NR NTN Comments file

Template:

# Xnnn

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| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| Xnnn |  |  |  |  |  |  | vnnn | ToDo |

**[Description]**:

**[Proposed Change]**:

**[Comments]**:

Instructions:

1. Copy the template RIL comments fields above (including the Heading Xnnn)
2. Paste the RIL comments fields at its position while **respecting the order of the RILs in the Review file (i.e. keep the order of the spec).**
3. Fill in the fields, see R19 ASN.1 Guideline.
4. Companies may comment whether they agree or disagree.
5. Can copy spec text and use Word “Track changes”, etc.
6. Do not delete text added by other companies.

# E010

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| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| E010 | NTN | 2 | Add possibility for*referenceLocationReport* in the *RRCResumeComplete* message | R2-25xxxxx | Ericsson (Philipp) |  | v001 | ToDo |

**[Description]**: The current solution for UE-assisted SMTC selection in RRC\_CONNECTED mode requires two RRC reconfigurations of the UE, for each UE upon each transition to RRC\_CONNECTED mode. This may cause significant signaling overhead and pose a scalability issue for NTN, where cells are large and radio resources are extremely scarce. The additional, second RRC reconfiguration is needed, because at the time when the usual, first RRC reconfiguration is performed, the network does not yet know which are the relevant SMTCs to be configured for the UE.

**[Proposed Change]**: The above problem can be avoided for UEs transitioning from RRC\_INACTIVE to RRC\_CONNECTED mode by allowing the UEs to report the N closest reference locations, i.e., by allowing them to add *referenceLocationReport*, in the *RRCResumeComplete* message based on prior UE configuration. For UEs transitioning from RRC\_INACTIVE to RRC\_CONNECTED mode, AS security is enabled after reception of the *RRCResumeRequest* message by the network. Hence, the *RRCResume* and *RRCResumeComplete* message are subject to the same protection (i.e., cyphering and integrity protection) as the *RRCReconfiguration* and *RRCReconfigurationComplete* message.

This change enables the network to efficiently resume RRC connections of UEs (without RRC reconfiguration).

**[Comments]**:

# E011

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| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| E011 | NTN | 1 | Establishment/Release of MRBs following the ISA |  | Ericsson (Ignacio) |  | v001 | ToDo |

**[Description]**: Following RAN2 agreements, a UE may initiate the establishment or release when it enters/leaves the ISA of the MBS service in question. However, the text captured in 5.9.3.2 is not sufficient to ensure these limitations. For instance, there are some clauses such as “upon start of the MBS session” that would allow a UE to acquire establish the MRBs even outside the ISA..

**[Proposed Change]**: It is simpler to include the geofencing limitation in the general configuration of broadcast MRBs (section 5.9.3.1) so that it applies both to initial establishment/release but also to updates. Here an example:

#### 5.9.3.1 General

The broadcast MRB configuration procedure is used by the UE to configure PDCP, RLC, MAC and the physical layer upon starting and/or stopping to receive a broadcast MRB transmitted on MTCH, or upon modification of a configuration of a broadcast MRB received by the UE. The procedure applies to MBS capable UEs that are interested to receive or that are receiving an MBS broadcast service that are in RRC\_IDLE, RRC\_INACTIVE or RRC\_CONNECTED with an active BWP with common search space configured by *searchSpaceMTCH* or *searchSpaceMCCH* and are located within the Intended Service Area associated with the MBS service, if any.

**[Comments]**:

# E012

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| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| E012 | NTN | 2 | New RAN1 parameter on DL CE |  | Ericsson (Ignacio) |  | v001 | ToDo |

**[Description]**: RAN1 has updated its higher layer parameters list in . A new parameter for DL CE has been added: searchSpaceLinkingId-r19. Provided there exist an old parameter with the same name but different functionality, we suggest renaming it to *searchSpaceLinkingId-CE-r19.* Unlike RAN1’s proposal, this parameter should be included within SearchSpace IE within a new SearchSpaceExt-v19.

**[Proposed Change]**: Add the new RAN1 parameter with the following TP:

**[Comments]**:

searchSpaceLinkingId-CE-r19 INTEGER (0.. maxNrofSearchSpacesLinks-1-r17) OPTIONAL -- Need R

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| ***SearchSpaceLinkingIdCE***  This parameter is used to link two search spaces of same type in the same BWP. If two search spaces have the same *searchSpaceLinkingIdCE-r19* UE assumes these two search spaces are linked to PDCCH repetition. When PDCCH repetition is monitored in two linked search space (SS) sets, the UE does not expect a third monitored SS set to be linked with any of the two linked SS sets. The two linked SS sets have the same CSS set type other than Type-0 CSS and other than Type-3 CSS for common search spaces other than SearchSpaceZero. The two linked SS sets have the same DCI formats to monitor. For intra-slot PDCCH repetition: The two SS sets should have the same periodicity and offset (monitoringSlotPeriodicityAndOffset), and the same duration. The starting symbol of monitoring occasion of the second SS is located right after the ending symbol of monitoring occasion of the first SS. For linking monitoring occasions across the two SS sets that exist in the same slot: The two SS sets have the same number of monitoring occasions within a slot and n-th monitoring occasion of one SS set is linked to n-th monitoring occasion of the other SS set. |

# E013

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| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| E013 | NTN | 2 | Maximum amount of reference locations for location-based SMTC selection | R2-25XXXX | Ericsson (Ignacio) |  | v001 | ToDo |

**[Description]**: Last meeting, RAN2 took the following agreement: “The maximum number configured SMTCs for idle/inactive is 7 and it also includes the SMTC of the serving cell (This updates a previous decision to have a maximum of 6 STMCs)”. In our understanding, the overall sentiment in the last RAN2 meeting is that the network will configure 6 potential neighbour SMTCs and SMTC1 is used for the serving cell. Therefore, the network only needs to configure 6 reference locations, i.e., the serving cell does not need a reference location. RAN2 needs to decide whether a reference location for the serving cell is needed for the purpose of location-based SMTC selection feature.

**[Proposed Change]**: The maximum number of reference locations for location-based SMTC selection is 6. The serving cell, i.e., SMTC1, is excluded from SMTC selection.

**[Comments]**: We understand that the UE needs SMTC1 to keep track of the serving cell which always needs to be measured.

# E014

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| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| E014 | NTN | 1 | Clarificatory NOTE for the use of ISA in both SIB and USD to establish MRBs |  | Ericsson (Ignacio) |  | v001 | ToDo |

**[Description]**: Last meeting, RAN2 agreed to consider the Target Service Area for the purpose of geofencing MBS broadcast services in NTN. Following previous agreements related to the ISA, this information in USD can also be used to establish/release MRBs depending on whether the UE is location within or outside the Target Service Area.

**[Proposed Change]**: Include a general NOTE so that the UE can consider both sources of information to establish/release MRB(s).

**[Comments]**: RAN2 to consider the following TP:

NOTE 2: It is up to UE implementation to use either the Target Service Area in the USD or the ISA(s) in *SIBXX*, if provided, for broadcast MRB configuration in NTN.