**3GPP TSG-RAN2 Meeting #121 *R2-230***

**Athens, Greece, February 27th –March 3rd, 2023**

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| *CR-Form-v12.2* |
| **CHANGE REQUEST** |
|  |
|  | **37.355** | **CR** | 0405 | **rev** | **1** | **Current version:** | 17.3.0 |  |
|  |
| *For* [***HELP***](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 | **X** | Radio Access Network |  | Core Network | **X** |

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|  |
| ***Title:***  | Correction to UE capability for MG (de-)activation |
|  |  |
| ***Source to WG:*** | Huawei, HiSilicon, Ericsson, Intel |
| ***Source to TSG:*** | RAN2 |
|  |  |
| ***Work item code:*** | NR\_pos\_enh-Core |  | ***Date:*** | 2023-02-27 |
|  |  |  |  |  |
| ***Category:*** | **F** |  | ***Release:*** | Rel-17 |
|  | *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-16 (Release 16)Rel-17 (Release 17)Rel-18 (Release 18)Rel-19 (Release 19)* |
|  |  |
| ***Reason for change:*** | For the current LPP spec, the following UE capability has been included for mg-activation for DL-TDOA, DL-AoD and multi-RTT

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| ***mg-ActivationRequest***This field, if present, indicates that the target device supports low latency measurement gap activation request for DL-PRS measurements. The UE can include this field only if the UE supports *mg-ActivationRequestPRS-Meas* and *mg-ActivationCommPRS-Meas* defined in TS 38.331 [35]. |

From the description above, it reads that the capability is for indicating the UE’s support for UL MAC CE for MG activation/deactivation request. Within the RRC spec, the following capabilities have been introduced * mg-ActivatonCommPRS-Meas: support of preconfigMG+DL MAC CE request
* mg-ActivationRequestPRS-Meas: support of preConfigMG+UL MAC CE request

And support for pre-configure measurement gap is by another fieldC:\Users\y00397895\AppData\Roaming\eSpace_Desktop\UserData\y00397895\imagefiles\originalImgfiles\6D2B5FDC-F073-4230-965F-B3C773813D86.pngWhile according to the current description in 38.305, there are two modes of MG activation/deactivation, either by UL MAC CE or NRPPa message. Coupling the support of the posMG and UL MAC CE for MG activation/deactivation is uncessary since the MG can also be activated/deactivated by NRPPa message. Following the RRC spec, we should separate the capability for the support for pre-configured MG and UL MAC for MG activation/deactivation request |
|  |  |
| ***Summary of change:*** | 1/ Add new UE capability for the support of pre-configured measument gap for positioning2/ Revise the previous UE capability to indicate the support of UL MAC CE for MG request |
|  |  |
| ***Consequences if not approved:*** | Wrong description on the capability indication, which couples the UL MAC CE for MG activation/deactivation and pre-configured MG.**Impact analysis****Impacted functionality:**Pre-configured MG for positioning**Inter-operability:*** If the UE is implemented according to the CR while the network is not, there is no inter-operability issue
* If the network is implemented according to the CR while the UE is not, there is no inter-operability issue.
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|  |  |
| ***Clauses affected:*** | 6.5.10.6, 6.5.11.6, 6.5.12.6  |
|  |  |
|  | **Y** | **N** |  |  |
| ***Other specs*** |  | **X** |  Other core specifications  | TS/TR ... CR ...  |
| ***affected:*** |  | **X** |  Test specifications | TS/TR ... CR ...  |
| ***(show related CRs)*** |  | **X** |  O&M Specifications | TS/TR ... CR ...  |
|  |  |
| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** | Ver0 in RAN2#121e: R2-2300280Ver1 in RAN2#121e: R2-2301829Ver2 in RAN2#121e: R2-230xxxx |

==================================CHANGE BEGINS===================================

#### 6.5.10.6 NR DL-TDOA Capability Information

#### – *NR-DL-TDOA-ProvideCapabilities*

The IE *NR-DL-TDOA-ProvideCapabilities* is used by the target device to indicate its capability to support NR DL-TDOA and to provide its NR DL-TDOA positioning capabilities to the location server.

-- ASN1START

NR-DL-TDOA-ProvideCapabilities-r16 ::= SEQUENCE {

 nr-DL-TDOA-Mode-r16 PositioningModes,

 nr-DL-TDOA-PRS-Capability-r16 NR-DL-PRS-ResourcesCapability-r16,

 nr-DL-TDOA-MeasurementCapability-r16 NR-DL-TDOA-MeasurementCapability-r16,

 nr-DL-PRS-QCL-ProcessingCapability-r16 NR-DL-PRS-QCL-ProcessingCapability-r16,

 nr-DL-PRS-ProcessingCapability-r16 NR-DL-PRS-ProcessingCapability-r16,

 additionalPathsReport-r16 ENUMERATED { supported } OPTIONAL,

 periodicalReporting-r16 PositioningModes OPTIONAL,

 ...,

 [[

 ten-ms-unit-ResponseTime-r17 PositioningModes OPTIONAL,

 nr-PosCalcAssistanceSupport-r17 BIT STRING { trpLocSup (0),

 beamInfoSup (1),

 rtdInfoSup (2),

 trpTEG-InfoSup (3)

 } (SIZE (1..8)) OPTIONAL,

 nr-los-nlos-AssistanceDataSupport-r17 SEQUENCE {

 type-r17 LOS-NLOS-IndicatorType2-r17,

 granularity-r17 LOS-NLOS-IndicatorGranularity2-r17,

 ...

 } OPTIONAL,

 nr-DL-PRS-ExpectedAoD-or-AoA-Sup-r17 BIT STRING { eAoD (0),

 eAoA (1)

 } (SIZE (1..8)) OPTIONAL,

 nr-DL-TDOA-On-Demand-DL-PRS-Support-r17 NR-On-Demand-DL-PRS-Support-r17 OPTIONAL,

 nr-los-nlos-IndicatorSupport-r17 SEQUENCE {

 type-r17 LOS-NLOS-IndicatorType2-r17,

 granularity-r17 LOS-NLOS-IndicatorGranularity2-r17,

 ...

 } OPTIONAL,

 additionalPathsExtSupport-r17 ENUMERATED { n4, n6, n8 } OPTIONAL,

 scheduledLocationRequestSupported-r17 ScheduledLocationTimeSupportPerMode-r17 OPTIONAL,

 nr-dl-prs-AssistanceDataValidity-r17 SEQUENCE {

 area-validity-r17 INTEGER (1..maxNrOfAreas-r17) OPTIONAL, ...

 } OPTIONAL,

 multiMeasInSameMeasReport-r17 ENUMERATED { supported } OPTIONAL,

 mg-ActivationRequest-r17 ENUMERATED { supported } OPTIONAL

 ]],

 [[

 posMeasGapSupport-r17 ENUMEERATED { supported } OPTIONAL

 ]]

}

-- ASN1STOP

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| *NR-DL-TDOA-ProvideCapabilities* field descriptions |
| ***nr-DL-TDOA-Mode***This field specifies the NR DL-TDOA mode(s) supported by the target device. |
| ***periodicalReporting***This field, if present, specifies the positioning modes for which the target device supports *periodicalReporting.* This is represented by a bit string, with a one‑value at the bit position means *periodicalReporting* for the positioning mode is supported; a zero‑value means not supported. If this field is absent, the target device does not support *periodicalReporting* in *CommonIEsRequestLocationInformation*. |
| ***ten-ms-unit-ResponseTime***This field, if present, specifies the positioning modes for which the target device supports the enumerated value '*ten-milli-seconds*' in the IE *ResponseTime* in IE *CommonIEsRequestLocationInformation*. This is represented by a bit string, with a one‑value at the bit position means '*ten-milli-seconds'* response time unit for the positioning mode is supported; a zero‑value means not supported. If this field is absent, the target device does not support '*ten-milli-seconds'* response time unitin *CommonIEsRequestLocationInformation*. |
| ***nr-PosCalcAssistanceSupport***This field indicates the Position Calculation Assistance Data supported by the target device for UE-based DL-TDOA. This is represented by a bit string, with a one‑value at the bit position means the particular assistance data is supported; a zero‑value means not supported.- bit 0 indicates whether the field *nr-TRP-LocationInfo* in IE *NR-PositionCalculationAssistance* is supported or not;- bit 1 indicates whether the field *nr-DL-PRS-BeamInfo* in IE *NR-PositionCalculationAssistance* is supported or not;- bit 2 indicates whether the field *nr-RTD-Info* in IE *NR-PositionCalculationAssistance* is supported or not;- bit 3 indicates whether the field *nr-DL-PRS-TRP-TEG-Info* in IE *NR-PositionCalculationAssistance* is supported or not. The UE can indicate this bit only if the UE supports *prs-ProcessingCapabilityBandList* and any of *maxNrOfDL-PRS-ResourceSetPerTrpPerFrequencyLayer*, *maxNrOfTRP-AcrossFreqs*, *maxNrOfPosLayer*, *maxNrOfDL-PRS-ResourcesPerResourceSet* and *maxNrOfDL-PRS-ResourcesPerPositioningFrequencylayer*. Otherwise, the UE does not include this field. |
| ***nr-los-nlos-AssistanceDataSupport***This field, if present, indicates that the target device supports the *NR-DL-PRS-ExpectedLOS-NLOS-Assistance* in IE *NR-PositionCalculationAssistance*:- *type* indicates whether the target device supports '*hard*' value or '*hard*' and '*soft*' value in *LOS-NLOS-Indicator* in IE *NR-DL-PRS-ExpectedLOS-NLOS-Assistance*.- *granularity* indicates whether the target device supports *nr-los-nlos-indicator* in IE *NR-DL-PRS-ExpectedLOS-NLOS-Assistance* '*per-trp*', '*per-resource*', or both.The UE can include this field only if the UE supports one of *maxDL-PRS-RSRP-MeasurementFR1*, *maxDL-PRS-RSRP-MeasurementFR2*, *dl-RSTD-MeasurementPerPairOfTRP-FR1*, *dl-RSTD-MeasurementPerPairOfTRP-FR*2, *maxNrOfRx-TX-MeasFR1*, *maxNrOfRx-TX-MeasFR2*, *supportOfRSRP-MeasFR1* and *supportOfRSRP-MeasFR2*. Otherwise, the UE does not include this field. |
| ***nr-DL-PRS-ExpectedAoD-or-AoA-Sup***This field, if present, indicates that the target device supports the *NR-DL-PRS-ExpectedAoD-or-AoA* in *NR-DL-PRS-AssistanceData.* |
| ***nr-DL-TDOA-On-Demand-DL-PRS-Support***This field, if present, indicates that the target device supports on-demand DL-PRS requests.  |
| ***nr-los-nlos-IndicatorSupport***This field, if present, indicates that the target device supports *nr-los-nlos-Indicator* reporting in IE *NR-DL-TDOA-SignalMeasurementInformation*.- *type* indicates whether the target device supports '*hard*' value or '*hard*' and '*soft*' value in IE *LOS-NLOS-Indicator.*- *granularity* indicates whether the target device supports *LOS-NLOS-Indicator* reporting per TRP, per DL-PRS Resource, or both.NOTE: A single value is reported when both Multi-RTT and DL-TDOA are supported. |
| ***additionalPathsExtSupport***This field, if present, indicates that the target device supports the *nr-AdditionalPathListExt* reporting in IE *NR-DL-TDOA-SignalMeasurementInformation*. The enumerated value indicates the number of additional paths supported by the target device.NOTE: The *supportOfDL-PRS-FirstPathRSRP* in IE *NR-DL-TDOA-MeasurementCapability* also applies to the additional paths. |
| ***scheduledLocationRequestSupported***This field, if present, specifies the positioning modes for which the target device supports scheduled location requests – i.e., supports the IE *ScheduledLocationTime* in IE *CommonIEsRequestLocationInformation* – and the time base(s) supported for the scheduled location time for each positioning mode. If this field is absent, the target device does not support scheduled location requests. |
| ***nr-dl-prs-AssistanceDataValidity***This field, if present, indicates that the target device supports validity conditions for pre-configured assistance data and comprises the following subfields:- ***area-validity*** indicates that the target device supports pre-configured assistance data with area validity. The integer number indicates the maximum number of areas the target device supports*.* |
| ***multiMeasInSameMeasReport***This field, if present, indicates that the target device supports multiple measurement instances in a single measurement report. |
| ***mg-ActivationRequest***This field, if present, indicates that the target device supports UL MAC CE for positioning measurement gap activation/deactivation request for DL-PRS measurements. The UE can include this field only if the UE supports *preconfiguredNW-ControlledMeasGap,* *mg-ActivationRequestPRS-Meas* and *mg-ActivationCommPRS-Meas* defined in TS 38.331 [35]. |
| ***posMeasGap-supported***This field, if present, indicates that the target device supports l pre-configured positioning measurement gap for DL-PRS measurements. The UE can include this field only if the UE supports *mg-ActivationCommPRS-Meas* defined in TS 38.331 [35]. |

====================================NEXT CHANGE ===================================

#### 6.5.11.6 NR DL-AoD Capability Information

#### – *NR-DL-AoD-ProvideCapabilities*

The IE *NR-DL-AoD-ProvideCapabilities* is used by the target device to indicate its capability to support NR DL-AoD and to provide its NR DL-AoD positioning capabilities to the location server.

-- ASN1START

NR-DL-AoD-ProvideCapabilities-r16 ::= SEQUENCE {

 nr-DL-AoD-Mode-r16 PositioningModes,

 nr-DL-AoD-PRS-Capability-r16 NR-DL-PRS-ResourcesCapability-r16,

 nr-DL-AoD-MeasurementCapability-r16 NR-DL-AoD-MeasurementCapability-r16,

 nr-DL-PRS-QCL-ProcessingCapability-r16 NR-DL-PRS-QCL-ProcessingCapability-r16,

 nr-DL-PRS-ProcessingCapability-r16 NR-DL-PRS-ProcessingCapability-r16,

 periodicalReporting-r16 PositioningModes OPTIONAL,

 ...,

 [[

 ten-ms-unit-ResponseTime-r17 PositioningModes OPTIONAL,

 nr-PosCalcAssistanceSupport-r17 BIT STRING { trpLocSup (0),

 beamInfoSup (1),

 rtdInfoSup (2),

 beamAntInfoSup (3)

 } (SIZE (1..8)) OPTIONAL,

 nr-los-nlos-AssistanceDataSupport-r17 SEQUENCE {

 type-r17 LOS-NLOS-IndicatorType2-r17,

 granularity-r17 LOS-NLOS-IndicatorGranularity2-r17,

 ...

 } OPTIONAL,

 nr-DL-PRS-ExpectedAoD-or-AoA-Sup-r17 BIT STRING { eAoD (0),

 eAoA (1)

 } (SIZE (1..8)) OPTIONAL,

 dl-PRS-ResourcePrioritySubset-Sup-r17 ENUMERATED { sameSet, differentSet, sameOrDifferentSet }

 OPTIONAL,

 nr-DL-PRS-BeamInfoSup-r17 ENUMERATED { supported } OPTIONAL,

 nr-DL-AoD-On-Demand-DL-PRS-Support-r17 NR-On-Demand-DL-PRS-Support-r17 OPTIONAL,

 nr-los-nlos-IndicatorSupport-r17 SEQUENCE {

 type-r17 LOS-NLOS-IndicatorType2-r17,

 granularity-r17 LOS-NLOS-IndicatorGranularity2-r17,

 ...

 } OPTIONAL,

 scheduledLocationRequestSupported-r17 ScheduledLocationTimeSupportPerMode-r17

 OPTIONAL,

 nr-dl-prs-AssistanceDataValidity-r17 SEQUENCE {

 area-validity-r17 INTEGER (1..maxNrOfAreas-r17) OPTIONAL,

 ...

 } OPTIONAL,

 multiMeasInSameMeasReport-r17 ENUMERATED { supported } OPTIONAL,

 mg-ActivationRequest-r17 ENUMERATED { supported } OPTIONAL

 ]] ,

 [[

 posMeasGapSupport-r17 ENUMEERATED { supported } OPTIONAL

 ]]

}

-- ASN1STOP

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| *NR-DL-AoD-ProvideCapabilities* field descriptions |
| ***nr-DL-AoD-Mode***This field specifies the NR DL-AoD mode(s) supported by the target device. |
| ***periodicalReporting***This field, if present, specifies the positioning modes for which the target device supports *periodicalReporting.* This is represented by a bit string, with a one‑value at the bit position means *periodicalReporting* for the positioning mode is supported; a zero‑value means not supported. If this field is absent, the target device does not support *periodicalReporting* in *CommonIEsRequestLocationInformation*. |
| ***ten-ms-unit-ResponseTime***This field, if present, specifies the positioning modes for which the target device supports the enumerated value '*ten-milli-seconds*' in the IE *ResponseTime* in IE *CommonIEsRequestLocationInformation*. This is represented by a bit string, with a one‑value at the bit position means '*ten-milli-seconds'* response time unit for the positioning mode is supported; a zero‑value means not supported. If this field is absent, the target device does not support '*ten-milli-seconds'* response time unitin *CommonIEsRequestLocationInformation*. |
| ***nr-PosCalcAssistanceSupport***This field indicates the Position Calculation Assistance Data supported by the target device for UE-based DL-AoD. This is represented by a bit string, with a one‑value at the bit position means the particular assistance data is supported; a zero‑value means not supported.- bit 0 indicates whether the field *nr-TRP-LocationInfo* in IE *NR-PositionCalculationAssistance* is supported or not;- bit 1 indicates whether the field *nr-DL-PRS-BeamInfo* in IE *NR-PositionCalculationAssistance* is supported or not;- bit 2 indicates whether the field *nr-RTD-Info* in IE *NR-PositionCalculationAssistance* is supported or not. The UE can indicate this bit only if the UE supports *prs-ProcessingCapabilityBandList* and any of *maxNrOfDL-PRS-ResourceSetPerTrpPerFrequencyLayer*, *maxNrOfTRP-AcrossFreqs*, *maxNrOfPosLayer*, *maxNrOfDL-PRS-ResourcesPerResourceSet* and *maxNrOfDL-PRS-ResourcesPerPositioningFrequencylayer*. Otherwise, the UE does not include this field;- bit 3 indicates whether the field *nr-TRP-BeamAntennaInfo* in IE *NR-PositionCalculationAssistance* is supported or not. |
| ***nr-los-nlos-AssistanceDataSupport***This field, if present, indicates that the target device supports the *NR-DL-PRS-ExpectedLOS-NLOS-Assistance* in IE *NR-PositionCalculationAssistance*:- *type* indicates whether the target device supports '*hard*' value or '*hard*' and '*soft*' value in *LOS-NLOS-Indicator* in IE *NR-DL-PRS-ExpectedLOS-NLOS-Assistance*.- *granularity* indicates whether the target device supports *nr-los-nlos-indicator* in IE *NR-DL-PRS-ExpectedLOS-NLOS-Assistanc*e 'per-trp', '*per-resource*', or both.The UE can include this field only if the UE supports one of *maxDL-PRS-RSRP-MeasurementFR1*, *maxDL-PRS-RSRP-MeasurementFR2,dl-RSTD-MeasurementPerPairOfTRP-FR1, dl-RSTD-MeasurementPerPairOfTRP-FR2, maxNrOfRx-TX-MeasFR1, maxNrOfRx-TX-MeasFR2, supportOfRSRP-MeasFR1* and *supportOfRSRP-MeasFR2* . Otherwise, the UE does not include this field. |
| ***nr-DL-PRS-ExpectedAoD-or-AoA-Sup***This field, if present, indicates that the target device supports the *NR-DL-PRS-ExpectedAoD-or-AoA* in *NR-DL-PRS-AssistanceData.*  |
| ***dl-PRS-ResourcePrioritySubset-Sup***This field, if present, indicates that the target device supports the *DL-PRS-ResourcePrioritySubset* in IE *NR-DL-PRS-Info.* Enumerated value indicates the supported resource set relationship for the target DL-PRS Resource and the associated subset. |
| ***nr-DL-PRS-BeamInfoSup***This field, if present, indicates that the target device supports the *NR-DL-PRS-BeamInfo* in IE *NR-DL-AoD-ProvideAssistanceData.* |
| ***nr-DL-AoD-On-Demand-DL-PRS-Support***This field, if present, indicates that the target device supports on-demand DL-PRS requests. |
| ***nr-los-nlos-IndicatorSupport***This field, if present, indicates that the target device supports *nr-los-nlos-Indicator* reporting in IE *NR-DL-AoD-SignalMeasurementInformation*.- *type* indicates whether the target device supports '*hard*' value or '*hard*' and '*soft*' value in IE *LOS-NLOS-Indicator.*- *granularit*y indicates whether the target device supports *LOS-NLOS-Indicator* reporting per TRP, per DL-PRS Resource, or both. |
| ***scheduledLocationRequestSupported***This field, if present, specifies the positioning modes for which the target device supports scheduled location requests – i.e., supports the IE *ScheduledLocationTime* in IE *CommonIEsRequestLocationInformation* – and the time base(s) supported for the scheduled location time for each positioning mode. If this field is absent, the target device does not support scheduled location requests. |
| ***nr-dl-prs-AssistanceDataValidity***This field, if present, indicates that the target device supports validity conditions for pre-configured assistance data and comprises the following subfields:- ***area-validity*** indicates that the target device supports pre-configured assistance data with area validity. The integer number indicates the maximum number of areas the target device supports. |
| ***multiMeasInSameMeasReport***This field, if present, indicates that the target device supports multiple measurement instances in a single measurement report. |
| ***mg-ActivationRequest***This field, if present, indicates that the target device supports UL MAC CE for positioning measurement gap activation/deactivation request for DL-PRS measurements. The UE can include this field only if the UE supports *preconfiguredNW-ControlledMeasGap, mg-ActivationRequestPRS-Meas* and *mg-ActivationCommPRS-Meas* defined in TS 38.331 [35]. |
| ***posMeasGap-supported***This field, if present, indicates that the target device supports pre-configured positioning measurement gap for DL-PRS measurements. The UE can include this field only if the UE supports *mg-ActivationCommPRS-Meas* defined in TS 38.331 [35]. |

====================================NEXT CHANGE ===================================

#### 6.5.12.6 NR Multi-RTT Capability Information

#### – *NR-Multi-RTT-ProvideCapabilities*

The IE *NR-Multi-RTT-ProvideCapabilities* is used by the target device to indicate its capability to support NR Multi-RTT and to provide its NR Multi-RTT positioning capabilities to the location server.

-- ASN1START

NR-Multi-RTT-ProvideCapabilities-r16 ::= SEQUENCE {

 nr-Multi-RTT-PRS-Capability-r16 NR-DL-PRS-ResourcesCapability-r16,

 nr-Multi-RTT-MeasurementCapability-r16 NR-Multi-RTT-MeasurementCapability-r16,

 nr-DL-PRS-QCL-ProcessingCapability-r16 NR-DL-PRS-QCL-ProcessingCapability-r16,

 nr-DL-PRS-ProcessingCapability-r16 NR-DL-PRS-ProcessingCapability-r16,

 nr-UL-SRS-Capability-r16 NR-UL-SRS-Capability-r16,

 additionalPathsReport-r16 ENUMERATED { supported } OPTIONAL,

 periodicalReporting-r16 ENUMERATED { supported } OPTIONAL,

 ...,

 [[

 ten-ms-unit-ResponseTime-r17 ENUMERATED { supported } OPTIONAL,

 nr-DL-PRS-ExpectedAoD-or-AoA-Sup-r17 BIT STRING { eAoD (0),

 eAoA (1)

 } (SIZE (1..8)) OPTIONAL, nr-Multi-RTT-On-Demand-DL-PRS-Support-r17

 NR-On-Demand-DL-PRS-Support-r17 OPTIONAL,

 nr-UE-RxTx-TEG-ID-ReportingSupport-r17 BIT STRING { case1 (0),

 case2 (1),

 case3 (2)

 } (SIZE (1..8)) OPTIONAL,

 nr-los-nlos-IndicatorSupport-r17 SEQUENCE {

 type-r17 LOS-NLOS-IndicatorType2-r17,

 granularity-r17 LOS-NLOS-IndicatorGranularity2-r17,

 ...

 } OPTIONAL,

 additionalPathsExtSupport-r17 ENUMERATED { n4, n6, n8 } OPTIONAL,

 scheduledLocationRequestSupported-r17 ScheduledLocationTimeSupport-r17 OPTIONAL,

 nr-dl-prs-AssistanceDataValidity-r17 SEQUENCE {

 area-validity-r17 INTEGER (1..maxNrOfAreas-r17) OPTIONAL,

 ...

 } OPTIONAL,

 multiMeasInSameMeasReport-r17 ENUMERATED { supported } OPTIONAL,

 mg-ActivationRequest-r17 ENUMERATED { supported } OPTIONAL

 ]] ,

 [[

 posMeasGapSupport-r17 ENUMEERATED { supported } OPTIONAL

 ]]

}

-- ASN1STOP

| *NR-Multi-RTT-ProvideCapabilities* field descriptions |
| --- |
| ***ten-ms-unit-ResponseTime***This field, if present, indicates that the target device supports the enumerated value '*ten-milli-seconds*' in the IE *ResponseTime* in IE *CommonIEsRequestLocationInformation*. |
| ***nr-DL-PRS-ExpectedAoD-or-AoA-Sup***This field, if present, indicates that the target device supports the *NR-DL-PRS-ExpectedAoD-or-AoA* in *NR-DL-PRS-AssistanceData.* |
| ***nr-Multi-RTT-On-Demand-DL-PRS-Support***This field, if present, indicates that the target device supports on-demand DL-PRS requests. |
| ***nr-UE-RxTx-TEG-ID-ReportingSupport***This field, if present, indicates that the target device supports *nr-UE-RxTx-TEG-Info* reporting in IE *NR-Multi-RTT-SignalMeasurementInformation.* This is represented by a bit string, with a one‑value at the bit position means the particular case is supported; a zero‑value means not supported:- bit 0indicates that the target device supports the '*case1*' choice in *NR-UE-RxTx-TEG-Info*.- bit 1 indicates that the target device supports the '*case2*' choice in *NR-UE-RxTx-TEG-Info*.- bit 2 indicates that the target device supports the '*case3*' choice in *NR-UE-RxTx-TEG-Info*.  |
| ***nr-los-nlos-IndicatorSupport***This field, if present, indicates that the target device supports *nr-los-nlos-Indicator* reporting in IE *NR-Multi-RTT-SignalMeasurementInformation*.- *type* indicates whether the target device supports '*hard*' value or '*hard*' and '*soft*' value in IE *LOS-NLOS-Indicator.*- *granularity* indicates whether the target device supports *LOS-NLOS-Indicator* reporting per TRP, per DL-PRS Resource, or both.NOTE: A single value is reported when both Multi-RTT and DL-TDOA are supported. |
| ***additionalPathsExtSupport***This field, if present, indicates that the target device supports the *nr-AdditionalPathListExt* reporting in IE *NR-Multi-RTT-SignalMeasurementInformation*. The enumerated value indicates the number of additional paths supported by the target device.NOTE: The *supportOfDL-PRS-FirstPathRSRP* in IE *NR-Multi-RTT-MeasurementCapability* also applies to the additional paths. |
| ***scheduledLocationRequestSupported***This field, if present, indicates that the target device supports scheduled location requests – i.e., supports the IE *ScheduledLocationTime* in IE *CommonIEsRequestLocationInformation* – and the time base(s) supported for the scheduled location time. |
| ***nr-dl-prs-AssistanceDataValidity***This field, if present, indicates that the target device supports validity conditions for pre-configured assistance data and comprises the following subfields:- ***area-validity*** indicates that the target device supports pre-configured assistance data with area validity. The integer number indicates the maximum number of areas the target device supports*.* |
| ***multiMeasInSameMeasReport***This field, if present, indicates that the target device supports multiple measurement instances in a single measurement report. |
| ***mg-ActivationRequest***This field, if present, indicates that the target device supports UL MAC CE for positioning measurement gap activation/deactivation request for DL-PRS measurements. The UE can include this field only if the UE supports *preconfiguredNW-ControlledMeasGap, mg-ActivationRequestPRS-Meas* and *mg-ActivationCommPRS-Meas* defined in TS 38.331 [35]. |
| ***posMeasGap-supported***This field, if present, indicates that the target device supports pre-configured positioning measurement gap for DL-PRS measurements. The UE can include this field only if the UE supports *mg-ActivationCommPRS-Meas* defined in TS 38.331 [35]. |

==================================END OF CHANGES====================================