3GPP TSG SA WG5 Meeting 135-e Tdoc S5-211301rev2

electronic meeting, online, 25 January - 3 February 2021

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| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  |  | **CR** |  | **rev** |  | **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-17 CR 28.537 Add management data management requirements | | | | | | | | | |
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| ***Source to WG:*** | Nokia, Nokia Shanghai Bell | | | | | | | | | |
| ***Source to TSG:*** | SA5 | | | | | | | | | |
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| ***Work item code:*** | MADCOL | | | | |  | ***Date:*** | | |  |
|  |  | | | |  | |  | | |  |
| ***Category:*** |  |  | | | | | ***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)*  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-15 (Release 15) Rel-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18)* | |
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| ***Reason for change:*** | | Management data management requirements are missing. | | | | | | | | |
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| ***Summary of change:*** | | Management data management requirements and procedures are added. | | | | | | | | |
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| ***Consequences if not approved:*** | | Management data management requirements are missing. | | | | | | | | |
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| ***Clauses affected:*** | | X (New) | | | | | | | | |
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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 ... | | |
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| ***Other comments:*** | | **(First) Input to DraftCR to 28.537 related to the WI MADCOL** | | | | | | | | |
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| ***This CR's revision history:*** | |  | | | | | | | | |

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| **First modification** |

# X Management data management

## X.1 Overview

Management data of different kinds are collected from telecommunication networks by observing discrete events or analogue quantities. This data serves as input to different functions such as optimisation functions or functions processing the raw input data to produce higher level abstractions and satistics or predictions. Management data is also used for training Machine Learning (ML) models.

To start management data collection jobs in the network requires detailed knowledge of the network and its management. For example, to request performance metrics an instance of "PerfMetricJob" (TS 28.622 [x]) needs to be created, to request trace or MDT data an instance of "TraceJob" (TS 28.622 [x]), which has more than 30 attributes, needs to be created. The consumer needs to know where in the information model these instances can be name-contained, and he needs to construct the DN of the new resource.

It is technically not possible or economically justifiable to program that knowledge into every data consumer. For example, data consumers external to the network management system benefit from being able to ask for management data in an easy way that shields them from network complexities. But also functions inside the management system that are not merely concerned with network details like analytics functions may benefit from a service shielding them from network details. These considerations lead to REQ-MDM-FUN-1.

Many consumers can ask network functions to produce management data. There is no guarantee that a network function is not requested to produce the very same data at a given point in time multiple times (for example measurement X on BTS Y). Some requests for data may also be satisfied from already existing data production processes. For example, when an analogue quantity is already sampled with a granularity of 1s, a request to sample the same quantity with a granularity of 5s does not need to be forwarded to the network function, but can be handled at management level by sending to the requestor every 5th element of the data stream received from the network function. In other words, it is beneficial to coordinate data requests at the management level to offload network functions from management tasks and let them focus their capacity on their primary tasks. These considerations lead to REQ-MDM-FUN-2.

AI/ML models need input data collected over a certain period of time for training purposes. A specific set of collected data may serve different purposes and can therefore be input to multiple AI/ML functions. For example, data collected from an area with a train station may be used also for another area with a train station, because the scenarios are statistically similar. This reduces not only the amount of data to be produced by the network functions but enables to address areas with AI/ML for which no data is available or for which no data can be produced. Another use case for storing produced data is related to the fact that multiple sets of traning data from similar scenarios are typically required. For example, one set of data produced for the rush hour in a subway station on a single weekday is typically not enough for profiling. Many sets produced on many workdays are required. This calls for storing produced data (REQ-MDM-FUN-3).

Stored data is only useful when functions can discover which data has been produced to check if the needed data is already available or has to be produced. This requires a description of the stored data and means allowing data consumers to discover data that was stored and is available for retrieval (REQ-MDM-FUN-4, REQ-MDM-FUN-5).

Management data includes data that is defined by 3GPP, such as the measurements defined in TS 28.522 [x]. But it may also include data types and data formats not defined by 3GPP, such as graphics in "png" format or videos in "mpg" or "wmv" format. Uses cases for this kind of data include optimisations where this data allows to take for example the presence, location and movement of people into account. The management system should be able to manage this kind of data as well, i.e. a consumer should be able to request this kind of data, the management system should be able to store it, etc. (REQ-MDM-FUN-6).

## X.2 Specification level requirements

REQ-MDM-FUN-1: The 3GPP management system shall support a capability enabling a consumer to request management data wihout knowledge about network details.

REQ-MDM-FUN-2: The 3GPP management system shall coordinate requests from consumers to produce management data in order to avoid the same data is requested multiple times from data consumers by different data producers.

REQ-MDM-FUN-3: The 3GPP management system shall support storing produced management data.

REQ-MDM-FUN-4: The 3GPP management system shall support a capability enabling a consumer to discover stored management data.

REQ-MDM-FUN-5: The 3GPP management system shall support a capability enabling a consumer to retrieve stored management data.

REQ-MDM-FUN-6: The 3GPP management system shall support managing data types and data formats, that is defined by other standardisation bodies or that is fully proprietary, such as photos or videos taken by a base station, in the same way as 3GPP defined data.

## X.3 Procedures

*Editor's note: To be added*

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| **End of modifications** |