**3GPP TSG-SA5 Meeting #157 *S5-246126***

**Hyderabad, India, 14 - 18 October 2024**

**Source: S5**

**Title:** **New WID on Management Data Analytics phase 3**

**Document for: Approval**

**Agenda Item: 6.2.1**

3GPP™ Work Item Description

Information on Work Items can be found at <http://www.3gpp.org/Work-Items>
See also the [3GPP Working Procedures](http://www.3gpp.org/specifications-groups/working-procedures), article 39 and the TSG Working Methods in [3GPP TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm)

Title: Management Data Analytics phase 3

Acronym: eMDAS\_Ph3

Unique identifier:

Potential target Release: Rel-19

# 1 Impacts

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Affects: | UICC apps | ME | AN | CN | Others (specify) |
| Yes |  |  | X | X |  |
| No | X | X |  |  | X |
| Don't know |  |  |  |  |  |

# 2 Classification of the Work Item and linked work items

## 2.1 Primary classification

### This work item is a …

|  |  |
| --- | --- |
|  | Study  |
| X | Normative – Stage 1 |
| X | Normative – Stage 2 |
| X | Normative – Stage 3 |
|  | Normative – Other\* |

**\* Other = e.g. testing**

## 2.2 Parent Work Item

|  |
| --- |
| Parent Work / Study Items  |
| Acronym | Working Group | Unique ID | Title (as in 3GPP Work Plan) |
| FS\_eMDAS\_Ph3 | SA5 | 1020019 | Study on Management Data Analytics (MDA) – Phase 3 |

### 2.3 Other related Work Items and dependencies

|  |
| --- |
| Other related Work /Study Items (if any) |
| Unique ID | Title | Nature of relationship |
| 970031 | Management Data Analytics phase 2 | Phase 3 adds new MDA capabilities and improves existing MDA capabilities  |

# 3 Justification

TR 28.866 recommended that the following possible new Management Data Analytics capabilities may be added to TS 28.104:
- Perform analysis and provide recommendations related to edge computing.
- Perform analysis and provide recommendations related to optimizing the selection of training data for ML model training.
- Perform analysis and provide recommendations related to traffic steering and the associated ATSSS rules and N4 rules.
- Perform analysis and provide recommendations related to traffic congestion.
- Perform analysis and provide report related to threshold crossing events.
- Perform analysis and provide recommendations related to service failure recovery.
- Perform analysis and provide recommendations related to software upgrade.

TR 28.866 recommended that the following existing Management Data Analytics capabilities may be enhanced in TS 28.104:
- Enhance the existing MDA capability for energy saving analysis to add new enabling data (UE throughput and location information) and new output data (throughput information at the granular level of geographical coordinate, recommendations related to grouping of cells for energy saving, and recommendations related to SSB energy saving).
- Enhance the existing MDA capability for handover optimization analysis to add new enabling data (predicted signalling measurements, predicted user trajectories, predicted signal measurements, and service characteristics such as QoE).
- Enhance the existing MDA capability for failure prediction to add new output data (possible root cause, trend indication, predicted recovery time, statistics information, and predicted impact area) and add a new attribute in MDARequest for threshold information.
- Enhance the existing MDA capability for 5GC Control plane congestion analysis to add new output data (possible root cause and predicted congestion duration).

TR 28.866 recommended that the following existing Management Data Analytics data types may be enhanced in TS 28.104:
- Enhance Recommended3GPPAction to add recommendations related to optimizing thresholds for performance measurement data.
- Enhance RecommendedAction to allow simultaneous actions and also a sequence of actions.
- Enhance RecommendedAction to include actions to support NF scaling.

# 4 Objective

**WT-1 Energy efficiency analytics**

**WT-1.1:** Enhance the existing MDA capability for energy saving analysis to add new enabling data (UE throughput and location information) and new output data (throughput information at the granular level of geographical coordinate and recommendations related to grouping of cells for energy saving).

**WT-1.2:** Enhance the existing MDA capability for energy saving analysis to add new output data (recommendations related to SSB energy saving).

**WT-2 End-to-end performance analytics including edge computing domain**

**WT-2.1:** Add new capability to perform analysis and provide recommendations related to edge computing. Specification of this new capability may need a new use case description, new requirements, and a new MDA type.

**WT-3 Data correlation analytics**

**WT-3.1:** Add new capability to perform analysis and provide recommendations related to data correlation (e.g. to assist in optimizing the selection of training data for ML model training). Specification of this new capability may need a new use case description, new requirements, and a new MDA type.

**WT-3.2:** Enhance the existing MDA capability for handover optimization analysis to add new enabling data (predicted signalling measurements, predicted user trajectories, predicted signal measurements, and service characteristics such as QoE).

**WT-3.3:** Enhance the existing data types as follows:

- Enhance Recommended3GPPAction to add recommendations related to optimizing thresholds for performance measurement data.

- Enhance RecommendedAction to allow simultaneous actions and also a sequence of actions.

- Enhance RecommendedAction to include actions to support NF scaling.

**WT-4 ATSSS performance analytics**

**WT-4.1:** Add new capability to perform analysis and provide recommendations related to traffic steering and the associated ATSSS rules and N4 rules. Specification of this new capability may need a new use case description, new requirements, and a new MDA type.

**WT-5 UE throughput analytics**

**WT-5.1:** Add new capability to perform analysis and provide recommendations related to traffic congestion. Specification of this new capability may need a new use case description, new requirements, and a new MDA type.

**WT-6 Fault management related analytics**

**WT-6.1:** Add new capability to perform analysis and provide report related to threshold crossing events. Specification of this new capability may need a new use case description, new requirements, new attribute for threshold information in the MDARequest and new output data (possible statistics information).

**WT-6.2:** Add new capability to perform analysis and provide recommendations related to service failure recovery. Specification of this new capability may need a new use case description, new requirements, and a new MDA type.

**WT-6.3:** Enhance the existing MDA capability for failure prediction to add new output data (possible root cause, trend indication, predicted recovery time, and predicted impact area).

**WT-7 Software upgrade validation**

**WT-7.1:** Add new capability to perform analysis and provide recommendations related to validating a software upgrade. Specification of this new capability may need a new use case description, new requirements, and a new MDA type.

**WT-8 Control plane congestion analytics**

**WT-8.1:** Enhance the existing MDA capability for 5GC Control plane congestion analysis to add new output data (possible root cause and predicted congestion duration).

**TU estimates and dependencies**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Work Task ID** | **TU Estimate****(Study)** | **TU Estimate****(Normative)** | **RAN Dependency****(Yes/No/Maybe)**  | **SA Dependency****(Yes/No/Maybe)** |
| WT-1 | 0 | 1.0 | Yes | No |
| WT-2 | 0 | 0.5 | No | No |
| WT-3 | 0 | 0.8 | No | No |
| WT-4 | 0 | 0.5 | No | No |
| WT-5 | 0 | 0.5 | No | No |
| WT-6 | 0 | 1.0 | No | No |
| WT-7 | 0 | 0.5 | No | No |
| WT-8 | 0 | 0.2 | No | Yes |

# 5 Expected Output and Time scale

|  |
| --- |
| Impacted existing TS/TR {One line per specification. Create/delete lines as needed} |
| TS/TR No. | Description of change  | Target completion plenary# | Remarks |
| 28.104 | New and enhanced MDA capabilities related to:* Energy efficiency analytics
* End-to-end performance analytics including edge computing domain
* Data correlation analytics
* ATSSS performance analytics
* UE throughput analytics
* Fault management related analytics
* Software upgrade validation
* Control plane congestion analytics
 | Sep 2025 (SA#109) | This TS covers Stages 1, 2, and 3 |

# 6 Work item Rapporteur(s)

# 7 Work item leadership

SA5

# 8 Aspects that involve other WGs

WT-1 “Energy efficiency analytics” relates to intra-system energy saving in RAN2, see TS 38.300 clause 15.4.2.1.

WT-8 “Control plane congestion analytics” relates to support for signalling storm mitigation and detection in SA2, see TR 23.700-84 solution #37.

# 9 Supporting Individual Members

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| Supporting IM name |
| China Mobile |
| China Unicom |
| Deutsche Telekom |
| Huawei |
| NEC |
| Nokia |
| Samsung |
| Verizon |
| ZTE |