**3GPP TSG-SA WG2 Meeting #139E S2-2003898**

**June 1 – 12, 2020, Elbonia (revision of S2-xxxxxxx)**

**Source: CATT**

**Title: KI#2, New solution for KI#2:** **Mitigating the load for Data Collection**

**Document for: Approval**

**Agenda Item: 8.1**

**Work Item / Release: FS\_eNA\_ph2 / Rel-17**

*Abstract of the contribution: This contribution proposes a solution to mitigate the load in 5GC for data collection.*

# Discussion

In the KI#2, multiple NWDAF instances deployed in the same PLMN may request same data collection from same NFs, which introduces lots of signalling for same data report. This paper therefore proposes a new solution which allows same data to be utilized by multiple NWDAF instance.

This solution relies on a shared data storage function to cache data collected from 5GC NFs, so that any data available in the data storage function can be re-used.

# Proposal

It is proposed to include the new solution into the TR 23.700-91.

*FIRST CHANGE (all new text)*

## 6.X Solution for Key Issue #2: mitigation of the load for Data Collection

### 6.X.1 Description

Editor's note: Describe the solutions. (sub) clause(s) may be added to capture details, procedural flow etc.

There may be multiple NWDAF instances deployed in the same PLMN and such NWDAF instances may request same data from same OAM/NFs, thus it is unnecessary for an OAM/NF to report duplicated data to all such NWDAFs.

In order to avoid different NWDAF instances to collect same data for different analysis purposes, a NWDAF which is responsible for data collection and data storage is introduced into the 5GC. As data collected from OAM/NFs is stored in this specific NWDAF with data storage function (called NWDAFdsf), any authorized NWDAF instance can interact with this NWDAFdsf to retrieve the cached data. By this way, the signalling load for same data collection can be mitigated. The following figure 6.x-1 shows the data collection architecture supporting NWDAFdsf.



NOTE: As NWDAFs in a PLMN may be deployed in same/different operator’s data centers, there may be multiple NWDAFdsf deployed in a PLMN, e.g. each per data center.

The main functionalities of the NWDAFdsf include:

- Data collection from 5GC NFs and OAM;

- Caching the collected data;

- Exposure of the cached data to authorized NWDAF instance.

### 6.X.2 Procedures



Figure 6.X-2: Data collection with the help of NWDAFdsf

1. When a NWDAF needs to collect network data from OAM/NFs, it invokes Nnwdaf\_EventExposure\_Subscribe (NF ID, Event ID, Target of Event Reporting, other information related to data collection ) to retrieve data from the NWDAFdsf instead of sending request to the OAM/NFs directly.

2. The NWDAFdsf may reject the subscription request if the NWDAF is not allowed to retrieve data from the NWDAFDSF. In this case, the NWDAF may need to collect data from the OAM/NFs directly.

If the NWDAFdsf has no related network data, it invokes Nnf\_EventExposure\_Subscribe (NF ID, Event ID, Target of Event Reporting, other information related to data collection ) to collect the data from the OAM/NFs identified by the NF ID.

3. The NWDAFdsf receives and caches the data reported by the OAM/NFs.

4. The NWDAFdsf notifies the NWDAF 1 of the requested data.

5. Another NWDAF (e.g. NWDAF 2) may request same data collection from the NWDAFdsf.

6. As the same data has been cached in the NWDAFdsf, the NWDAFdsf can directly respond the NWDAF 2 with the cached data.

7. The NWDAF 1 can send unsubscribe request to the NWDAFdaf if current data collection is not needed any longer.

8. Other NWDAFs may also unsubscribe network data from the NWDAFdsf.

9. If all NWDAFs subscribing same data collection unsubscribe from the NWDAFdsf, the NWDAFdsf can send Nnf\_EventExposure\_unSubscribe to the related OAM/NFs.

### 6.X.2 Impacts on Existing Nodes and Functionality

Editor's note: Capture impacts on existing 3GPP nodes and functional elements.

*End of CHANGE*