**3GPP TSG-SA5 Meeting #157 *S5-246149***

Hyderabad, India, 14 - 18 October 2024

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| *CR-Form-v12.3* |
| **CHANGE REQUEST** |
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|  |  | **CR** |  | **rev** | **1** | **Current version:** |  |  |
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| *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:***  | Rel-19 CR 28.622 Corrections for 5GC UE level measurements in TraceJob IOC |
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| ***Source to WG:*** | Nokia |
| ***Source to TSG:*** | SA5 |
|  |  |
| ***Work item code:*** |  |  | ***Date:*** | 2024-10-02 |
|  |  |  |  |  |
| ***Category:*** |  |  | ***Release:*** | Rel-19 |
|  | *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-17 (Release 17)Rel-18 (Release 18)Rel-19 (Release 19) Rel-20 (Release 20)* |
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| ***Reason for change:*** | * Due to the enhancement of TraceJob by 5GC UE level measurements the "jobType" parameter has been enhanced by several combinations. In some paragraphs only the existing combination ("IMMEDIATE\_MDT\_AND\_TRACE" is mentioned although the statement is valid for all combinations.
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| ***Summary of change:*** | * Enhance phrases to include introduced cases with combinations of 5GC UE level measurements
* Editorial corrections
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| ***Consequences if not approved:*** | * 5GC UE level measurements are not treated by some affected data types
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| ***Clauses affected:*** | 4.3.30.1, 4.3.57.1, 4.3.58.1, 4.3.59.1 |
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|  | **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:*** |  |

***First change***

### 4.3.30 TraceJob

#### 4.3.30.1 Definition

A TraceJob instance represents the Trace Control and Configuration parameters of a particular Trace Job (see TS 32.421 [29] and TS 32.422 [30] for details). It can be name-contained by SubNetwork, ManagedElement, ManagedFunction. In case of signalling based trace activation, it shall be name-contained by the UDM.

To activate Trace Jobs, a MnS consumer has to create TraceJob object instances on the MnS producer. A MnS consumer can activate a Trace Job for another MnS consumer since it is not required the value of traceCollectionEntityIPAddress or traceReportingConsumerUri to be his own.

For the details of Trace Job activation see clauses 4.1.1.1.2 and 4.1.2.1.2 of TS 32.422 [30].

When a MnS consumer wishes to deactivate a Trace Job, the MnS consumer shall delete the corresponding TraceJob instance. For details of management Trace Job deactivation see clauses 4.1.3.8 to 4.1.3.11 and 4.1.4.10 to 4.1.4.13 of TS 32.422 [30].

The attribute traceReference specifies a globally unique ID and identifies a Trace session. One Trace Session may be activated to multiple Network Elements. The traceReference is populated by the consumer that makes the request for a Trace Session, TS 32.422 [30].

The jobId attribute presents the job identifier of a TraceJob instance. The jobId can be used to associate multiple TraceJob instances. For example, it is possible to configure the same jobId value for multiple TraceJob instances required to produce the data (e.g. RSRP values of M1 and RLF reports) for a specific network analysis.

The attribute traceReportingFormat defines the method for reporting the produced measurements. The selectable options are file-based or stream-based reporting. In case of file-based reporting the attribute traceCollectionEntityIPAddress is used to specify the IP address to which the trace records shall be transferred, while in case of stream-based reporting the attribute traceReportingConsumerUri specifies the streaming target.

The mandatory attribute traceTarget determines the target object of the TraceJob. Dependent on the network element to which the Trace Session is activated different types of the target object are possible. The attribute pLMNTarget defines the PLMN for which sessions shall be selected in the Trace Session in case of management based activation when several PLMNs are supported in the RAN.

The attribute listOfTraceMetrics allows configuration of which metrics shall be recorded.

The attribute jobType specifies the kind of data to collect. In case of TRACE\_ONLY, the configuration parameters of attribute "traceConfig" shall be applied. In case of IMMEDIATE\_MDT\_ONLY, LOGGED\_MDT\_ONLY, RLF\_REPORT\_ONLY, RCEF\_REPORT\_ONLY and LOGGED\_MBSFN\_MDT the configuration parameters of attribute "mdtConfig" or a subset of these shall be applied. In case of 5GC\_UE\_LEVEL\_MEASUREMENTS\_ONLY, the configuration parameters of attribute "ueCoreMeasConfig" shall be applied. In case of any combination of Trace, Immediate MDT, and 5GC UE level measurements, the configuration parameters of the corresponding attributes, "traceConfig", "mdtConfig" and "ueCoreMeasConfig" are applicable.

If jobType has the value RRC Report, the attribute rrcReportType shall be present. The rrcReportType allows the tracing of RRC reports.

Creation and deletion of TraceJob instances by MnS consumers is optional; when not supported, the TraceJob instances may be created and deleted by the system or be pre-installed.

***Next change***

### 4.3.57 TraceConfig <<dataType>>

#### 4.3.57.1 Definition

This <<dataType>> defines the configuration parameters of IOC TraceJob which are specific for Trace or any combination of Trace.

The attribute listOfNeTypes specifies the network elements to be traced. The optional attribute listOfInterfaces allows to specify the individual interfaces of the network elements to be recorded.

The attribute traceDepth allows to configure the level of detail of the information which shall be recorded.

For trace the reporting is event based, where the triggering event is configured with attribute triggeringEvent. For each triggering event the first and last message (start/stop triggering event) to record are specified.

***Next change***

### 4.3.58 MdtConfig <<dataType>>

#### 4.3.58.1 Definition

This <<dataType>> defines the configuration parameters of IOC TraceJob which are specific for MDT or any combination of MDT.

The attribute anonymizationOfMdtData specifies the level of anonymization of MDT data.

The optional attribute areaScope allows to specify the area in terms of cells or Tracking Area/Routing Area/Location area where the MDT data collection shall take place. In case of RLF\_REPORT\_ONLY and RCEF\_REPORT\_ONLY the optional attribute areaScope allows to specify the eNB or list of eNBs or gNB or list of gNBs where the reports should be collected.

The optional attribute sensorInformation allows to specify the sensor information to include.

Based on the value configured for attribute jobType in IOC TraceJob, the attributes immediateMdtConfig or loggedMdtConfig are available: In case of IMMEDIATE\_MDT\_ONLY or any combination of Immediate MDT the attribute immediateMdtConfig is applicable. In case of LOGGED\_MDT\_ONLY or LOGGED\_MBSFN\_MDT the attribute loggedMdtConfig is applicable.

***Next change***

### 4.3.59 ImmediateMdtConfig <<dataType>>

#### 4.3.59.1 Definition

This <<dataType>> defines the configuration parameters of IOC TraceJob which are specific for Immediate MDT or any combination of Immediate MDT.

The optional attribute positioningMethod allows to specify the positioning methods to use.

The following attributes are conditional available based on the measurements configured in listOfMeasurements:

- reportInterval (conditional for M1 in LTE or NR and M1/M2 in UMTS),

- reportAmount (conditional for M1/M2 in UMTS),

- reportAmountM1LTE (conditional for M1 in LTE),

- reportAmountM4LTE (conditional for M4 in LTE),

- reportAmountM5LTE (conditional for M5 in LTE),

- reportAmountM6LTE (conditional for M6 in LTE),

- reportAmountM7LTE (conditional for M7 in LTE),

- reportAmountM1NR (conditional for M1 in NR),

- reportAmountM4NR (conditional for M4 in NR),

- reportAmountM5NR (conditional for M5 in NR),

- reportAmountM6NR (conditional for M6 in NR),

- reportAmountM7NR (conditional for M7 in NR),

- reportingTrigger (conditional for M1 in LTE or NR and M1/M2 in UMTS),

- eventThreshold (conditional for A2 event reporting or A2 event triggered periodic reporting),

- collectionPeriodRRMNR (conditional for M4 and M5 in NR),

- collectionPeriodM6NR (conditional for M6 in NR),

- collectionPeriodM7NR (conditional for M7 in NR),

- collectionPeriodRRMLTE (conditional for M3 in LTE),

- measurementPeriodLTE (conditional for M4 and M5 in LTE),

- collectionPeriodM6LTE (conditional for M6 in LTE),

- collectionPeriodM7LTE (conditional for M7 in LTE),

- collectionPeriodRRMUMTS (conditional for M4 and M5 in UMTS),

- measurementPeriodUMTS (conditional for M6 and M7 in UMTS),

- measurementQuantity (conditional for 1F event reporting).

- beamLevelMeasurement (conditional for M1 in NR),

- excessPacketDelayThresholds (conditional for M6 UL measurement in NR).

For immediate MDT, the measurement reporting is dependent on the configured measurements:

- For measurement M1 in LTE or NR, it is possible to select between periodical, event triggered, event triggered periodic reporting or reporting according to all configured RRM event triggers. For M1 and M2 measurement in UMTS, it is possible to select between periodical, event triggered reporting or reporting according to all configured RRM event triggers. Parameter reportingTrigger determines which of the reporting methods is selected and in case of event triggered or event-triggered periodic, which is the decisive event type. For periodical reporting, parameter reportInterval and one of reportAmount, reportAmountM1LTE and reportAmountM1NR, for UMTS, LTE or NR, respectively, determine the interval between two successive reports and the number of reports. This means the periodical reporting terminates after reportAmount, reportAmountM1LTE or reportAmountM1NR reports have been sent as long as the corresponding attribute is configured with a value different from infinity. For event-triggered periodic reporting, these two parameters apply in addition to parameter eventThreshold which determines the threshold of the event. In this case up to reportAmountM1LTE or reportAmountM1NR reports are sent with a periodicity of reportInterval after the entering condition is fulfilled. The reporting is stopped, if the leaving condition is fulfulled and is restarted if the configured event reoccurs. For event based reporting, there is only one report sent after the event occurs. The parameters to configure are reportingTrigger and eventThreshold. In case of UMTS and 1F event reporting, additionally parameter measurementQuantity is necessary in order to determine for which measurement(s) the event threshold is applicable. Parameter beamLevelMeasurement determines whether beam level measurements shall be included in case of NR.

- For measurement M2 in NR or LTE, reporting is according to RRM configuration, see TS 38.321 [36], TS 36.321 [37] and TS 38.331 [38], TS 36.331 [39].

- For measurement M4 in UMTS, reporting is either according to RRM configuration, see TS 25.321 [40] and TS 25.331 [41] or periodic or event triggered periodic using parameter collectionPeriodRRMUMTS and eventThresholdUphUMTS.

- For measurement M3 in UMTS, the reporting is done upon availability, see TS 37.320 [43].

- For measurements M4, M5, M6 and M7 in NR, for measurements M3, M4, M5, M6 and M7 in LTE and for measurements M5, M6 and M7 in UMTS periodical reporting is applied. The configurable parameter is the interval between two measurements (collectionPeriodRrmNR, collectionPeriodM6NR, collectionPeriodM7NR, collectionPeriodRrmLTE, measurementPeriodLTE, collectionPeriodM6LTE, collectionPeriodM7LTE, collectionPeriodRrmUMTS, measurementPeriodUmts) and the number of reports (reportAmountM4NR, reportAmountM5NR, reportAmountM6NR, reportAmountM7NR, reportAmountM4LTE, reportAmountM5LTE, reportAmountM6LTE, reportAmountM7LTE). If no collection period is configured for M5 in UMTS, all available measurements are logged according to RRM configuration.

- Measurements M8 and M9 in NR or LTE are reported according to configured M1 and/or M6 related UE measurement reporting.

***End of changes***