**3GPP TSG-RAN WG3 Meeting #123R3-241103**

**Athens, Greece, 26th Feb – 1st Mar 2024**

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| *CR-Form-v12.2* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  |  | **CR** | **0126** | **rev** | **1** | **Current version:** |  |  |
|  | | | | | | | | |
| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* | | | | | | | | |
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| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network | **X** | Core Network | **X** |

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| ***Title:*** | Clarify the Assigned Criticality for mobile IAB related IE | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Nokia, Nokia Shanghai Bell | | | | | | | | | |
| ***Source to TSG:*** |  | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NR\_mobile\_IAB-Core | | | | |  | ***Date:*** | | | 2024-01-10 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **F** |  | | | | | ***Release:*** | | |  |
|  | *Use one of the following categories:* ***F*** *(correction)* ***A*** *(mirror corresponding to a change in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)* ***S*** *(adding to the sourcing companies’ CR statistics)*  Detailed explanations of the above categories can be found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | | | | | | | | *Use one of the following releases: Rel-8 (Release 8) Rel-9 (Release 9) Rel-10 (Release 10) Rel-11 (Release 11) … Rel-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | Mobile TRP Location information is provided to the LMF via multiple messages. The Assigned Criticality is set to “ignore” in *E-CID Measurement Result* IE and *TRP Measurement Result* IE, but it is set to “reject” in *TRP Information* IE. The Assigned Criticality should be consistent. If the LMF does not support mobile TRP, the LMF should reject the IE and not perform UE positioning using the mobile TRP. So the Assigned Critiality should be set to “reject” for all occurrence of *Mobile TRP Location information* IE.  In addition, there is error for the reference to TS 23.273 and TS 29.571.  Misalignment between TS38.455 and TS38.473 regarding the presence of the *Location information* in the *Mobile TRP Location Information* IE | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Change the Assigned Critiality for *Mobile TRP Location information* IE to “ignore”.  Correct the reference for TS 23.273 and TS 29.571  Modify the presence of the *Location information* in the *Mobile TRP Location Information* IE to Mandatory to align with TS38.473. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Inconsistent behavior in the LMF for the same IE, misalignment between RAN3 specifications, and the reference error remains in the specification. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 8.2.8.2, 9.2.25, 9.2.88, 9.3.5 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | | **X** |  | Other core specifications | | | | TS 38.473 CR xxx | | |
| ***affected:*** | |  | **X** | Test specifications | | | |  | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | |  | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | | Rev 1: updated to use “ignore” for Assigned Critiality for *Mobile TRP Location information* IE, and modify the presence of the *Location information* in the *Mobile TRP Location Information* IE to Mandatory. | | | | | | | | |

*Start of Change*

### 8.2.8 TRP Information Exchange

#### 8.2.8.1 General

The purpose of the TRP Information Exchange procedure is to allow the LMF to request the NG-RAN node to provide detailed information for TRPs hosted by the NG-RAN node. This procedure applies only if the NG-RAN node is a gNB.

#### 8.2.8.2 Successful Operation



Figure 8.2.8.2-1: TRP Information Exchange procedure, successful operation

The LMF initiates the procedure by sending a TRP INFORMATION REQUEST message. The NG-RAN node responds with a TRP INFORMATION RESPONSE message that contains the requested TRP information.

If the *TRP List* IE is included in the TRP INFORMATION REQUEST message, the NG-RAN node should include in the TRP INFORMATION RESPONSE message, the requested information for all TRPs included in the *TRP List* IE.

If the *TRP List* IE is not included in the TRP INFORMATION REQUEST message, the NG-RAN node should include the requested information for all TRPs hosted by the NG-RAN node in the TRP INFORMATION RESPONSE message

If the *PRS Muting* IE is included in the *PRS Configuration* IE in the TRP INFORMATION RESPONSE message, the LMF may take it into account as the muting information for the given PRS resource set.

If the *QCL Info* IE is included in the *PRS Configuration* IE in the TRP INFORMATION RESPONSE message, the LMF may take it into account for the given PRS resource list.

If the *DL-PRS Resource Coordinates* IE is included in the *Geographical Coordinates* IE in the *TRP Information* IE in the TRP INFORMATION RESPONSE message, the LMF may take it into account as the DL PRS Resource Coordinates relative to the TRP coordinate.

If the *Mobile IAB-MT UE ID* IE is included in the *TRP Information* IE in the TRP INFORMATION RESPONSE message, the LMF shall, if supported, use this information to determine an updated location of the Mobile TRP as specified in TS 23.273 [20].

If the *TRP Information Type Item* IE is set to 'mobile trp location info', the NG-RAN node shall, if supported, derive the location of the Mobile TRP as specified in TS 23.273 [20] and include the *Mobile TRP Location Information* in the TRP INFORMATION RESPONSE message.

*Next Change*

### 9.2.25 TRP Information

The *TRP Information* IE contains information for one TRP within an NG-RAN node.

| IE/Group Name | Presence | Range | IE Type and Reference | Semantics Description | Criticality | Assigned Criticality |
| --- | --- | --- | --- | --- | --- | --- |
| TRP ID | M |  | 9.2.24 |  | - |  |
| **TRP Information Type** |  | *1 .. <maxnoTRPInfoTypes>* |  |  | - |  |
| >CHOICE *TRP Information Item* | M |  |  |  | - |  |
| *>>NR PCI* |  |  | INTEGER (0..1007) | NR Physical Cell ID |  |  |
| *>>NR CGI* |  |  | 9.2.9 |  |  |  |
| *>>NR ARFCN* |  |  | INTEGER (0..3279165) |  |  |  |
| *>>PRS Configuration* |  |  | 9.2.44 |  |  |  |
| *>>SSB Information* |  |  | 9.2.54 |  |  |  |
| *>>SFN Initialisation Time* |  |  | Relative Time 1900  9.2.36 |  |  |  |
| *>>Spatial Direction Information* |  |  | 9.2.45 |  |  |  |
| *>>Geographical Coordinates* |  |  | 9.2.46 |  |  |  |
| *>>TRP type* |  |  | ENUMERATED (prs-only-tp, srs-only-rp, tp, rp, trp, …, mobile trp) | TS 38.305 [18] | YES | reject |
| *>>On-demand PRS TRP Information* |  |  | 9.2.65 |  | YES | reject |
| *>>TRP Tx TEG Association* |  |  | 9.2.79 |  | YES | reject |
| *>>TRP Beam Antenna Information* |  |  | 9.2.82 |  | YES | reject |
| >>Mobile TRP Location Information | M |  | 9.2.88 |  | YES | ignore |
|  |  |  |  |  |  |  |
| >>Common TA Parameters | M |  | 9.2.89 |  | YES | reject |
|  |  |  |  |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| ifMobileTRP | This IE shall be present if the *TRP type* IE is set to the value 'mobile trp' |

*Next Change*

### 9.2.88 Mobile TRP Location Information

This IE contains location information for one mobile TRP.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE type and reference | Semantics description |
| Location Information | M |  | OCTET STRING | Location of the mobile TRP, Includes the *locationEstimate* IE as defined in TS 37.355 [14] |
| Velocity Information | O |  | OCTET STRING | Velocity of the mobile TRP, Includes the *velocityEstimate* IE as defined in TS 37.355 [14] |
| Location Time stamp | O |  | Time Stamp  9.2.42 | Indicates the time when the mobile TRP location information is generated. |

*Next Change*

### 9.3.5 Information Element definitions

\*\* Unchanged text skipped \*\*

Mobile-TRP-LocationInformation ::= SEQUENCE {

location-Information OCTET STRING,

velocity-Information OCTET STRING OPTIONAL,

location-time-stamp TimeStamp OPTIONAL,

iE-Extensions ProtocolExtensionContainer { { Mobile-TRP-LocationInformation-ExtIEs} } OPTIONAL,

...

}

Mobile-TRP-LocationInformation-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

...

}

\*\* Unchanged text skipped \*\*

TRPInformationTypeResponseItem-ExtIEs NRPPA-PROTOCOL-IES ::= {

{ ID id-TRPType CRITICALITY reject TYPE TRPType PRESENCE mandatory }|

{ ID id-OnDemandPRS CRITICALITY reject TYPE OnDemandPRS-Info PRESENCE mandatory}|

{ ID id-TRPTxTEGAssociation CRITICALITY reject TYPE TRPTxTEGAssociation PRESENCE mandatory}|

{ ID id-TRPBeamAntennaInformation CRITICALITY reject TYPE TRPBeamAntennaInformation PRESENCE mandatory }|

{ ID id-Mobile-TRP-LocationInformation CRITICALITY ignore TYPE Mobile-TRP-LocationInformation PRESENCE mandatory }|

{ ID id-CommonTAParameters CRITICALITY reject TYPE CommonTAParameters PRESENCE mandatory },

...

}

*End of Change*