**3GPP SA WG2 Meeting #152E e-meeting S2-22xxxxx**

**17 – 26 August, 2022, Elbonia**

**Source: China Telecom**

**Title: KI #2, Sol #6: Update to remove ENs**

**Document for: Discussion/Approval**

**Agenda Item: 9.6**

**Work Item / Release: FS\_DetNet / Rel-18**

*Abstract of the contribution: This contribution proposes to address editor’s notes in Solution #6.*

# 1 Discussion

The aim of this paper is to update Solution 6 in TR 23.700-46 by addressing/discussing editor’s notes (ENs).

### 1.1 Addressing EN 1

Editor's note：The functionality of the NEF is FFS.

* Enhance the function of NEF to support the transmission of DetNet flow configuration. The DetNet controller sends the DetNet related parameters of the DetNet flow to NEF and NEF transports them to TSCTSF.
* Enhance the function of NEF to support the authentication of DetNet controller.
* Enhance the function of NEF to convert the IETF protocols Netconf [8] or Restconf [9] on the interface between DetNet controller and NEF to HTTP protocol on N85 interface.

### 1.2 Addressing EN 2

 Editor's note：The interface protocol between DetNet controller and NEF is FFS.

DetNet controller distributes the information model of the DetNet flow to NEF, using IETF protocols Netconf [8] or Restconf [9].

### 1.3 Addressing EN 3

Editor's note: The interface protocol between NEF and TSCTSF is FFS.

NEF sends the information model of the DetNet flow to TSCTSF over N85.

### 1.4 Addressing EN 4

Editor's note: It is FFS how the end-to-end DetNet requirements are mapped to the per node 5GS requirements.

DetNet controller determines the end-to-end path and ensures the end-to-end requirements of the DetNet flow. 5GS should ensure the requirements.

# 2 Proposed changes

It is proposed to agree the following changes to TR 23.700-46, regarding Solution #6:

\*\*\*\*\* Beginning of CHANGES \*\*\*\*\*

### 6.6.2 Functional Description



Figure 6.6.2-1 Enhanced architecture

As shown in Figure 1, the TSC architecture based on 3GPP R17 supports DetNet function by the following function enhancement.

* Enhance the function of TSCTSF to support DetNet flow mapping.
* Realize the information interaction between TSCTSF and DetNet control plane through NEF:
* Enhance the function of NEF to support the transmission of DetNet flow configuration. The DetNet controller sends the DetNet related parameters of the DetNet flow to NEF and NEF transports them to TSCTSF.
* Enhance the function of NEF to support the authentication of DetNet controller.
* Enhance the function of NEF to convert the IETF protocols Netconf [8] or Restconf [9] on the interface between DetNet controller and NEF to HTTP protocol on N85 interface.

The DetNet controller transmits the forwarding requirements of the DetNet flow to TSCTSF. TSCTSF completes the QoS mapping from the service requirements of the DetNet flow to 5GS QoS flow.

* Generate QoS policies for deterministic service forwarding and forward them to PCF. According to the framework of policy control, PCF sets up the QoS. Then it can realize the certainty of wide area.
* DetNet controller distributes the information model of the DetNet flow to NEF, using IETF protocols Netconf [8] or Restconf [9].
* NEF sends the information model of the DetNet flow to TSCTSF over N85.



Figure 6.6.2-2 Function and mapping method in the TSCTSF

Based on 5GS QoS management framework, the mapping relationship between DetNet flow and 5GS QoS flow is shown in Figure 2:

* The DetNet IP flow description identifies the DetNet flow; it can be mapped to Packet filter Set under 5GS QoS framework.
* The traffic specification requirements of DetNet flow are specific service requirements for specific flows. It can be mapped to QoS profile under 5GS QoS framework. The specific mapping methods are as follows:
* The minimum guaranteed bandwidth is mapped to GFBR in QoS profile;
* The maximum delay is mapped to 5QI-PDB in QoS profile;
* The maximum packet loss is mapped to 5QI-Error Rate in QoS profile;

The above mapping functions are executed by the DetNet flow mapping function extended in TSCTSF..

DetNet controller determines the end-to-end path and ensures the end-to-end requirements of the DetNet flow. 5GS should ensure the requirements.

\*\*\*\*\* End of CHANGES \*\*\*\*\*