NR NTN Comments file

Template:

# Xnnn

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 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.

# V200

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| V200 | NTN | 1 | Having a valid version of SIB2 when the CONNECTED UE is configured with location information reporting for assisted SMTC configuration  | Yes, R2-250xxxx | vivo (Stephen) |  | v005 | ToDo |

 **[Description]**: When the CONNECTED UE is configured with location information reporting for assisted SMTC configuration, the network may not configure *refLocList-r19* via dedicated RRC message (for overhead saving), the UE shall have a valid version of SIB2. Otherwise, the UE may not be able to report the nearest location in the RRC complete message.

**[Proposed Change]**: Clarify that the CONNECTED UE is configured with location information reporting for assisted SMTC configuration shall have a valid version of SIB2.

5.2.2.1 General UE requirements

….

The UE capable of MBS broadcast which is receiving or interested to receive MBS broadcast service(s) via a broadcast MRB shall ensure having a valid version of *SIB20*, regardless of the RRC state the UE is in.

The UE configured to provide location information for assisted SMTC configuration in RRC\_CONNECTED state shall ensure having a valid version of *SIB2.*

The UE shall ensure having a valid version of the posSIB requested by upper layers.

**[Comments]**:

# V201

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| V201 | NTN | 1 | PDCCH repetition impacts on SI acquisition | Yes, R2-250xxxxx | vivo (Stephen) |  | v005 | ToDo |

 **[Description]**: With common PDCCH repetition, the UE not only monitors *searchSpaceOtherSystemInformation*, but also monitors *searchSpace* linked with *searchSpaceOtherSystemInformation*. Clarification is needed in sub-clause 5.2.2.3.2

**[Proposed Change]**: Clarify that PDCCH monitoring occasions for SI message are determined based on search space(s) indicated by *searchSpaceOtherSystemInformation* and its linked *searchSpace* (if any) in sub-clause 5.2.2.3.2.

5.2.2.3.2 Acquisition of an SI message

For SI message acquisition PDCCH monitoring occasion(s) are determined according to *searchSpaceOtherSystemInformation* and linked *searchSpace* (if any). If *searchSpaceOtherSystemInformation* or linked *searchSpace* is set to zero, PDCCH monitoring occasions for SI message reception in SI-window are same as PDCCH monitoring occasions for *SIB1* where the mapping between PDCCH monitoring occasions and SSBs is specified in TS 38.213[13]. If *searchSpaceOtherSystemInformation* or linked *searchSpace* (if any) is not set to zero, PDCCH monitoring occasions for SI message are determined based on search space(s) indicated by *searchSpaceOtherSystemInformation* and its linked *searchSpace* (if any). PDCCH monitoring occasions for SI message which are not overlapping with UL symbols (determined according to *tdd-UL-DL-ConfigurationCommon*) are sequentially numbered from one in the SI window. The [x×N+K]th PDCCH monitoring occasion (s) for SI message in SI-window corresponds to the Kth transmitted SSB, where x = 0, 1, ...X-1, K = 1, 2, …N, N is the number of actual transmitted SSBs determined according to *ssb-PositionsInBurst* in *SIB1* and X is equal to CEIL(number of PDCCH monitoring occasions in SI-window/N). The actual transmitted SSBs are sequentially numbered from one in ascending order of their SSB indexes. The UE assumes that, in the SI window, PDCCH for an SI message is transmitted in at least one PDCCH monitoring occasion corresponding to each transmitted SSB and thus the selection of SSB for the reception SI messages is up to UE implementation.

**[Comments]**:

# C002

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| C002 | NTN | 1 | Missed geographical area coordinates in procedure of SIB7 reception | N | CATT (Da Wang) |  | v008 | ToDo |

 **[Description]**:.

**[Proposed Change]**: Add geographical area coordinates as below.

1> else if all segments of a warning message and geographical area coordinates (if any) have been received:

2> assemble the warning message from the received *warningMessageSegment(s)*;

2> assemble the geographical area coordinates from the received *warningAreaCoordinatesSegment* (if any);

2> forward the received complete warning message, *messageIdentifier*, *serialNumber*, *dataCodingScheme* and geographical area coordinates (if any) to upper layers;

2> stop reception of *SIB7*;

2> discard the current values of *messageIdentifier* and *serialNumber* for *SIB7*;

**[Comments]**:

# C003

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| C003 | NTN | 1 | clarify how UE determines the service area if the Target Service Area in the USD or the ISA in SIBXX are not totally aligned | Yes, R2-250xxxxx | CATT (Da Wang) |  | v008 | ToDo |

 **[Description]**: We prefer to clarify how UE determines the service area if the Target Service Area in the USD or the ISA in SIBXX are not totally aligned. Since the UE is not expect to receive MBS service outside the service area, it would be better for the UE to get a precise service area scope.

**[Proposed Change]**: Add the following NOTE to clarify the relationship between the Target Service Area in the USD and the ISA in SIBXX.

NOTE: If the service area information is broadcast in an NTN cell, the UE ignores the service area information in USD

**[Comments]**:

# H250

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| H250 | NTN | 1 | Descriptions of UAI | R2-25xxxxx | Huawei (Lili) |  | V006 | ToDo |

 **[Description]**: The closest reference location information in the UAI can be used for both SMTC configuration and gap configuration. Besides, it is preferred that we use “reference location information reporting” because it is different from directly reporting UE location. Similar changes (referring to gap configuration) need to be made to multiple other places.

**[Proposed Change]**:

2> if the *assisted-SSB-MTC-Config* is set to *setup*:

3> consider itself to be configured to provide closest reference location information for assisting SMTC and measurement gap configuration in RRC\_CONNECTED state in accordance with 5.7.4;

2> else:

3> consider itself not to be configured to provide closest reference location information for assisting SMTC and measurement gap configuration in RRC\_CONNECTED state.

**[Comments]**:

# V202

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| V202 | NTN | 1 | Reference to 5.3.5.3 | N | vivo (Stephen) |  | v005 | ToDo |

 **[Description]**: The *OtherConfig* setting up location information reporting also impacts sub-clause 5.3.5.3. A reference to sub-clause 5.3.5.3 should be added in sub-clause 5.3.5.9.

**[Proposed Change]**:

1> if the received *otherConfig* includes the *assisted-SSB-MTC-Config*:

2> if the *assisted-SSB-MTC-Config* is set to *setup*:

3> consider itself to be configured to provide location information for assisted SMTC configuration in RRC\_CONNECTED state in accordance with 5.3.5.3 and 5.7.4;

2> else:

3> consider itself not to be configured to provide location information for assisted SMTC configuration in RRC\_CONNECTED state.

 **[Comments]**:

# C004

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| C004 | NTN | 1 | clarify how UE determines the periodicity and offset of the SSB-MTC5 element | Yes, R2-250xxxxx | CATT (Da Wang) |  | v009 | ToDo |

 **[Description]**: According to the field description of smtc5list, the pci-List, periodicity and/or offset fields can be absent, and if these field is absent for an entry, the UE applies the value of the corresponding field from the entry at the same position in smtc4list. However, in section 5.5.2.10, the situation of absent of pci-List, periodicity and/or offset fields is not reflected.

**[Proposed Change]**: modify “in” as “related to”.

If *smtc5list* is present, for cells indicated in the *pci-List* parameter related to each *SSB-MTC5* element of the list in the same *MeasObjectNR*, the UE shall setup an additional SS/PBCH block measurement timing configuration (SMTC) in accordance with the received *periodicity* and *offset* parameter related to each *SSB-MTC5* configuration and use the *duration* parameter from the *smtc1* configuration. The first subframe of each SMTC occasion occurs at an SFN and subframe of the NR serving cell meeting the above condition.

**[Comments]**:

# C005

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| C005 | NTN | 1 | Clarify the meaning of “can” in the following agreement: - The UE reports an indication of the N closest reference locations via UE assistance information, e.g. bitmap or list of indices of the locations.  - The UE can report the N closest reference locations via the RRCReconfigurationComplete message. | Yes, R2-250xxxxx | CATT (Da Wang) |  | v008 | ToDo |

 **[Description]**: From our perspective, “can” means the UE does not have to report the reference location in the RRCReconfigurationComplete message. However, the following text implies that the UE shall report the N closest reference locations in the RRCReconfigurationComplete message for the first time.

1> set the content of the *RRCReconfigurationComplete* message as follows:

*[unreleated part is ommitted]*

2> if the UE is configured in this *RRCReconfiguration* message to provide location information for assisted SMTC configuration in RRC\_CONNECTED state:

3> include *referenceLocationReport*;.

We have two options to solve this issue:

Option 1: restrict the UE have to report the reference locations in the RRCReconfigurationComplete message for the first time, and remove the “upon being configured to do so” triggered condition under the UEAssistanceInformation message.

Option 2: make the UE report the reference locations in the RRCReconfigurationComplete message as an optional behaviour, and complete the UE behaviour of “upon being configured to do so” triggered condition under the UEAssistanceInformation message.

For simplicity, we can go with the option 1, i.e., restrict that the UE have to report the N closest reference locations in the RRCReconfigurationComplete message for the first time and the UEAssistanceInformation message can be used for the subsequent reports. The spec can be modified as following.

**[Proposed Change]**: Remove the “upon being configured to do so” for the condition of reporting N closest reference locations in the *UEAssistanceInformation* message.

A UE capable of providing location information for assisted SMTC configuration in RRC\_CONNECTED state shall initiate the procedure upon determining that the closest reference location(s) have changed compared with the last reported values.

**[Comments]**:

[Samsung]: we share the same view on the issue, as we already mentioned in the CR review but not addressed by the Rapporteur. In our understanding of the agreement, we think Option 2 should be the corresponding UE behaviour, i.e., reporting reference location in RRCReconfigurationComplete message is optional. We propose a change in RIL S024.

# S024

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| S024 | NTN | 1 | UE optionally reports N closest reference locations via the RRCReconfigurationComplete message. | Yes, R2-250xxxxx | Samsung (Shiyang) |  | v011 | ToDo |

 **[Description]**: RAN2 agreement is that

- The UE reports an indication of the N closest reference locations via UE assistance information, e.g. bitmap or list of indices of the locations.

 The UE can report the N closest reference locations via the RRCReconfigurationComplete message.

“UE can ..” in our understanding means UE optionally reports in RRCReconfigurationComplete message. If we implement in the current way below, it enforces UE always reports in RRCReconfigurationComplete message, which obviously is not aligned with the agreement!

2> if the UE is configured in this *RRCReconfiguration* message to provide location information for assisted SMTC configuration in RRC\_CONNECTED state:

3> include *referenceLocationReport*;.

**[Proposed Change]**: Add “if available” at the end.

2> if the UE is configured in this *RRCReconfiguration* message to provide location information for assisted SMTC configuration in RRC\_CONNECTED state:

3> include *referenceLocationReport*, if available;

**[Comments]**:

# S025

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| S025 | NTN | 1 | UE first time reports N closest reference locations using UAI. | Yes, R2-250xxxxx | Samsung (Shiyang) |  | v011 | ToDo |

 **[Description]**: As agreed “The UE can report the N closest reference locations via the RRCReconfigurationComplete message.”, if UE has not reported in RRCReconfigurationComplete message or in UAI since it is configured to do so, UE shall report reference location via UAI for the first time. The condition for the first-time report is missing currently.

**[Proposed Change]**: add the condition for the first-time report.

1> if configured to provide location information for assisted SMTC configuration in RRC\_CONNECTED state:

2> if the UE did not include *referenceLocationReport* in a RRCReconfigurationComplete message or in a *UEAssistanceInformation* message since it has been configured to provide location information; or

2> if the current closest reference locations are different from the ones indicated in the last transmission including *referenceLocationReport*:

3> initiate transmission of the *UEAssistanceInformation* message in accordance with 5.7.4.3 to provide location information for assisted SMTC configuration;

**[Comments]**:

# E010

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 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

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 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]**:

# V208

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| V208 | NTN | 2 | Confirm that bitmap is used for UE reference location report | Yes, R2-250xxxx | vivo (Stephen) |  | v007 | ToDo |

 **[Description]**: In the post email discussion, there is an argument on whether a bitmap or a reference location index should be used for the UE reference location report. With index indicating, the network can identify which one location is the nearest one or second-nearest one, based on the listed order in the reporting list. However, we don’t see index is beneficical. The network can configure the parameter *N* to control the number of locations that can be reported. Such information is sufficient for configuring *M* SMTCs for UE. The network doesn’t require which location is the nearest one.

**[Proposed Change]**: RAN2 confirms that bitmap of 6 bit is used for UE reference location report.

**[Comments]**:

# E012

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 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

|  |
| --- |
| ***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. |

[vivo] The field naming in the FD part should be ***SearchSpaceLinkingId-CE*.**

# X251

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| X251 | NTN | 2 | Providing the closest reference location in a list instead of bitmap | R2-25XXXX | Xiaomi (Xiaowei Jiang) |  | v010 | ToDo |

 **[Description]**: The current ASN.1 design of UE reported assisted closest reference locations (i.e. referenceLocationReport-r19) is a bitmap. It doesn't allow network to differentiate the reference locations in the order of closeness. As a result, network has to always configure all the SMTCs for all the reported reference locations.

**[Proposed Change]**: Provide closest reference locations in the form of a list, the order of the reference location indicates the closeness/UE preference.

**[Comments]**:

# H251

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| H251 | NTN | 1 | SMTC for serving cell | R2-25xxxxx | Huawei (Lili) |  | V006 | ToDo |

 **[Description]**: It was agreed to have 7 SMTCs altogether on a single frequency. Serving cell does not require a reference location, and in this case the legacy *smtc* is used for the serving cell measurement. However, this understanding is a bit different from legacy releases because *smtc* is now changed to a cell-specific SMTC rather than a frequency-specific SMTC. Also, the field description of *smtc* related to SMTC adjustment based on PDD needs to revised so that UE does not need to consider neighbour cell propagation delay.

**[Proposed Change]**: Measurement timing configuration for intra-frequency measurement. If this field is absent, the UE assumes that SSB periodicity is 5 ms for the intra-frequency cells. If the field is broadcast by an NTN cell and *smtc5list* is not configured, the *offset* (derived from parameter *periodicityAndOffset*) is based on the assumption that the gNB-UE propagation delay difference between the serving cell and neighbour cells equals to 0 ms, and UE can adjust the actual *offset* based on the actual propagation delay difference. If the field is broadcast by an NTN cell and *smtc5list* is configured, *smtc* is for serving cell measurements and the *offset* (derived from parameter *periodicityAndOffset*) is based on the assumption that the gNB-UE propagation delay difference equals to 0 ms.

**[Comments]**:

# E013

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 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.

[vivo] We agree with 6 as the max size of the reference location list. In addition, the scenario where there are 7 detectable neighboring cells is not a common case in TN. And we believe this is even less common for the NTN scenario.

# X250

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| X250 | NTN | 2 | Broadcast of distance threshold together with reference location for neighbor cells in SIB2 | R2-25XXXX | Xiaomi (Xiaowei Jiang) |  | v010 | ToDo |

 **[Description]**: As the cell size of neighbor cells can be different according to TR38.821, UE cannot decide which SMTC to select purely based on the closeness of neighbour cells, as UE may be out of coverage of the closest neighbour cell if it happens to be with a small cell size.

**[Proposed Change]**: Broadcast a distance threshold together with the reference location.

**[Comments]**:

# V203

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| V203 | NTN | 1 | Refine the mapping between reference location and smtc4 and smtc5 | No | vivo (Stephen) |  | v007 | ToDo |

 **[Description]**: Currently, the refLocList can only be associated with smtc5. In our understanding, the reference location should be allowed to be associated with smtc4. For example, the network may configure 3 smtc4 and 3 smtc5 of different periodicity, with 6 reference locations. For Rel-19 UE, the UE should know the detailed association between smtc4/smtc5 and the reference location.

**[Proposed Change]**: Refine the mapping between reference location and smtc4 and smtc5

***refLocList***

Indicates a reference location associated to an SMTC configuration in *smtc5list*. If present, it includes the same number of entries as *smtc5list*. The first entry in this list corresponds to the first entry across *smtc4list* and *smtc5list*, the second entry corresponds to the seccond entry across *smtc4list* and *smtc5list*, and so on.

**[Comments]**:

# C006

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| C006 | NTN | 1 | Clarify whether the R19 DL CE capable UEs perform measurement as configured in the SMTC4 | Yes, R2-250xxxxx | CATT (Da Wang) |  | v008 | ToDo |

 **[Description]**: Based on the field description of smtc4list and smtc5list under SIB2, it is unclear whether the R19 DL CE capable UEs use the SMTC4 perform measurement as configured in the SMTC4.

We agreed that “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)”. The yellow highlight text means the R19 DL CE capable UE takes into account all the SMTCs in smtc4list and smtc5list. While the green highlight text means the SMTC5 explict configure SMTCs not configured in SMTC4 and implicit configure SMTCs configured in SMTC4, that the UE only take the entries in SMTC5 into account. There is a contradiction here and the total number of configurable SMTCs across smtc4list and smtc5list may exceed 6.

For instance, SMTC4={a,b,c} SMTC5={-,d,e,f,g,h}, the total number of configurable SMTCs across smtc4list and smtc5list is 9, which is against with the yellow highlight part.

|  |
| --- |
| ***smtc4list, smtc5list***Measurement timing configuration list for NTN deployments. The offset of each SSB-MTC4 in *smtc4list* and SSB-MTC5 in *smtc5list* is based on the assumption that the gNB-UE propagation delay difference between the serving cell and neighbour cells equals to 0 ms, and UE can adjust the actual *offset* based on the actual propagation delay difference. For a UE that supports less SMTCs than what is included in *smtc4list* and *smtc5list*, it is up to the UE to select which SMTCs to consider. The total number of configurable SMTCs across *smtc4list* and *smtc5list* is 6. The total number of different SMTC periodicities across *smtc*, *smct4list*, and *smtc5list* is 2. If an entry in *smtc5list* is present but the *pci-List, periodicity and/*or *offset* fields are absent, the UE applies the value of the corresponding field from the entry at the same position in *smtc4list*, if present. |

**[Proposed Change]**: remove the limitation of “The total number of configurable SMTCs across smtc4list and smtc5list is 6”. The maximum number configured SMTCs for idle/inactive is 7 can be restricted by the sequence length of SMTC5 naturally.

|  |
| --- |
| ***smtc4list, smtc5list***Measurement timing configuration list for NTN deployments. The offset of each SSB-MTC4 in *smtc4list* and SSB-MTC5 in *smtc5list* is based on the assumption that the gNB-UE propagation delay difference between the serving cell and neighbour cells equals to 0 ms, and UE can adjust the actual *offset* based on the actual propagation delay difference. For a UE that supports less SMTCs than what is included in *smtc4list* and *smtc5list*, it is up to the UE to select which SMTCs to consider. The total number of different SMTC periodicities across *smtc*, *smct4list*, and *smtc5list* is 2. If an entry in *smtc5list* is present but the *pci-List, periodicity and/*or *offset* fields are absent, the UE applies the value of the corresponding field from the entry at the same position in *smtc4list*, if present. |

**[Comments]**:

[Samsung]: we share the same view that the current sentence “The total number of configurable SMTCs across *smtc4list* and *smtc5list* is 6.” is not correct and should be removed.

# V204

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| V204 | NTN | 2 | SMTC5 and the reference location list can be configured for the inter-frequency case | Yes, R2-250xxxx | vivo (Stephen) |  | v005 | ToDo |

 **[Description]**: There are use cases to include SMTC5 and reference location list in SIB4 for the inter-frequency case.

**[Proposed Change]**: Add *refLocList* and *smtc5list* in SIB4.

**[Comments]**:

[xiaomi] We agree with the proposal. For idle/inactive mode, there is no measurement gap. So there is no UE capability issue related to inter frequency measurement.

[Samsung] share same view

# S026

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| S026 | NTN | 1 | Missing FD of radius-r19 in SIBXX  |  | Samsung (Shiyang) |  | v011 | ToDo |

 **[Description]**: The FD of radius-r19 is missing which is needed to describe the circle area and the unit of radius.

**[Proposed Change]**:

Add a field description for radius-r19

***Radius***

Indicates the radius of *circleArea*. Each step represents 1m.

**[Comments]**:

# S027

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| S027 | NTN | 1 | Incorrect FD of ***smtc5list*** in MO |  | Samsung (Shiyang) |  | v011 | ToDo |

 **[Description]**: The FD of ***smtc5list*** in MO is incorrect. *smtc5list* will not be configured in MO if it is not to indicate an additional SMTC periodicity.

**[Proposed Change]**:

Update the FD of ***smtc5list*** in MO as follows.

***smtc4list, smtc5list***

Measurement timing configuration list for NTN deployments, see clause 5.5.2.10. *smtc5list* is configured to indicate an additional SMTC periodicity to the one indicated in *smtc1*.

**[Comments]**:

# E014

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 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.

[vivo] We think the TSA is only needed for MCCH acquisition. The benefit of considering both resources for MRB management is unclear.

# C007

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| C007 | NTN | 2 | The introduced SIBxx need to be added in the *SI-SchedulingInfo* | N | CATT (Da Wang) |  | v008 | ToDo |

 **[Description]**: The introduced SIBxx need to be added in the *SI-SchedulingInfo*

**[Proposed Change]**:

SIB-TypeInfo-v1700 ::= SEQUENCE {

 sibType-r17 CHOICE {

 type1-r17 ENUMERATED {sibType15, sibType16, sibType17, sibType18, sibType19, sibType20, sibType21,

 sibType22-v1800, sibType23-v1800 ,sibType24-v1800, sibType25-v1800,

 sibType17bis-v1820, sibTypexx-v1900, spare3, spare2, spare1,...},

 type2-r17 SEQUENCE {

 posSibType-r17 ENUMERATED {posSibType1-9, posSibType1-10, posSibType2-24, posSibType2-25,

 posSibType6-4, posSibType6-5, posSibType6-6, posSibType2-17a-v1770,

 posSibType2-18a-v1770, posSibType2-20a-v1770, posSibType1-11-v1800,

 posSibType1-12-v1800, posSibType2-26-v1800, posSibType2-27-v1800,

 posSibType6-7-v1800, posSibType7-1-v1800,...,

 posSibType7-2-v1800, posSibType7-3-v1800, posSibType7-4-v1800},

 encrypted-r17 ENUMERATED { true } OPTIONAL, -- Need R

 gnss-id-r17 GNSS-ID-r16 OPTIONAL, -- Need R

 sbas-id-r17 SBAS-ID-r16 OPTIONAL -- Cond GNSS-ID-SBAS

 }

 },

 valueTag-r17 INTEGER (0..31) OPTIONAL, -- Cond NonPosSIB

 areaScope-r17 ENUMERATED {true} OPTIONAL -- Need S

}

**[Comments]**:

# V205

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| V204 | NTN | 2 | FFS whether also a distance threshold is indicated. | Yes, R2-250xxxx | vivo (Stephen) |  | v005 | ToDo |

 **[Description]**: We think a distance threshold is needed for the CONNECTED UE. There is no need for UE to report its location if the distance to the nearest location remains large.

**[Proposed Change]**: Introduce a distance threshold in *Assisted-SSB-MTC-Config*. The UE only sets the reference location bit to 1 when the UE is within the associated threshold range.

**[Comments]**:

[Xiaomi] We agree with the proposal to introduce distance threshold based closest reference location report.

# V206

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| V207 | NTN | 1 | Need code for *mbs-SessionAreaList-r19* should be Need S | Yes, R2-250xxxxx | vivo (Stephen) |  | v005 | ToDo |

 **[Description]**: RAN2 confirms that if no intended area ID is explicitly indicated in MCCH for an MBS broadcast service the UE is interested in, the UE considers the service is applicable for reception within the entire cell area. So Need S is supposed to be used for *mbs-SessionAreaList-r19*

**[Proposed Change]**: Change Need R to Need S for *mbs-SessionAreaList-r19*

**[Comments]**:

# V207

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| V206 | NTN | 1 | Capture the following agreement.RAN2 confirms that if no intended area ID is explicitly indicated in MCCH for an MBS broadcast service the UE is interested in, the UE considers the service is applicable for reception within the entire cell area, with legacy behavior applicable (FFS whether we capture this in the spec) | Yes, R2-250xxxxx | vivo (Stephen) |  | v003 | ToDo |

 **[Description]**: The current specification only specifies the following cases: namely, cases where a service is not associated with an ISA entry, and cases where services are associated with an ISA entry with a specific area. The UE's behavior in the case where a service is associated with an empty ISA entry shall be further clarified.

**[Proposed Change]**: Capture the agreement in the FD of mbs-SessionAreaList.

***mbs-SessionAreaList***

Indicates the list of intended service areas associated with an MBS broadcast session in an NTN cell. If absent, UE considers the associated service can be received within the entire cell area.

**[Comments]**: