Mobility Comments file

Template:

# Exxx

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| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
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 **[Description]**: Based on the current spec, it is unclear whether LTM, CLTM based handover can be applied to the intermediate SL relay UEs.

**[Proposed Change]**: R2 to clarify whether LTM, CLTM based handover can be applied to the intermediate SL relay UEs or not.

**[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.
7. Please pay attention to the text styles of the RIL comment fields.

# J050

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| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| J050 | MOB | 1 | Clarify an RRCReconfiguration can be triggered by Conditional LTM |  | Takaki(Sharp) |  | V018 |  |

 **[Description]**: In the current specification, CLTM is excluded from the case of “reception of an RRCReconfiguration.” Considering that other conditional mobility cases are explicitly stated, it would be more natural to explicitly mention CLTM as well.

**[Proposed Change]**: add “(C)” before “LTM” as below:

5.3.5.3 Reception of an *RRCReconfiguration* by the UE

The UE shall perform the following actions upon reception of the *RRCReconfiguration,* upon execution of the conditional reconfiguration (CHO, CPA, CPC, or subsequent CPAC), or upon execution of an (C)LTM cell switch:

**[Comments]**:

[Huawei] For CLTM, the procedure that is called is called "LTM cell switch execution procedure", not "(C)LTM cell switch excecution procedure" so prefer not to add "(C").

# C150

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| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| C150 | MOB | 1 | Upon inter-CU MCG LTM execution, SN key update is also needed for the case that SN terminated bearer configured with MCG RLC leg only. |  | Rui(CATT) |  | V005 |  |

 **[Description]**: Upon inter-CU MCG LTM execution, SN key update is also needed for the case that SN terminated bearer configured with MCG RLC leg only. However, in this case, the LTM-Candidate IE indicated by lower layers includes an mrdc-SecondaryCellGroupConfig set to release.Thus.the current spec is not correct.

**[Proposed Change]**:

2> if this *RRCReconfiguration* message is applied due to an LTM cell switch execution procedure which requires an update of the master security key, according to clause 5.3.5.18.6:

~~3> if the~~ *~~LTM-Candidate~~* ~~IE indicated by lower layers does not include an~~ *~~mrdc-SecondaryCellGroupConfig~~* ~~set to~~ *~~release~~*~~:~~

~~4~~3> perform security key update procedure as specified in 5.3.5.7;

**[Comments]**:

[OPPO]

Agree with the change. In current specification, when the target cell configuration includes mrdc-SecondaryCellGroupConfig setting to relase, both the cases that the SN terminated bearers are kept and released can be supported. It can be up to NW to ensure that the sk-counter is configured properly, i.e., if sk-counter is included in target cell configuration, it implies that there are existing SN terminated bearers in the target cell and the UE can directly use the sk-counter without checking whether mrdc-SecondaryCellGroupConfig is set to release.

[Huawei]

Agree with the change

# O600

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| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| O600 | MOB | 1 | Unncessary condition for including the selectedSK-Counter in RRCReconfigurationComplete |  | OPPO (Xue Lin) |  | V013 | ToDo |

**[Description]**: In current spec, when the UE determines whether to include the selectedSK-Counter in RRCReconfigurationComplete, it needs to check how the target cell configruation is received as yellow-hilighted text. While if a sk-counter has been selected due to LTM execution as in its sub-condition, it already represents that it is an inter-CU SCG LTM procedure and the target configuration can be only provided via SRB1 but not within the *nr-SCG* within *mrdc-SecondaryCellGroup*, i.e., *ltm-ConfigNRDC.* Therefore, the yellow-hilighted condition is unnecessary for checking whether to include SelectedSK-Counter.

**[Proposed Change]**:

2> if this *RRCReconfiguration* message is applied due to an LTM cell switch execution procedure according to clause 5.3.5.18.6:

3> include in the *appliedLTM-CandidateId* the *LTM-CandidateId* of the applied LTM candidate configuration;

3> if a new sk-Counter value has been selected due to the LTM cell switch execution procedure as specified in 5.3.5.18.6:

5> include *selectedSK-Counter* and set its value to the selected *sk-Counter* value;

**[Comments]**:

Z151

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| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| Z151 | MOB | 1 | Wrong removal of report configuration associated with L3 based CLTM upon reconfiguration with sync |  | ZTE (Mengjie Zhang) |  | V009 | ToDo |

 **[Description]**: According to the current spec, upon reconfiguration with sync, the UE shall remove the report configuration if the reportConfigId is not associated with any measId indicated by the condExecutionCond or the condExecutionCondSCG in an entry of condReconfigList in VarConditionalReconfig in which subsequentCondReconfig is included. However, the reportConfig which has a reportType set to condTriggerConfig may also be associated with the execution condition for L3 based CLTM. In order to support subsequent CLTM, such report configuration should not be released upon reconfiguration with sync.

**[Proposed Change]**: To add a condition to exclude the report configuration and measurement object configuration associated with L3 based CLTM. And also fix the wrong indentation. For example:

3> for each *measId* of the MCG *measConfig*, if configured, and for each *measId* of the SCG *measConfig*, if configured, if the associated *reportConfig* has a *reportType* set to *condTriggerConfig*:

4> if the *reportConfigId* is not associated with any *measId* indicated by the *condExecutionCond* or the *condExecutionCondSCG* in an entry of *condReconfigList* in *VarConditionalReconfig* in which *subsequentCondReconfig* is included; and

4> if the *reportConfigId* is not associated with any *measId* indicated by the *LTM-ExecutionCondition* in an entry of *LTM-ExecutionConditionList*:

5> remove the entry with the matching *reportConfigId* from the *reportConfigList* within the *VarMeasConfig*;

4> if the associated *measObjectId* is only associated to a *reportConfig* with *reportType* set to *condTriggerConfig*; and

4> if the *measObjectId* is not associated with any *measId* indicated by the *condExecutionCond* or the *condExecutionCondSCG* in an entry of *condReconfigList* in *VarConditionalReconfig* in which *subsequentCondReconfig* is included; and

4> if the *measObjectId* is not associated with any *measId* indicated by the *LTM-ExecutionCondition* in an entry of *LTM-ExecutionConditionList*:

5> remove the entry with the matching *measObjectId* from the *measObjectList* within the *VarMeasConfig*;

4> remove the entry with the matching *measId* from the *measIdList* within the *VarMeasConfig*;

**[Comments]**:

[Huawei] In the TP, it is unclear which *LTM-ExecutionConditionList* to use. In general, we believe current procedure text and ASN.1 are unclear on which the execution conditions in use are.

# Z152

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| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| Z152 | MOB, Sidelink | 1 | The coexistsnce of (C)LTM and sidelink | R2-25xxxxx | ZTE (Mengjie Zhang) |  | V009 | ToDo |

 **[Description]**: Based on the current spec, it is unclear whether (C)LTM can be coexisted with NR sidelink.

**[Proposed Change]**: RAN2 to clarify whether the coexistence of (C)LTM and NR sidelink can be supported or not.

**[Comments]**:

# Z153

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| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| Z153 | MOB, QoE | 1 | The coexistsnce of (C)LTM and QoE | R2-25xxxxx | ZTE (Mengjie Zhang) |  | V009 | ToDo |

 **[Description]**: Based on the current spec, it is unclear whether (C)LTM can be coexisted with QoE.

**[Proposed Change]**: RAN2 to clarify whether the coexistence of (C)LTM and QoE can be supported or not.

**[Comments]**:

# Z154

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| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| Z154 | MOB, MBS | 1 | The coexistsnce of (C)LTM and MBS | R2-25xxxxx | ZTE (Mengjie Zhang) |  | V009 | ToDo |

 **[Description]**: Based on the current spec, it is unclear whether (C)LTM can be coexisted with MBS.

**[Proposed Change]**: RAN2 to clarify whether the coexistence of (C)LTM and MBS can be supported or not.

**[Comments]**:

# C151

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| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| C151 | MOB | 1 | It is not clear on whether the UE should stop the LTM conditions evaluation based on L1 measurements and/or based on L3 measurements. |  | Rui(CATT) |  | V005 |  |

 **[Description]**:.

**[Proposed Change]**:

2> else:

3> if the target SpCell is different from current SpCell:

~~4> stop the LTM conditions evaluation, if any, for all the LTM candidate configurations;~~

~~4> if the UE is performing LTM cell switch conditions evaluation based on L1 measurements:~~

~~5> request lower layers to stop the LTM cell switch conditions evaluation for all LTM candidate configurations;~~

4> if UE is performing LTM cell switch conditions evaluation based on L1 measurements:

5> request lower layers to stop the LTM conditions evaluation based on L1 measurements for all the LTM candidate configurations;

4> if UE is performing LTM cell switch conditions evaluation based on L3 measurements:

5> stop the LTM cell switch conditions evaluation based on L3 measurements for all the LTM candidate configurations;

3> start synchronising to the DL of the target SpCell;

 **[Comments]**:

# J051

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| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| J051 | MOB | 1 | Wrong IE name |  | Takaki(Sharp) |  | V018 |  |

 **[Description]**: same issue with Z158

**[Proposed Change]**: Change the IE name to *ltm-SK-CounterConfigToReleaseList* as below:

1> for each *securityCellSetId* value included in the *sk-CounterConfigToReleaseList* that is part of the current *sk-CounterConfigToAddModList* in *VarConditionalReconfig*:

**[Comments]**:

# C152

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| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| C152 | MOB | 1 | Ambiguity on whether the IE *ltm-Config* can be the one included in the *RRCReconfiguration* message contained in nr-SCG . |  | Rui(CATT) |  | V005 |  |

 **[Description]**: Ambiguity on whether the IE *ltm-Config* can be the one included in the *RRCReconfiguration* message contained in nr-SCG.

**[Proposed Change]**:

5.3.5.18.1 LTM configuration

……

An *ltm-Config* included within an *RRCReconfiguration* message not included in *nr-SCG* received via SRB1 is for LTM on the MCG. It may include an SCG configuration and/or *ltm-ServingCellNoSecurityChangeID*.

An *ltm-Config* included within an *RRCReconfiguration* message either received via SRB3, or embedded *nr-SCG* in in an *RRCReconfiguration* message received via SRB1 is for LTM on the SCG. It does not include any MCG configuration and does not include *ltm-ServingCellNoSecurityChangeID*.

 **[Comments]**:

[MediaTek (Pasi)]

Agree for the first change. The second change seems unnecessary, because "... *RRCReconfiguration* message ... embedded in an *RRCReconfiguration* message received via SRB1" looks unambiguous. However, if the second change is applied it should be "in *nr-SCG*" instead of "*nr-SCG* in".

[Huawei]

Agree with MediaTek's comments.

# Z155

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| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| Z155 | MOB | 1 | The missing description for VarLTM-ServingCellNoSecurityChange |  | ZTE (Mengjie Zhang) |  | V009 | ToDo |

 **[Description]**: In the current spec, we have specified how to handle the ltm-Config/ltm-ConfigNRDC and several related UE variables in NR-DC, but the description for VarLTM-ServingCellNoSecurityChange is missing here. It may cause some confusion whether one or two VarLTM-ServingCellNoSecurityChange shall be maintained in NR-DC.

**[Proposed Change]**: To add the description for VarLTM-ServingCellNoSecurityChange, for example:

In this case, the following principles apply:

- the UE maintains independently the two *ltm-Config,* or the *ltm-Config* and the *ltm-ConfigNRDC*;

- the UE maintains two independent *VarLTM-ServingCellNoResetID*, one associated with each *ltm-Config,* or one associated with the *ltm-Config* and one associated with the *ltm-ConfigNRDC*;

- the UE maintains two independent *VarLTM-ServingCellUE-MeasuredTA-ID*, one associated with each *ltm-Config,* or one associated with the *ltm-Config* and one associated with the *ltm-ConfigNRDC*;

- the UE maintains only one *VarLTM-ServingCellNoSecurityChange*, associated with either the *ltm-Config* or the *ltm-ConfigNRDC*;- the UE independently performs all the procedures in clause 5.3.5.18 for each *ltm-Config,* or an *ltm-Config* and an *ltm-ConfigNRDC,* and the associated *VarLTM-ServingCellNoResetID,* *VarLTM-ServingCellUE-MeasuredTA-ID*, and *VarLTM-ServingCellNoSecurityChange,* unless explicitly stated otherwise.

**[Comments]**:

[Huawei]

It should be specified that, if *ltm-Config* and *ltm-ConfigNRDC* are both configured, *ltm-NoSecurityChangeID* can either be configured in *ltm-*Config or in *ltm-ConfigNRDC* but not in both, and then *VarLTM-ServingCellNoSecurityChange* is associated with the one from *ltm-*Config and *ltm-ConfigNRDC* in which *ltm-NoSecurityChangeID* is configured.

# Z156

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| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| Z156 | MOB | 1 | The handling order of the IEs in the received LTM-Config  |  | ZTE (Mengjie Zhang) |  | V009 | ToDo |

 **[Description]**: Since we have specified some specific handling on some IEs received in the LTM-Config, the reconfiguration of all other fields in the received LTM-Config IE should be put at the end of the procedure.

**[Proposed Change]**: Move “1> reconfigure the UE according to all other fields of the received *LTM-Config* IE” to the end of the procedure.

**[Comments]**:

X150

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| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| X150 | MOB | 1 | Avoid stop CLTM evaluation for new configured CLTM conditions. | R2-25xxxxx | Xiaomi (Yi Xiong) |  | V006 | ToDo |

 **[Description]**: In LTM configuration section 5.3.5.18.1, for each LTM-ExecutionCondition included within ltm-ServingCellExecutionCondition, the UE stop CLTM evaluation for all the LTM candidate configurations and then UE perform CLTM evaluation for associated candidate cell, as shown below.

1> if the received *LTM-Config* includes the field *ltm-ServingCellExecutionCondition* set to *setup*:

2> for each *LTM-ExecutionCondition* included within *ltm-ServingCellExecutionCondition*:

3> if the UE is performing LTM cell switch conditions evaluation based on L1 measurements:

4> request lower layers to stop the LTM cell switch conditions evaluation based on L1 measurements for all the LTM candidate configurations;

3> if the UE is performing LTM cell switch conditions evaluation based on L3 measurements:

4> stop the LTM cell switch conditions evaluation based on L3 measurements for all the LTM candidate configurations as specified in 5.3.5.18.x;

3> if *l3-Conditions* is included within *ltm-ServingCellExecutionCondition*:

4> perform the LTM cell switch conditions evaluation based on L3 measurements as specified in 5.3.5.18.x according to the received *ltm-ServingCellExecutionCondition*;

3> else if *l1-Conditions* is included within *ltm-ServingCellExecutionCondition*:

4> request lower layers to initiate the LTM cell switch conditions evaluation based on L1 measurements according to the received field *ltm-ServingCellExecutionCondition*;

Based on the current spec, for each *LTM-ExecutionCondition* included within *ltm-ServingCellExecutionCondition*, the UE shall perform the blue part once. The blue part performed during the next “if” LOOP will cause the UE stop the CLTM evaluation which is triggered in previous “if” LOOP(s). The final result is that the UE will only perform CLTM evaluation for the conditions included in the last *LTM-ExecutionCondition* of the LOOP. This is incorrect and the UE shall perform evaluation based on the all new configured CLTM conditions

Hence, we suggest to move the procedure of “2> for each *LTM-ExecutionCondition* included within *ltm-ServingCellExecutionCondition*:” after the UE stop CLTM execution for all CLTM candidate.

**[Proposed Change]**: Based on the above description, we suggest the following change:

1> if the received *LTM-Config* includes the field *ltm-ServingCellExecutionCondition* set to *setup*:

2> if the UE is performing LTM cell switch conditions evaluation based on L1 measurements:

3> request lower layers to stop the LTM cell switch conditions evaluation based on L1 measurements for all the LTM candidate configurations;

2> if the UE is performing LTM cell switch conditions evaluation based on L3 measurements:

3> stop the LTM cell switch conditions evaluation based on L3 measurements for all the LTM candidate configurations as specified in 5.3.5.18.x;

2> for each *LTM-ExecutionCondition* included within *ltm-ServingCellExecutionCondition*:

3> if *l3-Conditions* is included within *ltm-ServingCellExecutionCondition*:

4> perform the LTM cell switch conditions evaluation based on L3 measurements as specified in 5.3.5.18.x according to the received *ltm-ServingCellExecutionCondition*;

3> else if *l1-Conditions* is included within *ltm-ServingCellExecutionCondition*:

4> request lower layers to initiate the LTM cell switch conditions evaluation based on L1 measurements according to the received field *ltm-ServingCellExecutionCondition*;

**[Comments]**:

# C153

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| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| C153 | MOB | 1 | UE should stop the corresponding LTM conditions evaluation before release the ltm-ServingCellExecutionCondition. |  | Rui(CATT) |  | V005 |  |

 **[Description]**: When *ltm-ServingCellExecutionCondition* is set to *release,* UE should stop the corresponding LTM conditions evaluation before release the ltm-ServingCellExecutionCondition..

**[Proposed Change]**:

5.3.5.18.1 LTM configuration

……

1. else (*ltm-ServingCellExecutionCondition* set to *release*):

2> Stop the corresponding LTM conditions evaluation,

2> release the *ltm-ServingCellExecutionCondition*

 **[Comments]**:

[Xiaomi/Yi Xiong]

We also think UE needs to stop CLTM evaluation, but we think UE needs to stop CLTM conditions evaluation for all the LTM candidate configurations.

Because subsequent CLTM is supported, after the initial CLTM, the UE may perform CLTM evaluation based on the conditions configured by *ltm-ExecutionCondition* configured within the *LTM-Candidate*. Hence, just stopping the corresponding LTM conditions evaluation does not cause the UE to stop CLTM evaluation based on the conditions configured by *ltm-ExecutionCondition*. And when the current serving cell set *ltm-ServingCellExecutionCondition* to *release*, it means the current serving cell wants UE to suspend CLTM.

Based on the above description, we suggest the following change:

1> else (*ltm-ServingCellExecutionCondition* set to *release*):

2> release the *ltm-ServingCellExecutionCondition*;

2> if the UE is performing LTM cell switch conditions evaluation based on L1 measurements:

3> request lower layers to stop the LTM cell switch conditions evaluation based on L1 measurements for all the LTM candidate configurations;

2> if the UE is performing LTM cell switch conditions evaluation based on L3 measurements:

3> stop the LTM cell switch conditions evaluation based on L3 measurements for all the LTM candidate configurations as specified in 5.3.5.18.x.

[Huawei] The execution condition that are being evaluated might be from *LTM-Candidate*, not from *ltm-ServingCellExecutionCondition*. In this case, it is rather strange that the release of *ltm-ServingCellExecutionCondition* is stopping the execution of those conditions.

X151

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| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| X151 | MOB | 1 | Correction on conditional LTM cell switch execution for only one triggered LTM candidate configuration | R2-25xxxxx | Xiaomi (Yi Xiong) |  | V006 | ToDo |

 **[Description]**: In LTM cell switch conditions evalution based on L3 measurements section 5.3.5.18.x, the target candidate cell, whose condition is met, is not considered as the selected cell.

In LTM cell switch execution section 5.3.5.18.6:

For L3 based CLTM (LTM cell switch triggered upon the fulfilment of LTM cell switch execution conditions), the LTM cell switch execution is based on the selected cell., as shown below:

1> else (LTM cell switch triggered upon cell selection performed while timer T311 was running or upon the fulfilment of LTM cell switch execution conditions (as specified in clause 5.3.5.18.x):

2> apply the *RRCReconfiguration* message in *ltm-CandidateConfig* within *LTM-Candidate* IE in *ltm-Config* related to the LTM candidate configuration identity for the selected cell (i.e., in accordance with 5.3.5.18.x or 5.3.7.3) according to clause 5.3.5.3;

However, the selected cell is determined by the bullet 2>, which is only applicable when ‘more than one LTM candidate configuration has triggered’, as shown below:

1> if this procedure is triggered due to fulfilment of LTM cell switch execution conditions:

2> if more than one LTM candidate configuration has triggered this procedure:

3> select one of the LTM candidate configurations as the selected cell for the LTM cell switch execution;

Therefore, if only one LTM candidate configuration has triggered, there would be no ‘selected cell’ according to the current spec. LTM cell switch execution for L3 CLTM can not be executed.

The similar issue of CHO has been discussed in RAN2, and the CR “R2- 2202835 Correction on conditional reconfiguraiton execution for only one triggered cell” has been agreed in RAN2#117-e meeting for the similar issue of CHO.

**[Proposed Change]**: Based on the above description, we suggest the following change:

1> if this procedure is triggered due to fulfilment of LTM cell switch execution conditions:

2> if more than one LTM candidate configuration has triggered this procedure:

3> select one of the LTM candidate configurations as the selected cell for the LTM cell switch execution;

2> else:

3> consider the triggered LTM candidate configurations as the selected cell for the LTM cell switch execution;

**[Comments]**:

[MediaTek (Pasi)]

Agree with Xiaomi's proposal, except we think the new 3> should have "candidate configuration", not "candidate configurations".

# M200

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| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| M200 | MOB | 1 | Ambiguity in handling of LTM UE variables in LTM cell switch |  | Pasi (MediaTek) |  | V008 |  |

 **[Description]**:

1> if the LTM cell switch is triggered on the MCG; or

1> if the LTM cell switch is triggered on the SCG and the LTM candidate configuration to be applied is configured via *ltm-ConfigNRDC*:

2> release/clear all current dedicated and common radio configurations which have neither been received via SRB1 within *mrdc-SecondaryCellGroup*, nor via SRB3 except for the following:

- the radio bearer configuration (configured via *RadioBearerConfig*)

- the *logicalChannelIdentity* and *logicalChannelIdentityExt* of RLC bearers configured in *RLC-BearerConfig* and the associated RLC entities, their state variables, buffers, and timers, except for triggering the associated RLC entities to reset the variable RETX\_COUNT its initial value, as specified in TS 38.322 [4];

- the *bh-LogicalChannelIdentity* of BH RLC channels configured in *BH-RLC-ChannelConfig* and the associated RLC entities, their state variables, buffers, and timers, except for triggering the associated RLC entities to reset the variable RETX\_COUNT its initial value, as specified in TS 38.322 [4];

- the UE variables *VarLTM-ServingCellNoResetID,* *VarLTM-ServingCellUE-MeasuredTA-ID*, and *VarLTM-ServingCellNoSecurityChange*;

- the *ltm-Config* and *ltm-ConfigNRDC* (if configured);

- the MCG C-RNTI;

- the AS security configurations associated with the master key;

- the logged measurement configuration;

3> if the LTM cell switch is triggered on the SCG and the LTM candidate configuration to be applied is configured via *ltm-ConfigNRDC*:

- the *ServingCellConfigCommon* of the PCell;

In above spec clip, the yellow text refers to the UE variables associated with *ltm-Config* for LTM on the MCG.

However, since this spec part is executed by the UE also when LTM cell switch is triggered on the SCG based on *ltm-ConfigNRDC*, it is ambiguous which UE variables, those associated with *ltm-Config* for MCG or those associated with *ltm-ConfigNRDC*, are meant here.

Note that even if we have "2> release/clear all current dedicated and common radio configurations which have neither been received via SRB1 within *mrdc-SecondaryCellGroup*, nor via SRB3 except for the following:", which intends to say "MCG related configurations", there still is ambiguity as the UE variables are not received via any SRB.

**[Proposed Change]**:

1> if the LTM cell switch is triggered on the MCG; or

1> if the LTM cell switch is triggered on the SCG and the LTM candidate configuration to be applied is configured via *ltm-ConfigNRDC*:

2> release/clear all current dedicated and common radio configurations which have neither been received via SRB1 within *mrdc-SecondaryCellGroup*, nor via SRB3 except for the following:

- the radio bearer configuration (configured via *RadioBearerConfig*)

- the *logicalChannelIdentity* and *logicalChannelIdentityExt* of RLC bearers configured in *RLC-BearerConfig* and the associated RLC entities, their state variables, buffers, and timers, except for triggering the associated RLC entities to reset the variable RETX\_COUNT its initial value, as specified in TS 38.322 [4];

- the *bh-LogicalChannelIdentity* of BH RLC channels configured in *BH-RLC-ChannelConfig* and the associated RLC entities, their state variables, buffers, and timers, except for triggering the associated RLC entities to reset the variable RETX\_COUNT its initial value, as specified in TS 38.322 [4];

- the UE variables *VarLTM-ServingCellNoResetID* and *VarLTM-ServingCellUE-MeasuredTA-ID* associated with the *ltm-Config* for LTM on the MCG (if configured);

- the UE variable *VarLTM-ServingCellNoSecurityChange*;

- the *ltm-Config* and *ltm-ConfigNRDC* (if configured);

- the MCG C-RNTI;

- the AS security configurations associated with the master key;

- the logged measurement configuration;

3> if the LTM cell switch is triggered on the SCG and the LTM candidate configuration to be applied is configured via *ltm-ConfigNRDC*:

- the *ServingCellConfigCommon* of the PCell;

**[Comments]**:

[Huawei] In Rel-18, it is already possible to have two instances of *VarLTM-ServingCellNoResetID* and *VarLTM-ServingCellUE-MeasuredTA-ID*. If there is any ambiguity because UE variables are not received from an SRB, that ambiguity already exists in Rel-18, then a Rel-18 correction should be considered.

On the TP: for SCG LTM cell switch, shouldn't the variables associated with *ltm-ConfigNRDC* also be kept? In general, the variables for MCG LTM should not be cleared until the whole MCG LTM configuration is released, and the variables for SCG LTM should be cleared if the whole SCG LTM configurations is released, or if the SCG is released.

# Z157

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| Z157 | MOB | 1 | The release of the current SCG configuration in case of MCG LTM with SCG configuration  |  | ZTE (Mengjie Zhang) |  | V009 | ToDo |

 **[Description]**: According to the current spec, the UE shall release/clear the MCG part of the current UE configuration if the LTM cell switch is triggered on the MCG, but no handling on the SCG part of the current UE configuration. It means that the SCG part of the current UE configuration shall be maintained during LTM cell switch. However, for MCG LTM with SCG configuration, the applied candidate configuration shall include both MCG and SCG part. Thus, the UE should also remove the SCG part of the current configuration, to avoid any configuration mismatch.

**[Proposed Change]**: To clarify that the UE shall release the current SCG configuration if the LTM cell switch is triggered on the MCG and the LTM candidate configuration to be applied includes *mrdc-SecondaryCellGroup*. For example:

1> if the LTM cell switch is triggered on the SCG; and

1> if the LTM cell switch is triggered on the MCG and the LTM candidate configuration to be applied includes *mrdc-SecondaryCellGroup*:

2> release/clear all current dedicated and common radio configurations which have been received either via SRB1 within *mrdc-SecondaryCellGroup*, or via SRB3 except for the following:

**[Comments]**:

[Huawei] Disagree, because *mrdc-ReleaseAndAdd* is always included if there is an SCG in the target MCG LTM configuration.

# J052

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| J052 | MOB | 1 | Ambiguity on selecting a *sk-Conter* |  | Takaki(Sharp) |  | V018 |  |

 **[Description]**: There is ambiguity regarding which sk-Counter should be selected. In the current wording, an sk-Counter included in ltm-SK-Counters, which is not directly related, is selected. While this is technically correct, it is not clear for implementers. The wording needs to be clarified by referring to the SCPAC text.

**[Proposed Change]**: Clarify which sk-CounterList to be used to get the first sk-Counter as below:

2> else if the LTM cell switch is triggered on the SCG:

3> consider the first *sk-Counter* value in the *sk-CounterList* associated with the field *ltm-NoSecurityChangeID* within the *VarLTM-ServingCellNoSecurityChange* as the selected *sk-Counter* value, and update the secondary key by performing security key update procedure as specified in 5.3.5.7;

**[Comments]**:

[Huawei] Agree with the TP.

# C154

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| C154 | MOB | 1 | Ambiguity on removing the the selected *sk-Counter* value from which entry in *ltm-SK-Counters*. |  | Rui(CATT) |  | V005 |  |

 **[Description]**: it is not clear UE should remove the selected *sk-Counter* value from which entry in ltm-SK-Counters, as ltm-SK-Counters includes multiple entries of SK-CounterConfigLTM as follows,

VarLTM-ServingCellNoSecurityChange-r19 ::= SEQUENCE {

 ltm-ServingCellNoSecurityChangeID-r19 INTEGER (1..maxNrofLTM-Configs-plus1-r18) OPTIONAL,

 ltm-SK-Counters-r19 SEQUENCE (SIZE (1..maxSecurityCellSet-r18)) OF SK-CounterConfigLTM-r19 OPTIONAL

}

.

**[Proposed Change]**:

5.3.5.18.6 LTM cell switch execution

……

2> else if the LTM cell switch is triggered on the SCG:

3> consider the first *sk-Counter* value in the *ltm-SK-Counters* within the *VarLTM-ServingCellNoSecurityChange* associated to the the field *ltm-NoSecurityChangeID* as the selected *sk-Counter* value, and update the secondary key by performing security key update procedure as specified in 5.3.5.7;

3> remove the selected *sk-Counter* value from the entry associated to the the field *ltm-NoSecurityChangeID* in the *ltm-SK-Counters* within the *VarLTM-ServingCellNoSecurityChange*;

 **[Comments]**: Agree with the TP.

# M201

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| M201 | MOB | 1 | PDCP data recovery at the end of LTM cell switch |  | Pasi (MediaTek) |  | V008 |  |

 **[Description]**:

2> at the end of the procedure, for each *drb-Identity* value that is part of the current UE configuration:

3> if the LTM cell switch is triggered on the MCG; or

3> if the LTM cell switch is triggered on the SCG and this DRB is using the secondary key; or

3> if the LTM cell switch is triggered on the SCG and the *keyToUse* for this DRB is changed:

4> if the PDCP entity of this DRB is not configured with *cipheringDisabled:*

5> configure the PDCP entity with the ciphering algorithm and KUPenc key associated with the master key (KgNB) or secondary key (S-KgNB), as indicated in *keyToUse*, i.e. the ciphering configuration shall be applied to all subsequent PDCP PDUs received and sent by the UE;

4> if the PDCP entity of this DRB is configured with *integrityProtection*:

5> configure the PDCP entity with the integrity protection algorithms according to *securityConfig* and apply the KUPint key associated with the master key (KgNB) or the secondary key (S-KgNB) as indicated in *keyToUse*;

4> if *drb-ContinueROHC* is included in *pdcp-Config*:

5> indicate to lower layer that *drb-ContinueROHC* is configured;

4> if *drb-ContinueEHC-DL* is included in *pdcp-Config*:

5> indicate to lower layer that *drb-ContinueEHC-DL* is configured;

4> if *drb-ContinueEHC-UL* is included in *pdcp-Config*:

5> indicate to lower layer that *drb-ContinueEHC-UL* is configured;

4> if *drb-ContinueUDC* is included in *pdcp-Config*:

5> indicate to lower layer that *drb-ContinueUDC* is configured;

4> re-establish the PDCP entity of this DRB as specified in TS 38.323 [5], clause 5.1.2;

3> else if LTM cell switch is triggered on the SCG and this DRB is using the master key:

4> if the RLC entity of an RLC bearer associated with this DRB is re-established or released during LTM cell switch execution:

5> if this DRB is an AM DRB:

6> after the end of this procedure, trigger the PDCP entity of this DRB to perform data recovery as specified in TS 38.323 [5], after applying the LTM configuration in *ltm-CandidateConfig* within *LTM-Candidate* IE in *ltm-Config* or *ltm-ConfigNRDC*;

In above spec clip, the yellow text seems fully unnecessary, because there is already corresponding green text in 2>.

**[Proposed Change]**:

2> at the end of the procedure, for each *drb-Identity* value that is part of the current UE configuration:

3> if the LTM cell switch is triggered on the MCG; or

3> if the LTM cell switch is triggered on the SCG and this DRB is using the secondary key; or

3> if the LTM cell switch is triggered on the SCG and the *keyToUse* for this DRB is changed:

4> if the PDCP entity of this DRB is not configured with *cipheringDisabled:*

5> configure the PDCP entity with the ciphering algorithm and KUPenc key associated with the master key (KgNB) or secondary key (S-KgNB), as indicated in *keyToUse*, i.e. the ciphering configuration shall be applied to all subsequent PDCP PDUs received and sent by the UE;

4> if the PDCP entity of this DRB is configured with *integrityProtection*:

5> configure the PDCP entity with the integrity protection algorithms according to *securityConfig* and apply the KUPint key associated with the master key (KgNB) or the secondary key (S-KgNB) as indicated in *keyToUse*;

4> if *drb-ContinueROHC* is included in *pdcp-Config*:

5> indicate to lower layer that *drb-ContinueROHC* is configured;

4> if *drb-ContinueEHC-DL* is included in *pdcp-Config*:

5> indicate to lower layer that *drb-ContinueEHC-DL* is configured;

4> if *drb-ContinueEHC-UL* is included in *pdcp-Config*:

5> indicate to lower layer that *drb-ContinueEHC-UL* is configured;

4> if *drb-ContinueUDC* is included in *pdcp-Config*:

5> indicate to lower layer that *drb-ContinueUDC* is configured;

4> re-establish the PDCP entity of this DRB as specified in TS 38.323 [5], clause 5.1.2;

3> else if LTM cell switch is triggered on the SCG and this DRB is using the master key:

4> if the RLC entity of an RLC bearer associated with this DRB is re-established or released during LTM cell switch execution:

5> if this DRB is an AM DRB:

6> trigger the PDCP entity of this DRB to perform data recovery as specified in TS 38.323 [5];

**[Comments]**:

[Huawei] Agree.

# C155

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| C155 | MOB | 1 | Upon LTM execution, UE behaivor is missing on performing PDCP discard for SRBs according to the Rel-19 ID. |  | Rui(CATT) |  | V005 |  |

 **[Description]**: Upon LTM execution, UE behaivor is missing on performing PDCP discard for SRBs according to the Rel-19 ID.This is needed according to the RAN2 agreements as follows,

1. For inter-CU MCG LTM, when the Rel-19 ID of candidate cell is the same with serving cell, the UE performs PDCP SDU discard for SRB1/SRB2.
2. For SRBs in inter-CU SCG LTM, Rel-19 ID is used to determine whether PDCP re-establishment or PDCP SDU discard is performed for LTM execution for SRB3.

 **[Proposed Change]**:

**[Comments]**:

[Huawei] For intra-CU LTM, we agreed that the network will include discardOnPDCP. So perhaps we rely on this here?

# C156

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| C156 | MOB | 1 | Duplicated check for the different R19 ID case  |  | Rui(CATT) |  | V005 |  |

 **[Description]**: it is duplicated with,

1> if the value of *ltm-NoSecurityChangeID* contained in the *LTM-Candidate* IE in *ltm-Config* or *ltm-ConfigNRDC* indicated by lower layers or for the selected cell in accordance with 5.3.7.3 is not equal to the value of *ltm-ServingCellNoSecurityChange* within *VarLTM-ServingCellNoSecurityChange*:

 **[Proposed Change]**:

5.3.5.18.6 LTM cell switch execution

……

1> if the value of *ltm-NoSecurityChangeID* contained in the *LTM-Candidate* IE in *ltm-Config* or *ltm-ConfigNRDC* indicated by lower layers or for the selected cell in accordance with 5.3.7.3 is not equal to the value of *ltm-ServingCellNoSecurityChange* within *VarLTM-ServingCellNoSecurityChange*:

……

~~2> if the value of field~~ *~~ltm-NoSecurityChangeID~~* ~~contained in the~~ *~~LTM-Candidate~~* ~~IE in~~ *~~ltm-Config~~* ~~or~~ *~~ltm-ConfigNRDC~~* ~~indicated by lower layers or for the selected cell in accordance with 5.3.7.3 is not equal to the value of~~ *~~ltm-ServingCellNoSecurityChangeID~~* ~~within~~ *~~VarLTM-ServingCellNoSecurityChange~~*

2~~3~~> replace the value of *ltm-ServingCellNoSecurityChangeID* in *VarLTM-ServingCellNoSecurityChange* with the value of *ltm-NoSecurityChangeID* in the *LTM-Candidate* in *ltm-Config* or *ltm-ConfigNRDC* indicated by lower layers or for the selected cell in accordance with 5.3.7.3;

1> else if the field *ltm-NoSecurityChangeID* is not configured for the *LTM-Candidate* IE in *ltm-Config* or *ltm-ConfigNRDC* indicated by lower layers and if the UE does not have any value stored of *ltm-ServingCellNoSecurityChangeID* within *VarLTM-ServingCellNoSecurityChangeID*; or

**[Comments]**:

[Xiaomi/Yi Xiong]

We also think the above procedures are duplicated. We support the change.

[MediaTek (Pasi)]

Agree with CATT and Xiaomi.

[Huawei] Agree.

X152

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| X152 | MOB | 1 | UE behaviours when *ltm-NoSecurityChangeID* = *ltm-ServingCellNoSecurityChangeID* is missing. | R2-25xxxxx | Xiaomi (Yi Xiong) |  | V006 | ToDo |

 **[Description]**: In LTM cell switch execution section 5.3.5.18.6:

1> if the value of *ltm-NoSecurityChangeID* contained in the *LTM-Candidate* IE in *ltm-Config* or *ltm-ConfigNRDC* indicated by lower layers or for the selected cell in accordance with 5.3.7.3 is not equal to the value of *ltm-ServingCellNoSecurityChange* within *VarLTM-ServingCellNoSecurityChange*:

…………………unused part, skip…………………

1> else if the field *ltm-NoSecurityChangeID* is not configured for the *LTM-Candidate* IE in *ltm-Config* or *ltm-ConfigNRDC* indicated by lower layers and if the UE does not have any value stored of *ltm-ServingCellNoSecurityChangeID* within *VarLTM-ServingCellNoSecurityChangeID*; or

…………………unused part, skip…………………

Based on the above spec, the UE behaviours when the value of *ltm-NoSecurityChangeID* is not equal to the value of *ltm-ServingCellNoSecurityChange* and the UE behaviours when the *ltm-NoSecurityChangeID* is not configured and *ltm-ServingCellNoSecurityChangeID* is not stored have been captured in the spec.

But the UE behaviours when the value of *ltm-NoSecurityChangeID* is equal to the value of *ltm-ServingCellNoSecurityChange* is missing, suggest to add associated wording.

**[Proposed Change]**: Based on the above description, we suggest the following change:

1> if the value of *ltm-NoSecurityChangeID* contained in the *LTM-Candidate* IE in *ltm-Config* or *ltm-ConfigNRDC* indicated by lower layers or for the selected cell in accordance with 5.3.7.3 is not equal to the value of *ltm-ServingCellNoSecurityChange* within *VarLTM-ServingCellNoSecurityChange*:

…………………unused part, skip…………………

1> else if the field *ltm-NoSecurityChangeID* is not configured for the *LTM-Candidate* IE in *ltm-Config* or *ltm-ConfigNRDC* indicated by lower layers and if the UE does not have any value stored of *ltm-ServingCellNoSecurityChangeID* within *VarLTM-ServingCellNoSecurityChangeID*; or

1> if the value of *ltm-NoSecurityChangeID* contained in the *LTM-Candidate* IE in *ltm-Config* or *ltm-ConfigNRDC* indicated by lower layers or for the selected cell in accordance with 5.3.7.3 is equal to the value of *ltm-ServingCellNoSecurityChange* within *VarLTM-ServingCellNoSecurityChange*:

…………………unused part, skip…………………

**[Comments]**:

[MediaTek (Pasi)]

Agree that this condition should be added. However, if we add that, we can replace both of these conditions with simple "1> else:" (assuming also X153 is agreed).

[Huawei] The two tests should not be there, what should be there is the text from Rel-18.

X153

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| X153 | MOB | 1 | Incorrect UE behaviours when the value of *ltm-NoResetID* is equal to the value of *ltm-ServingCellNoResetID*. | R2-25xxxxx | Xiaomi (Yi Xiong) |  | V006 | ToDo |

 **[Description]**: In LTM cell switch execution section 5.3.5.18.6:

1> else if the field *ltm-NoSecurityChangeID* is not configured for the *LTM-Candidate* IE in *ltm-Config* or *ltm-ConfigNRDC* indicated by lower layers and if the UE does not have any value stored of *ltm-ServingCellNoSecurityChangeID* within *VarLTM-ServingCellNoSecurityChangeID*; or

1> if the *LTM-Candidate* IE in *ltm-Config* or *ltm-ConfigNRDC* indicated by lower layers or for the selected cell in accordance with 5.3.5.18.x or 5.3.7.3 does not contain the field *ltm-NoResetID* and if the UE does not have any value stored of *ltm-ServingCellNoResetID* within *VarLTM-ServingCellNoResetID*; or

1> if the value of field *ltm-NoResetID* contained within the *LTM-Candidate* IE in *ltm-Config* or *ltm-ConfigNRDC* indicated by lower layers or for the selected cell in accordance with 5.3.5.18.x or 5.3.7.3 is not equal to the value of *ltm-ServingCellNoResetID* within *VarLTM-ServingCellNoResetID*:

2> for each *logicalChannelIdentity* and *logicalChannelIdentityExt* that is part of the current UE configuration for the cell group for which the LTM cell switch procedure is triggered:

3> if *servedRadioBearer* is set to *drb-Identity*:

4> after the end of this procedure, re-establish the corresponding RLC entity as specified in TS 38.322 [4], after applying the LTM configuration in *ltm-CandidateConfig* within the *LTM-Candidate* IE in *ltm-Config* or *ltm-ConfigNRDC*;

2> for each *bh-LogicalChannelIdentity* that is part of the current UE configuration for the cell group for which the LTM cell switch procedure is triggered:

3> after the end of this procedure, re-establish the corresponding RLC entity as specified in TS 38.322 [4], after applying the LTM configuration in *ltm-CandidateConfig* within the LTM-Candidate IE in *ltm-Config* or *ltm-ConfigNRDC*;

2> for each *drb-Identity* value that is part of the current UE configuration:

3> if this DRB is an AM DRB:

4> after the end of this procedure, trigger the PDCP entity of this DRB to perform data recovery as specified in TS 38.323 [5], after applying the LTM configuration in *ltm-CandidateConfig* within *LTM-Candidate* IE in *ltm-Config* or *ltm-ConfigNRDC*;

Based on the above procedure, when the *ltm-NoSecurityChangeID* is not configured and *ltm-ServingCellNoSecurityChangeID* is not stored, the UE shall perform RLC re-establishment and PDCP data recovery (AM DRB). In other words, for this case, even if the value of *ltm-NoResetID* is equal to the value of *ltm-ServingCellNoResetID*, the UE also needs to perform RLC re-establishment and PDCP data recovery (AM DRB), which is inconsistent with the principle of Rel-18 LTM.

Hence, we think the wording for whether to perform RLC re-establishment and PDCP data recovery (AM DRB) based on the Rel-18 ID (*ltm-NoResetID* and *ltm-ServingCellNoResetID*) shall be the next bullet of “1> else if the field *ltm-NoSecurityChangeID* …… *VarLTM-ServingCellNoSecurityChangeID*; or”, rather than in the same layer bullet.

In addition, whether the Rel-19 IDs are configured or not and whether the Rel-19 ID(s) are same or different, the Rel-18 ID of serving cell (*ltm-ServingCellNoResetID*) shall be the value of Rel-18 ID in candidate configuration associated with current serving cell (target cell). Hence, the wording for the update of Rel-18 ID of serving cell shall be the first bullet.

**[Proposed Change]**: Based on the above description, we suggest the following change:

1> else if the field *ltm-NoSecurityChangeID* is not configured for the *LTM-Candidate* IE in *ltm-Config* or *ltm-ConfigNRDC* indicated by lower layers and if the UE does not have any value stored of *ltm-ServingCellNoSecurityChangeID* within *VarLTM-ServingCellNoSecurityChangeID*:

2> if the *LTM-Candidate* IE in *ltm-Config* or *ltm-ConfigNRDC* indicated by lower layers or for the selected cell in accordance with 5.3.5.18.x or 5.3.7.3 does not contain the field *ltm-NoResetID* and if the UE does not have any value stored of *ltm-ServingCellNoResetID* within *VarLTM-ServingCellNoResetID*; or

2> if the value of field *ltm-NoResetID* contained within the *LTM-Candidate* IE in *ltm-Config* or *ltm-ConfigNRDC* indicated by lower layers or for the selected cell in accordance with 5.3.5.18.x or 5.3.7.3 is not equal to the value of *ltm-ServingCellNoResetID* within *VarLTM-ServingCellNoResetID*:

3> for each *logicalChannelIdentity* and *logicalChannelIdentityExt* that is part of the current UE configuration for the cell group for which the LTM cell switch procedure is triggered:

4> if servedRadioBearer is set to drb-Identity:

5> after the end of this procedure, re-establish the corresponding RLC entity as specified in TS 38.322 [4], after applying the LTM configuration in *ltm-CandidateConfig* within the *LTM-Candidate* IE in *ltm-Config* or *ltm-ConfigNRDC*;

3> for each *bh-LogicalChannelIdentity* that is part of the current UE configuration for the cell group for which the LTM cell switch procedure is triggered:

4> after the end of this procedure, re-establish the corresponding RLC entity as specified in TS 38.322 [4], after applying the LTM configuration in *ltm-CandidateConfig* within the LTM-Candidate IE in *ltm-Config* or *ltm-ConfigNRDC*;

3> for each *drb-Identity* value that is part of the current UE configuration:

4> if this DRB is an AM DRB:

5> after the end of this procedure, trigger the PDCP entity of this DRB to perform data recovery as specified in TS 38.323 [5], after applying the LTM configuration in *ltm-CandidateConfig* within *LTM-Candidate* IE in *ltm-Config* or *ltm-ConfigNRDC*;

1> if the value of field *ltm-NoResetID* contained within the *LTM-Candidate* IE in *ltm-Config* or *ltm-ConfigNRDC* indicated by lower layers or for the selected cell in accordance with 5.3.5.18.x or 5.3.7.3 is not equal to the value of *ltm-ServingCellNoResetID* within *VarLTM-ServingCellNoResetID*:

2> replace the value of *ltm-ServingCellNoResetID* in *VarLTM-ServingCellNoResetID* with the value of *ltm-NoResetID* in the *LTM-Candidate* in *ltm-Config* or *ltm-ConfigNRDC* indicated by lower layers or for the selected cell in accordance with 5.3.5.18.x or 5.3.7.3;

**[Comments]**:

[MediaTek (Pasi)]

Agree with Xiaomi.

X154

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| X154 | MOB | 1 | Incorrect accordance section of the selected cell for CLTM |  | Xiaomi (Yi Xiong) |  | V006 | ToDo |

 **[Description]**: In LTM cell switch conditions evalution based on L3 measurements section 5.3.5.18.x, the triggered candidate cell, whose condition is met, is not considered as the selected cell.

In LTM cell switch execution section 5.3.5.18.6, the selected cell is determined by the bullet 2> , as shown below:

1> if this procedure is triggered due to fulfilment of LTM cell switch execution conditions:

2> if more than one LTM candidate configuration has triggered this procedure:

3> select one of the LTM candidate configurations as the selected cell for the LTM cell switch execution;

Hence, in section 5.3.5.18.6, the UE can consider one of the LTM candidate configurations as the selected cell for the LTM cell switch execution. Hence, we suggest to change the accordance section from “5.3.5.18.x” to “5.3.5.18.6”

**[Proposed Change]**: Based on the above description, we suggest the following change:

the selected cell in accordance with 5.3.5.18.6 or 5.3.7.3

[Huawei] "select as the selected cell" looks ugly.

In addition, 5.3.5.18.y says " perform the LTM cell switch procedure for the LTM candidate configuration associated to the *ltm-CandidateId* according to the actions specified in 5.3.5.18.6." so "selecting a cell" in 5.3.5.18.6 contradicts with this.

Suggestion: remove this, add a note that if 5.3.5.18.6 is triggered for more than one candidate cell, the UE executes it only for one of them and it is up to the UE to choose one.

**[Comments]**:

# E005

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| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| E005 | MOB | 2 | Handling of radio bearers during LTM cell switch | R2-25xxxxx | Tony (Ericsson) |  | V004 | ToDo |

 **[Description]**: Current specification assumes that when the target configuration prepares the LTM candidate configuration, it needs to prepare a radio bearer configuration which is according to the bearer configuration the UE is using in its current source cell. However, there are no means at the moment for the target cell to know what bearer configuration the UE is using in the source cell.

**[Proposed Change]**: The issue is rather complex and we plan to bring a contribution to the next meeting where we explain the problem and also the possible solutions.

**[Comments]**:

X155

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| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| X155 | MOB | 1 | Perform the subsequent CLTM evaluation after LTM Cell switch triggered based on the indication from lower layers. | R2-25xxxxx | Xiaomi (Yi Xiong) |  | V006 | ToDo |

 **[Description]**: In LTM cell switch execution section 5.3.5.18.6, the UE only perform subsequent CLTM evaluation for the selected LTM candidate configuration, as shown below:

1> if *ltm-ExecutionCondition* is configured within the *LTM-Candidate* IE for the selected LTM candidate configuration:

2> if the field *l3-Conditions* is included within *ltm-ExecutionCondition*:

3> perform the LTM cell switch conditions evaluation based on L3 measurements as specified in 5.3.5.18.x according to the received *ltm-ExecutionCondition* once this procedure is completed;

2> else if the field *l1-Conditions* is included within *ltm-ExecutionCondition*:

3> request lower layers to initiate the LTM cell switch conditions evaluation based on L1 measurements according to the received field *ltm-ExecutionCondition* once this procedure is completed.

RAN2 has agreed “Network can send an LTM Cell Switch Command MAC CE indicating a CLTM candidate configuration (no specification change)”. So, after the CLTM candidate configuration is triggered by LTM Cell Switch Command MAC CE, the UE shall also perform subsequent CLTM evaluation. But in current spec, the LTM candidate configuration indicated by lower layers has not been included in the first bullet.

**[Proposed Change]**: Based on the above description, we suggest the following change:

1> if *ltm-ExecutionCondition* is configured within the *LTM-Candidate* IE for the LTM candidate configuration either indicated by lower layers or for the selected cell:

2> if the field *l3-Conditions* is included within *ltm-ExecutionCondition*:

3> perform the LTM cell switch conditions evaluation based on L3 measurements as specified in 5.3.5.18.x according to the received *ltm-ExecutionCondition* once this procedure is completed;

2> else if the field *l1-Conditions* is included within *ltm-ExecutionCondition*:

3> request lower layers to initiate the LTM cell switch conditions evaluation based on L1 measurements according to the received field *ltm-ExecutionCondition* once this procedure is completed.

**[Comments]**:

[Huawei] At this point of the procedure, it could be "for the LTM candidate configuration that was applied in this procedure".

# J053

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| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| J053 | MOB | 1 | Ambiguity on replaceing a *sk-ConterList* |  | Takaki(Sharp) |  | V018 |  |

 **[Description]**:

5.3.5.18.y LTM sk-Counter configuration addition/modification

The UE shall:

1> for each *ltm-NoSecurityChangeID* received in *ltm-SK-CounterConfigToAddModList*:

2> if an entry with the matching *ltm-NoSecurityChangeID* exists in the *ltm-SK-Counters* within the *VarLTM-ServingCellNoSecurityChange*:

3> replace the *sk-CounterList* within the *VarLTM-ServingCellNoSecurityChange* with the *sk-CounterList* according to the received *ltm-NoSecurityChangeID*;

2> else:

3> add a new entry for this *ltm-NoSecurityChangeID* within the *VarLTM-ServingCellNoSecurityChange*.

**[Proposed Change]**: Clarify what information element UE is replaced as below:

5.3.5.18.y LTM sk-Counter configuration addition/modification

The UE shall:

1> for each *ltm-NoSecurityChangeID* received in *ltm-SK-CounterConfigToAddModList*:

2> if an entry with the matching *ltm-NoSecurityChangeID* exists in the *ltm-SK-Counters* within the *VarLTM-ServingCellNoSecurityChange*:

3> replace the *sk-CounterList* within the *VarLTM-ServingCellNoSecurityChange* with the received *sk-CounterList* associated to the *ltm-NoSecurityChangeID*;

2> else:

3> add a new entry for this *ltm-NoSecurityChangeID* within the *VarLTM-ServingCellNoSecurityChange*.

**[Comments]**:

[Huawei] Agree.

# Z158

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| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| Z158 | MOB | 1 | The wrong IE name  |  | ZTE (Mengjie Zhang) |  | V009 | ToDo |

 **[Description]**: According to the ASN.1 signaling, the IE name should be *ltm-SK-CounterConfigToReleaseList*, instead of *ltm-SK-CounterConfigToRemoveList.*

*LTM-ConfigNRDC* information element

-- ASN1START

-- TAG-LTM-CONFIGNRDC-START

LTM-ConfigNRDC-r19 ::= SEQUENCE {

 ltm-ConfigurationSCG-r19 LTM-Config-r18 OPTIONAL, -- Need M

 ltm-SK-CounterConfigToAddModList-r19 SEQUENCE (SIZE (1..maxSecurityCellSet-r18)) OF SK-CounterConfigLTM-r19 OPTIONAL, -- Need N

 ltm-SK-CounterConfigToReleaseList-r19 SEQUENCE (SIZE (1..maxSecurityCellSet-r18)) OF LTM-NoSecurityChangeId-r19 OPTIONAL, -- Need N

 ...

}

-- TAG-LTM-CONFIGNRDC-STOP

-- ASN1STOP

**[Proposed Change]**: Change the IE name to *ltm-SK-CounterConfigToReleaseList.*

**[Comments]**:

# Z159

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| Z159 | MOB | 1 | Removing the wrong reference clause |  | ZTE (Mengjie Zhang) |  | V009 | ToDo |

 **[Description]**: The 5.3.5.18.x is for LTM cell switch conditions evalution based on L3 measurements, i.e. CLTM based on L3 condition, which is not triggered by the indication from lower layers. Besides, the LTM candidate with ltm-NoSecurityChangeID is not applicable to CLTM, i.e. only intra-CU CLTM is supported. Thus, only LTM triggered by the indication from lower layers needs to be considered here.

**[Proposed Change]**: Remove the “5.3.5.18.x”. For example:

2> the cell selection is triggered by detecting re-configuration with sync failure of the MCG for an LTM cell switch procedure triggered upon the indication by lower layers as specified in clause 5.3.5.18.6 and the selected cell has a *ltm-NoSecurityChangeID* configured with a value which is equal to the value of *ltm-NoSecurityChangeID* configured within the LTM candidate configuration for which the re-configuration with sync failure is detected:

3> perform the LTM cell switch procedure for the selected LTM candidate cell according to the actions specified in 5.3.5.18.6;

**[Comments]**:

[Huawei] Agree. About "I guess that is still good to clarify that this procedure applies also to CLTM": all what is refered to in 5.7.3.7 is the LTM cell switch procedure, that is also applicable to CLTM, so this is already clear.

# Z160

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| Z160 | MOB | 1 | Clarification on the sk-counter contained in the ltm-CandidateConfig for SCG LTM  |  | ZTE (Mengjie Zhang) |  | V009 | ToDo |

 **[Description]**: For the SCG LTM configuration provided in LTM-ConfigNRDC, the sk-counter is provided via SK-CounterConfigLTM, so the RRCReconfiguration contained in the ltm-CandidateConfig should not include the field sk-counter, similar to subsequent CPAC.

**[Proposed Change]**: To clarify that the sk-counter is absent for the RRCReconfiguration message contained in the ltm-CandidateConfig within ltm-ConfigNRDC.

***sk-Counter***

A counter used upon initial configuration of S-KgNB or S-KeNB, as well as upon refresh of S-KgNB or S-KeNB. This field is always included either upon initial configuration of an NR SCG or upon configuration of the first RB with *keyToUse* set to *secondary*, whichever happens first. This field is absent if there is neither any NR SCG nor any RB with *keyToUse* set to *secondary*, or if the *RRCReconfiguration* message is contained in *condRRCReconfig* for subsequent CPAC, or if the *RRCReconfiguration* message is contained in *ltm-CandidateConfig* within *ltm-ConfigNRDC*.

**[Comments]**:

[Huawei] Ok.

# Z161

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| Z161 | MOB | 1 | Clarification on the selectedSK-Counter for SCG LTM  |  | ZTE (Mengjie Zhang) |  | V009 | ToDo |

 **[Description]**: Upon the execution of SCG LTM, the UE may also include the selectedSK-Counter in the RRCReconfigurationComplete message. The SCG LTM case is missing in the current field description.

**[Proposed Change]**: To add the execution of SCG LTM.

***selectedSK-Counter***

This field includes the selected *sk-counter* value for security key update upon the execution of subsequent CPAC or SCG LTM.

**[Comments]**:

[Huawei] Ok.

# H151

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| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| H151 | MOB | 3 | Per cell configuration includes per CG items  |  | Huawei (David) |  | V023 | ToDo |

 **[Description]**: In Rel-18, LTM-CSI-ReportConfig is used for reports to be sent on the serving cell on which the LTM-CSI-ReportConfig is configured, so it is clear where to include each LTM-CSI-ReportConfig.

In Rel-19, LTM-CSI-ReportConfig is also used for reports via MAC CE, that may be sent on any serving cell, and conditional events, for which no report is sent. Consequently, in which serving cell the corresponding LTM-CSI-ReportConfig has no functional role. If there are 3 serving cells, PCell, SCell 1 and SCell 2, the network could configure 3 LTM-CSI-ReportConfig, one one each serving cell, and with the same ID value. Or it could put 2 in SCell 1 and 1 in SCell 2. Or the opposite.

In general, IEs that are unrelated to a particular serving cell should not be included in ServingCellConfig, they should be at a higher level.

**[Proposed Change]**: Event triggered reports and executions conditions are configured in CellGroupConfig.

In CellGroupConfig, add:

*ltm-EventTrigeredReportToAddModList-r19* SEQUENCE (SIZE (1..maxNrofLTM-EventTriggeredReport-r19)) OF LTM-CSI-ReportConfig-r18 OPTIONAL, -- Need N

*ltm-EventTrigeredReportToAddModList-r19* SEQUENCE (SIZE (1..maxNrofLTM-EventTriggeredReport-r19)) OF LTM-CSI-ReportConfigId-r18 OPTIONAL, -- Need N

*ltm-CondEventToAddModList-19* SEQUENCE (SIZE (1..maxNrofLTM-CondEvent-r19)) OF LTM-CSI-ReportConfig-r18 OPTIONAL, -- Need N

*ltm-CondEventToAddModList-19* SEQUENCE (SIZE (1..maxNrofLTM-CondEvent-r19)) OF LTM-CSI-ReportConfigId-r18

This also makes it easier to refer to "the list of event triggered reports" in TS 38.321.

Note: it might also be clearer to define a separate type for event triggered report and a separate type for L1 conditional events.

**[Comments]**:

# C157

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| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| C157 | MOB | 1 | There is no need to mandatorily provide the 2TA configuration in the IE EarlyUL-SyncConfig if *tag2* is present in the *SpCellConfig* in *ltm-CandidateConfig* |  | Rui(CATT) |  | V005 |  |

 **[Description]**:

NW should have the flexibility to perform early UL sync on a specific TRP even though the mTRP configuration is present in the candidate configuration.

**[Proposed Change]**:

|  |  |
| --- | --- |
| Conditional Presence | Explanation |
| *2TA* | This field is ~~mandatory~~optional present if *tag2* is present in the *SpCellConfig* in *ltm-CandidateConfig*. It is absent, Need R, otherwise. |
| *L139* | The field is mandatory present if *prach-RootSequenceIndex* L=139, otherwise the field is absent, Need S. |
| *TDD* | This field is optionally present, Need R, for TDD LTM candidate cells. It is absent otherwise. |

**[Comments]**:

# C158

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| C158 | MOB | 1 | Add the field description for ltm-CSI-ReportConfig-r19 under the LTM-Candidate |  | Rui(CATT) |  | V005 |  |

 **[Description]**: suggest to add the field description for ltm-CSI-ReportConfig-r19 under the LTM-Candidate to clarify the following aspects,

- It is used to configure CSI report setting for the candidate cell configured by the LTM-Candidate

- UE ignores the associated RSs from other candidate cell when acquire CSI for this candidate cell.

- If LTM-CSI-ReportConfig is configured under in an LTM-Candidate, the UE ignores the fields ltm-ReportConfigType and ltm-ReportContent.

**[Proposed Change]**:

**[Comments]**:

# M202

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| M202 | MOB | 1 | Need code for *ltm-CSI-ReportConfig-r19* in *LTM-Candidate* IE |  | Pasi (MediaTek) |  | V008 |  |

 **[Description]**:

Need code "Need N" seems incorrect for *ltm-CSI-ReportConfig-r19* in *LTM-Candidate* IE. We think it should be "Need M".

**[Proposed Change]**:

 ltm-CSI-ReportConfig-r19 LTM-CSI-ReportConfig-r18 OPTIONAL, -- Need M

**[Comments]**:

[Huawei] This field is stored by the UE and to be used for every LTM cell switch to the *LTM-Candidate*, so Need N makes no sense. It can be Need M or Need R.

# B110

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| B110 | MOB | 1 | CSI report configuration for early CSI acquisition after cell switch | R2-25xxxxx | Lenovo (Lianhai Wu) |  | V016 | ToDo |

 **[Description]**: Based on the current spec, UE will keep the whole *LTM-config IE* after cell switch. However, *LTM configu IE* includes *LTM-CSI-ReportConfig-r18* for early CSI acquisition. Early CSI acquisition is only for cell switch case. In addition, *LTM-CSI-ReportConfig IE* for early CSI acquisition is generated by source cell. The target cell does not know *LTM-CSI-ReportConfigId* of *LTM-CSI-ReportConfig.* Therefore, the target cell cannot release it. We propose that after CSI reporting at the target cell after or during cell switch triggered by LTM, *LTM-CSI-ReportConfig IE of LTM-candidate IE* can be released by UE.

**[Proposed Change]**: After CSI reporting at the target cell after or during cell switch triggered by LTM, *LTM-CSI-ReportConfig IE of LTM-candidate IE* can be released by UE. We will prepare one contribution to discuss this issue.

**[Comments]**:

[Huawei] This field is the (only) *ltm-CSI-ReportConfig-r19* in *LTM-Candidate*. It should be either Need M or Need R. If it is Need M, to release the field, the target cell must release the LTM-Candidate. If it is need R, to release the field, the target cell can reconfigure the LTM-Candidate with the field absent. The *ltm-CSI-ReportConfigId* in *ltm-CSI-ReportConfig-r19* has no use.

# B111

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| B111 | MOB | 1 | Maintenance of CSI resource in LTM-configu after cell switch | R2-25xxxxx | Lenovo (Lianhai Wu) |  | V016 | ToDo |

 **[Description]**: Based on the current RRC CR, UE will keep the whole *LTM-config IE* after cell switch. CSI-RS/IM resources are included in *LTM-config IE*. Specifically, *LTM configu IE* includes periodical and SP CSI-RS resource sets and periodical and SP CSI-IM resource sets for L1 measurement or early CSI acquisition. Early CSI acquisition is only for cell switch case. Therefore, regarding the CSI resource for early aqiusition, after CSI reporting at the target cell after or during cell switch triggered by LTM, the configured periodic or SP CSI-RS/CSI-IM resource sets for the target cell can be released. Regarding CSI resource of the candidate cells for L1 measurment or early CSI acquisition, we suggest aligning with the maintenance of CSI resource of target cell for early CSI acquisition purpose. Target cell can reconfigure this CSI resource since the target cell is aware of CSI resource from other candiate cells.

**[Proposed Change]**:

Proposal x1: After CSI reporting at the target cell after or during cell switch triggered by LTM, the configured periodic or SP CSI-RS/CSI-IM resource sets for the target cell are released.

Proposal x2: After reconfiguration with sync that is triggered by LTM, the configured the periodic or SP CSI-RS/CSI-IM resource sets for all candidate cell(s), except the target cell, are released.

We will prepare one contribution to discuss this issue.

**[Comments]**:

[Huawei] In Rel-18, there is no release of periodic resources (SSB) after LTM cell switch, why should periodic CSI-RS resources be released after LTM cell switch in Rel-19? With respect to semi-persistent resources configured in *LTM-Config*, no matter for which candidate cell (they are mixing candidate cells anyway), they are deactivated at LTM cell switch, and it is up to the network (=target cell, now serving cell) to activate them via MAC CE or not, so there is no need to release them.

# C159

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| C159 | MOB | 1 | Ambiguity of the ltm-ExecutionCondition field description on whether it is only used for MCG LTM |  | Rui(CATT) |  | V005 |  |

 **[Description]**:

CLTM is only supported on MCG LTM, However, “an ltm-Config associated with the MCG” used in the field description is not equal to MCG LTM.for example,a inter-CU SCG LTM configuration is also associated with the MCG.

**[Proposed Change]**:

|  |
| --- |
| *LTM-Candidate* field descriptions |
| ***ltm-ExecutionCondition***This field can only be included in an *ltm-Config* ~~associated with the MCG~~ for LTM on the MCG. |

**[Comments]**:

[MediaTek (Pasi)]

The field description talks about *ltm-Config* field (not *LTM-Config* IE), so it does not cover *ltm-ConfigNRDC*. Therefore, the current field description seems unambiguous.

Note that we have similar text also in clause 5.3.7.3: "1> if the selected cell is one of the LTM candidate cells in the *LTM-Candidate* IE within *ltm-Config* associated with the MCG; and", which is unambiguous.

[Huawei] 5.3.5.18.1 does not include any concept of "associated with the MCG", it says when something is for LTM on the MCG or for LTM on the SCG, so the wording proposed by CATT should be adopted to align with 5.3.5.18.1.

# O001

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| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| O001 | MOB, SLRelay | 1 | LTM, C-LTM applicability to intermediate Relay | R2-25xxxxx | OPPO (Qianxi) |  | V003 | ToDo |

 **[Description]**: Based on the current spec, it is unclear whether LTM, CLTM based handover can be applied to the intermediate SL relay UEs.

**[Proposed Change]**: R2 to clarify whether LTM, CLTM based handover can be applied to the intermediate SL relay UEs or not.

**[Comments]**:

V400

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| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| V400 | MOB | 2 | Introduce new *attemptLTM-Switch*-r19 to cover the case when a UE only support intra-CU LTM fast recovery but not inter-CU fast recovery | R2-25xxxxx | vivo(Jing Liang) |  | V007 | ToDo |

 **[Description]**: According to the last meeting agreement, a new UE capability for inter-CU LTM recovery is supported. Therefore, reusing the legacy *attemptLTM-Switch-r18* cannot cover all cases.

For example, if a UE supports Rel-18 intra-CU LTM-based recovery but does NOT support Rel-19 inter-CU LTM-based recovery, the network will NOT configure *attemptLTM-Switch-r18* to the UE while inter-CU LTM candidate cells are present. Then the UE cannot do intra-CU LTM-based recovery.

**[Proposed Change]**: A new indicator for the inter-CU LTM recovery should be introduced (e.g., *attemptLTM-SwitchForInterCU-r19*) instead of reusing the attemptLTM-Switch-r18. The procedure in section 5.3.7 for the LTM recovery should also be updated with the new indicator.

**[Comments]**:

[Huawei] If the UE does not support recovery for inter-CU LTM, the UE will simply not do it, and the network is aware of this, so there is no issue related to UE capability.

H150

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| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| H150 | MOB | 3 | ltm-ServingCellExecutionCondition as SetupRelease Need M contradicts with procedure text | R2-25xxxxx | Huawei(David) |  | V023 | ToDo |

 **[Description]**: Normally, when a field is SetupRelease Need M, when the field is configured and in later reconfigurations, it is absent, the field is still kept and used. However, according to procedure text, upon LTM cell switch execution, the UE uses execution conditions from the selected LTM-Candidate, but ltm-ServingCellExecutionCondition remains configured.

Then, there are problems like:

- Z151 has a TP for 5.3.5.3, in order not to clear conditional measIds that are referred to by CLTM execution conditions, that TP mentions "LTM-ExecutionConditionList", but how to say which one it is? It is "the one that is in use", but this has actually no definition

- C153 is proposing that "release" affects the CLTM execution conditions in use, but normally, "release" of a SetupRelease Need M field is only for release of that field, it is not supposed to have actions on things coming from other fields

**[Proposed Change]**:

1) Change ltm-ServingCellExecutionCondition to a Need N field

2) Create a variable VarLTM-ExecutionConditions

3) Reception of ltm-ServingCellExecutionCondition and LTM cell switch override the variable contents

4) For the TP in Z151, use the variable

**[Comments]**:

# C160

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| C160 | MOB | 1 | Ambiguity of the ltm-ServingCellExecutionCondition field description on whether it is only used for MCG LTM |  | Rui(CATT) |  | V005 |  |

 **[Description]**: similar issue as C159

**[Proposed Change]**:

|  |
| --- |
| *LTM-Config field descriptions* |
| ***ltm-ServingCellExecutionCondition*** This field can can only be included in an *ltm-Config* ~~associated with the MCG~~ for LTM on the MCG. |

**[Comments]**:

[MediaTek (Pasi)]

The field description talks about *ltm-Config* field (not *LTM-Config* IE), so it does not cover *ltm-ConfigNRDC*. Therefore, the current field description seems unambiguous.

Note that we have similar text also in clause 5.3.7.3: "1> if the selected cell is one of the LTM candidate cells in the *LTM-Candidate* IE within *ltm-Config* associated with the MCG; and", which is unambiguous.

[Huawei] 5.3.5.18.1 does not include any concept of "associated with the MCG", it says when something is for LTM on the MCG or for LTM on the SCG, so the wording proposed by CATT should be adopted to align with 5.3.5.18.1.

# M203

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| M203 | MOB | 1 | Ambiguity of the Cond for *attemptLTM-Switch* |  | Pasi (MediaTek) |  | V008 |  |

 **[Description]**:

(Inspired by C159/C160)

|  |  |
| --- | --- |
| Conditional Presence | Explanation |
| *LTM-MCG* | This field is optional present for the MCG, Need R, if the UE is configured with at least an LTM candidate configuration associated to the MCG. Otherwise, the field absent. |

Based on clause 5.3.7.3, only LTM candidate configurations configured in *ltm-Config* for LTM on the MCG are considered for fast LTM recovery. The LTM candidate configurations configured in *ltm-ConfigNRDC* are not considered for fast LTM recovery.

1> if *attemptLTM-Switch* is configured; and

1> if the selected cell is one of the LTM candidate cells in the *LTM-Candidate* IE within *ltm-Config* associated with the MCG; and

1> if at least one of the following conditions is fulfilled:

2> the selected cell does not have the field *ltm-NoSecurityChangeID* configured and the UE does not have any value stored of *ltm-ServingCellNoSecurityChangeID* within *VarLTM-ServingCellNoSecurityChange*; or

2> the cell selection is triggered by detecting radio link failure of the MCG and the selected cell has a *ltm-NoSecurityChangeID* configured with a value which is equal to the value of *ltm-ServingCellNoSecurityChangeID* within *VarLTM-ServingCellNoSecurityChange*; or

2> the cell selection is triggered by detecting re-configuration with sync failure of the MCG for an LTM cell switch procedure triggered upon the indication by lower layers as specified in clause 5.3.5.18.x or 5.3.5.18.6 and the selected cell has a *ltm-NoSecurityChangeID* configured with a value which is equal to the value of *ltm-NoSecurityChangeID* configured within the LTM candidate configuration for which the re-configuration with sync failure is detected:

3> perform the LTM cell switch procedure for the selected LTM candidate cell according to the actions specified in 5.3.5.18.6;

Since LTM candidate configurations configured in *ltm-ConfigNRDC* are also "associated with the MCG" (i.e., contain MCG configuration), the Cond for *attemptLTM-Switch* needs to be fixed to be in line with clause 5.3.7.3.

**[Proposed Change]**:

|  |  |
| --- | --- |
| Conditional Presence | Explanation |
| *LTM-MCG* | This field is optional present for the MCG, Need R, if the UE is configured with at least one LTM candidate configuration in an *ltm-Config* associated with the MCG. Otherwise, the field absent. |

**[Comments]**:

[Huawei] This text should be modified to say "for LTM on the MCG", which is the only thing defined in 5.3.5.18.1, there is no concept of "associated with the MCG".

# N102

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| B111 | MOB | 1 | LTM Config NR-DC Clarification | R2-25xxxxx | Nokia(Srinivasan) |  | V017 | ToDo |

 **[Description]**:

The field description for ***ltm-ConfigurationSCG*** says it cannot be included within LTM-Config. However LTM-Config IE does not have this field name within it. In our view this field is meant to provide LTM config for SCG LTM in case of inter SN SCG LTM. Hence better to reflect this in the field description.

*LTM-ConfigNRDC*

The IE *LTM-ConfigNRDC* is used to provide LTM configurations in NR-DC.

*LTM-ConfigNRDC* information element

-- ASN1START

-- TAG-LTM-CONFIGNRDC-START

LTM-ConfigNRDC-r19 ::= SEQUENCE {

 ltm-ConfigurationSCG-r19 LTM-Config-r18 OPTIONAL, -- Need M

 ltm-SK-CounterConfigToAddModList-r19 SEQUENCE (SIZE (1..maxSecurityCellSet-r18)) OF SK-CounterConfigLTM-r19 OPTIONAL, -- Need N

 ltm-SK-CounterConfigToReleaseList-r19 SEQUENCE (SIZE (1..maxSecurityCellSet-r18)) OF LTM-NoSecurityChangeId-r19 OPTIONAL, -- Need N

 ...

}

-- TAG-LTM-CONFIGNRDC-STOP

-- ASN1STOP

|  |
| --- |
| *LTM-ConfigNRDC field descriptions* |
| ***ltm-ConfigurationSCG***This field provides LTM configuration for Inter-CU SCG LTM. The network does not configure this field in an *RRCReconfiguration* message within *ConditionalReconfiguration* IE. |

**[Comments]**:

[Huawei] The addition is not needed. The existing sentence is misplaced, it should be part of the field description of *ltm-ConfigNRDC* in the *RRCReconfiguration* message.

V401

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| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| V401 | MOB | 2 | Missing RRC parameter used for LTM ‘*CodebookConfig-LTM-r19’* and ‘*cqi-Table*’ for CSI acquisition | R2-25xxxxx | vivo(Jing Liang) |  | V007 | ToDo |

 **[Description]**: RRC parameters newly agreed by RAN1 for early CSI acquisition which include ‘*CodebookConfig-LTM-r19’* and ‘*cqi-Table*’are missed according to higher layers parameters list from RAN1 (LS in R1-2506626).

**[Proposed Change]**: Introduce two new RRC parameters ‘*CodebookConfig-LTM-r19’* and ‘*cqi-Table*’ under the parent IE *LTM-CSI-ReportConfig-r18*.

**[Comments]**:

# C161

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| C161 | MOB | 1 | Ambiguity of the reportQuantity field description on the wording “CSI report” |  | Rui(CATT) |  | V005 |  |

 **[Description]**:

It is not clear whether the wording “CSI report” means early CSI acquization.

**[Proposed Change]**:

|  |
| --- |
| *LTM-ReportContent field descriptions* |
| ***nrOfReportedCells***This field defines how many cells are reported within a single L1 measurement report instance. |
| ***nrOfReportedRS-PerCell***This field defines how many RSs per cell are reported within a single L1 measurement report instance. |
| ***spCellInclusion***This field indicates whether the UE shall include a L1 measurement report associated to the current SpCell. This field can only be configured if the current SpCell is configured as an SpCell of an LTM candidate configuration and the *LTM-CSI-ResourceConfig* IE associated to the *LTM-CSI-ReportConfig* IE includes resources for the current SpCell. |
| ***reportQuantity***Indicates the report quantity ~~for the CSI report~~. |

**[Comments]**:

[Huawei]: This is the report quantity "for this IE", so "for the CSI report" is useless, then what remains is "reportQuantiy indicates the report quantity", which is also useless. Suggest deleting this description.

# C162

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| C162 | MOB | 1 | Issue on the name and place of the candidateSpecificOffsetS field description |  | Rui(CATT) |  | V005 |  |

 **[Description]**:

Two issue to address,

it is not suitable to used candidate in the the name of ***candidateSpecificOffsetS*** as it is used for serving cell

the field description should be under *LTM-CSI-ReportConfig* but not LTM-CandidateReportConfig

**[Proposed Change]**:

|  |
| --- |
| *LTM-CSI-ReportConfig* field descriptions |
| *eventId*Type of LTM event for triggering event-triggered measurement report as specified in TS 38.321 [3]. |
| ***hysteresis***Hysteresis when evaluating the entering/leaving conditions for an LTM event. |
| ***ltm-CandidateReportConfigList***List of report configurations for LTM candidate IDs. If the field is absent the UE shall measure all the LTM candidate cells associated to the field *ltm-ResourcesForChannelMeasurement.* |
| ***ltm-EventTriggeredPeriodicReport***This field indicates when an LTM event is triggered, whether the event-triggered measurement report is sent periodically. If the field is absent, the event-triggered measurement report is sent once, as specified in TS 38.321 [3]. |
| ***ltm-EventTriggeredReportContent***This field indicates what to include in a measurement report when an LTM event is triggered. When this field is absent, the field *ltm-ReportConfigType* is set to *eventTriggered*, and the corresponding *LTM-CSI-ReportConfigId* is part of an *LTM-ExecutionConditionList* IE, when the associated LTM event is fulfilled, the UE triggers an LTM cell switch procedure instead of an event-triggered measurement report, as specified in TS 38.321 [3].  |
| ***ltm-ReportConfigType***This field specifies how the UE shall report the measurement results for LTM either by gNB-scheduled measurement report or by event-triggered measurement report by MAC CE. The UE shall ignore this field if *LTM-CSI-ReportConfig* is configured in a *LTM-Candidate* IE. |
| ***ltm-ReportContent***This field defines the content of the LTM L1 measurement report. The UE shall ignore this field if the field *ltm-ReportConfigType* is set to *eventTriggered*. |
| ***ltm-ResourcesForChannelMeasurement, ltm-ResourceForInterferenceMeasurements***This field indicates the index of SSB or CSI-RS in the field *LTM-CSI-ResourceConfig*. |
| ***ltm2-Threshold, ltm4-Threshold, ltm5-Threshold1, ltm5-Threshold2***Thresholds defined in the entering/leaving conditions for different LTM events. |
| ***ltm3-Offset***Offset for the entering/leaving condition for event LTM3. The actual value is field value \* 0.5 dB. |
| ***reportOnLeave***Indicates whether the event-triggered measurement report by MAC CE shall be triggered when leaving condition is satisfied, as specified in TS 38.321 [3]. |
| ***reportSlotConfig***Periodicity and slot offset (see TS 38.214 [19], clause 5.2.1.4). The UE shall ignore the offset provided by this field in case *semiPersistentOnPUSCH* is configured. |
| ***reportSlotOffsetList, reportSlotOffsetListDCI-0-1***, ***reportSlotOffsetListDCI-0-2***Timing offset Y for semi persistent reporting using PUSCH and aperiodic reporting. |
| ***servingSpecificOffset***Offset for event condition that is applicable for all the reference signals belonging to serving cell. If the field is absent, the value '0dB' is applied. |

|  |
| --- |
| *LTM-CandidateReportConfig* field descriptions |
| ***ltm-CandidateReportConfigId***LTM candidate cell ID for which the UE is required to measure reference signal and perform LTM event evaluation as specified in TS 38.321 [3]. |
| ***candidateSpecificOffset***Offset for event condition that is applicable for all the reference signals belonging to the candidate cell with the candidate cell ID *ltm-CandidateReportConfigId*. If the field is absent, the value '0dB' is applied.  |
| ***~~candidateSpecificOffsetS~~***~~Offset for event condition that is applicable for all the reference signals belonging to serving cell. If the field is absent, the value '0dB' is applied.~~  |

**[Comments]**:

# Z162

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| Z162 | MOB | 1 | Clarification on the conditional presence of allowReportAnyBeam |  | ZTE (Mengjie Zhang) |  | V009 | ToDo |

 **[Description]**: According to the current conditional presence of allowReportAnyBeam, the IE is is mandatory in case the eventId is configured as eventLTM2. However, if the eventLTM2 is configured as the L1 execution condition for CLTM, the field LTM-EventTriggeredReportContent can be absent, and there is no need to configure the child IE allowReportAnyBeam.

**[Proposed Change]**: To clarify that allowReportAnyBeam is mandatory in case the eventId is configured as eventLTM2 and the associated ltm-EventTriggeredReportContent is configured.

|  |  |
| --- | --- |
| Conditional Presence | Explanation |
| *LTM2* | This field is mandatory in case the *eventId* is configured as *eventLTM2* and the associated *ltm-EventTriggeredReportContent* is configured*.* Otherwise, it is optionally present, need R. |
| *notEventLTM2* | This field is not present when the *eventId* is configured as *eventLTM2*. Otherwise, it is optionally present, need S. |
| *onlyLTM3* | This fiels is optionally present, need S, when *eventId* is configured as *eventLTM3*. Otherwise, it is absent. |

**[Comments]**:

[Huawei] according to 6.1.2 : "For downlink RRC message and sidelink PC5 RRC messages, the need codes, conditions and ASN.1 defaults specified for a particular (child) field only apply in case the (parent) field including the particular field is present."

V402

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| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| V402 | MOB | 2 | Missing RRC parameter used for LTM ‘*repetition’* for CSI acquisition | R2-25xxxxx | vivo(Jing Liang) |  | V007 | ToDo |

 **[Description]**: RRC parameters newly agreed by RAN1 which is ‘*repetition’* is missed according to higher layers parameters list from RAN1 (LS in R1-2506626).

**[Proposed Change]**: Introduce a new RRC parameters ‘*repetition’* under the parent IE *LTM-NZP-CSI-RS-ResourceSet*.

**[Comments]**:

# C163

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| C163 | MOB | 1 | Wrong fields in the LTM-CSI-IM-ResourceSet field descriptions |  | Rui(CATT) |  | V005 |  |

 **[Description]**:

There is no field ltm-CSI-IM-ResourceList in *LTM-CSI-IM-ResourceSet*, it should beltm-CSI-IM-ResourceSetId and ltm-CandidateId

.

**[Proposed Change]**:

**[Comments]**:

# Z163

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| Z163 | MOB | 1 | Clarification on CondTriggerConfig field descriptions |  | ZTE (Mengjie Zhang) |  | V009 | ToDo |

 **[Description]**: The fields included in the CondTriggerConfig are applicable to not only conditional reconfiguration triggering condition, but also CLTM triggering condition based on L3 measurements. The CLTM case is missing in multiple field descriptions.

Note: We have defined CLTM in 3.2 Abbreviations, but it seems that the term is not used in other places in the current spec. I guess we can use “CLTM” here to clearly specify the case.

**[Proposed Change]**: To add “CLTM triggering condition based on L3 measurements” in the field description for related IEs.

|  |
| --- |
| *CondTriggerConfig* field descriptions |
| ***a3-Offset***Offset value(s) to be used in NR conditional reconfiguration triggering condition or CLTM triggering condition based on L3 measurements for cond event a3. The actual value is field value \* 0.5 dB. |
| ***a4-Threshold***Threshold value associated to the selected trigger quantity (e.g. RSRP, RSRQ, SINR) per RS Type (e.g. SS/PBCH block, CSI-RS) to be used in NR conditional reconfiguration triggering condition or CLTM triggering condition based on L3 measurements for cond event a4. |
| ***a5-Threshold1/ a5-Threshold2***Threshold value associated to the selected trigger quantity (e.g. RSRP, RSRQ, SINR) per RS Type (e.g. SS/PBCH block, CSI-RS) to be used in NR conditional reconfiguration triggering condition or CLTM triggering condition based on L3 measurements for cond event a5. In the same *condeventA5*, the network configures the same quantity for the *MeasTriggerQuantity* of the *a5-Threshold1* and for the *MeasTriggerQuantity* of the *a5-Threshold2*. |
| ***condEventId***Choice of NR conditional reconfiguration or CLTM event triggered criteria. |
| ***distanceThreshFromReference1, distanceThreshFromReference2***Distance from a fixed reference location configured with *referenceLocation1* or *referenceLocation2* for *condEventD1*. Distance from a moving reference location determined by the UE based on the serving cell *movingReferenceLocation* broadcast in *SIB19* or *referenceLocation* and the corresponding epoch time and satellite ephemeris configured within the *MeasObjectNR* associated to the event for *condEventD2*. Each step represents 50m. |
| ***duration***This field is used for defining the leaving condition T1-2 for conditional HO event *condEventT1*. Each step represents 100ms. |
| ***nesEvent***Indicates the event is a NES-specific CHO event and the event is only considered to be satisfied if indication from lower layers is received indicating the applicability of NES-specific CHO event and the related entry condition(s) is fulfilled. This field can only be configured for *condEventA3*, *condEventA4* or *condEventA5*. This field cannot be configured for CPAC. |
| ***referenceLocation1, referenceLocation2***The r*eferenceLocation1* is associated to serving cell and *referenceLocation2* is associated to candidate target cell. |
| ***t1-Threshold***The field counts the number of UTC seconds in 10 ms units since 00:00:00 on Gregorian calendar date 1 January, 1900 (midnight between Sunday, December 31, 1899 and Monday, January 1, 1900). |
| ***timeToTrigger***Time during which specific criteria for the event needs to be met in order to execute the conditional reconfiguration evaluation or CLTM evaluation based on L3 measurements. |

**[Comments]**:

# N101

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| B111 | MOB | 1 | Reference configuration for Inter-SN SCG LTM | R2-25xxxxx | Nokia(Srinivasan) |  | V017 | ToDo |

 **[Description]**:

When Inter SN SCG LTM is configured the LTM config is delivered via MN RRC message. In this case RAN2 agreed that the reference configuration and candidate configurations will include all the parameters across both cell group. However the reference configuration definition still indicates it provides common configuration for cell group. This needs to be clarified.

**[Proposed Change]**: ( Highlighted in yellow).

– *ReferenceConfiguration*

The IE *ReferenceConfiguration* is used provide a configuration that is common, within the same cell group, to all configured non-complete candidate configurations if included in the LTM Config IE within LTM-Config-NRDC. If the reference configuration is included for LTM-Config-NRDC this IE is used to provide configuration that is common across bothe cell groups, to all configured non-complete candidate configurations.

*ReferenceConfiguration* information element

-- ASN1START

-- TAG-REFERENCECONFIGURATION-START

ReferenceConfiguration-r18 ::= OCTET STRING (CONTAINING RRCReconfiguration)

-- TAG-REFERENCECONFIGURATION-STOP

-- ASN1STOP

**[Comments]**:

[Huawei] Even in Rel-18, this description is unclear, and which one to use for which candidate configuration should be covered by procedure text. Could be reworded:

The IE *ReferenceConfiguration* is used provide a configuration that is used for a set of non-complete candidate configurations.

# Z164

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| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| Z164 | MOB | 1 | Clarification on reportType |  | ZTE (Mengjie Zhang) |  | V009 | ToDo |

 **[Description]**: The condTriggerConfig can also be used for CLTM configuration.

Note: We have defined CLTM in 3.2 Abbreviations, but it seems that the term is not used in other places in the current spec. I guess we can use “CLTM” here to clearly specify the case.

**[Proposed Change]**: To add the CLTM case.

***reportType***

Type of the configured measurement report. In MR-DC, network does not configure report of type *reportCGI* using SRB3. The *condTriggerConfig is* used for CLTM, CHO, CPA or CPC configuration.

**[Comments]**:

# C164

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| C164 | MOB | 1 | Suffix “-r19” should be used instead of “” for the ReportInterval-v19xy |  | Rui(CATT) |  | V005 |  |

 **[Description]**:

As ReportInterval-v19xy includes all the values in the legacy ReportInterval, Suffix “-r19” should be used instead of “” for the ReportInterval-v19xy

.

**[Proposed Change]**:

*ReportInterval* information element

-- ASN1START

-- TAG-REPORTINTERVAL-START

ReportInterval ::= ENUMERATED {ms120, ms240, ms480, ms640, ms1024, ms2048, ms5120, ms10240, ms20480, ms40960,

 min1,min6, min12, min30 }

ReportInterval-~~v19xy~~r19 ::= ENUMERATED {ms20, ms60, ms120, ms240, ms480, ms640, ms1024, ms2048, ms5120, ms10240, ms20480, ms40960,

 min1,min6, min12, min30 }

-- TAG-REPORTINTERVAL-STOP

-- ASN1STOP

**[Comments]**:

[Huawei] ReportInterval is used in 4 IEs: ReportConfigInterRAT, ReportConfigNR, ReportConfigNR-SL and SL-ReportConfigList, but ReportInterval-r19 is used only in LTM-CSI-ReportConfig, and there is no place where ReportInterval-r19 actually replaces ReportInterval, as should be the case if this name is used according to A.3.1.2:

When an extension is introduced a suffix is added to the identifier of the concerned ASN.1 field and/or type. A suffix of the form "‑rX" is used, with X indicating the release, for ASN.1 fields or types introduced in a later release (i.e. a release later than the original/first release of the protocol) as well as for ASN.1 fields or types for which a revision is introduced in a later release replacing a previous version, *e.g.*, *Foo-r9* for the Rel-9 version of the ASN.1 type *Foo*.

Therefore, this definition should not be added in the ReportInterval IE, the enumerated values should be directly included in LTM-CSI-ReportConfig.

# M204

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| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| M204 | MOB | 1 | Ambiguity on UE variable *VarLTM-ServingCellNoResetID* for inter-CU LTM  |  | Pasi (MediaTek) |  | V008 |  |

 **[Description]**:

Based on the procedural text in clause 5.3.5.18.6 (assuming X152 and X153 are agreed), the UE variable *VarLTM-ServingCellNoResetID* is used to determine need for L2 reset only when the LTM cell switch does not include security key change. It would make the specification more clear, if the description of the UE variable was clarified accordingly.

**[Proposed Change]**:

*– VarLTM-ServingCellNoResetID*

The IE *VarLTM-ServingCellNoResetID* is used to store the ID associated with the serving cell based on which the UE determines whether a L2 reset is needed or not upon an LTM cell switch procedure which does not involve security key change.

*VarLTM-ServingCellNoResetID* UE variable

-- ASN1START

-- TAG-VARLTM-SERVINGCELLNORESETID-START

VarLTM-ServingCellNoResetID-r18 ::= SEQUENCE {

 ltm-ServingCellNoResetID-r18 INTEGER (1..maxNrofLTM-Configs-plus1-r18) OPTIONAL

}

-- TAG-VARLTM-SERVINGCELLNORESETID-STOP

-- ASN1STOP

**[Comments]**:

# Z165

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| Z165 | MOB | 1 | No need to introduce ltm-Config-r19 in the CG-Config |  | ZTE (Mengjie Zhang) |  | V009 | ToDo |

 **[Description]**: According to the latest RAN3 BLCR R2-256023, most IEs included in the ltm-Config have been introduced in XnAP messages for SCG LTM. Currently, only ltm-NoResetID and ltm-UE-MeasuredTA-ID are missed in the RAN3 interface messages, which are still under RAN3 discussion. Thus, we think there is no need to introduce the whole ltm-Config in the CG-Config, which may cause the redundant IE information transfer for SCG LTM. We can just introduce IEs currently missing in the RAN3 interface messages, e.g. ltm-NoResetID and ltm-UE-MeasuredTA-ID, if needed.

**[Proposed Change]**: To remove ltm-Config-r19 from the CG-Config, and just add the IEs (i.e. ltm-NoResetID and ltm-UE-MeasuredTA-ID) in the CG-Config message.

**[Comments]**:

# C165

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| C165 | MOB | 1 | ltm-ReferenceConfigurationMCG in *CG-ConfigInfo should contain the LTM reference configuration* to be used at the SCG, but not MCG |  | Rui(CATT) |  | V005 |  |

 **[Description]**:

In the field description ltm-ReferenceConfigurationMCG in *CG-ConfigInfo,it says “*The field contains the LTM reference configuration to be used at the MCG*”*.In our understanding, it should be LTM reference configuration to be used at the SCG.

.

**[Proposed Change]**:

***ltm-ReferenceConfigurationMCG***

The field contains the LTM reference configuration to be used at the ~~MCG~~SCG. This field is only used in NR-DC.

**[Comments]**:

# S036

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| S036 | MOB | 1 | Upate L1-MeasConfigNRDC with CSI-RS measurement related information. | R2-25xxxxx | Samsung(Aby) |  | V014 | ToDo |

 **[Description]**:

In the capability CR, a number of L1 capabilities for CSI-RS measurements are added for LTM as below. This needs to be considered in RRC INM.

| ***intraFreqL1-MeasConfigPeriodicCSI-RS-r19***Indicates whether UE supports intra-frequency L1- RSRP measurement and reporting based on periodic CSI-RS(s) of candidate cell(s).This capability signalling comprises of the following parameters:- *supportedMaxIntraFreqCellsConfig-r19* indicates the maximum number of RRC configured candidate cells for intra-frequency L1-RSRP measurement on CSI-RS resource;- *supportedMaxIntraFreqCellsPerReport-r19* indicates the maximum number of candidate cells in one report where a CRI-RSRP pair is used for each beam report for intra-frequency L1-RSRP measurement;- *supportedMaxReportBeamsPerReportedCell-r19* indicates the maximum number of candidate beams per candidate cell in one report where a CRI-RSRP pair is used for each beam report for intra-frequency L1-RSRP measurement;- *supportedMaxReportBeamsReports-r19* indicates the maximum number of candidate beams in total across all cells© in one report where a CRI-RSRP pair is used for each beam report for intra-frequency L1-RSRP measurement;- *supportedMaxAperiodic-LTM-CSI-ReportConfig-r19* indicates maximum number of aperiodic *LTM-CSI-ReportConfig*;- *supportedMaxPeriodic-LTM-CSI-ReportConfig-r19* indicates maximum number of periodic *LTM-CSI-ReportConfig*;- *supportedMaxSemiPersistent-LTM-CSI-ReportConfig-r19* indicates maximum number of semi-persistent *LTM-CSI-ReportConfig*;UE supporting this feature shall also indicate support of *intraFreqL1-MeasConfig-r18.* |
| --- |
| ***intraFreqL1-MeasConfigSP-CSI-RS-r19***Indicates whether UE supports intra-frequency L1- RSRP measurement and reporting based on semi-persistent CSI-RS(s) of candidate cell(s).This capability signalling comprises of the following parameters:- *supportedMaxAperiodic-LTM-CSI-ReportConfig-r19* indicates maximum number of aperiodic *LTM-CSI-ReportConfig* using semi-persistent CSI-RS as measurement resource;- *supportedMaxSemiPersistent-LTM-CSI-ReportConfig-r19* indicates maximum number of semi-persistant *LTM-CSI-ReportConfig* using semi-persistent CSI-RS as measurement resource;UE supporting this feature shall also indicate support of *intraFreqL1-MeasConfigPeriodicCSI-RS-r19*.NOTE: The UE must support a non-zero value for at least one of *supportedMaxAperiodic-LTM-CSI-ReportConfig-r19* and *supportedMaxSemiPersistent-LTM-CSI-ReportConfig-r19*. |
| ***maxCSI-RS-ResourceL1-Meas-r19***Indicates the max number of CSI-RS resources for L1-RSRP measurement that UE can measure within a slot across candidate cells for L1-RSRP measurement. If UE does not support this feature, there is no limitation on the number of CSI-RS resources for L1 measurement within a slot.A UE supporting this feature shall also indicate support of *intraFreqL1-MeasConfigPeriodicCSI-RS-r19*.NOTE: The CSI-RS resources of this feature |

**[Proposed Change]**:

Based on the above description, we suggest the following change:

L1-MeasConfigNRDC-r18 ::= SEQUENCE {

 maxL1-MeasNoGapSCG-r18 INTEGER(0..maxNrofL1-MeasNoGap-r18) OPTIONAL,

 maxL1-MeasWithGapSCG-r18 INTEGER(0..maxNrofL1-MeasWithGap-r18) OPTIONAL,

 maxCellsL1-MeasNoGapSCG-r18 INTEGER(0..maxNrofCellsL1-MeasNoGap-r18) OPTIONAL,

 maxCellsL1-MeasWithGapSCG-r18 INTEGER(0..maxNrofCellsL1-MeasWithGap-r18) OPTIONAL,

 maxTotalCellsL1-MeasNoGapSCG-r18 INTEGER(0..maxNrofTotalCellsL1-MeasNoGap-r18) OPTIONAL,

 maxSSBsL1-MeasNoGapSCG-r18 INTEGER(0..maxNrofSSBsL1-MeasNoGap-r18) OPTIONAL,

 maxSSBsL1-MeasWithGapSCG-r18 INTEGER(0..maxNrofSSBsL1-MeasWithGap-r18) OPTIONAL,

 maxTotalSSBsL1-MeasNoGapSCG-r18 INTEGER(0..maxNrofTotalSSBsL1-MeasNoGap-r18) OPTIONAL,

 maxCellsL1-MeasIntraFreqSCG-r18 INTEGER(0..maxNrofSSBsL1-MeasIntraFreq-r18) OPTIONAL,

 maxCellsL1-MeasInterFreqSCG-r18 INTEGER(0..maxNrofSSBsL1-MeasInterFreq-r18) OPTIONAL,

 maxReportConfigsAperiodic-r18 INTEGER(0..maxNrofReportConfigsAperiodic-r18) OPTIONAL,

 maxReportConfigsPeriodic-r18 INTEGER(0..maxNrofReportConfigsPeriodic-r18) OPTIONAL,

 maxReportConfigsSemiPersistent-r18 INTEGER(0..maxNrofReportConfigsSemiPersistent-r18) OPTIONAL,

 ...,

 [[

 maxSSBsL1-MeasNoGapSCGExt-r18 INTEGER(0..maxNrofSSBsL1-MeasNoGapExt-r18) OPTIONAL

 ]],

 [[

 maxCellsL1-CSIMeasIntraFreq-r19 INTEGER (1..maxNrofCellsL1-CSIMeasIntraFreq-r19) OPTIONAL,

 maxReportConfigsAperiodic-PeriodicCSI-RS-r19 INTEGER(0..maxNrofReportConfigsAperiodic-PeriodicCSI-RS-r19) OPTIONAL,

 maxReportConfigsPeriodic-PeriodicCSI-RS-r19 INTEGER(0..maxNrofReportConfigsPeriodic-PeriodicCSI-RS-r19) OPTIONAL,

 maxReportConfigsSP-PeriodicCSI-RS-r19 INTEGER(0..maxNrofReportConfigsSP-PeriodicCSI-RS-r19) OPTIONAL,

 maxReportConfigsAperiodic-SPCSI-RS-r19 INTEGER(0..maxNrofReportConfigsAperiodic-SPCSI-RS-r19) OPTIONAL,

 maxReportConfigsSP-SPCSI-RS-r19 INTEGER(0..maxNrofReportConfigsSP-SPCSI-RS-r19) OPTIONAL,

 maxTotalCSI-RS-L1-Meas-r18 INTEGER(0..maxNrofTotalCSI-RS-L1-Meas) OPTIONAL,

 ]]

}

|  |
| --- |
| *L1-MeasConfigNRDC* field descriptions |
| ***maxCellsL1-MeasInterFreqSCG***Indicates the maximum number of RRC configured LTM candidate cells for intra- and inter-frequency L1 measurement. |
| ***maxCellsL1-MeasIntraFreqSCG***Indicates the maximum number of RRC configured LTM candidate cells for intra-frequency L1 measurement. |
| ***maxCellsL1-MeasNoGapSCG***Indicates the maximum number of neighbour cells UE can measure per frequency layer for intra-frequency or inter-frequency L1 measurements without measurement gaps. |
| ***maxCellsL1-MeasWithGapSCG***Indicates the maximum number of neighbour cells UE can measure per frequency layer for inter-frequency L1 measurements with measurement gaps. |
| ***maxL1-MeasNoGapSCG***Indicates the maximum number of frequency layers UE can measure for intra- and inter-frequency L1 measurements without measurement gaps. |
| ***maxL1-MeasWithGapSCG***Indicates the maximum number of frequency layers UE can measure for inter-frequency L1 measurements with measurement gaps. |
| ***maxReportConfigsAperiodic***Indicates the maximum number of aperiodic LTM CSI report configurations. |
| ***maxReportConfigsPeriodic***Indicates the maximum number of periodic LTM CSI report configurations. |
| ***maxReportConfigsSemiPersistent***Indicates the maximum number of semi-persistent LTM CSI report configurations. |
| ***maxSSBsL1-MeasNoGapSCG, maxSSBsL1-MeasNoGapSCGExt***Indicates the maximum number of SSB resources UE can measure per frequency layer for intra-frequency or inter-frequency L1 measurements without measurement gaps. If the field *maxSSBsL1-MeasNoGapSCGExt* is included, the field *maxSSBsL1-MeasNoGapSCG* is not present. |
| ***maxSSBsL1-MeasWithGapSCG***Indicates the maximum number of SSB resources UE can measure per frequency layer for inter-frequency L1 measurements with measurement gaps. |
| ***maxTotalCellsL1-MeasNoGapSCG***Indicates the maximum total number of cells, including serving cells and neighboring cells, across all frequency layers of intra-frequency and inter-frequency L1 measurements, UE can measure without measurement gaps. |
| ***maxTotalSSBsL1-MeasNoGapSCG***Indicates the maximum total number of SSB resources, including serving cells and neighboring cells, across all frequency layers of intra-frequency and inter-frequency L1 measurements, UE can measure without measurement gaps. |
| ***MaxIntraFreqCellsConfig***Indicates the maximum number of RRC configured candidate cells for intra-frequency L1-RSRP measurement using periodic CSI-RS resource. |
| ***MaxAperiodic-LTM-CSI-ReportConfig-usingPeriodicCSI-RS***Indicates the maximum number of aperiodic LTM-CSI-ReportConfig using periodic CSI-RS resource |
| ***MaxPeriodic-LTM-CSI-ReportConfig***Indicates the maximum number of periodic LTM-CSI-ReportConfig using periodic CSI-RS resource |
| ***MaxSP-LTM-CSI-ReportConfig-UsingPeriodicCSI-RS*** Indicates the maximum number of semi-persistent LTM-CSI-ReportConfig using periodic CSI-RS resource |
| ***MaxAperiodic-LTM-CSI-ReportConfig-usingSPCSI-RS*** Indicates the maximum number of aperiodic LTM-CSI-ReportConfig using semi-persistent CSI-RS. |
| ***MaxSP-LTM-CSI-ReportConfig-usingSPCSI-RS-r19*** Indicates the maximum number of semi-persistant LTM-CSI-ReportConfig using semi-persistent CSI-RS. |
| ***MaxSP-LTM-CSI-ReportConfig-usingSPCSI-RS-r19*** Indicates the Maximum total number of CSI-RS resources for L1 measurements for candidate cells and serving cells. |

– Multiplicity and type constraints definitions

-- ASN1START

-- TAG-NR-MULTIPLICITY-AND-CONSTRAINTS-START

maxMeasFreqsMN INTEGER ::= 32 -- Maximum number of MN-configured measurement frequencies

maxMeasFreqsSN INTEGER ::= 32 -- Maximum number of SN-configured measurement frequencies

maxMeasIdentitiesMN INTEGER ::= 62 -- Maximum number of measurement identities that a UE can be configured with

maxCellPrep INTEGER ::= 32 -- Maximum number of cells prepared for handover

maxNrofL1-MeasNoGap-r18 INTEGER ::= 8 -- Maximum number of frequencies layers for L1 measurements UE can measure without gaps

maxNrofL1-MeasWithGap-r18 INTEGER ::= 8 -- Maximum number of frequencies layers for L1 measurements UE can measure with gaps

maxNrofCellsL1-MeasNoGap-r18 INTEGER ::= 8 -- Maximum number of neighboring cells for L1 measurements UE can measure without gaps

maxNrofCellsL1-MeasWithGap-r18 INTEGER ::= 8 -- Maximum number of neighboring cells for L1 measurements UE can measure with gaps

maxNrofTotalCellsL1-MeasNoGap-r18 INTEGER ::= 24 -- Maximum total number of cell across all frequencies layers UE can measure

maxNrofSSBsL1-MeasNoGap-r18 INTEGER ::= 8 -- Maximum number of SSB resources for L1 measurements without gaps

maxNrofSSBsL1-MeasNoGapExt-r18 INTEGER ::= 24 -- Maximum number of SSB resources for L1 measurements without gaps

maxNrofSSBsL1-MeasWithGap-r18 INTEGER ::= 8 -- Maximum number of SSB resources for L1 measurements with gaps

maxNrofTotalSSBsL1-MeasNoGap-r18 INTEGER ::= 64 -- Maximum total number of SSB resources for L1 measurements without gaps

maxNrofSSBsL1-MeasIntraFreq-r18 INTEGER ::= 8 -- Maximum number of RRC configured intra-frequency LTM candidate configurations

maxNrofSSBsL1-MeasInterFreq-r18 INTEGER ::= 8 -- Maximum number of RRC configured inter-frequency LTM candidate configurations

maxNrofReportConfigsAperiodic-r18 INTEGER ::= 4 -- Maximum number of aperiodic LTM CSI report configurations

maxNrofReportConfigsPeriodic-r18 INTEGER ::= 4 -- Maximum number of periodic LTM CSI report configurations

maxNrofReportConfigsSemiPersistent-r18 INTEGER ::= 4 -- Maximum number of semi-persistent LTM CSI report configurations

maxNrofCellsTA-Meas-r18 INTEGER ::= 8 -- Maximum number of LTM candidate cells for TA acquisition

maxNrofConfigJointTCI-States-r18 INTEGER ::= 128 -- Maximum number of joint LTM DL TCI states that can be configured

maxNrofConfigDL-TCI-States-r18 INTEGER ::= 128 -- Maximum number of separate LTM DL TCI states that can be configured

maxNrofConfigUL-TCI-States-r18 INTEGER ::= 64 -- Maximum number of separate LTM UL TCI states that can be configured

maxNrofCellsTCI-r18 INTEGER ::= 8 -- Maximum number of configured joint LTM TCI state(s) across candidate cells

maxNrofStoredConfigCells-r18 INTEGER ::= 16 -- Maximum number cells which can be stored by the UE

maxNrofConfigCells-r18 INTEGER ::= 4 -- Maximum number LTM candidate configurations on which UE can fast processing

maxNrofActivatedJointTCI-States-r18 INTEGER ::= 32 -- Maximum number of joint DL TCI states that can be activated via MAC CE

maxNrofActivatedDL-TCI-States-r18 INTEGER ::= 32 -- Maximum number of separate DL TCI states that can be activated via MAC CE

maxNrofActivatedUL-TCI-States-r18 INTEGER ::= 32 -- Maximum number of separate DL TCI states that can be activated via MAC CE

maxNrofCellsL1-CSIMeasIntraFreq-r19 INTEGER ::= 4 -- Maximum number of RRC configured candidate cells for intra-frequency L1-RSRP measurement using periodic CSI-RS resource

maxNrofReportConfigsAperiodic-PeriodicCSI-RS-r19 INTEGER ::= 4 -- Maximum number of aperiodic LTM-CSI-ReportConfig using periodic CSI-RS resource

maxNrofReportConfigsPeriodic-PeriodicCSI-RS-r19 INTEGER ::= 4 -- Maximum number of periodic LTM-CSI-ReportConfig using periodic CSI-RS resource

maxNrofReportConfigsSP-PeriodicCSI-RS-r19 INTEGER ::= 4 -- Maximum number of semi-persistant LTM-CSI-ReportConfig using periodic CSI-RS resource

maxNrofReportConfigsAperiodic-SPCSI-RS-r19 INTEGER ::= 4 -- Maximum number of aperiodic LTM-CSI-ReportConfig using semi-persistant CSI-RS resource

maxNrofReportConfigsSP-SPCSI-RS-r19 INTEGER ::= 4 -- Maximum number of semipersistant LTM-CSI-ReportConfig using semi-persistant CSI-RS resource

maxNrofTotalCSI-RS-L1-Meas-r19 INTEGER ::= 64 -- Maximum total number of CSI-RS resources for L1 measurements

-- TAG-NR-MULTIPLICITY-AND-CONSTRAINTS-STOP

-- ASN1STOP

**[Comments]**:

# S037

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| S037 | MOB | 1 | Maintaining the LTM-Config and reference configuration received in INM for Inter-SN LTM | R2-25xxxxx | Samsung(Aby) |  | V014 | ToDo |

 **[Description]**:

When the reference configuration or LTM configuration is included in CG-Config/CG-ConfigInfo, it makes sense for the receiver to maintain the received parameters. Otherwise the entire configuration needs to be included again in every CG-Config/CG-Config according to the clause 11.2.3.

For e.g. if MN sends a new DRX configuration or measurement gap configuration or sends a UAI to SN, entire ltm-config or ltm-referenceconfiguration which was send previously needs to be again included in the CG-ConfigInfo even if there is no change for these configurations.

Since the ltm-config or ltm-referenceconfiguration are Need M parameters in air interface there is no need to resend them everytime a CG-Config/CG-ConfigInfo is send, They are very large IEs, potentially including thousands of bytes, since the reference configuration can include entire RRCReconfiguration message, or for LTM-Config, many RRCReconfiguration messages of all the candidate cells.

To avoid this, Reference configiuration and LTM config can be included in the list in *section 11.2.3 Mandatory information in inter-node RRC messages,* to avoid the retransmission everytime a CG-Config/CG-ConfigInfo is send.

**[Proposed Change]**: Based on the above description, we suggest the following change:

11.2.3 Mandatory information in inter-node RRC messages

For the *AS-Config* transferred within the *HandoverPreparationInformation*:

- The source node shall include all fields necessary to reflect the current AS configuration of the UE, except for the fields *sourceSCG-NR-Config*, *sourceSCG-EUTRA-Config* and *sourceRB-SN-Config*, which can be omitted in case the source MN did not receive the latest configuration from the source SN. For *RRCReconfiguration* included in the field *rrcReconfiguration*, *ReconfigurationWithSync* is included with only the mandatory subfields (e.g. *newUE-Identity* and *t304*) and *ServingCellConfigCommon*;

- Need codes or conditions specified for subfields according to IEs defined in clause 6 do not apply. I.e. some fields shall be included regardless of the "Need" or "Cond" e.g. *discardTimer*;

- Based on the received AS configuration, the target node can indicate the delta (difference) to the current AS configuration (as included in *HandoverCommand*)to the UE. The fields *newUE-Identity* and *t304* included in *ReconfigurationWithSync* are not used for delta configuration purpose.

The *candidateCellInfoListSN*(-*EUTRA*) in *CG-Config* and the *candidateCellInfoListMN*(*-EUTRA*)/*candidateCellInfoListSN*(-*EUTRA*) in *CG-ConfigInfo* need not be included in procedures that do not involve a change of node.

For fields *scg-CellGroupConfig, scg-CellGroupConfigEUTRA* and *scg-RB-Config* in *CG-Config* (sent upon SN initiated SN change or other conditions as specified in field descriptions) and fields *mcg-RB-Config*, *scg-RB-Config* and *sourceConfigSCG* in *CG-ConfigInfo* (sent upon change of SN):

- The source node shall include all fields necessary to reflect the current AS configuration of the UE, unless stated otherwise in the field description. For *RRCReconfiguration* included in the field *scg-CellGroupConfig in CG-Config*, *ReconfigurationWithSync* is included with only the mandatory subfields (e.g. *newUE-Identity* and *t304*) and *ServingCellConfigCommon*;

- Need codes or conditions specified for subfields according to IEs defined in clause 6 do not apply;

- Based on the received AS configuration, the target node can indicate the delta (difference) as compared to the current AS configuration to the UE. The fields *newUE-Identity* and *t304* in *ReconfigurationWithSync* are always included by the target node, i.e. they are not used for delta configuration purpose to UE.

For fields in *CG-Config* and *CG-ConfigInfo* listed below, absence of the field means that the receiver maintains the values informed via the previous message. Note that every time there is a change in the configuration covered by a listed field, the MN or SN shall include the field and it shall provide the full configuration provided by that field unless stated otherwise. Otherwise, if there is no change, the field can be omitted:

- *configRestrictInfo*;

- *gapPurpose;*

- *measGapConfig* (for which delta signaling applies);

*- measGapConfigFR2* (for which delta signaling applies);

- *measResultCellListSFTD*;

*- measResultSFTD-EUTRA*;

- *sftdFrequencyList-EUTRA*;

*- sftdFrequencyList-NR;*

- *ue-CapabilityInfo;*

*- servFrequenciesMN-NR;*

*- musim-GapConfigInfo-r18;*

- *musim-CapRestrictionInfo-r18.*

*- ltm-ReferenceConfigurationSCG*

*- ltm-Config*

*- ltm-ReferenceConfigurationMCG*

For other fields in CG-Config and CG-ConfigInfo, the sender shall always signal the appropriate value even if same as indicated in the previous inter-node message, unless explicitly stated otherwise.

**[Comments]**: