**3GPP TSG-SA5 Meeting #162 *S5-253969***

**, , - revision of S5-253257**

**Source: Ericsson Hungary**

**Title: DP Clarify use of multiple NRMs in 28.541**

**Document for: Endorsement**

**Agenda Item: 6.19.8.1**

# 1 Decision/action requested

***Endorsement***

# 2 References

1. 3GPP TS 32.160 Management service template
2. 3GPP TS 28.541 Management and orchestration; 5G Network Resource Model (NRM); Stage 2 and stage 3 19.4.0

# 3 Rationale

TS 28.541 [2] contains threee separate NRMs. It is not clear how the NRMs relate to each other, whether definitions defined in one NRM are automatically part of the other NRMs.

**Observation 1:** Today it is not defined whether attributes (datatypes, IOCs) defined in one NRM are visible and valid definitions in the other 2 NRMs. If they are not, they should be imported from one NRM in TS 28.541 to other NRMs in the same document. At the moment they are not imported.

**Observation 2:** Today many ( > 100, etc. pLMNId, epTransportRef, sNSSAI) attributes are not defined in the same NRM where they are used as attributes or attribute fields. They are defined in another NRM, but it is unclear whether these definitions are visible in another NRM.

**Observation 3:** Today there are cases where the same IOC name is defined in multiple NRM’s with conflicting definition. E.g. ExternalAMFFunction is defined both in 4.3.22 and 5.3.53

**Observation 4:** Today there are cases where the same attribute name is defined in multiple NRM’s big attribute table with conflicting definition. E.g. operationalState is defined both in 4.4.1 and 5.4.1

**Observation 5:** Today separate level 1 chapters seem to indicate that the NRMs are separate. The reader will not understand that he has to search for attribute definitions in 3 separate big attribute tables, hundreds of pages apart in a document where each search can take over 15 seconds to complete. If something is defined only in the Slicing NRM, which the vendor might not even implement, why should a reader look for the definitions in the Slicing clauses?

**Observation 6:** Today the 28.541 word document is very big. Opening it or running a search in it might take over 30 seconds. Working with the document is slow and tedious.

Earlier it was thought that, after removing the OpenAPI, YANG and XML code from TS 28.541, the specification will be small enough to be used as a single Word document. It seems this expectation was incorrect.

**Observation 7**: It was observed that sometimes model element names were reused between different NRMs even when the actual definitions were conflicting. This led to confusion and multiple modelling errors.While this seems like a trivial error, it has still been observed multiple times. E.g. Renaming the datatype ThreshodInfo to ThresholdCrossing in TS 28.111 or the reuse of the class name ExternalAMFFunction in TS 28.541.

**Recommendation** 1: Remove duplicated, conflicting definitions of attributes or classes.

**Recommendation 2**: Specify (in TS 28.541) that each NRM is a self-contained unit and it can only use its own definitions and imported definitions. Import attributes and attribute fields used by an NRM if they are defined in other NRMs. Redefining attributes with the same meaning (e.g. copy-paste) shall be avoided.

**Recommendation 3:** Investigate how to make TS 28.541 easier, faster to handle. Consider MsWord refernce handling, any other Ms Word internal structuring or separating TS 28.541 into multiple parts (while keeping the separate word documents part of the same zip file, the same TS number).

**Recommendation 4:** In the future strictly avoid reusing the same attribute, class, type etc. name. If it’s the same thing, import it, if its different, use a different name. Avoid such misleading name reuse even if the items are in sepearate NRMs or specifications.

# 4 Detailed proposal

Endorse the modification of TS 28.541 according to recommendation 1 for release-19.

Endorse the modification of TS 28.541 according to recommendation 2 for release-20.

Endorse recommendation 4 as a principle.