**3GPP TSG-SA5 Meeting #162 *S5-253882***

Goteborg, Sweden, 25 - 29 August 2025

**Source: Ericsson Korea Partners Co Ltd, Huawei**

**Title: Clarify support for data generation**

**Document for: Approval**

**Agenda item: 6.19.5.1**

**Spec: TS 28.561**

**Version: 1.0.0**

**Work Item: NDT**

**Comments**

Description in 5.4 is not clear and needs to be improved. This contribution improves the text to clearly shows the benefit of using NDT for data generation. Use case 5.4.2.1 points out the need for large amount of data, but it is not the amount of data but the reliable, useful data from a wider range is what is needed.

In use case 5.4.2.2 describes the capability of NDT to generate user experience data while the focus should be how the data generated by NDT can provide a better opportunity for the consumer to improve the user experience.

Requirement REQ-NDTDG-04 says that MnS consumer should be able to request generation of the user experience data, but in fact the MnS Consumer should be able to request MnS Producer to generate data that can be used to improve the user experience. This data is just an example of data that NDT MnS Producer should be able to provide. For this reason, REQ-NDTDG-04 is removed and combined with REQ-NDTDG-02. For the same reason a clarification is added to requirements REQ-NDTDG-05.

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Rev.1 - According to comments received during SA5#162;

* Removed new paragraph added at the end of Change 1.
* Undo removal of Req-4
* Replace “reduce the performance of ML model” by “impact the performance of ML model”

**Proposed Changes**

\* \* \* First Change \* \* \* \*

## 5.4 NDT support for data generation

### 5.4.1 Description

NDTs can be used to support the generation of data in different application use cases.

### 5.4.2 Use cases

#### 5.4.2.1 General use case on NDT support for data generation

NDT can be utilized to provide a report with generated data and information related to network scenarios, configurations, policies, and performance outcomes.

The data generation scenarios that the NDT might support include those in following sub-clauses.

\* \* \* Next Change \* \* \* \*

#### 5.4.2.2 Using NDT to generate ML training data

ML training usually requires reliable and data with a wide variety and range to guarantee the good performance of the ML models. Sufficient ML training data plays a key role for training the ML model. In general, the ML training data for network related use cases is obtained through historical network management data. For instance, for training an ML model for the MDA SLS analysis use case, described in TS 28.104 clause 7.2.2, the raw feature of training data could be the enabling data, such as UL/DL throughput, uplink/downlink delay, etc., as specified in clause 8.4.2 of TS 28.104 can be used.

However, obtaining data from the network has the following limitations:

- The quantity of issues that happened in the actual mobile network is limited.

- The variety of issues that happened in actual mobile network is limited. There could be too many corner cases that rarely happen in a live network but can impact the performance of the ML model.

To overcome these challenges, the NDT MnS Consumer can request the NDT to generate data with an indication of data requirements, e.g., data type, required data period, data sampling periods, etc.

When the request is sent by the NDT MnS Consumer, the NDT can execute the simulation/emulation and as an output generate data corresponding to the request. By using an appropriate amount of training data, the NDT MnS Consumer has a better opportunity to enhance the model accuracy.

\* \* \* Next Change \* \* \* \*

#### 5.4.2.3 Using NDT to generate user experience data

For operators, it is important to accurately measure user satisfaction with the network services from network usage perspective. When the performance metrics related to customer satisfaction are low, operators are eager to identify the underlying causes and determine ways to boost performance.

Multiple factors influence user satisfaction, including user service quality, network usage experience and etc. NDTs can be used to model and simulate end - user behaviors within the network, providing valuable insights for improving network services by generating simulation results, e.g. KPIs/PMs related to service experience of end user. The results may be provided to other network functionality, e.g. MDA, for further analysing the customer satisfaction level for network services.

The satisfaction of network service is affected by a combination of factors. NDT can be utilized to model network services by integrating multi-domain data sources, including network performance, user experience data, and fault predictions, and to report the user experience data.

This proactive approach allows CSPs (in this case, the NDT MnS Consumer) to identify potential detractors who are not satisfied with services across the network, monitor the end user journey, gain deeper insights into the end user's needs, and perform refined experience management based on user groups.

\* \* \* Next Change \* \* \* \*

### 5.4.3 Requirements

Table 5.4.3-1: NDT support for data generation

| **Requirement label** | **Description** | **Related use case(s)** |
| --- | --- | --- |
| **REQ-NDTDG-01:** | The 3GPP management system should support a capability to provide an output on the simulation/emulation enabling generation of data. | General use case on NDT support for data generation (See clause 5.4.2.1) |
| **REQ-NDTDG-02:** | The 3GPP management system should have the capability to allow an authorized MnS consumer to request generation of simulated network data to be used for ML training | Using NDT to generate ML training data (See clause 5.4.2.2) |
| **REQ-NDTDG-03:** | The 3GPP management system should support a capability to report the generated data for ML training. | Using NDT to generate ML training data (See clause 5.4.2) |
| **REQ-NDTDG-04:** | The 3GPP management system should support a capability to allow an authorized MnS consumer to request generation of the user experience related data. | Using NDT to generate user experience (See clause 5.4.3) |
| **REQ-NDTDG-05:** | The 3GPP management system should support a capability to report the generated user experience related data. | Using NDT to generate user experience (See clause 5.4.3) |

\* \* \* End of Changes \* \* \* \*