure for Class 0 and Class 1 issues below.
2. **Minor** e.g. quite straightforward changes e.g. correction/ addition of specification references or sub-clauses.  
   See procedure for Class 0 and Class 1 issues below.
3. **ASN.1 session** **issue** e.g. ASN.1 issue e.g. related to need codes, extensibility, alternative encoding, ASN.1/ guidelines, general protocol (consistency) issue or issue affecting more than one WI
4. **WI session issue i**.e. an issue that is not purely ASN.1 but has some impact on functionality but only affecting a single WI.

# Open issues for NR RRC

| **Issue number** | **Company** | **Subclause** | **IE name** | **Class** | **Description/**  **correction** | **Status** |
| --- | --- | --- | --- | --- | --- | --- |
| U506 | Samsung | 6.3.2 | MeasObjectNR | 2 | the field rmtc-SubframeOffset-r16 does not have to be optional: it should be mandatory | Open.  **Rapporteur:** This was optional for LAA. However, it was optional for inter-frequency case due to the following statement “For inter-frequency measurements, this field is optional present and if it is not configured, the UE chooses a random value as *rmtc-SubframeOffset* for *measDuration* which shall be selected to be between 0 and the configured *rmtc-Period* with equal probability.”. RAN2 should discuss whether the same applies to NR-U.  [MTK]: This issue needs to be resolved. We are okay with either Samsung’s or rapporteur’s proposal.  [HW] We are fine the the proposal by rapporteur.  [Samsung] We are also fine with the proposal by rapporteur (our comment was purely from ASN.1 perspective to avoid unnecessary signaling overhad).  **Ericsson:**  We prefer to follow LTE-LAA. The above field description from TS 36.331 for *rmtc-SubframeOffset* should also be included in 38.331, but the part with *measDuration* is a bit confusing: the UE chooses a random value as *rmtc-SubframeOffset* ~~for~~ *~~measDuration~~* which shall be selected to be between 0 and the configured *rmtc-Periodicty.*  The statement in clause 5.5.2.10a is too vague and can potentially be ‘moved’ with above clarification to the field description.  Summary: I was informed by my RAN4 collegaue that RAN4 is already defining inter-freq RSSI measurements. So we can follow LAA baseline w/ RAN4 way-forward and keep this IE optional while extending RSSI/CO measurement to inter-frequency. |
| U510 | Samsung | 6.3.2 | BWP-UplinkDedicated | 2 | The field ‘useInterlacePUCCH-PUSCH-r16’ should be possible to release: can be changed to BOOLEAN with need M. | Open.  **Rapporteur:** It is not clear if waveform change dynamically is feasible or preferable as use of interlaced waveform is usually due to regulation (occupied bandwidth and power) and thus static in a region (at least in a given cell during the connection duration). Will also need RAN1/RAN4 input.  **Nokia:** It would not hurt to have this as optional to ensure it can be released if in some scenario it would be needed. Changing later to optional would be cumbersome.  [HW] We would like to calrify here this parameter is not fur the waveform configuration, but for the UL resource allocation mode. After clarification with RAN1 colleagues, this configuration does not need dynamic change. So we think the previous configuration with need m is OK.  **Ericsson:**  According to our RAN1 colleagues, the chosen configuration depends on the required cell coverage, and thus, will not change dynamically.  So ENUMERATED Need M is fine.  Summary: Based on the feedback, no changes to this IE is needed. |
| U514 | MTK | 6.3.1 | SIB2, SIB4 | 2 | Our understanding is that Q is always needed for measurements on an NR-U cell. However in RRC CR, it appears to be optional (perhaps because it’s not needed for licensed operation).  To make it clear that Q always needs to be uccessfu for an NR-U cell/frequency, perhaps “ssb-PositionQCL-Common-r16” in SIB2, SIB4 and MeasObjectNR should be made **“Cond Mandatory” (mandatory for NR-U)** for NR-U. Without mandatory configuration value of Q, a NR-U UE might not be able to correctly combine measurements from detected SSBs, which would affect RRM. | Open  [MTK]: See comments and explanation in U515.  **Ericsson:** see below |
| U515 | MTK | 6.3.2 | MeasObjectNR | 2 | Open  **Rapporteur:** According to 38.213, it doesn’t have to be signalled for cell access as below. However, this should be discussed for measobject where the UE does not have to read neighbour MIB. An alternative for measobject is also to have a default value (8) when not signalled.  and is either provided by *ssbPositionQCL-Relationship-r16* or, if *ssbPositionQCL-Relationship-r16* is not provided,obtained from a *MIB* provided by a SS/PBCH block according to Table 4-1. for cell access  [MTK]: We agree with rapporteur’s comments that Q is not needed for cell access. The case we are discussing (U514 and U515) are neighbour cell measurements. As explained in R2-2002719, neighbour cell measurements in shared spectrum is not possible without a value of Q. In this case,we suggest that Q is provided in the neighbor list, so that UE doesnot have to read broadcast information of neighbor cells to perform measurements. Thus, for measurements this Q value should be always provided in neighbor cell list for NR-U.  The rapporteur’s suggestion to have a default value will work but is inefficient as it will delay neighbour cell measurements.  [HW] We tend to agree with MTK’s comment that Q is not needed for initial access. But for measurement it is still needed. We also got to know from our RAN1 colleagues that RAN1 is discussing about default value for this and when the field is not configured the default value is set to 8. Maybe more companies can double check on this.  **Ericsson:**  Agree with rapporteur that these fields are optional according to RAN1 agreements and about the **default value o**f 8 if the parameter is not provided (we confirm that this is discussed in RAN1) .  Making them mandatory would revert RAN1 agreements. It should be left to the gNB to signal the Q value for a neighbor cell.  Summary: Based on the feedback, the IE for signalling of Q is kept optional. It is added to the field description that the UE assumes “8” when not signalled. |
| U528 | Ericsson | 6.3.2 | ***ra-ResponseWindow*** | 3 | ***ra-ResponseWindow***  Msg2 (RAR) window length in number of slots. The network configures a value lower than or equal to 10 ms when ra-ResponseWindow (without suffix) is configured and 40 ms when ra-ResponseWindow-r16 is configured (see TS 38.321 [3], clause 5.1.4). UE ignores the field if included in *SCellConfig*. If *ra-ResponseWindow-r16* is signalled, the UE shall ignore the *ra-ResponseWindow* (without suffix).  - The new parameter has been introduced exactly for extending the RAR window. Therefore, we propose to make the value range dependent on the used parameter version rather than link it to the spectrum | Open  [MTK]: The current description text is correct and therefore the suggested change is not needed.  [HW] we are fine with the current spec. The wording of shared/licensed spectru has been used in the spec quite a lot and there is no confusion for that.  **Ericsson:**  We think that configurations should be band-agnostic when possible and that it is cleaner to make behaviors dependent on provided parameters. This would follow general RRC convention when introducing a new release specific version of a parameter. Then it could also be configured also for other purposes (2-step RACH already has its separate configuration, but it may useful for future enhancements).  [Samsung] Object: RAR window extension should be there only for unlicensed spectrum and for 2 step RA, but not for other cases. So this should be clearly indicated in field description, as in the current text.  Summary: Based on the feedback, no changes to the field description of ra-ResposeWindow. |
| U538 | Ericsson | 6.3.2 | SearchSpace | 3 | Search space switching has to be configured also for Type-3 CSS. Currently only defined for USS. freqMonitorLocations is not limited to USS, either. | Open.  **Rapporteur:** Problem is valid so we need to move these IEs from USS to make it applicable to both USS and CSS. Suggested option is to put searchSpaceGroupIdList-r16 and freqMonitorLocations-r16 in SearchSpace-v16xy. RRC rapporteur is fine with this and he will take care of this once the agreement is reached here.  **Nokia**: TYPE-3 CSS is configured UE-specifically. So it does not seems logical to configure this search space group switching for such a SS. For frequencyMonitoringLocations, there is no restriction at the moment, but there has been discussions in RAN1 to limit this to UE specific SS-sets, since I suppose you do not want to redesign pdcch-ConfigCommon. So probably best to check with RAN1 for both type3 CSS and frequency monitor locationso.  [HW] This is based on the RAN1 agreement. HW has a similar comment.  **Ericsson:**  RAN1#100e agreement:  For search space switching, limit the switching to USS and Type-3 CSS.  There is no RAN1 agreement for restricting freqMonitorLocations to USS.  Summary: RAN1 agreement is quite clear and also confirmed by the RAN1 rapporteur. So we should move the IEs to the SearchSpace-v16xy. |
| U544 | Ericsson | 6.3.2 | *ServingCellConfigCommon, ServingCellConfigCommonSIB* | 3 | For ssb-PositionInBurst:  The issue is that Q ssb-PositionQCL is optional, so ~~can be defined in~~ the UE would either use the Q value from MIB (no field name), ~~in ssb-PositionQCL-Common, and~~ or ssb-PositionQCL, depending on ~~what~~ whether the gNB provides ssb-PositionQCL or not, and for *ServingCellConfigCommonSIB* there is not such a field ~~in its system information or in the measurement object which~~. To cover how the UE determines the Q value would make ~~the~~ this field description unnecessarily complex. Therefore, referring to the Information Element instead of the field could make sense, maybe something like “k > Q, where Q is the configured value for SSB-PositionQCL-Relationship.” | Open  [MTK]: It is not clear why we need this change. Looking into the current specifications it seems clear.  [HW] It is “field description” rather than “IE descrtiption” prefer to keep th current text.  **Ericsson:**  Updated the text that is relevant for ssb-PositionInBurst  Summary: There was no support so no changes to the field description |
| U548 | Ericsson | 6.3.2 | *ReportConfigNR* | 3 | Add to the field description of ***measRSSI-ReportConfig*** that “the UE shall ignore the rsType, reportQuantityCell and maxReportCells for this reportConfigNR when configured with measRSSI-ReportConfig and if *reportType* is set to *periodical*” | Open  **Nokia:** Not sure why this would be needed. If procedural text does not behave actions for UE for these fields in case RSSI reporting is configured then fields are “ignored” by default i.e no additional text is needed  **Ericsson:**  We added a clarification in red that the UE shall only ignore those parameters when periodical reporting is configured.  There are corresponding actions defined in clause 5.5.5.1 which will include such measurement results if not ignored by the UE:  1> for each serving cell configured with *servingCellMO*:  2> if the *reportConfig* associated with the *measId* that triggered the measurement reporting includes *rsType*:  **LGE:**  In NR, the RSSI measurement can be reported via a measurement report triggered by other measurement quantity, e.g. RSRP or RSRQ. UE should not ignore these fields.  Summary: There was no support for this. For the quoted procedural text by Ericsson, there is another if “3> if the serving cell measurements based on the *rsType* included in the *reportConfig* that triggered the measurement report are available” so the UE does not need to take any other action. |
| U549 | Ericsson | 5.5.4.1 |  | 3 | Clarify that measurement report triggering when a (first) measurement result is available, is only valid for a*reportType* set to *periodical*. For event-triggered measurement reporting, the measurement report would otherwise be triggered even if none of the reporting conditions were fulfilled | Open  [MTK]: We don’t understand the problem. Some more explanation might be useful. Existing RAN2 agreements should not be reverted.  **Ericsson**:  Added the clarification in red.  For event-triggered reporting, the reporting should only be started when a reporting condition is fulfilled and not whenever RSSI measurement results are available.  Summary: Needs online discussion. However, Ericsson point seems valid. |
| U550 | Ericsson | 5.5.4.1 |  | 3 | Clarify that the report is triggered after the “L1 measurement *period”* (and not “L1 measurement *duration”* which in TS 36.133 is defined by the *rmtc-MeasDuration*). | Open  **Ericsson:**  If not changed, this may cause confusion between the given parameters for triggering RSSI measurement reporting. |
| U551 | Ericsson | 6.3.2 |  | 3 | Move *ssb-PositionQCL-Common* from *MeasObjectNR* to sub-element *SSB-ConfigMobility* within *MeasObjectNR.*  All SSB related configuration should be provided within *SSB-ConfigMobility*  *ssb-PositionQCL-Common* is only needed when corresponding SSB measurement configurations are configured (*ssb-ToMeasure*). | Open  **Rapporteur:** RAN1 agreement was to use *MeasObjectNR*  [MTK]: We prefer to keep RAN1 agreement.  **Nokia:** we are ok both ways. No behavioural change. But location proposed by ericsson makes sense  [HW] SSB-ConfigMobility is within MeasObjectNR? Not sure what is wrong.  **Ericsson:** *SSB-ConfigMobility* is signaled within *MeasObjectNR*, so *ssb-PositionQCL-Common* is still part of *MeasObjectNR.*  The change is still compliant with RAN1 proposal/agreement.  RAN1 does not look into detailed RAN2 parameter structure.  It is up to RAN2 to decide how to group the parameters.  We think that all SSB related configuration should be provided within *SSB-ConfigMobility.*  Furthermore, *ssb-PositionQCL-Common* is clearly related to *ssb-ToMeasure*, which is provided within *SSB-ConfigMobility* and provides the corresponding bitmap for the SSB candidate positions.  **LGE:**  *ssb-PositionQCL-Common* is used to derive the SSB based cell quality. so we also think *SSB-ConfigMobility* is a more proper location to include it.  Summary: The change seems fine but can be discussed further online. |
| U552 | Ericsson | 6.3.2 |  | 3 | Move cell specific Qfrom *MeasObjectNR* to *SSB-ConfigMobility* and use a Setup/Release structure | Open  **Rapporteur:** RAN1 agreement was to use *MeasObjectNR*  [MTK]: We prefer to keep RAN1 agreement  **Nokia:** see U551 comment and additionally we think that existing addmod/remove structure is corresponding with existing cell specific parameter configuration i.e. we do not need see for setup/release structure.  [HW] SSB-ConfigMobility is within MeasObjectNR? Not sure what is wrong.  About the setupRelease stuecutre, we wonder why we need this  **Ericsson:**  1) See argument above for moving information about the QCL relationship between SSB positions to *SSB-ConfigMobility.*  The change is still compliant with RAN1 proposal/agreement.  2) Adding an element costs 10 (for the PCI) + 2 bits (Q value), removing an element costs 10 bits. There is almost no signaling gain with such a delta approach. It is easier to setup a new list than modifying a list.  **LGE:**  see U551. Agree to move cell specific Q to *SSB-ConfigMobility* but the structure doesn’t need to be changed.  Summary: The change seems fine without changing the structure but can be discussed further online. |

| U553 | Ericsson |  |  | 3 | Introduce a new timer to react to consistent LBT failure after RRC release with redirection in Rel-16. The new timer is started upon reception of RRC release with redirection and stopped upon entering RRC connected. Upon expiry of the timer, the carrier frequency indicated by redirectedCarrierInfo is down-prioritised. | Open  **Rapporteur:** There is a parallel discussion in UP. This proposal was copied here since it can be introduced independent of LBT recovery.  [MTK]: We prefer to discuss it in single forum (in UP discussion).  **Nokia:** discuss in U-plane  **Ericsson:**  We also prefer to discuss it in single forum (in UP discussion).  Summary: This will be resolved in UP email discussion. |
| --- | --- | --- | --- | --- | --- | --- |
| U554 | Huawei | 6.3.2 | *ConfiguredGrantConfig* | 3 | For CG-PUSCH and DG-PUSCH without slot aggregation, HARQ-ACK for the associated TB is valid if a first symbol of the PDCCH reception is after a last symbol of the PUSCH transmission, or of any repetition of the PUSCH transmission, by a number of symbols provided by cg-minDFIDelay-r16. For DG with slot aggregation, HARQ-ACK is valid if first symbol of the PDCCH reception is after a last symbol of the PUSCH transmission in a first slot from the multiple slots by cg-minDFI-Delay if the value of the HARQ-ACK information is ACK and after a last symbol of the PUSCH transmission in a last slot from the multiple slots, if value of the HARQ-ACK information is NACK. (see TS 38.213 [13], clause 10.3).. | **Ericsson:**  We agree that some clarification in the field description is needed as the parameter applies for for both CG-PUSCH and dynamically scheduled PUSCH.  However, we prefer not to copy the RAN1 specification text from 38.213 clause 10.3 about when the HARQ-ACK information is valid:  […] is valid if a first symbol of the PDCCH reception is after a last symbol of the PUSCH transmission, or of any repetition of the PUSCH transmission, by a number of symbols provided by cg-minDFIDelay-r16.  For a PUSCH transmission scheduled by a DCI format, HARQ-ACK information for a transport block of a corresponding HARQ process number is valid if a first symbol of the PDCCH reception is after a last symbol of the PUSCH transmission or, if the PUSCH transmission is over multiple slots,  -     after a last symbol of the PUSCH transmission in a first slot from the multiple slots by a number of symbols provided by *cg-minDFIDelay-r16*, if a value of the HARQ-ACK information is ACK.  -     after a last symbol of the PUSCH transmission in a last slot from the multiple slots by a number of symbols provided by *cg-minDFIDelay-r16*, if a value of the HARQ-ACK information is NACK.  Something as follows is sufficient, while more details are provided in the RAN1 spec:  “Indicates the minimum duration (in unit of symbols) from the ending symbol of the ~~CG-PUSCH or dynamically scheduled~~ PUSCH to the starting symbol of the PDCCH containing the downlink feedback indication (DFI) carrying HARQ-ACK for that PUSCH. HARQ-ACK received before that minimum duration is not valid, see TS 38.213 [13], clause 10.3.   * DG-PUSCH is not defined in RRC and we should use “dynamically scheduled PUSCH” instead or to keep it general, just refer to “PUSCH” instead of CG-PUSCH and dynamically scheduled grant * DFI is not defined in RRC and should be spelled out. * We propose to clarify that DFI is carried on PDCCH * Slot aggregation is already specified as part of 38.213 spec. * Remove all text that is specified in detail in 38.213.   [Samsung] Ericsson's alternative looks good.  Summary: Since there are two alternative options, it will be good to discuss this further. |
| U555 | Qualcomm | 5.7.3.5 |  | 3 | Add the *failureType* as *scg-lbtFailure* in this section. It was put in 5.7.3.3 which is for EN-DC by mistake. Note that 5.7.3.3 will still be used due to the RAN2#109bis-e agreement to introduce SCG failure reporting for EN-DC | **Ericsson:** Agree.  Intel: Just want to say we have make similar comment sin ASN.1 review (RIL: I906). If this change is agreed, I906 can be closed as well.  Summary: This can be agreed. |
| U556 | Huawei | 6.3.2 | *ConfiguredGrantConfig* | 3 | Wrong name "n-cg-DFIDelay-r16" and The explanation is not accurate. need to consider for slot aggretation for both CG and DG. For CG DFI delay for a CG PUSCH: HARQ-ACK for the associated TB is valid if a first symbol of the PDCCH reception is after a last symbol of the PUSCH transmission, or of any repetition of the PUSCH transmission, by a number of symbols provided by cg-minDFIDelay-r16. For DG - DFI delay for a DG PUSCH: Same as CG PUSCH expect for slot aggregation; \* cg-minDFIDelay-r16 after a last symbol of the PUSCH transmission in a first slot from the multiple slots if value of the HARQ-ACK information is ACK. \* cg-minDFIDelay-r16 after a last symbol of the PUSCH transmission in a last slot from the multiple slots, if value of the HARQ-ACK information is NACK | **Rapporteur:** This was H225 in ASN.1 RIL.  Name change was agreed by RAN2 email discussion to be compatible with ASN.1 convention.  **Ericsson:**  This is not about the field name.  Such a *formula* “n-cg-DFIDelay-r16” cannot be used in the field description. It would have to be captured in a different way.  However, these clarifications about the timing between PUSCH and HARQ-ACK are specified in TS 38.213 clause 10.3 and it is sufficient to describe on high level what is the purpose of this parameter.  This sentence can therefore be removed.  Summary: Agree with Ericsson that we don’t need to repeat 38.213 text. This is related to U554 so can be discussed together. |
| U557 | Samsung | 6.3.2 | *MeasObjectNR* | 3 | Since the field rmtc-SubframeOffset-r16 starts with 0, it should always be present, and no reason to make it optional (which takes additional bit)) | **Rapporteur:** This was S052 in ASN.1 RIL.  This also affects RRC procedural text as well as RAN1 spec since the UE selects a random occasion when this IE is configured. Note that this is same behavior as LAA.  [HW] This is also mentioned above. In the RRC spec, we have the following text.  The UE shall setup the RSSI measurement timing configuration (RMTC) in accordance with the received *rmtc-Periodicity*, *rmtc-SubframeOffset* if configured otherwise determined by the UE randomly, i.e. the first symbol of each RMTC occasion occurs at first symbol of an SFN and subframe of the PCell meeting the following condition:  **Ericsson:**  **Is this not the same as U506???**  We prefer to follow LTE-LAA. The above field description from TS 36.331 for *rmtc-SubframeOffset* should also be included in the field description in 38.331 (unclear why *measDuration* was mentioned in LTE LAA. That part can be removed.)  “For inter-frequency measurements, this field is optional present and if it is not configured, the UE chooses a random value as *rmtc-SubframeOffset* which shall be selected to be between 0 and the configured *rmtc-Periodicity* with equal probability.”  The statement in clause 5.5.2.10a is too vague and can potentially be ‘moved’ with above clarification to the field description.  [Samsung] We are also fine with the proposal by rapporteur as for U506 (our comment was purely from ASN.1 perspective to avoid unnecessary signaling overhad).  Summary: The conclusion of U506 also applies here. |
| U558 | Vivo | 6.3.2 | *ConfiguredGrantConfig* | 3 | We think betaOffsetCG-UCI-r16 should also can be configured dynamically. We propose to discuss and clarify whether the current CR of TS 38.331 is aligned with RAN1’s understanding or not | **Rapporteur:** This was V011 in ASN.1 RIL.  We should check this with RAN1. 38.213 is not clear. I’ll add it to open issue list.  [HW] Not sure how betaOffsetCG-UCI is related to measObjectNR?  **Ericsson**: issue is not clear.  Summary: This is actually in *ConfiguredGrantConfig*. However, it is Optional with Need R so the issue is not clear. |
| U559 | ZTE | 6.3.2 | *ServingCellConfigCommon* | 3 | This field (ChannelAccessMode) should have been UE specific. So, perhaps this should be added to servingCellConfig) | **Rapporteur:** This was Z015 in ASN.1 RIL  It was explicitly stated in RAN1 parameter list Add in SIB1 and ServingCellConfigCommon”. This parameter should be per cell (per region or country in reality).  [HW] Agree with Rapp  **Ericsson:**  Agree with rapporteur that RAN1 intention was to signal FFP configuration per cell via SIB1 or dedicated signaling.  RAN1#99 agreement:  For FBE operation   * FFP configuration is included in SIB-1 * FFP configuration can be signaled for a UE with UE-specific RRC signaling   ZTE: Thanks! It seems rapporteur understanding is correct regarding this field. But, if the this is set to be semistatic, then the semi-static period should be UE specific then is it and is this configuration missing then?  Intel: ServingCellConfigCommon is also in dedicated signalling. So nothing is missing.  Summary: All companies agree with the current location. The periodicity is configured via *SemiStaticChannelAccessConfig* in the same location. |
| U560 | Nokia | 6.3.2 | *IntraCellGuardBand* | 3 | Agreement in online week 1 RAN2#109ebis: 8: For signalling of intra-cell guard bands, an explicit IE is used for “default” case and no guard bands are used if signaling is absent.  This contradicst with RAN1 decision explicitly and should be reverted based on RAN1 input i.e. if no GB is signaled then UE applies default GB as defined by RAN4  Coding can be done e.g. in this way:  IntraCellGuardBand-r16 ::= SEQUENCE (SIZE (1..ffsValue)) OF GuardBand-r16 -- FFS upper size 4, assuming 100Mhz cell  GuardBand-r16 ::= SEQUENCE {  startCRB-r16 INTEGER (0..ffsValue), --FFS upper range 275  nrofCRBs-r16 INTEGER (0..ffsValue)  } | **Ericsson:**  It is RAN2 responsibility how the detailed RRC signaling is done. RRC conventions should be maintained.  Furthemore, TS 38.214 currently uses square brackets for the cases when *intraCellGuardBandDL* and *intraCellGuardBandUL* are not configured, meaning that RAN1 is waiting for RAN2 to conclude on this:  When the UE is not configured with *intraCellGuardBandUL-r16,* the UE determines intra-cell guard band and corresponding RB-set according to the [default intra-cell GB pattern from 38.101 corresponding to and carrier size ]. When the UE is not configured with *intraCellGuardBandDL-r16,* the UE determines intra-cell guard band and corresponding RB-set according to the [default intra-cell GB pattern from 38.101 corresponding to and carrier size ].  Additionaly, RAN1 is awaiting RAN2 feedback on how no guard bands should be configured:  [The configuration of intraCellGuardBandDL-r16 and intraCellGuardBandUL-r16 can indicate to the UE that no intra-cell guard-bands are configured.]  **LGE:**  Support Nokia`s proposal. The agreement contradicts RAN1 decision. It would be better not to impose further work on RAN1 though the square bracket is used in RAN1 spec.  Intel: Signalling structure is in RAN2 scope and RAN2 should follow the RRC principle on signaling.  Rapporteur: The proposal reverts the RAN2#109e agreement so should be discussed online. |
| U561 | Nokia | 6.3.2 | *searchSpaceGroupIdList-r16* | 2 | There is nothing critically wrong with coding but it seems bit weird that coding allows searchspace to be included in both groups which basically means same thing as not configuring it to belong to any groups (as then UE will monitor search space always)  Thus it would seems better from coding and bit saving perspective just to configure searchSpace to be included in one group. So probably easiest is to change ASN.1 to following: searchSpaceGroupIdList-r16 INTEGER (1..2) OPTIONAL  renaming field could be considred as well to remove “list” as the length of the “list” is 1 with proposed coding. | [HW] Or we can change the need code to need S and absence means no group is configured/ the search space is configured under both groups, if we consider optimizing on the signaling. But probably we will need to tell RAN1 if this has been captured somewhere in RAN1 spec.  **Ericsson:**  Given that there are only 2 search space groups, we we have sympathy with the reasoning.  However, RAN1 has agreed on the following:   * A single search space set can be part of more than one group. * A UE can be provided with not more than two groups of search space sets (as per previous agreement on search space switching) for PDCCH.   To be consistent with RAN1 agreements, a search space set can be a member of 1 or 2 groups.  Any changes would need to be triggered from RAN1.  Summary: RAN1 agreement is to allow the search space belonging to more than one group as Ericsson noted above. Whether this is a good design or not is beyong RAN2. Since the proposal was for ASN.1 optimization (savings bits) and nothing is broken, it is safer to stay with the current signaling. Agree with Ericsson that any changes should be triggered by RAN1. |
| U562 | Ericsson | 6.3.2 | PUSCH-TimeDomainResourceAllocation-r16 | 3 | multiplePUSCH-Allocations-r16      SEQUENCE (SIZE(2..maxNrofMultiplePUSCHs-r16)) OF singlePUSCH-TimeDomainResourceAllocation-r16  - SIZE should start with 1 to support legacy table entry  - IEs should start with capital letters: SinglePUSCH-TimeDomainResourceAllocation-r16 | Rapporteur: Not sure why this is needed. For single PUSCH, the legacy IE is already there. Needs further discussion. I will correct the typo. |
| U563 | Ericsson | 6.3.2 | *ServingCellConfigCommon* | 1 | The field description for *ssb-PositionQCL* is not correct. It is within serving cell config and should apply to this serving cell. Proposed update:  Indicates the QCL relationship between SSB positions for ~~a neighbor~~ this serving cell as specified in TS 38.213 [13], clause 4.1. | Rapporetur: This is an obvious typo so I’ll correct this in the CR. |
| U564 | Ericsson | 6.3.2 | *ServingCellConfigCommon* and *ServingCellConfigCommonSIB* | 0 | “semistatic” in channelAccessMode should be aligned with other parts in 38.331  Propose to change to “semiStatic”.  This should also be changed in the field description for channelAccessMode. | Rapporetur: I’ll correct this in the CR. |
| U565 | Ericsson | 6.3.2 | *ServingCellConfigCommonSIB* | 3 | **On agreement 1:**   1. **Use *inOneGroup* instead of *mediumBitmap* in *ServingCellConfigCommonSIB***   This restriction for *ssb-PositionsInBurst*: For operation with shared spectrum channel access, only inOneGroup is used” is not necessary.  *ssb-PositionsInBurst* only consists of *inOneGroup* and *groupPresence*, where the latter is Cond FR2-Only. So anyway only inOneGroup would be used. | Rapporteur: The comment from ZTE and agreement was simply to correct the RAN1 text where “mediumBitmap” was used. It is extra information but nothing is broken. Please provide an alternative text to the RAN1 suggestion during the email discussion for the finalization of the CR if this is important for you. |
| U540 | Ericsson | 5.5.1 | RSSI/CO reporting | 3 | ~~Add~~ Modify as follows:  “the UE measures and reports on~~any~~ the defined measurement bandwidth and configured time domain measurement resources on the indicated frequency.”  Or at least:  “the UE measures and reports on **~~any~~ the defined/configured measurement resources** on the indicated frequency.”  The current description is **misleading and contradicts with Section 5.5.2.10a** and with TS 38.215.  The text should capture the intention and should be aligned/consistent with other parts of the specification rather than stating something else.  As we are writing a new spec, we can still improve specification text and just use LAA as a starting point and correct if necessary. | Open  **Rapporteur:** Current text is based on LAA. RAN2#109e decided to keep that text.  **Ericsson:**  We would like to explain the issue together with the change proposal. See text in red..  Rapporteur: Let’s discuss online again. |
| U567 | ZTE | 6.3.2 | Field description of ChannelAccessPriority | 2 | For the field description, 38.321 is referenced, but CAPAC seems not mentioned within this spec.  Also, the CAPAC signalled will be applicable for the case when UL grant indicates LBT type 1 in DCI 0\_0. This needs to be clarified. | **Rapporteur:** RAN1 agreement is for UE initiated COT with DCI 0\_0 so will indicate this to the ASN.1 discussion. For gNB initiated COT with DCI0\_0, CAPC = 4 in RAN1 specs.  ZTE: When DCI 0\_0 is used, CAPC is not signalled. The table used for DCI 0\_0 is as below.    When DCI 0\_0 is used and type 1 is indicated, since CAPC can not be indicated, UE determines CAPC based on the multiplexed traffic. So, the UE assumes that the gNB used CAPAC=4, but the UE doesn’t use this in UL (the UL CAPAC is based on the multiplexed traffic) in our understanding. |

# Open issues for LTE RRC

| **Issue number** | **Company** | **Subclause** | **IE name** | **Class** | **Description/**  **correction** | **Status** |
| --- | --- | --- | --- | --- | --- | --- |
| U801 | Ericsson | 6.3.5 | MeasObjectNR | 3 | In order to providefrequency specific Q values in the *MeasObjectNR* for E-UTRAN, include *ssb-PositionQCL-CommonNR* in the existing IE *RS-ConfigSSB-NR-r15* | Open.  [MTK]: We prefer to keep the IE structure common between NR and LTE.  **Ericsson:**  Same argument as above.  *ssb-PositionQCL-CommonNR* should be grouped together with other SSB related measurement configurations.  We made acorresponding proposal also for NR.  Summary: Discuss online |
| U802 | Ericsson | 6.3.1 | SIB24 | 3 | Per-cell Q value can be broadcasted in LTE SIB24 for NR-U neighbour cells. | Open  **Rapporteur:** In NR RRC, a common Q value per frequency is signalled in SIB4 for inter-frequency. LTE SIB24 is for NR (inter-frequency) and the current signalling is per-frequency.  [MTK]: We prefer to keep Q value per frequency.  **Ericsson:**  In SIB4, this can also be signaled for inter-frequency neighbor cells according to RAN1 agreements, and this is captured in 38.331, v16.0.0, in *InterFreqNeighCellInfo*.  RAN1 agreements:  • Support signaling of a common Q value per frequency by broadcast RRC signaling (SIBx) and/or dedicated RRC signaling (measObjectNR) from the serving cell.  • Support signaling from the serving cell of a Q value for a listed neighbour cell.  Summary: Discuss online |
|  |  |  |  |  |  |  |

# Conclusion

**EASY AGREEMENTS**

**Proposal 1: (Issue U506 and U557) Extend RSSI/CO measurements to inter-frequency (as in LTE LAA). The IE *rmtc-SubframeOffset-r16* is optional for inter-frequency (as in LTE LAA).**

**Proposal 2: (Issue U510) Keep the ASN.1 for *useInterlacePUCCH-PUSCH-r16* as ENUMERATED {true} with Need M. No changes to the 38.331 is needed.**

**Proposal 3: (Issue U515) The IE for signaling of Q in measurement object is kept Optional. It is added to the field description that the UE applies default value 8 when not signaled.**

**Proposal 4: (Issue U528) No changes to the field description of *ra-ResponseWindow* is needed.**

**Proposal 5: (Issue U538) Move the IEs searchSpaceGroupIdList-r16 and freqMonitorLocations-r16 from SearchSpace to SearchSpace-v16xy in order to allow search space switching for Type-3 CSS.**

**Proposal 6: (Issue U544) No changes are made to the field description of *ssb-PositionInBurst***

**Proposal 7: (Issue U548) No changes are made to the field description of *measRSSI-ReportConfig***

**Proposal 8: (Issue U555) Introduce text for setting *failureType* as *scg-lbtFailure* in 5.7.3.5 (corresponding to NR-NRU DC)**

**Proposal 9: (Issue 558) No changes are made to *betaOffsetCG-UCI-r16* since it can already be configured dynamically.**

**Proposal 10: (Issue 559) The IE *ChannelAccessMode* is kept in *ServingCellConfigCommon* without any changes.**

**Proposal 11: (Issue 561) No changes are made to the structure of IE *searchSpaceGroupIdList-r16.***

**Proposal 12: Agree to the editorial changes suggested in:**

U563: Change “neighbour” to “this serving cell” for field description of *ssb-PositionQCL* in *ServingCellConfigCommon*

U564: Change semistatic to semiStatic

**NEEDS ONLINE DISCUSSION**

**Proposal 13: (Issue U549) It should be clarified that the “when a (first) measurement result is available” for RSSI reporting in 5.5.4.1 is only applicable to *reportType* set to *periodical***

**Proposal 14: (Issue U551) Move *ssb-PositionQCL-Common* from *MeasObjectNR* to sub-element *SSB-ConfigMobility* within *MeasObjectNR***

**Proposal 15: (Issue U552) Movecell specific Qfrom *MeasObjectNR* to sub-element *SSB-ConfigMobility* within *MeasObjectNR*. However, do not change the structure, i.e. keep the list.**

**Proposal 16: (Issue 540) Change the text for RSSI reporting as follows:** “the UE measures and reports on~~any~~ the defined measurement bandwidth and configured time domain measurement resources on the indicated frequency.”

**Proposal 17: (U801) Putfrequency specific Q values in the *MeasObjectNR* for E-UTRAN, include *ssb-PositionQCL-CommonNR* in the existing IE *RS-ConfigSSB-NR-r15***

**Proposal 18: (U802) Per-cell Q value can be broadcasted in LTE SIB24 for NR-U neighbour cells.**

**CHANGING PREVIOUS AGREEMENTS**

**Proposal 19: (Issue 560) The UE applies default guard band when signalling is absent and no guard band is signalled by explicit IE.**

**NEEDS FURTHER DISCUSSION**

The following issues are related to aligning RAN2 and other group specs or there was no feedback or there was no clear majority so should be kept open for further discussion.

**Proposal 20: Further discuss the following issues until next RAN2 meeting:**

U550: L1 measurement period vs duration

U554, U556: field description for *cg-minDFIDelay*

U562: Change the minimum size of multi-TTI PUSCH table (allow list with single entry)

U567: CAPC determination when DCI 0\_0 is used.