**3GPP TSG-SA5 Meeting #162** ***S5-253894***

**Goteborg, Sweden, 25 - 29 August 2025**

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| *CR-Form-v12.3* |
| **CHANGE REQUEST** |
|  |
|  | **28.622** | **CR** | **0587** | **rev** | **1** | **Current version:** | **19.4.0** |  |
|  |
| *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:***  | Rel-19 CR TS 28.622 Clarification on historical management data |
|  |  |
| ***Source to WG:*** | Nokia |
| ***Source to TSG:*** | SA5 |
|  |  |
| ***Work item code:*** | MADCOL\_Ph2 |  | ***Date:*** | 2025-08-14 |
|  |  |  |  |  |
| ***Category:*** | **F** |  | ***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)* |
|  |  |
| ***Reason for change:*** | The proposed correction to clarify the meaning of time value in the past has been already agreed in S5-252275 CR0566 (and previously in corresponding Input to draftCR S5-253026) but has not been implemented.Correct the usage of modal verb “will” based on 3GPP guidelines. According to TS 21.801 “will” and “will not” “shall be used to indicate behaviour of equipment or sub-systems outside the scope of the document in which they appear”. There are incorrect usages of “will” in the specification which need to be corrected. |
|  |  |
| ***Summary of change:*** | * Add sentence about relationship between historical management data and start time or end time.
* Correct format
* Replace occurences of modal verb “will” by the appropriate modal verb;
* Editorial corrections
 |
|  |  |
| ***Consequences if not approved:*** | - Uncertainty of meaning of time value in the past in attributes “startTime” and “endTime”.- Incorrect specification |
|  |  |
| ***Clauses affected:*** | 4.3.33.1, 4.3.47.1, 4.3.49.1, 4.3.50.1, 5.2, 5.3.5, 5.4.1.1, 5.4.1.2, 5.4.1.4 |
|  |  |
|  | **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:*** | S5-253499 |

***First change***

###  4.3.33 ReportingCtrl <<choice>>

#### 4.3.33.1 Definition

This <<choice>> defines the method for reporting collected performance metrics to MnS consumers as well as the parameters for configuring the reporting function. It is a choice between the control parameter required for the reporting methods, whose presence selects the reporting method as follows:

When only the fileReportingPeriod attribute is present (CHOICE\_1), the MnS producer shall store files on the MnS producer at a location selected by the MnS producer and, on condition that an appropriate subscription is in place, inform the MnS consumer about the availability of new files and the file location using the notifyFileReady notification. In case the preparation of a file fails, "notifyFilePreparationError" shall be sent instead.

When the fileReportingPeriod and notificationRecipientAddress attributes are present (CHOICE\_2), then the MnS producer shall behave like described for the case that only the fileReportingPeriod is present. In addition, the MnS producer shall create on behalf of the MnS consumer a subscription, using NtfSubscriptionControl, for the notification types notifyMOICreation and notifyMOIDeletion related to the File instances that can be produced later. In case an existing subscription does already include the File instances to be produced, no new subscription shall be created. The notificationRecipientAddress attribute in the created NtfSubscriptionControl instance shall be set to the value of the "notificationRecipientAddress" in the related PerfMetricJob. This feature is called implicit notification subscription, as opposed to the case where the MnS consumer creates the subscription (explicit notification subscription). When the related PerfMetricJob is deleted, the NtfSubscriptionControl instance created due to the request for implicit subscription shall be deleted as well.

When only the “fileReportingPeriod” and “fileLocation” attributes are present (CHOICE\_3), the MnS producer shall store the files at the location specified by “fileLocation”. The file location may identify any entity such as a file server or a MnS consumer. The identified MnS consumer may or may not be identical to the MnS consumer creating the “PerfMetricJob”. As for CHOICE\_1 the MnS producer may emit “notifyFileReady” and "notifyFilePreparationError" notifications to inform subscribers that a file has been made available at the location specified by “fileLocation”.

When only the streamTarget attribute is present (CHOICE\_4), the MnS producer shall stream the data to the location specified by streamTarget.

For the file-based reporting methods the fileReportingPeriod attribute specifies the time window during which collected measurements are stored into the same file before the file is closed and a new file is opened.

***Next change***

### 4.3.47 ManagementDataCollection

#### 4.3.47.1 Definition

This IOC represents a management data collection request job. The requested data is of kind Trace, MDT (Minimization of Drive Test), RLF (Radio Link Failure) report, RCEF (RRC Connection Establishment Failure) report, RRC report, PM (performance measurements), KPI (end-to-end key performance indicators) or a combination of these.

The attribute managementData defines the management data which shall be reported. This may either include a list of data categories or a list of management data identified with their name. For further details see clause 4.3.50.

The targetNodeFilter attribute can be used to target object instance(s) producing the required management data. It is assumed that the consumer may not have detailed knowledge of the network and hence may not identify the exact object instance producing the required management data. In this case consumer can request management data, specified by 3GPP, produced by certain object instance (s) based on a particular location, the domain (CN or RAN) of the object instances, and the handled traffic (CP or UP) of the object instances.

To activate the production of the requested data, a MnS consumer has to create a ManagementDataCollection object instance on the MnS producer.

The attribute jobId is used to identify a management data collection request.

The production and reporting of the management data can be constrained by conditions such that only when the conditions are satisfied shall management data collection be enabled. For example, a MnS consumer can request to create two ManagementDataCollection instances. One can be configured with high data producing and reporting period on a set of conditions (e.g, to reduce transmission cost when network performance metric is in normal range). Another can be configured with low data producing and reporting period on another set of conditions (e.g. to enable network optimization when network performance metric is in abnormal range).

Editor’s Note: It is currently not possible to construct conditions based on performance metrics. This needs to be enabled before the text in the paragraph above can be approved and published. Furthermore, it needs to be investigated if the ConditionMonitor shall be used or if the conditions should be added to this IOC directly using an attribute.

The MnS producer may derive multiple jobs (PerfMetricJob, TraceJob) from a single ManagementDataCollection job for collecting the required management data. The jobId of the request is used to identify the output. The value is also used to correlate the derived jobs which will have the same jobId value as the ManagementDataCollection.

If the MnS producer receives the collected data from multiple sources, it shall consolidate the data into a set of management data for reporting based on the value of the attribute consolidateOutput.

For consolidation of file-based management data the attribute consolidateOutput controls:

- True: the MnS Producer shall combine the file output from jobs used to collect the required management data into a single output file as follows:

- File is in compressed format, i.e. zip.

- File shall contain individual output files from each configured job

- Each file retains its original filename

- Each file retains it original content

- Consolidated filename uses naming convention defined in [27], clause 11.3.2.1.4 with the following:

- <Type> is a combination of the management data types included in the consolidated output

- <UniqueIdList> is omitted

- False: the MnS Producer shall not combine the output from jobs used to collect the required management data. The MnS Consumer shall receive separate output from the derived jobs.

Subject to the reporting method, the MnS Consumer may receive file related notifications. When consolidated output is selected the MnS Producer shall create file notifications for the consolidated files. When consolidated output is not selected, the MnS Producer shall create the notification subscriptions on behalf of the MnS Consumer and the MnS Consumer shall receive notifications directly from the derived jobs.

The attribute collectionTimeWindow specifies the time window for which the management data should be reported. The attributes startTime and the endTime can be in the past, present or in the future. A startTime value in the past and/or a endTime value in the past indicate that historical management data is included.

The attribute reportingCtrl specifies the method and associated control parameters for reporting the produced management data to MnS consumers. Three methods are available: file-based reporting with selection of the file location by the MnS producer, file-based reporting with selection of the file location by the MnS consumer and stream-based reporting.

The attribute dataScope configures, whether the management data should be reported per S-NSSAI or per 5QI or per PLMN, if applicable.

The attribute processMonitor allows the MnS consumer to monitor the status of the management data collection represented by the object ManagementDataCollection.

The MnS producer indicates in the attribute progressStateInfo the state of the management data collection:

- NOT\_STARTED

- RUNNING

- CANCELING

and indicates in the attribute resultStateInfo:

- FINISHED

- FAILED

- PARTIALLY\_FAILED

- CANCELLED

***Next change***

### 4.3.49 NodeFilter <<dataType>>

#### 4.3.49.1 Definition

This <<dataType>> defines several selection criteria for the target node(s) i.e., the node(s) producing the requested management data.

The attribute areaOfInterest determines the location for which the management data is collected. The system translates the area into the target managed objects. The location is either configured by a list of TAI, a list of cells (identified either by NG-RAN CGI, E-UTRAN CGI or UTRAN CGI) or by a geographical area. The geographical area shall be mapped to the cells providing coverage for this area. The cell coverage status at the time of the request is used for the mapping. Managed objects providing service to these cells are considered as target managed objects. Furthermore, an object which name contains or is associated to a managed object providing service to the considered cell, is considered as target managed object as well.

The attribute networkDomain is used to select a particular domain (e.g. RAN, CN) for which the management data is collected. The system translates this information into the target managed objects. Managed objects from this selected particular domain (e.g RAN, CN) are considered as target managed objects. Furthermore, an object which name contains or is associated to a managed object of that domain, is considered as target managed object as well.

The attribute cpUpType is used to select the traffic type (CP, UP) for which the management data is collected. The system translates this information into the target managed objects. Managed objects catering particular traffic type (CP, UP) are considered as target managed objects. Furthermore, an object which name contains or is associated to a managed object of that traffic type, shall be considered as target managed object as well.

The attribute sst is used to select the SST (Slice/Service Type) TS 23.501 [22] for which the management data is collected. The system translates this information into the target managed objects. Managed objects related to particular SST shall be considered as target managed objects.

The attribute objectInstances is used to select one or more exact managed objects for which management data is collected.

If it is not possible to select the target node(s) (based on a particular selection criteria) deterministically, the selection criteria should not be used.

***Next change***

### 4.3.50 ManagementData <<choice>>

#### 4.3.50.1 Definition

This <<choice>> defines the management data which is requested. It is a choice between

- a list of data categories (attribute mgtDataCategory) This may include "COVERAGE", "CAPACITY", "MOBILITY", "ENERGY\_EFFICIENCY", "ACCESSIBILITY" etc. The mapping of exact measurement with the requested category shall be done at the producer and is implementation specific.

- a list of management data identified with their name (attribute "mgtDataName"). The management data name presents a specific single measurement (e.g. by selecting "RRU.PrbTotDl", see TS 28.552 [20] or "immediateMdt.nr.m1", see TS 32.422 [30]) or a set of measurements (e.g. measurement families such as RRU (radio resource utilization) or MM (mobility management) in case of PM, see TS 28.552 [20], or group of measurements such as "immediateMdt.nr" in case of MDT, see TS 32.422 [30]).

***Next change***

## 5.2 Simple Data Types

This clause specifies common simple data types. Simple data types represent specializations of the data types specified in TS 32.156 [10], clause 5.4.3 (i.e. predefined data types).

Table 5.2-1 lists simple data types. As noted, simple data types (“type name” column) result from applying certain constraints to predefined (“type definition” column).

Table 5.2-1: Simple Data Types

|  |  |  |
| --- | --- | --- |
| Type Name | Type Definition | Description |
| FullTime | String | String with format "full-time" as defined in RFC 3339 [54] |
| DateMonth | String | String with format "date-month" as defined in RFC 3339 [54] |
| DateMonthDay | String | String with format "date-mday" as defined in RFC 3339 [54] |
| Float | Real | Float is a number with format sufficient for precision <=7 decimal digits. Real is a number with format sufficient for precision >7 decimal digits.  |
| Latitude | Real | The type is Real, the range is [-90, 90] |
| Longitude | Real | The type is Real, the range is [-180, 180] |
| DnList | array(DN) | List of DN |
| Mcc | String | Mobile Country Code, see clause 2.3 of TS 23.003 [5] for MCC,, String with pattern: '^[0-9]{3}$' |
| Mnc | String | Mobile Network Code, see clause 2.3 of TS 23.003 [5] for MNC, String with pattern: '^[0-9]{2,3}$' |
| Nid | String | This represents the Network Identifier, which together with a PLMN ID is used to identify an SNPN (see 3GPP TS 23.003 [5] and 3GPP TS 23.501 [22] clause 5.30.2.1).Pattern: '^[A-Fa-f0-9]{11}$' |
| Tac | String | 2 or 3-octet string identifying a tracking area code as specified in clause 9.3.3.10 of 3GPP TS 38.413 [34], in hexadecimal representation. Each character in the string shall take a value of "0" to "9", "a" to "f" or "A" to "F" and shall represent 4 bits. The most significant character representing the 4 most significant bits of the TAC shall appear first in the string, and the character representing the 4 least significant bit of the TAC shall appear last in the string.pattern: '(^[A-Fa-f0-9]{4}$)|(^[A-Fa-f0-9]{6}$)'Examples:A legacy TAC 0x4305 shall be encoded as "4305".An extended TAC 0x63F84B shall be encoded as "63F84B" |
| UtraCellId | Integer | UTRAN cells identified by UTRAN CGI |
| EutraCellId | String | 28-bit string identifying an E-UTRA Cell Id as specified in clause 9.3.1.9 of 3GPP TS 38.413 [34], in hexadecimal representation. Each character in the string shall take a value of "0" to "9", "a" to "f" or "A" to "F" and shall represent 4 bits. The most significant character representing the 4 most significant bits of the Cell Id shall appear first in the string, and the character representing the 4 least significant bit of the Cell Id shall appear last in the string.Pattern: '^[A-Fa-f0-9]{7}$'Example:An E-UTRA Cell Id 0x5BD6007 shall be encoded as "5BD6007". |
| NrCellId | String | 36-bit string identifying an NR Cell Id as specified in clause 9.3.1.7 of 3GPP TS 38.413 [34], in hexadecimal representation. Each character in the string shall take a value of "0" to "9", "a" to "f" or "A" to "F" and shall represent 4 bits. The most significant character representing the 4 most significant bits of the Cell Id shall appear first in the string, and the character representing the 4 least significant bit of the Cell Id shall appear last in the string.Pattern: '^[A-Fa-f0-9]{9}$'Example:An NR Cell Id 0x225BD6007 shall be encoded as "225BD6007". |
| Fqdn | String | Fully Qualifed Domain Name, refer to clause 19.4.2 of TS 23.003 [5]Pattern: '^([0-9A-Za-z]([-0-9A-Za-z]{0,61}[0-9A-Za-z])?\.)+[A-Za-z]{2,63}\.?$'minLength: 4maxLength: 253 |
| Ipv4Addr | String | String identifying an IPv4 address formatted in the "dotted decimal" notation as defined in IETF RFC 1166 [60].Pattern: '^(([0-9]|[1-9][0-9]|1[0-9][0-9]|2[0-4][0-9]|25[0-5])\.){3}([0-9]|[1-9][0-9]|1[0-9][0-9]|2[0-4][0-9]|25[0-5])$'example: '198.51.100.1' |
| Ipv6Addr | String | String identifying an IPv6 address formatted according to clause 4 of IETF RFC 5952 [61]. The mixed IPv4 IPv6 notation according to clause 5 of IETF RFC 5952 [61] shall not be used.Pattern: '^((:|(0?|([1-9a-f][0-9a-f]{0,3}))):)((0?|([1-9a-f][0-9a-f]{0,3})):){0,6}(:|(0?|([1-9a-f][0-9a-f]{0,3})))$'andPattern: '^((([^:]+:){7}([^:]+))|((([^:]+:)\*[^:]+)?::(([^:]+:)\*[^:]+)?))$'example: '2001:db8:85a3::8a2e:370:7334' |
| Ipv6Prefix | String | String identifying an IPv6 address prefix formatted according to clause 4 of IETF RFC 5952 [61]. IPv6Prefix data type may contain an individual /128 IPv6 address.Pattern: '^((:|(0?|([1-9a-f][0-9a-f]{0,3}))):)((0?|([1-9a-f][0-9a-f]{0,3})):){0,6}(:|(0?|([1-9a-f][0-9a-f]{0,3})))(\/(([0-9])|([0-9]{2})|(1[0-1][0-9])|(12[0-8])))$'andPattern: '^((([^:]+:){7}([^:]+))|((([^:]+:)\*[^:]+)?::(([^:]+:)\*[^:]+)?))(\/.+)$'example: '2001:db8:abcd:12::0/64' |
| Uri | String | String providing an URI formatted according to IETF RFC 3986 [62].  |
| NOTE: The string Pattern in 5.2-1 may have different variants with no “^” or “$” in the pattern string.  |

***Next change***

### 5.3.5 AvailabilityStatus <<enumeration>>

Table 5.3.5-1: <<enumeration>> AvailabilityStatus

|  |  |
| --- | --- |
| Enumeration value | Description |
| IN\_TEST | The availability status is in test. |
| FAILED | The availability status is failed. |
| POWER\_OFF | The availability status is powered off. |
| OFF\_LINE | The availability status is offline. |
| OFF\_DUTY | The availability status is off duty. |
| DEPENDENCY | The availability status is dependency |
| DEGRADED | The availability status is degraded. |
| NOT\_INSTALLED | The availability status is not installed. |
| LOG\_FULL | The availability status is log full. |

## 5.4 Structured Data Types

### 5.4.1 TimeWindow <<dataType>>

#### 5.4.1.1 Definition

This <<dataType>> defines a time window.

It is a <<dataType>> between the control parameters required to define the time window as follows:

When startTime and endTime are present, the time window starts when startTime is reached and ends when endTime is reached.

When only the startTime attribute is present, the time window starts when startTime is reached and runs until deletion of the managed object instance including this timeWindow.

When only the endTime attribute is present, the time window starts when the managed object instance including this TimeWindow is created and ends when endTime is reached.

#### 5.4.1.2 Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | S | isReadable | isWritable | isInvariant | isNotifyable |
| startTime | M | T | T | T | T |
| endTime | M | T | T | T | T |

#### 5.4.1.3 Attribute constraints

None

#### 5.4.1.4 Notifications

The Notifications subclause of the <<IOC>> using this <<dataType>> as one of its attributes, shall be applicable.

***End of changes***