**Comments collection for Rel-19 IoT NTN RRC running CR**

**1. Contacts**

|  |  |  |
| --- | --- | --- |
| **Company** | **Name** | **Email** |
| MediaTek | Felix Tsai | Chun-fan.tsai@mediatek.com |
| Qualcomm | Bharat Shrestha | bshresth@qti.qualcomm.com |
| Samsung | Jonas Sedin | j.sedin@samsung.com |
| vivo | Yitao Mo (Stephen) | yitao.mo@vivo.com |
| Apple | Yuqin Chen | yuqin\_chen@apple.com |
| Nokia | Ping Yuan | Ping.1.Yuan@nokia-sbell.com |

**2. Comments**

**Please provide your comments in the table following similar format as the example:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Company** | **Section/clause/IE** | **Comments/Suggested Change** | **Rapp Response** |
| MTK01 vivo01 | 5.3.3.1x Conditions for initiating CB-Msg3 EDT in NTN | We should use CB-Msg3-EDT rather than CB-Msg3 EDT to align with the RAN2 agreement and 36.300/36.321**vivo additional comment:** From stage-2 spec, CB-Msg3 is a kind of MO-EDT, the conditions should be added in 5.3.3.1b. I.E.,5.3.3.1b Conditions for initiating EDTA BL UE, UE in CE or NB-IoT UE can initiate EDT using the random access procedure when all of the following conditions are fulfilled:…A BL UE, UE in CE Mode A or NB-IoT UE can initiate EDT using the CN-Msg3-EDT procedure when all of the following conditions are fulfilled: |  |
| MTK02 | 5.3.3.1x A BL UE, UE in CE Mode A or NB-IoT UE can initiate CB-Msg3 EDT transmission when all of the following conditions are fulfilled: | The T in EDT is for transmission, this additional transmission is not needed. Suggest to delete it.vivo agrees with it. |  |
| MTK03 | 5.3.3.1xthe measured RSRP satisfies the conditions specified in TS 36.321 [6], clause X; | We think it is sufficient to check the minimum RSRP threshold of initialing CB-Msg3-EDT **in RRC**. There seems no need referring to 36.321. Suggest some like“the measured RSRP is larger than the minimum RSRP threshold configured in *cb-Msg3-MinRSRP-Threshold* (in *cb-Msg3-MinRSRP-Threshold-NB* for NB-IoT)” |  |
| MTK04 | 5.3.3.1x1> the size of the resulting MAC PDU including the total UL data is expected to be smaller than or equal to the TBS signalled in *[FFS parameter name]*, as specified in TS 36.321 [6], clause X; | Unlike the legacy EDT, UE does not move to the next CE level when the number of max re-attempt has been reached, there will be no TBS check after that point. The only TBS check occurs before the procedure is for initialization. We suggest that the TBS check is only captured in RRC spec, and the reference to MAC can be removed.Nokia03: The maximum TBS is defined per CE level while the CE level determination is captured in MAC spec. In this sense, referring to MAC spec seems reasonable (as legacy) |  |
| MTK05 | – CB-Msg3-ConfigSIBcb-Msg3-MaxAttemptNum-r19 ENUMERATED {n3, n4, n5, n6, n7, n8, n10}  | It better starts with n2. If this IE is absent, no re-attempt should be assumed. |  |
| MTK06 | CB-MSG3-MPDCCH-Config-r19 ::= SEQUENCE { mpdcch-Narrowband-r19 INTEGER (1..maxAvailNarrowBands-r13), mpdcch-PRB-PairsConfig-r19 SEQUENCE{ numberPRB-Pairs-r19 ENUMERATED {n2, n4, n6, spare1}, resourceBlockAssignment-r19 BIT STRING (SIZE(4))  }, | Indentation issue on numberPRB-Pairs-r19 and resourceBlockAssignment-r19. |  |
| MTK07 | maxCE-Level-NB-r19 INTEGER ::= 3 | It should be placed at 6.7.4 |  |
| MTK08 | CB-Msg3-ProbabilityAnchorList-NB-r19  | RAN2 agrees that **a** new probability parameter for anchor carrier is introduced in SIB22-NB. RAN2 can further discuss whether it should be a **single value** or **a list of value for each CE level**. |  |
| MTK09 | cb-Msg3-RSRP-CE-Level-NB-r19 CB-Msg3-RSRP-CE-Level-NB-r19 | It should be *cb-Msg3-RSRP-CE-Level-List-NB-r19*. |  |
| MTK10 |  npusch-SubCarrierSetIndex-r19 CHOICE { khz15 INTEGER (0..18), khz3dot75 INTEGER (0..47) }, | According to the RAN1 LS1, it should be **defined as a set**. * The following parameters can be supported:
	+ npusch-NumRUsIndex-r16
	+ npusch-NumRepetitionsIndex-r16
	+ npusch-SubCarrierSetIndex-r16 (but defining this as a set)
	+ npusch-MCS-r16
 |  |
| MTK11 | ack-NumRepetitions-NB-r19 ACK-NACK-NumRepetitions-NB-r13, | This IE could be optional. It is absent, the same value in SIB2 for NPRACH can be used.If this field is absent, the UE apply the value *ack-NACK-NumRepetitions-r13* configured in *SystemInformationBlockType2-NB*. |  |
| MTK12 | cb-Msg3-MaxAttemptNum-NB-r19 ENUMERATED {n3, n4, n5, n6, n7, n8, n10, spare1}, | Same comment to cb-Msg3-MaxAttemptNum-r19. And this IE should be optional. |  |
| MTK13 | **CB-Msg3-ConfigList-NB**CB-Msg3 EDT configuration for each CE level applicable to a UE performing CB-Msg3 EDT. The first entry in the list is the CB-Msg3 EDT configuration for CE level 0, the second entry in the list is the CB-Msg3 EDT configuration for CE level 1, and so on.  | It is a legacy UE behavior that numbers of CE levels in the anchor carrier and non-anchor carrier are the same. I think we can stick it.Here we can add:For the CB-Msg3-ConfigList-NB in *SystemInformationBlockType22-NB*, E-UTRAN includes the same number of entries, and listed in the same order, as in *CB-Msg3-ConfigList-NB* in *SystemInformationBlockType2-NB.* |  |
| MTK14 | ***cb-Msg3-ResponseWindow-NB***MPDCCH search space window duration. See TS 36.321 [6] and TS 36.213 [23]. Value pp1 corresponds to 1 PDCCH period, pp2 corresponds to 2 PDCCH periods and so on. The value considered by the UE is: *mac-ContentionResolutionTimer* = Min (signaled value x PDCCH period, 10.24s). | The MPDCCH should be NPDCCH. *mac-ContentionResolutionTimer* cleary is a mistake. |  |
| MTK15 | ***npdcch-CarrierIndex***Indicates the non-anchor carrier for receiving Msg4. If this field is absent, UE receives Msg4 on the anchor carrier. | We suggest a clearer text:Indicates the carrier in the list of DL non-anchor carriers for receiving CB-Msg4. If this field is absent, UE receives CB-Msg4 on the anchor carrier. |  |
| MTK16 | ***cb-Msg3-NumOfReplicas-NB***Indicates the number of replicas that UE should send for CB-Msg3 EDT. | Suggest to modify as: Indicates the number of replicas that UE should send within one attempt of CB-Msg3 EDT. |  |
| Qualcomm | ***6.3.2 CB-Msg3-ConfigSIB***CB-Msg3-Config-r19 ::= SEQUENCE { cb-Msg3-TBS-r19 ENUMERATED {b328, b408, b504, b600, b712, b808, b936, b1000}, cb-Msg3-NumOfReplicas-r19 INTEGER(1..4), cb-Msg3-TimeResource-r19 SEQUENCE { pusch-Periodicity-r19 ENUMERATED {sf2, sf4, sf8, sf16, sf32, sf64, sf128, sf256}, pusch-StartSFN-r19 INTEGER (0..1023), pusch-StartSubframe-r19 INTEGER (0..9) }, cb-Msg3-MPDCCH-Config-r19 CB-Msg3-MPDCCH-Config-r19, cb-Msg3-PUCCH-Config-r19 CB-Msg3-PUCCH-Config-r19, cb-Msg3-PUSCH-Config-r19 CB-Msg3-PUSCH-Config-r19, cb-Msg3-TxWindow-r19 SEQUENCE { windowStartSFN-r19 INTEGER (0..1023), windowStartSubframe-r19 INTEGER (0..9), windowSize-r19 ENUMERATED {FFS}, windowPeriodicity-r19 ENUMERATED {FFS} }  | 1. In procedural text, at least CP and UP indication can be added now. For example, AS security enabling is not applicable in CP solution.2. ConfigurationWe suggest remove redundancies.The cb-Msg3-TimeResource-r19 can be moved into cb-Msg3-TxWindow-r19. Start of PUSCH and start of window should be same. cb-Msg3-TxWindow-r19 SEQUENCE { windowStartSFN-r19 INTEGER (0..1023), windowStartSubframe-r19 INTEGER (0..9), windowSize-r19 ENUMERATED {FFS}, windowPeriodicity-r19 ENUMERATED {FFS},pusch-Periodicity-r19 ENUMERATED {sf2, sf4, sf8, sf16, sf32, sf64, sf128, sf256} } |  |
| SS01 | ***SystemInformationBlockType31* information element**-- ASN1STARTSystemInformationBlockType31-r17 ::= SEQUENCE { servingSatelliteInfo-r17 ServingSatelliteInfo-r17, lateNonCriticalExtension OCTET STRING OPTIONAL, ..., [[ servingSatelliteInfo-v1820 ServingSatelliteInfo-v1820 OPTIONAL -- Need OR ]], [[ t-ModeSwitching-r19 TimeOffsetUTC-r17 OPTIONAL -- Need OR ]]} | Introduce a ServingSatelliteInfo-v19xy in SystemInformationBlockType31(-NB). This helps to help to improve clarity and does not cost anything in terms of overhead.  |  |
| SS02 | 1> if the SI message was not possible to decode from the accumulated SI message transmissions by the end of the SI-window, continue reception and accumulation of SI message transmissions on DL-SCH in the next SI-window occasion for the concerned SI message; | There was a discussion on this for release 17 for NTN-related SIBs, but there are similar issues for this for PWS-related SIB. If PWS is segmented to multiple SIBs, then the UE should not accumulate SI messages across SI-windows. This was probably not considered in the past as neither LTE-M nor NB-IoT was designed to receive PWS SIB. How to handle this needs to be discussed in an open issue.  |  |
| SS03 | Section 5.2.1.3 | We believe that it would be useful for someone implementing NB-IoT PWS that the following agreement should be captured in some manner: Agreements:1. In case of PWS notification the network may release a RRC\_CONNECTED UE to idle, in case the UE reports the capability to receive PWS in idle (no other spec impact other than the introduction of a UE capability for supporting PWS reception in idle)An example could be: In RRC\_CONNECTED, BL UEs or UEs inCEor NB-IoT UEs are not required to acquire system information except when T311 is running, or upon handover where the UE is only required to acquire the *MasterInformationBlock* in the target PCell, or for UEs in CE to receive ETWS/CMAS information, or upon expiry of T317 where the UE is only required to acquire the *SystemInformationBlockType31* (*SystemInformationBlockType31-NB* in NB-IoT). For an NB-IoT UE capable of receiving ETWS/CMAS, the E-UTRAN may initiate connection release for UE to acquire ETWS/CMAS. In RRC\_IDLE, E-UTRAN may notify BL UEs or UEs inCEorNB-IoT UEs about SI update, ETWS and CMAS notification, and may notify BL UEs or UEs inCE about EAB modification and UAC modification, using Direct Indication information, as specified in 6.6 (or 6.7.5 in NB-IoT) and TS 36.212 [22]. |  |
| SS04 | cb-Msg3-MaxAttemptNum-r19 | It is more efficient to have a parameter range that includes the configurable values rather than relying on optionality. Remember that OPTIONAL costs one bit and makes ASN1 implementations more complicated. Better to have a parameter with 2^n values that is not optional, which includes all the values. We also think that n1 and n2 makes sense here as compared to preamble transmissions, as it keeps the latency low. So we propose the values [n1, n2, n3, n4, n5, n6, n8, n10] and that the field is not optional. Also there is an extreme comma “,” after the need-code.  |  |
| SS05 |  [[ npdsch-ConfigDedicated-v1900 NPDSCH-ConfigDedicated-NB-v1900 OPTIONAL -- Need ON ]] | Should be changed to np**u**sch-ConfigDedicated-v1900 |  |
| SS06vivo02 | CB-Msg3-EDT modelling | As we have discussed in the past, currently the introduction of CB-Msg3-EDT causes a lot of changes to duplicate CP/UP-EDT procedures. This is despite the fact that CB-Msg3-EDT is to a large degree a MAC-enhancement and that the higher layer procedures are largely the same – i.e same type of RRC messages and same type of content in the RRC messages. We think it is nevertheless an open issue that we think should be raised and discussed. **vivo additional comments:** similar view as Samsung. Changes in 5.3.3.2, 5.3.3.3b, 5.3.3.18 is not needed as the new CB-Msg3 is still covered by legacy EDT. |  |
| SS07 |  | The following agreement does not seem to have been implemented: 3. A CB-Msg4 without RRC message (but with contention resolution identity) is allowed as the complete response to the CB-Msg3 in CP solution.It should be implemented in a similar fashion to section 5.3.3.3d: For CP transmission using PUR, upon indication from lower layers that transmission using PUR is successfully completed, the UE shall perform the actions as specified in 5.3.3.4b as if an empty *RRCEarlyDataComplete* message was received. |  |
| SS08 | 5.3.3.3b Actions related to transmission of *RRCEarlyDataRequest* messageThe UE shall set the contents of *RRCEarlyDataRequest* message as follows:. . .1> if the UE is a NB-IoT UE:2> if the UE supports DL channel quality reporting and *cqi-Reporting* is present in *SystemInformationBlockType2-NB*:3> set the *cqi-NPDCCH* to include the latest results of the downlink channel quality measurements of the carrier where the random access response is received as specified in TS 36.133 [16]; | It needs to be discussed how to deal with setting the cqi-NPDCCH field for CB-Msg3-EDT. Currently it is specified that the UE shall measure the random access response, but in CB-Msg3-EDT there is obviously no random access response. Either cqi-NPDCCH is not reported for CB-Msg3-EDT or it is specified that the UE uses CQI based on other measurements.  |  |
| SS09 | ***ta-Report***When this field is included in *SystemInformationBlockType2*, it indicates reporting of timing advance is enabled during Random Access due to RRC connection establishment, RRC connection resume or RRC connection reestablishment. When this field is included in *MobilityControlInfo*, it indicates TA reporting is enabled during Random Access due to handover, see TS 36.321 [6], clause 5.4.9. | According to the field description, it is not clear whether TAR MAC CE will be included for a CB-Msg3-EDT transmission, but in the current procedures a TAR MAC CE will be triggered for CB-Msg3-EDT as long as the ta-Report is configured. This is potentially wasteful as the UE will only transmit a short message. This should be added to the open issue list.  |  |
| ERI01 | Segmentation can be applied for the delivery of a secondary notification and, if present, the associated warning area coordinates. | Segmentation can be applied to the warning area coordinates only in the secondary notification. |  |
| ERI02 | For NB-IoT, the possible boundaries of modification for *SystemInformationBlockType1-NB* are defined by SFN values for which (H-SFN \* 1024 + SFN) mod 4096 = 0. | Similar to legacy, upon an emergency, the network should be able to update SIB1-NB regardless the modification period boundaries.  |  |
| ERI03 | 4> if the UE is in CE:5> start acquiring *SystemInformationBlockType10*; 4> else if the UE is an NB-IoT UE:5> start acquiring *SystemInformationBlockType10-NB immediately*; | A NB-IoT can operate in CE mode A or B. Thus, it would enter the first branch. In addition, RAN2 should discuss if the acquisition starts “immediately”. |  |
| ERI04vivo03 | 1> forward the *t-ModeSwitching* to upper layers, if present. | It is uncertain whether upper layers make use of this parameter. We suggest waiting for the LS response from CT1.**vivo additional comment**: we are fine to keep this as this inforamtion may be used at the APP layer. In addition, the mode information is also intended to be indicated to determine the mode switching status. Merely having UTC timing info is insufficient to determine the mode switcing state (e.g. whether the switching is from S&F to regenerative or from regenerative to S&F).  |  |
| ERI05 | ***sf-OperationIdication***Indicates that the cell is operating in Store and Forward mode. If this field is present, UEs supporting the Store and Forward operation ignores *cellBarred-NTN* and *cellBarred.* Value 'barred' means the cell is barred for NTN connectivity with the Store and Forward operation, as defined in TS 36.304 [4]. Value 'notBarred' means the cell allows UEs supporting the Store and Forward operation to access. If this field is absent, the NTN cell is operating in normal mode, i.e., not in the Store and Forward mode and UEs supporting the Store and Forward operation follow *cellBarred-NTN.* | The detailed description pertains 304. We prefer to simplify the text in 331. There is no need to capture both in 331 and 304 the UE behaviour upon each of the values that the parameter may take. |  |
| ERI06 | ]], [[ t-ModeSwitching-r19 TimeOffsetUTC-r17 OPTIONAL -- Need OR ]] | Following previous releases conventions, it could be included under the extension marker.  |  |
| Apple01 | Section 5.3.3.3a1> if the UE is initiating CB-Msg3 EDT in accordance with conditions in 5.3.3.1x; or | The same sentence is used for MO and MT access, it should be more specific on MO and MT. |  |
| Apple02 | Section 6.7.3.2, IE CB-Msg3-ConfigSIB-NB | cb-Msg3-RSRP-CE-Level-NB-r19 can be renamed as a list. |  |
| Apple03 | Section 6.7.3.2, IE CB-Msg3-ConfigSIB-NB | I guess npusch-SubCarrierSetIndex-r19 should be a list, to indicate multiple frequency domain resources (as RAN1 also confirmed)? |  |
| Apple04 | Section 6.7.3.2, IE *PhysicalConfigDedicated-NB*[[ npdsch-ConfigDedicated-v1900 NPDSCH-ConfigDedicated-NB-v1900 OPTIONAL -- Need ON ]] | It should be npusch not npdsch. |  |
| Apple05 | Section 5.2.2.44> else if the UE is an NB-IoT UE:5> start acquiring *SystemInformationBlockType10-NB immediately*; | Why not just merge it to the bullet above? |  |
| Apple06 | Section 5.3.3.18- the UE is initiating CB-Msg3 EDT in accordance with conditions in 5.3.3.1x; | It should be made clear this is only for UP because CP solution does not require early security reactivation. |  |
| Apple07 | Section 6.2.2, SystemInformationBlockType1***sf-OperationIdication*** | The name in field description is not the same as in ASN.1. |  |
| Apple08 | Section 6.4maxCE-Level-NB-r19 | It should be put into NB section 6.7.4 |  |
| Apple09 | Section 6.7.3.1 SIB22-NBE-UTRAN includes the same number of entries, and listed in the same order, as in*CB-Msg3-ConfigList-NB* in *SystemInformationBlockType2-NB.* | This sentence should be better put into ***cb-Msg3-ProbabilityAnchorList-NB.*** |  |
| Nokia01 | Section 5.2.2.41> if the UE is ETWS capable:2> upon entering a cell during RRC\_IDLE, following successful handover or upon connection re-establishment:3> discard any previously buffered *warningMessageSegment*; | Per agreement in last meeting, need to further discuss continued inter-cell PWS reception in intra-eNB scenario. |  |
| Nokia02 | – CB-Msg3-ConfigSIBCB-MSG3-MPDCCH-Config-r19 ::= SEQUENCE { mpdcch-Narrowband-r19 INTEGER (1..maxAvailNarrowBands-r13), | Whether the narrowband configuration should be defined as a set (not one single narrow band) has been raised to RAN1 in LS R2-2503175 question2. Since there is no consensus in RAN1 (LS response R1-2504905), RAN2 should further discuss the issue and take decision in next meeting. |  |