**3GPP TSG-RAN WG3 Meeting #114b-e R3-220506**

**E-meeting, 17-26 Jan 2022**

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| *CR-Form-v12.1* |
| **CHANGE REQUEST** |
|  |
|  | **38.455** | **CR** | **0052** | **rev** | **-** | **Current version:** | **16.6.0** |  |
|  |
| *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:***  | Correction on Measurement Periodicity |
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| ***Source to WG:*** | Huawei |
| ***Source to TSG:*** | R3 |
|  |  |
| ***Work item code:*** | NR\_POS-Core  |  | ***Date:*** | 2022-01-06 |
|  |  |  |  |  |
| ***Category:*** | **F** |  | ***Release:*** | Rel-16 |
|  | *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)*Detailed explanations of the above categories canbe 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-15 (Release 15)Rel-16 (Release 16)Rel-17 (Release 17)Rel-18 (Release 18)* |
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| ***Reason for change:*** | The current values of the Measurement periodicity for UL and UL&DL positioning are as follows:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Measurement Periodicity | C-ifReportCharacteristicsPeriodic |  | ENUMERATED (120ms, 240ms, 480ms, 640ms, 1024ms, 2048ms, 5120ms, 10240ms, 1min, 6min, 12min, 30min, 60min,…, 20480ms, 40960ms)  | The codepoint 60min is not applicable |

The measurement periodicity share the same IE with E-CID positioning measurement periodicity, which is aligned with UE RRM measurment report interval in RRC, which is as follows:ReportInterval ::= ENUMERATED {ms120, ms240, ms480, ms640, ms1024, ms2048, ms5120, ms10240, ms20480, ms40960, min1,min6, min12, min30 }This is incorrect because that for UL and UL&DL positioning it is gNB to measure the SRS sent from the UE, while the RRM measurement is for the UE to measure DL reference signals. The SRS periodicity has the following values:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| CHOICE *Resource Type Positioning* | M |  |  |  |
| >*periodic* |  |  |  |  |
| >>Periodicity | M |  | ENUMERATED(slot1, slot2, slot4, slot5, slot8, slot10, slot16, slot20, slot32, slot40, slot64, slot80, slot160, slot320, slot640, slot1280, slot2560, slot5120, slot10240, slot40960, slot81920,…) |  |

It is obvious that in the measurement periodicity, at least the following values are not aligned with the SRS periodicity: 120ms, 240ms, 480ms, 1024ms, 2048ms, 1min, 6min, 12min, and 30min.Thus, the measurement periodicity for the UL and UL&DL positioning should be aligned with SRS periodicity, rather than the RRC report interval. The values of SRS periodicity should be added in the measurement periodicity for UL and UL&DL positioning, including 160ms, 320ms, 1280ms 2560ms, 81920ms.Some of the values in current measurement periodicity should be subtituded by the similar value that can be aligned with the SRS periodicity. For example, the value 1min should be subtituded by a similar value, such as 61440ms. The value of 6min, 12min, and 30min can be subtituted by a similar value such as 368640ms, 737280ms, and 1843200ms.If SRS periodicity interval is not accurate, there will be some redudency in mesurements, inacurate reporting, shifting of the report measurements update, that could not be deteced by the LMF. As conscequence the report could be totally incurate …  |
| ***R3-20*** |  |
| ***Summary of change:*** | 1. Add the missed values of SRS periodicity including 160ms, 320ms, 1280ms 2560ms, 81920ms in the Measurement Periodicity to align with SRS periodicity.
2. Add the value of 61440ms, which is aligned with SRS periodicity, to subtitute the 1min in the Measurement Periodicity.
3. Add the value of 368640ms, which is aligned with SRS periodicity, to subtitute the 6min in the Measurement Periodicity.
4. Add the value of 737280ms, which is aligned with SRS periodicity, to subtitute the 12min in the Measurement Periodicity.
5. Add the value of 1843200ms, which is aligned with SRS periodicity, to subtitute the 30min in the Measurement Periodicity.
6. Add the description that the newly added values are not applicable in E-CID MEASUREMENT INITIATION REQUEST message.
7. Add the description that some of the values, which are not aligned with SRS periodicity, are not applicable in Measurement Request message.

Impact assessment towards the previous version of the specification (same release): This CR has isolated impact with the previous version of the specification (same release). The change has functional impact and ASN.1 backward compatible impact. |
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| ***Consequences if not approved:*** | The measurement periodicity is not agligned with SRS periodicity and the measurement may fail or be totally wrong withtout possibility to detect the mistake. |
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| ***Clauses affected:*** | 9.1.1.1, 9.1.4.1, 9.3.5 |
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|  | **Y** | **N** |  |  |
| ***Other specs*** | **X** |  |  Other core specifications  | TS/TR 38.473 CR 0848 |
| ***affected:*** |  | **x** |  Test specifications | TS/TR ... CR ...  |
| ***(show related CRs)*** |  | **x** |  O&M Specifications | TS/TR ... CR ...  |
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| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** |  |

<<<<<<<<<<<<<<<<<<<< Changes Begin >>>>>>>>>>>>>>>>>>>>

9.1.1.1 E-CID MEASUREMENT INITIATION REQUEST

This message is sent by LMF to initiate E-CID measurements.

Direction: LMF → NG-RAN node.

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| --- | --- | --- | --- | --- | --- | --- |
| **IE/Group Name** | **Presence** | **Range** | **IE type and reference** | **Semantics description** | **Criticality** | **Assigned Criticality** |
| Message Type | M |  | 9.2.3 |  | YES | reject |
| NRPPa Transaction ID | M |  | 9.2.4 |  | - |  |
| LMF UE Measurement ID | M |  | INTEGER (1..15 ,…, 16..256) |  | YES | reject |
| Report Characteristics | M |  | ENUMERATED (OnDemand, Periodic,…) |  | YES | reject |
| Measurement Periodicity | C-ifReportCharacteristicsPeriodic |  | ENUMERATED (120ms, 240ms, 480ms, 640ms, 1024ms, 2048ms, 5120ms, 10240ms, 1min, 6min, 12min, 30min, 60min,…, 20480ms, 40960ms, reserved) | The codepoint 60min applies only for ng-eNB.The codepoint “reserved” is not used . | YES | reject |
| **Measurement Quantities** |  | *1 .. <maxnoMeas>* |  |  | EACH | reject |
| >Measurement Quantities Item | M |  | ENUMERATED (Cell-ID, Angle of Arrival, Timing Advance Type 1, Timing Advance Type 2, RSRP, RSRQ,…, SS-RSRP, SS-RSRQ, CSI-RSRP, CSI-RSRQ, NR Angle of Arrival) |  | - | - |
| Other-RAT Measurement Quantities |  | *0 .. <maxnoMeas>* |  |  | EACH | ignore |
| >Other-RAT Measurement Quantities Item | M |  | ENUMERATED (GERAN, UTRAN,…, NR, EUTRA) |  |  |  |
| WLAN Measurement Quantities |  | *0 .. <maxnoMeas>* |  |  | EACH | ignore |
| >WLAN Measurement Quantities Item | M |  | ENUMERATED (WLAN, ...) |  | - |  |

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| **Range bound** | **Explanation** |
| maxnoMeas | Maximum no. of measured quantities that can be configured and reported with one message. Value is 64. |

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| **Condition** | **Explanation** |
| ifReportCharacteristicsPeriodic | This IE shall be present if the *Report Characteristics* IE is set to the value "Periodic". |

<<<<<<<<<<<<<<<<<<<< Unchanged Text Omitted >>>>>>>>>>>>>>>>>>>>

9.1.4.1 MEASUREMENT REQUEST

This message is sent by the LMF to request the NG-RAN node to configure a positioning measurement.

Direction: LMF → NG-RAN node.

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| **IE/Group Name** | **Presence** | **Range** | **IE type and reference** | **Semantics description** | **Criticality** | **Assigned Criticality** |
| Message Type | M |  | 9.2.3 |  | YES | reject |
| NRPPa Transaction ID | M |  | 9.2.4 |  | - |  |
| LMF Measurement ID | M |  | INTEGER (1..65536, …)  |  | YES | reject |
| **TRP Measurement Request List** |  | *1* |  |  | YES | reject |
| **>TRP Measurement Request Item**  |  | *1..<maxnoofMeasTRPs>* |  |  | EACH | reject |
| >>TRP ID | M |  | 9.2.24 |  | - |  |
| >>Search Window Information | O |  | 9.2.26 |  | - |  |
| >>Cell ID | O |  | NR CGI9.2.9 | The Cell ID of the TRP identified by the *TRP ID* IE. | YES | ignore |
| Report Characteristics | M |  | ENUMERATED (OnDemand, Periodic, ...) |  | YES | reject |
| Measurement Periodicity | C-ifReportCharacteristicsPeriodic |  | ENUMERATED (120ms, 240ms, 480ms, 640ms, 1024ms, 2048ms, 5120ms, 10240ms, 1min, 6min, 12min, 30min, 60min,…, 20480ms, 40960ms, extended)  | The codepoint 120ms, 240ms, 480ms, 1024ms, 2048ms, 1min, 6min, 12min, 30min, and 60min are not applicable | YES | reject |
| **TRP Measurement Quantities** |  | *1* |  |  | YES | reject |
| **>TRP Measurement Quantities Item** |  | *1 .. <maxnoPosMeas>* |  |  | EACH | reject |
| >TRP Measurement Type | M |  | ENUMERATED (gNB-RxTxTimeDiff, UL-SRS-RSRP, UL-AoA, UL-RTOA,…) |  | - |  |
| >Timing Reporting Granularity Factor | O |  | INTEGER (0..5) | Value (0..5) corresponds to (k0..k5)TS 38.133 [16] | - |  |
| SFN initialisation Time | O |  | Relative Time 19009.2.36 | If this IE is not present, the TRP may assume that the value is same as its own SFN initialisation time. | YES | ignore |
| SRS Configuration | O |  | 9.2.28 |  | YES | ignore |
| Measurement Beam Information Request | O |  | ENUMERATED (true,...) |  | YES | ignore |
| System Frame Number | O  |  | INTEGER(0..1023) |  | YES | ignore |
| Slot Number | O |  | INTEGER(0..79) |  | YES | ignore |
| Extended Measurement Periodicity | C-ifMeasPerExt |  | ENUMERATED (160ms, 320ms, 1280ms, 2560ms, 81920ms, …) |  | YES | reject |

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| **Condition** | **Explanation** |
| ifReportCharacteristicsPeriodic | This IE shall be present if the *Report Characteristics* IE is set to the value "Periodic". |
| ifMeasPerExt | This IE shall be present if the *Measurement Periodicity* IE is set to the value "extended". |

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| **Range bound** | **Explanation** |
| maxnoPosMeas | Maximum no. of measured quantities that can be configured and reported with one positioning measurement message. Value is 16384. |
| maxnoofMeasTRPs | Maxmum no. of TRPs that can be included within one message. Value is 64.  |

<<<<<<<<<<<<<<<<<<<< Unchanged Text Omitted >>>>>>>>>>>>>>>>>>>>

MeasurementPeriodicity ::= ENUMERATED {

 ms120,

 ms240,

 ms480,

 ms640,

 ms1024,

 ms2048,

 ms5120,

 ms10240,

 min1,

 min6,

 min12,

 min30,

 min60,

 ...,

 ms20480,

 ms40960,

 ms160,

 ms320,

 ms1280,

 ms2560,

 ms61440,

 ms81920,

 ms368640,

 ms737280,

 ms1843200

}

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