**3GPP TSG-SA5 Meeting #162 *S5-253877d3***

Goteborg, Sweden, 25 - 29 August 2025

**Source: China Mobile, Ericsson, Nokia**

**Title: Rel-19 pCR on TS 28.561 Update NDT concept (relation to automation and LCM)**

**Document for: Approval**

**Agenda item: 6.19.5.1**

**Spec: 3GPP TS 28.561**

**Version: 1.0.0**

**Work Item: NDT**

**Comments**

This pCR is to add the description of NDT relation to automation and NDT LCM*.*

**Proposed Changes**

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

# 4 Concepts and overview

## 4.x Relations of NDTs and network automation functions

Existing automation capabilities include analytics services and decision-making capabilities with the assumption that the knowledge about network behaviour is available within the automation functions. Accordingly, the unaddressed gap for network automation is the capabilities for modelling the behaviour of the network. The Network Resource Model (NRM) is used to describes the attributes of a mobile network and their relationships. The Network Digital Twin facilitates modelling the behaviour of a mobile network, and the analytic data from automation functions (e.g., MDA) may also be utilized when needed. Therefore, network digital twins could provide modelling capabilities that support network automation functions (e.g. MDA, SON, etc.) to accomplish their automation objectives. When the network digital twin provides modelling capabilities for the network, it can be integrated inside or outside of existing network automation functions. - see figure 4.x-1, and the options are implementation-specific.



Option 1 NDT internal/integrated into existing Network Automation Functions.

Option 2 NDT separate from existing Network Automation Functions

Figure 4.x-1: Relation of NDTs with network automation functions

NOTE: The double headed arrows indicate candidate flow of data or control while one headed arrow indicates only flow of data.

## 4.y NDT Life-cycle management

An NDT may have multiple simulation/emulation jobs (here called NDT jobs) each considering a different network scenario and use case. An NDT function instance is a manageable object that provides simulation and emulation capabilities for specific network scenarios.

The NDT is an object that can be managed, the LCM includes two aspects: the LCM of the NDT function instance and the LCM of the NDT job instances. Accordingly, the following capabilities are included:

- NDT function creation: The MnS producer who provides the NDT simulation/emulation capabilities creates an NDT function instance that is capable to model a specific scenario.

- NDT job instantiation: NDT MnS producer receives the request to create a job. The NDT MnS producer instantiates and executes the simulation/emulation for this job, which is an NDT job instance. The NDT job instance can be configured by the MnS consumer at any time.

 - NDT job suspension: NDT MnS producer receives the request to pause or suspend a job.

- NDT job deletion: NDT MnS producer receives the request to delete a simulation/emulation job instance. The NDT MnS producer stops the execution of the simulation/emulation and deletes the NDT job instance.

- NDT function deletion: the MnS producer may delete an NDT Function instance that is not active.

NOTE: All the life cycle operations may not be valid for all NDT Function instances. For example, a particular NDT function instance may not support suspending the NDT job execution.

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