**SA WG2 Meeting #149E S2-2201072r08**

**14 – 25 February 2022, Elbonia**

**Source: Nokia, Nokia Shanghai Bell, NTT DOCOMO, CATT, Ericsson, vivo**

**Title: KI: Key Issue for WT#3.1**

**Document for: Discussion/Approval**

**Agenda Item: 9.23**

**Work Item / Release: FS\_eNA\_Ph3 / Rel-18**

*Abstract of the contribution: This contribution proposes a KI for WT#3.1 under Rel-17 features enhancement*

# 1 Discussion

The agreed SID SP-211650 contains the following Working Task:

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| **Objective#3: Rel-17 features enhancement:**  WT#3.1: data collection and data storage enhancements (including DCCF and ADRF enhancements, e.g., DCCF relocation, ADRF selection, ML model storage) |

A few aspects need to be considered to enhance data collection and data storage:

- TS 23.288 clause 6.2.6 specifies that data may be stored in an ADRF/NWDAF based on a request to the DCCF or NWDAF from an NWDAF or DCCF service consumer. Alternatively, data may be stored in the ADRF/NWDAF based on operator configuration. Once data or analytics is stored in the ADRF/NWDAF, it remains there permanently unless some action is taken to remove it when the data or analytics is no longer needed. Over time, this may result in the ADRF/NWDAF becoming a wasteland containing a huge volume of data or analytics that serves no purpose and is no longer needed. Mechanisms should be studied to manage stored data based on operator policy and instructions from consumers that request data storage.

- When a UE moves (e.g., as part of idle mode mobility or as part of a handover), the data or analytics source may change (e.g.: a new NWDAF, a new AMF, a new SMF). The new data source may not be in the area served by the current DCCF and/or the current MFAF. A way to change DCCF and/or MFAF upon data source or analytics source change so the serving areas of the DCCF/MFAF and data source remain aligned should be studied.

- TS 23.288 clause 6.2.7 specifies a muting mechanism whereby a data source (e.g., AMF, SMF) stores events until the event consumer requests the data using an “activate notification” flag. Variability in the number of event notifications generated per subscription, number of subscriptions requesting muting and the duration of muting among other factors can use up the limited capacity of data sources to buffer notifications. Mechanisms should be studied to manage the storing of notifications by data sources and provide recourse to a data source that is approaching its capacity limit.

- Activation of data collection is currently triggered by an analytics request to an NWDAF. This poorly serves the needs of the NWDAF containing MTLF, which could gather data and perform training for expected analytics even when those analytics are not currently requested from the NWDAF. While the NWDAF cannot collect all data all the time, mechanisms to pro-actively collect data for model training, e.g., based on predictions of which analytics will be needed, should be studied.

- TS 23.501, clause 6.3.20 states that multiple ADRFs can already serve the network, and that:

*The following factor may be considered by the NF consumer for ADRF selection:*

*- S-NSSAI.*

Additional criteria for ADRF selection (e.g. serving area, data or analytics type) should be studied.

This contribution proposes a related key issue.

# 2 Proposal

The following change is proposed for TR 23.700-81.

\* \* \* \* First change (all new text)\* \* \* \*

## 5.x Key Issue #X: How to Enhance Data collection and Storage

For this Key Issue the following aspects will be studied:

- Interaction between multiple DCCFs and MFAFs (e.g. DCCF or MFAF relocation) if multiple DCCFs are deployed in one PLMN, to facilitate and improve data collection coordination.

- Whether and how to enhance data collection for model training.

- Whether and how to enhance ADRF selection in case of multiple ADRF deployed in the network and whether and how to support ADRF relocation.

- Whether and how the ADRF should store types of data other than historical data and analytics (e.g. ML models, analytics context) for network analytics.

- Whether and what other enhancements are required for storage of data and/or analytics in ADRF, NWDAF and/or data source NF.

- Whether and what other enhancements can be made to further reduce signalling and data traffic and the impact of obtaining data on data sources related to network analytics.

\* \* \* \* End of changes \* \* \* \*