**3GPP TSG-CT WG1 Meeting #128-eC1-210694**

**Electronic meeting; 25 February – 5 March 2021**

**Source: China Mobile**

**Title: Solution to KI#1-About verifying the validity of a slice by the 5GC network in scenario 2**

**Spec:** **3GPP TR 23.700-10 v0.3.0**

**Agenda item: 17.3.3**

**Document for: Agreement**

**1. Introduction**

As discussed in C1-210693, in scenario 2, in the case IMS services ask for dynamic PCC, both 5GC network and IMS network have a capability to verify whether the selected slice is appropriate or not. And the following aspects are suggested to be studied in that pCR:

- Whether and how the 5GC network or the IMS network verifies the validity of a slice.

- Whether and how the reason about an inappropriate slice is indicated to the UE.

In this contribution, a solution to the above questions in scenario 2 is proposed.

**2. Reason for Change**

This pCR attemps to address the issue on verifying the validity of a slice by the 5GC network in scenario 2.

**3. Proposal**

It is proposed to agree the following changes to 3GPP TR 23.700-10 v0.3.0.

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

# 2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non‑specific.

- For a specific reference, subsequent revisions do not apply.

- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

[1] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

[2] 3GPP TS 23.502: "Procedures for the 5G System".

[x] 3GPP TS 23.503: "Policy and charging control framework for the 5G System (5GS)".

[y] 3GPP TS 29.514: "Policy Authorization Service".

[z] 3GPP TS 29.214: "Policy and Charging Control over Rx reference point".

\* \* \* Next Change \* \* \* \*

## 3.3 Abbreviations

For the purposes of the present document, the abbreviations given in 3GPP TR 21.905 [1] and the following apply. An abbreviation defined in the present document takes precedence over the definition of the same abbreviation, if any, in 3GPP TR 21.905 [1].

NSSAI Network Slice Selection Assistance Information

S-NSSAI Single NSSAI

URSP UE Route Selection Policy

PCC Policy and Charging Control

\* \* \* Next Change \* \* \* \*

## 6.X Solution X: Verifying the validity of a slice for IMS services

### 6.X.1 Description

This solution addresses scenario 2 of Key Issue #1 to suggest verifying the validity of a slice by the 5GC network and rejecting the IMS service in the case the selected slice is inappropriate.

After the UE establishes a 5GS PDU session for an IMS service, in the case the IMS service asks for dynamic PCC, The P-CSCF provides service information via Rx or N5 to the PCF. According to clause 4.3.3.2, 6.1.3.2.3, 6.2.1.2 of TS 23.503 [x], the PCF shall perform the PCC Rule authorization based on the service information (e.g. Media Type) from the P-CSCF, the session binding, the 5GC specific restrictions, subscription information and other information available to the PCF.

To "prevent inappropriate services been used from the incorrect 5GC network slice." as stated in Key Issue #1, it is suggested service information provided to the PCF be distinguished for each IMS service routed by different slices. Based on that, the PCF can verify the validity of a slice during the PCC Rule authorization. When a UE selects an inappropriate slice for an IMS service and the capability of the selected slice does not match the service information for a particular IMS service, the PCF shall reject the request from the P-CSCF with an Experimental-Result-Code or a cause "REQUESTED\_SERVICE\_NOT\_AUTHORIZED", according to TS 29.214 [z] and TS 29.514 [y].

In addition, it is suggested IMS network indicate to the UE that the rejection is due to an inappropriate slice in scenario 2 to let the UE know the failure of an IMS service request for troubleshooting and further URSP re-evaluation.

### 6.X.2 Impacts on existing nodes and functions

P-CSCF:

- Indicate to the UE the rejection is due to an inappropriate slice via a proper reponse code together with the Reason header field when receiving a cause in Rx/N5 pointing out REQUESTED\_SERVICE\_NOT\_AUTHORIZED due to the capability of the selected slice doesn't match the service information for a particular IMS service.

Editor's note: The extention of the cause in Rx/R5 pointing out the capability of the selected slice doesn't match the service information for a particular IMS service is for FFS.

UE: The upper layer of the UE performs URSP re-evaluation when receiving a proper reponse code together with the Reason header field showing the rejection is due to an inappropriate slice.

### 6.X.3 Solution Evaluation

Editor's note: This clause provides an evaluation of the solution.