**3GPP TSG RAN WG1 #116bis R1-24xxxxx**

**Changsha, China, April 15th – 19th, 2024**

**Source: Moderator (Fujitsu)**

**Title: Final FL summary of Maintenance on Further NR Mobility Enhancements**

**Agenda Item: 8.5**

**Document for: Information**

# Introduction

This contribution is a Feature Lead (FL) summary for the CRs for mobility enhancements under A.I. 8.4.

# Plan for GTW/Online discussion

##### [Proposals for Monday Online]

TBD

##### [Proposals for Tuesday Online]

TBD

##### [Proposals for Wednesday Online]

TBD

##### [Proposals for Thursday Online]

TBD

##### [Proposals for Friday Online]

TBD

# List of Contributions

## Contributions under AI 5

[R1-2401945](Docs\R1-2401945.zip) Reply LS on MAC CE to activate/deactivate semi-persistent PUCCH report for LTM RAN2, Fujitsu

* No RAN1 action is required

[R1-2401955](Docs\R1-2401955.zip) LS on timing assumption between source and target cells for R18 LTM cell switch RAN4, MediaTek

* Discussed based on the company CR

R1-2401951 Reply LS on n-TimingAdvanceOffset for PDCCH order RACH RAN2, Huawei

* No action in RAN1

## Contributions under AI 8.4

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| **TDoc** | **Title** | **Source** |
| [**R1-2402059**](https://www.3gpp.org/ftp/TSG_RAN/WG1_RL1/TSGR1_116b/Docs/R1-2402059.zip) | Draft CR on consistency between SSB index and TCI state in LTM Cell Switch Command MAC CE | ZTE |
| [**R1-2402060**](https://www.3gpp.org/ftp/TSG_RAN/WG1_RL1/TSGR1_116b/Docs/R1-2402060.zip) | Discussion on consistency between SSB index and TCI state in LTM Cell Switch Command MAC CE | ZTE |
| [**R1-2402061**](https://www.3gpp.org/ftp/TSG_RAN/WG1_RL1/TSGR1_116b/Docs/R1-2402061.zip) | Draft CR on prioritizations for transmission power reductions in LTM | ZTE |
| [**R1-2402062**](https://www.3gpp.org/ftp/TSG_RAN/WG1_RL1/TSGR1_116b/Docs/R1-2402062.zip) | Draft CR on capturing CFRA triggered by LTM Cell Switch Command MAC CE | ZTE |
| [**R1-2402198**](https://www.3gpp.org/ftp/TSG_RAN/WG1_RL1/TSGR1_116b/Docs/R1-2402198.zip) | Discussion on timing assumption between source and target cells for R18 LTM cell switch | vivo |
| [**R1-2402225**](https://www.3gpp.org/ftp/TSG_RAN/WG1_RL1/TSGR1_116b/Docs/R1-2402225.zip) | Draft CR on timing assumption between source and target cells for R18 LTM cell switch | vivo |
| [**R1-2402226**](https://www.3gpp.org/ftp/TSG_RAN/WG1_RL1/TSGR1_116b/Docs/R1-2402226.zip) | Discussion on LTM cell switch for target cell with multiple TAs | vivo |
| [**R1-2402302**](https://www.3gpp.org/ftp/TSG_RAN/WG1_RL1/TSGR1_116b/Docs/R1-2402302.zip) | Correction on Candidate Cell TCI state indication in TS 38.213 | OPPO |
| [**R1-2402493**](https://www.3gpp.org/ftp/TSG_RAN/WG1_RL1/TSGR1_116b/Docs/R1-2402493.zip) | Correction on timing assumption between source and target cells for R18 LTM cell switch | CATT |
| [**R1-2402502**](https://www.3gpp.org/ftp/TSG_RAN/WG1_RL1/TSGR1_116b/Docs/R1-2402502.zip) | Draft CR on TS38.211 for LTM | Lenovo |
| [**R1-2402709**](https://www.3gpp.org/ftp/TSG_RAN/WG1_RL1/TSGR1_116b/Docs/R1-2402709.zip) | Draft CR on applying UE-measured TA after LTM Cell Switch Command MAC CE | ZTE |
| [**R1-2402821**](https://www.3gpp.org/ftp/TSG_RAN/WG1_RL1/TSGR1_116b/Docs/R1-2402821.zip) | Correction on timing difference for LTM | ASUSTeK |
| [**R1-2402822**](https://www.3gpp.org/ftp/TSG_RAN/WG1_RL1/TSGR1_116b/Docs/R1-2402822.zip) | Correction on LTM | ASUSTeK |
| [**R1-2402983**](https://www.3gpp.org/ftp/TSG_RAN/WG1_RL1/TSGR1_116b/Docs/R1-2402983.zip) | Draft CR for 38.213 on candidate cell naming | Ericsson |
| [**R1-2402984**](https://www.3gpp.org/ftp/TSG_RAN/WG1_RL1/TSGR1_116b/Docs/R1-2402984.zip) | Draft CR for 38.213 on deactivation of candidate TCI states | Ericsson |
| [**R1-2402985**](https://www.3gpp.org/ftp/TSG_RAN/WG1_RL1/TSGR1_116b/Docs/R1-2402985.zip) | Draft CR for 38.213 on RACH procedure triggred by LTM cell switch | Ericsson |
| [**R1-2402986**](https://www.3gpp.org/ftp/TSG_RAN/WG1_RL1/TSGR1_116b/Docs/R1-2402986.zip) | Draft CR for 38.213 on signaling of TCI state in LTM cell switch command | Ericsson |
| [**R1-2402987**](https://www.3gpp.org/ftp/TSG_RAN/WG1_RL1/TSGR1_116b/Docs/R1-2402987.zip) | Draft CR for 38.213 on TCI state applied for CORESET 0 | Ericsson |
| [**R1-2402988**](https://www.3gpp.org/ftp/TSG_RAN/WG1_RL1/TSGR1_116b/Docs/R1-2402988.zip) | Draft CR for 38.214 on CSI report priority | Ericsson |
| [**R1-2402989**](https://www.3gpp.org/ftp/TSG_RAN/WG1_RL1/TSGR1_116b/Docs/R1-2402989.zip) | Draft CR for 38.214 on QCL assumption after LTM cell switch command | Ericsson |
| [**R1-2402990**](https://www.3gpp.org/ftp/TSG_RAN/WG1_RL1/TSGR1_116b/Docs/R1-2402990.zip) | Draft CR for 38.214 on spCellInclusion | Ericsson |
| [**R1-2403073**](https://www.3gpp.org/ftp/TSG_RAN/WG1_RL1/TSGR1_116b/Docs/R1-2403073.zip) | Draft CR for 38.213 on PRACH collision handling for LTM | Nokia |
| [**R1-2403074**](https://www.3gpp.org/ftp/TSG_RAN/WG1_RL1/TSGR1_116b/Docs/R1-2403074.zip) | Draft CR for 38.213 on prioritizations for transmission power reductions for LTM | Nokia |
| [**R1-2403222**](https://www.3gpp.org/ftp/TSG_RAN/WG1_RL1/TSGR1_116b/Docs/R1-2403222.zip) | Maintenance on Further NR Mobility Enhancements | NTT DOCOMO |
| [**R1-2403331**](https://www.3gpp.org/ftp/TSG_RAN/WG1_RL1/TSGR1_116b/Docs/R1-2403331.zip) | Correction on supplementary uplink for LTM | Google |
| [**R1-2403334**](https://www.3gpp.org/ftp/TSG_RAN/WG1_RL1/TSGR1_116b/Docs/R1-2403334.zip) | Correction on CFRA triggered by cell switch command | Google |
| [**R1-2403347**](https://www.3gpp.org/ftp/TSG_RAN/WG1_RL1/TSGR1_116b/Docs/R1-2403347.zip) | Corrections to LTM TCI state application on target SCell in TS38.213 | Huawei, HiSilicon |
| [**R1-2403349**](https://www.3gpp.org/ftp/TSG_RAN/WG1_RL1/TSGR1_116b/Docs/R1-2403349.zip) | Corrections to the power control after LTM cell switch and Pathloss RS in LTM TCI state in TS38.213 | Huawei, HiSilicon |
| [**R1-2403350**](https://www.3gpp.org/ftp/TSG_RAN/WG1_RL1/TSGR1_116b/Docs/R1-2403350.zip) | Corrections to CFRA triggered by cell switch command in TS38.213 | Huawei, HiSilicon |
| [**R1-2403360**](https://www.3gpp.org/ftp/TSG_RAN/WG1_RL1/TSGR1_116b/Docs/R1-2403360.zip) | Corrections to UL/SUL indicator in DCI format 1\_0 for LTM early RACH in TS38.212 | Huawei, HiSilicon |

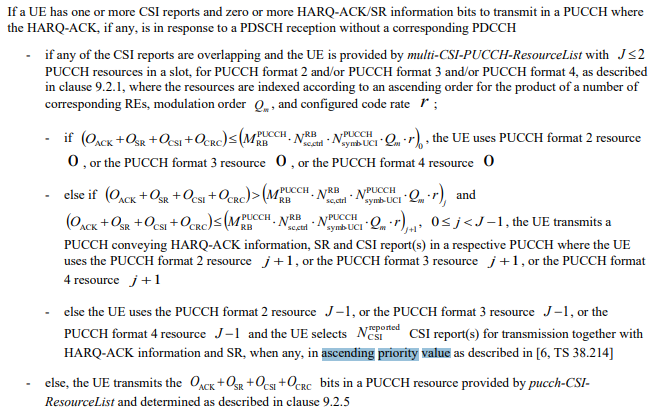
# High priority issues in RAN1#116bis

## Issue 1-1: [Offline planned] CSI report priority

### Summary of Proposal

[R1-2402988](Docs\R1-2402988.zip) Draft CR for 38.214 on CSI report priority Ericsson

* The priority rule for LTM contradict with the spec description in 38.213 (FL found 3 parts, the following is just an example)



* Thus, Ericsson’s proposal is to change the formula to achieve a unique priority value

### Companies view.

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| Company | Essential or Not (Yes or No) | Comment |
| FL | Yes but…  (new issue) | FL understands the intention by Ericsson. However, with this proposal, the priority value will be different between Rel-17 and Rel-18 even for the legacy CSI report without *LTM-CSI-ReportConfig* configured*.* FL suggestion is to discuss the solution how to address this issue in RAN1#116bis.  Official offline discussion is planed for this issue. |
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## Issue 1-2: [Offline planned] power control after LTM cell switch and pathloss RS

### Summary of Proposal

[R1-2403348](Docs\R1-2403348.zip) Discussion on the power control after LTM cell switch and pathloss RS in LTM TCI state Huawei, HiSilicon  
[R1-2403349](Docs\R1-2403349.zip) Corrections to the power control after LTM cell switch and Pathloss RS in LTM TCI state in TS38.213 Huawei, HiSilicon

🡪The proposals by Huawei are the followings:

* **Proposal 1:** For UL transmission after cell switch and before the serving cell TCI state is indicated, UE applies power control parameter in the ul-powerControl-r17 of the TCI-State or the TCI-UL-State, if configured, corresponding to the CandidateTCI-State or the CandidateTCI-UL-State indicated in the LTM Cell Switch Command. Otherwise, ul-powerControl-r17 configured in BWP-UplinkDedicated of the target cell is applied.
* **Proposal 2:** For the first UL based on CG resources in LTM, the rrc-P0-PUSCH-r18 and rrc-Alpha-r18 are not applicable.
* **Proposal 3:** Capture the procedure of pathloss estimation for candidate cells and define the maximum number simultaneous pathloss estimation across all candidate cells before LTM cell switch in RAN1 specification.

### Companies view.

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| Company | Comment |
| FL | FL suggestion is to gather the companies view on Proposals 1,2 and 3 above before going to the CR. Also official offline discussion is planned for this issue.  For proposal 1, considering the RRC parameter session, it has already been agreed not to introduce power control parameters in CandidateTCI-State or CandidateTCI-UL-State. Then, Proposal 1 would be the right approach. On the other hand, the association between TCI-State and CandidateTCI-state (as well as TCI-UL-State andCandidateTCI-UL-State) also needs discussion as no consensus was achieved at RAN1#116.  Proposal 2 is a new issue. Companies input are appreciated.  Proposal 3 might be a UE capability issue (which can be handled under AI 8.5.3). FL plan is firstly discuss if a restriction on simultaneous pathloss estimation is introduced or not. |
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## Issue 1-3: Prioritizations for transmission power reductions

### Summary of Proposal

[R1-2402061](Docs\R1-2402061.zip) Draft CR on prioritizations for transmission power reductions in LTM ZTE  
[R1-2403074](Docs\R1-2403074.zip) Draft CR for 38.213 on prioritizations for transmission power reductions for LTM Nokia

* Power allocation prioritization is captured in clause 21 of TS38.213. Meanwhile, nothing is described in clause 7.5, where the detailed rule for power prioritization is captured.

### Companies view.

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| Company | Essential or Not (Yes or No) | Comment |
| FL | Yes  (majority supported the TP in the previous meeting) | ZTE and Nokia addresses the same issue, the proposal is almost the same. FL has no strong view which one to take. |
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## Issue 1-4: CFRA triggered by cell switch command

### Summary of Proposal

[R1-2402062](Docs\R1-2402062.zip) Draft CR on capturing CFRA triggered by LTM Cell Switch Command MAC CE ZTE  
[R1-2403334](Docs\R1-2403334.zip) Correction on CFRA triggered by cell switch command Google  
[R1-2402985](Docs\R1-2402985.zip) Draft CR for 38.213 on RACH procedure triggred by LTM cell switch Ericsson

* Not necessary to capture the same description in RAN2 specs.
* The merged version of the CR is found below:

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* TP for 38.213 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

8.1 Random access preamble

Physical random access procedure for a UE is triggered upon request of a PRACH transmission by higher layers or by a PDCCH order or LTM Cell Switch Command MAC CE in clause 6.1.3.75 [11, TS 38.321] for a cell. A configuration by higher layers for a PRACH transmission includes the following:

- A configuration for PRACH transmission on the cell [4, TS 38.211].

- A preamble index, a preamble SCS, , a corresponding RA-RNTI when applicable [11, TS 38.321], and a PRACH resource for the cell.

- A number of preamble repetitions for the PRACH transmission if the UE would transmit the PRACH with repetitions.

A configuration by LTM Cell Switch Command MAC CE for a PRACH transmission includes the following:

- A Random Access Preamble index.

- A SS/PBCH index.

- A PRACH Mask index.

<Unchanged part is omitted>

For a PRACH transmission by a UE triggered by a PDCCH order or an LTM cell switch command MAC CE, the PRACH mask index field, if the value of the random access preamble index field is not zero, indicates the PRACH occasion for the PRACH transmission where the PRACH occasions are associated with the SS/PBCH block index indicated by the SS/PBCH block index field of the PDCCH order or the LTM cell switch command MAC CE and, if any, a cell indicator field indicates a cell for the PRACH transmission [5, TS 38.212]. If the UE is provided by *cellSpecificKoffset*, the PRACH occasion is after slot where is the slot of the UL BWP for the PRACH transmission that overlaps with the end of the reception of the PDCCH order or the LTM cell switch command MAC CE assuming , and is the SCS configuration for the PRACH transmission. If the PDCCH reception for the PDCCH order includes two PDCCH candidates from two linked search space sets based on *searchSpaceLinkingId*, as described in clause 10.1, the last symbol of the PDCCH reception is the last symbol of the PDCCH candidate that ends later. The PDCCH reception includes the two PDCCH candidates also when the UE is not required to monitor one of the two PDCCH candidates as described in clauses 10 (except clause 10.4), 11.1, 11.1.1 and 17.2.

<Unchanged part is omitted>

If a random access procedure is initiated by a PDCCH order or an LTM cell switch command MAC CE, the UE, if requested by higher layers, transmits a PRACH in the selected PRACH occasion, as described in [11, TS 38.321], for which a time between the last symbol of the reception of the PDCCH order or the LTM cell switch command MAC CE and the first symbol of the PRACH transmission is larger than or equal to msec, where

- is a time duration of symbols corresponding to a PUSCH preparation time for UE processing capability 1 [6, TS 38.214] assuming corresponds to the smallest SCS configuration between the SCS configuration of the PDCCH order or the PUSCH carrying the LTM cell switch command MAC CE and the SCS configuration of the corresponding PRACH transmission

- if the active UL BWP does not change, or if a cell indicator field in the PDCCH order indicates a non-serving cell [5, TS 38.212], and is defined in [10, TS 38.133] otherwise

- msec for FR1 and msec for FR2

- is a switching gap duration as defined in [6, TS 38.214]

- if a cell indicator field in the PDCCH order indicates a serving cell or if cell indicator field is not present, and is defined in [10, TS 38.133] otherwise

- if a cell indicator field in the PDCCH order indicates a serving cell or if cell indicator field is not present, and is defined in [10, TS 38.133] otherwise

21 L1/L2-triggered mobility procedures

<Unchanged part is omitted>

A UE can be provided configurations, by *EarlyUlSyncConfig*, for PRACH transmission parameters for each of the candidate cells. The UE can be triggered a PRACH transmission on a candidate cell by a PDCCH order that the UE receives on a serving cell and includes an indication of the candidate cell for the PRACH transmission [4, TS 38.212]. If the serving cell and the candidate cell operate in a same frequency range and the UE would have transmissions that overlap in time, or when a gap between a first or last symbol of a PRACH transmission to the candidate cell is less than 𝑁 symbols from a last or first symbol, respectively, of an UL transmission to the serving cell, where is defined in Clause 8.1, the UE

- drops the transmissions on the serving cell when the UE does not support transmissions that overlap in time or are separated by less than the gap on the serving cell and the candidate cell

- prioritizes power allocation to the PRACH transmission on the candidate cell in clause 7.5 when the UE supports transmissions that overlap in time or are separated by less than the gap, and a total UE transmit power in the frequency range would exceed

The UE transmits the PRACH on the candidate cell as described in Clause 8.1 with a power determined as described in Clause 7.4.

The UE can be triggered a PRACH transmission on a target cell by LTM Cell Switch Command MAC CE including an index of candidate target configuration, in clause 6.1.3.75 [11, TS 38.321], that is received on a serving cell.

<Unchanged part is omitted>

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### Companies view.

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| Company | Essential or Not (Yes or No) | Comment |
| FL | Yes  (majority supported the TP in the previous meeting) | ZTE and Nokia addresses the same issue, and almost same changes are proposed. FL has no strong view which one to take. FL thinks the yellow part of the merged CR above may not be necessary as they have already been captured in 38.321  FL will prepare a merged CR after receiving the input from interested companies. |
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## Issue 1-5: Capturing RAN4 agreement (R1-2401955)

### Summary of Proposal

[R1-2402225](Docs\R1-2402225.zip) Draft CR on timing assumption between source and target cells for R18 LTM cell switch vivo  
[R1-2402493](Docs\R1-2402493.zip) Correction on timing assumption between source and target cells for R18 LTM cell switch CATT  
[R1-2402502](Docs\R1-2402502.zip) Draft CR on TS38.211 for LTM Lenovo  
R1-2402821 Correction on timing difference for LTM ASUSTeK

* The four proponents propose to add “LTM cell switch procedure” into 38.211 based on the RAN4 input
* The proposed change by ASUSTek includes UL sync before cell switch.

### Companies view.

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| Company | Essential or Not (Yes or No) | Comment |
| FL | Yes  (new issue) | FL share the same view as vivo (R1-2402225) that the terminology “handover” does not include PScell change. FL suggestion is to approve R1-2402225. |
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## Issue 1-6: Deactivation of candidate TCI states

### Summary of Proposal

[R1-2402984](Docs\R1-2402984.zip) Draft CR for 38.213 on deactivation of candidate TCI states Ericsson

* The rule for candidate cell TCI state deactivation after RRC reconfiguration with sync is not captured in the specification

### Companies view.

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| Company | Essential or Not (Yes or No) | Comment |
| FL | Yes?  (new issue) | OK to have this CR for clear UE behaviour. However, FL thinks the spec wouldn’t be broken even without this CR.  When no UE behaviour is captured in the spec, the gNB can’t assume any activated TCI states and hance the gNB has to activate necessary TCI states for candidate cells before LTM.  If everyone is fine with this CR, FL suggest approving R1-2402984 |
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## Issue 1-7: TCI state applied for CORESET 0

### Summary of Proposal

[R1-2402987](Docs\R1-2402987.zip) Draft CR for 38.213 on TCI state applied for CORESET 0 Ericsson

* The current fallback rule for the TCI state to receive CORESET 0 (to SSB identified though initial access procedure) is not applicable to LTM. This aspect needs to be clarified

### Companies view.

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| Company | Essential or Not (Yes or No) | Comment |
| FL | Yes  (new issue) | FL thinks the spec description will contradict without this additional sentence.  FL suggestion is to approve R1-2402987 |
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## Issue 1-8: TCI state applied after LTM cell switch

### Summary of Proposal

[R1-2402989](Docs\R1-2402989.zip) Draft CR for 38.214 on QCL assumption after LTM cell switch command Ericsson

* The current rule for default TCI state (i.e. associated with SSB identified though initial access procedure) is not applicable to LTM. This aspect needs to be clarified

### Companies view.

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| Company | Essential or Not (Yes or No) | Comment |
| FL | Yes  (new issue) | FL thinks the current spec description will contradict without this additional sentence.  FL suggestion is to approve R1-2402989 |
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## Issue 1-9: PRACH collision handling

### Summary of Proposal

[R1-2403073](Docs\R1-2403073.zip) Draft CR for 38.213 on PRACH collision handling for LTM Nokia

* This is to reflect the RAN1 agreement that “When the UE does not support simultaneous/parallel transmissions of PRACH in candidate cell and UL channels and signals in serving cell, support serving cell UL TX is dropped.”

### Companies view.

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| Company | Essential or Not (Yes or No) | Comment |
| FL | Yes  (slight majority supported the TP in the previous meeting) | This is to capture the RAN1 agreement  FL suggestion is to approve R1-2403073 |
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## Issue 1-10: UL/SUL indicator

### Summary of Proposal

[R1-2403331](Docs\R1-2403331.zip) Correction on supplementary uplink for LTM Google  
[R1-2403360](Docs\R1-2403360.zip) Corrections to UL/SUL indicator in DCI format 1\_0 for LTM early RACH in TS38.21 Huawei, HiSilicon

🡪 Google and Huawei have a common understanding on the interpretation of the UL/SUL indicator field. On the other hand, Huawei see the need to change the order of bit field: Cell indictor field should be placed before UL/SUL indicator because the interpretation of UL/SUL indicator depends on cell indicator

### Companies view.

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| Company | Essential or Not (Yes or No) | Comment |
| FL | Yes  (majority supported the TP in the previous meeting) | As proposed by Goole and Huawei, the text change for UL/SUL field is essential. As for the change of position for cell indicator field (proposed by Huawei), FL thinks it is “nice to have” as the interpretation of the filed can be done sequentially. However, the system will still work without this change.  We can discuss which draft CR to take, Google or Huawei. |
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# Wording change/Alignment to be concluded in RAN1#116bis or #117 if necessary

## Issue 2-1: Alignment of

[R1-2402528](Docs\R1-2402528.zip) Correction on Further NR Mobility Enhancements Langbo

* Change the unit of a parameter (slot number 🡪 millisecond).

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| Company | Essential or Not (Yes or No) | Comment |
| FL | Yes  (majority supported the TP in the previous meeting) | The intention is OK and the spec will be clearer with this change. |
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## Issue 2-2: Terminology of “non-serving” cell for LTM

[R1-2402983](Docs\R1-2402983.zip) Draft CR for 38.213 on candidate cell naming Ericsson

* The intention is not to use “non-serving” cell for LTM purpose

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| Company | Essential or Not (Yes or No) | Comment |
| FL | Yes  (new issue) | Intention is OK |
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## Issue 2-3: TCI state ID in cell switch command

[R1-2402986](Docs\R1-2402986.zip) Draft CR for 38.213 on signaling of TCI state in LTM cell switch command Ericsson

* TCI state ID and/or UL TCI state ID is provided by a LTM Cell Switch Command instead of *CandidateTCI-State* and/or *CandidateTCI-UL-State.*

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| Company | Essential or Not (Yes or No) | Comment |
| FL | Yes  (new issue) | Intention is OK |
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## Issue 2-4: clarification on spCellInclusion

[R1-2402990](Docs\R1-2402990.zip) Draft CR for 38.214 on spCellInclusion Ericsson

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| Company | Essential or Not (Yes or No) | Comment |
| FL | Yes  (new issue) | OK with the intention  For FL, the yellow part sounds weird (from non-native speaker point of view) since SSB resource is not defined inside of the *ltm-CandidateIdList*. “associated with” instead of “in the” would be better ?  if *spCellInclusion* is configured, SSB resources in *ltm-CSI-SSB-ResourceList* associated with the current SpCell are the entries in the *ltm-CandidateIdList* where ~~  LTM-CSI-SSB-ResourceSet-r18 ::= SEQUENCE {  ltm-CSI-SSB-ResourceList-r18 SEQUENCE (SIZE (1..maxNrofLTM-CSI-SSB-ResourcesPerSet-r18)) OF SSB-Index,  ltm-CandidateIdList-r18 SEQUENCE (SIZE (1..maxNrofLTM-CSI-SSB-ResourcesPerSet-r18)) OF LTM-CandidateId-r18,  ...  }  FL is fine if everyone is OK with the original proposal from Ericsson. |
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## Issue 2-5: Parameter name correction for UE-based TA

[R1-2403009](Docs\R1-2403009.zip) Draft CR on L1/L2-triggered mobility procedures ETRI  
[R1-2403010](Docs\R1-2403010.zip) Discussion on L1/L2-triggered mobility procedures ETRI

* Focus on R1-2403009 . This CR is to correct the parameter name

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| Company | Essential or Not (Yes or No) | Comment |
| FL | Yes but…  (new issue) | This proposal is fine as an alignment CR. On the other hand,   * the first change “*~~ltm-UE-MeasuredTA-ID~~* *ltm-UE-MeasuredTA-ID”* does not change anything. * the description is completely same as the condition defined in section 5.3.5.18.3 of 38.331. Then, another solution is just refer to this 38.331 to avoid a duplication.   Ether approach is fine from FL perspective. |
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## Issue 2-6: Parameter name correction - miscellenous

R1-2402822 Correction on LTM ASUSTeK

* This CR is to correct the parameter name

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| Company | Essential or Not (Yes or No) | Comment |
| FL | Yes  (new issue) | OK as an alignment CR |
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# Issues that need more discussion: to be concluded in RAN1#117 if necessary

## Issue 3-1: Consitency between SSB index and TCI state in cell switch command MAC CE

[R1-2402059](Docs\R1-2402059.zip) Draft CR on consistency between SSB index and TCI state in LTM Cell Switch Command MAC CE ZTE  
[R1-2402060](Docs\R1-2402060.zip) Discussion on consistency between SSB index and TCI state in LTM Cell Switch Command MAC CE ZTE

* This proposal tries to achieve the consistency between SSB index for PRACH transmission and the TCI state

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| Company | Essential or Not (Yes or No) | Comment |
| FL | No  (not many input in the previous meeting) | The potential mismatch between SSB index and TCI state in cell switch command MAC CE can be avoided by gNB implementation. |
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## Issue 3-2: LTM coexistence with Rel-18 multiple TA

[R1-2402226](Docs\R1-2402226.zip) Discussion on LTM cell switch for target cell with multiple TAs vivo

* The following proposals are made:
  + Proposal 1: Add the information for mapping between TCI state and TAG ID in the CandidateTCI-State and CandidateTCI-UL-State.
  + Proposal 2: If the co-existence between RACH-based LTM and Rel-18 MIMO multiple TAs is supported, how to avoid or resolve the mismatch between the TAGs associated with the indicated TCI state and the calculated TA in the RAR needs further study.

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| Company | Essential or Not (Yes or No) | Comment |
| FL | ?  (new issue) | According to R1-2402226, the RAN2 discussion is still ongoing. FL suggestion is to check the RAN2 status and come back in the next meeting for more clarity. (FL believes this approach is not too late considering this is a bis meeting) |
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## Issue 3-3: Clarification of Candidate Cell TCI state activation

[R1-2402302](Docs\R1-2402302.zip) Correction on Candidate Cell TCI state indication in TS 38.213 OPPO

* Clarify the UE behaviour that a Candidate Cell TCI States Activation/Deactivation MAC CE can activate TCI states and LTM Cell Switch Command MAC CE can also activate TCI state(s) if the TCI state(s) is not activated.

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| Company | Essential or Not (Yes or No) | Comment |
| FL | No?  (new issue) | FL does not see the difference between the original specification and the CR. FL would like to hear the opinion from companies. |
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## Issue 3-4: Condition to apply UE-measured TA

[R1-2402709](Docs\R1-2402709.zip) Draft CR on applying UE-measured TA after LTM Cell Switch Command MAC CE ZTE

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| Company | Essential or Not (Yes or No) | Comment |
| FL | No  (new issue) | Reference to 38.321 has already been captured in the corresponding sentence in 38.213, and the condition to apply UE-measured TA can be found there. |
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## Issue 3-5: TA offset information for UE-based TA

[R1-2402785](Docs\R1-2402785.zip) Correction on TA offset information for UE-based TA acquisition Fujitsu

* Clarify the TA offset value used for UE based TA.

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| Company | Essential or Not (Yes or No) | Comment |
| FL | Yes – more discussion needed  (Not many supports in the previous meeting) | FL sees two issues related to this proposal:  UE procedure related to *n-TimingAdvanceOffset* for a candidate cell (including default value) is not described in the specification irrespective of UE-measured TA or not.  For the second change, FL thinks the expect behaviour can anyway captured for the spec clarity. On the other hand, the simplest solution is to leave everything to UE implementation, i.e. assuming the UE to use *n-TimingAdvanceOffset* in *EarlyUL-SyncConfig*.  *“n-TimingAdvanceOffset-ltm”* in this CR should be *“n-TimingAdvanceOffset* in *EarlyUL-SyncConfig”* |
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## Issue 3-6: Handling of TRS traking

[R1-2403222](Docs\R1-2403222.zip) Maintenance on Further NR Mobility Enhancements NTT DOCOMO, INC.

* The following proposals were made:
* If UE does not support TRS tracking for candidate cells before cell switch, UE measures/tracks SSBs for candidate cells before cell switch command. After cell switch command, UE measures/tracks TRS for target cell if TRS is provided in the indicated TCI state.
* If UE supports TRS tracking for candidate cells before cell switch, UE measures/tracks TRS for candidate cells before cell switch command if TRS is provided in the activated TCI states.

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| Company | Essential or Not (Yes or No) | Comment |
| FL | OK to clarify (but FL understanding from the last meeting is No) | There might be a different understanding on the UE behaviour for TRS. However, according to the offline discussion at RAN1#115, the following is the intention of the current specifications: - The UE capability applies both before and after cell switch command - A UE is capable of TRS, the UE can be configured with TRS. The UE behaviour is the same before and after cell switch command, i.e. TRS is used for tracking before and after CSC - A UE is capable of SSB, the UE can be configured with SSB. The UE behaviour is the same before and after cell switch command, i.e. SSB is used for tracking before and after CSC |
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## Issue 3-7: Timing to apply new UL TCI state

[R1-2402991](Docs\R1-2402991.zip) Remaining issue on beam usage after LTM cell switch command Panasonic  
[R1-2403310](Docs\R1-2403310.zip) Draft CR for 38.213 for TCI state usage after RACH-based LTM Panasonic

* It is pointed out in this contribution that after RACH procedure the timing to apply the indicated TCI state is not clear

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| Company | Essential or Not (Yes or No) | Comment |
| FL | No  (new issue) | Even though it is not captured in the FL summaries and Chair’s note, it was discussed in the offline session that “completion of the random access procedure” refers to the description in RAN2 specification, i.e. the condition of the completion of random access procedure is clearly captured in section 5.1.5 of 38.321. FL thinks no new interpretation needs to be defined in RAN1. |
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## Issue 3-8: LTM TCI state application on target SCell

[R1-2403337](Docs\R1-2403337.zip) Discussion on LTM TCI state application on target SCell Huawei, HiSilicon  
[R1-2403347](Docs\R1-2403347.zip) Corrections to LTM TCI state application on target SCell in TS38.213 Huawei, HiSilicon  
[R1-2402710](https://fujitsu-my.sharepoint.com/personal/akimoto_yosuke_jp_fujitsu_com/Documents/ドキュメント/Internal/1.work/1.3GPP技術解説/L1L2mob-BM/116bis-L1L2mob-contirb/FL-Summary/Docs/R1-2402710.zip) Discussion on applying TCI state indicated in LTM Cell Switch Command MAC CE to a list of CCs ZTE

* The following proposal is made
* If more than one CCs are configured in the same simultaneousU-TCI-UpdateList of CellGroupConfig for the target cell, UE activates and applies the indicated LTM TCI state on the SCells in the simultaneousU-TCI-UpdateList AFTER CSC without additional signalling
* If “simultaneousU-TCI-UpdateList” is configured, the TCI state for target SpCell indicated in LTM Cell Switch Command MAC CE can be applied for all CCs in the same CC list configured by “simultaneousU-TCI-UpdateList” as the target SpCell.

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| Company | Essential or Not (Yes or No) | Comment |
| FL | No (not many supports in the previous meeting) | Firstly, FL wants to understand correctly what the consequence is if this CR is not agreed. Huawei mentioned that “the UE behaviour is not clear” in the CR. If so, sending a (Unified) TCI States Activation/Deactivation MAC CE after the completion of cell switch would be the simplest solution, even though this is not an optimum solution. |
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