**3GPP TSG-CT3 Meeting #127-e C3-231031**

**E-Meeting, 17th – 21st April 2023**

**Source: Ericsson**

**Title: Pseudo-CR on Scope, Overview and Data Transfer Policy Control Services offered by PCF**

**Spec: 3GPP TS 29.543 V0.0.0**

**Agenda item: 18.31**

**Document for: Agreement**

**1. Introduction**

TS 29.543 is introduced under AIMLsys work item for the specification of new Data Transfer Policy Control Services.

**2. Reason for Change**

The Scope, Overview and Data Transfer Policy Control Services offered by PCF clauses of the new 3GPP TS 29.543 need to be specified. The Npcf\_PDTQPolicyControl service needs to be specified in clause 5.2.

**3. Conclusions**

**4. Proposal**

It is proposed to agree the following changes to 3GPP TS 29.543 V0.0.0.

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

# 1 Scope

The present document specifies the stage 3 protocol and data model for the Service Based Interface (SBI) of the Data Transfer Policy Control Services. It provides stage 3 protocol definitions and message flows, and specifies the APIs of the Data Transfer Policy Control Services offered by the Policy Control Function (PCF).

The 5G System stage 2 architecture is specified in 3GPP TS 23.501 [2]. The stage 2 definition and related procedures for Data Transfer Policy Control Services are specified in 3GPP TS 23.502 [3] and 3GPP TS 23.503 [14].

The 5G System stage 3 call flows are provided in 3GPP TS 29.513 [15].

The Technical Realization of the Service Based Architecture and the Principles and Guidelines for Services Definition are specified in 3GPP TS 29.500 [4] and 3GPP TS 29.501 [5].

\*\*\* Next 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 23.501: "System Architecture for the 5G System; Stage 2".

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

[4] 3GPP TS 29.500: "5G System; Technical Realization of Service Based Architecture; Stage 3".

[5] 3GPP TS 29.501: "5G System; Principles and Guidelines for Services Definition; Stage 3".

[6] OpenAPI: "OpenAPI Specification Version 3.0.0", <https://spec.openapis.org/oas/v3.0.0>.

[7] 3GPP TR 21.900: "Technical Specification Group working methods".

[8] 3GPP TS 33.501: "Security architecture and procedures for 5G system".

[9] IETF RFC 6749: "The OAuth 2.0 Authorization Framework".

[10] 3GPP TS 29.510: "5G System; Network Function Repository Services; Stage 3".

[11] IETF RFC 7540: "Hypertext Transfer Protocol Version 2 (HTTP/2)".

[12] IETF RFC 8259: "The JavaScript Object Notation (JSON) Data Interchange Format".

[13] IETF RFC 7807: "Problem Details for HTTP APIs".

[14] 3GPP TS 23.503: "Policy and Charging Control Framework for the 5G System; Stage 2".

[15] 3GPP TS 29.513: "5G System; Policy and Charging Control signalling flows and QoS parameter mapping; Stage 3".

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

## 3.1 Definitions

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

For the purposes of the present document, the following terms and definitions given in 3GPP TS 23.501 [2], clause 3.1 apply:

**5G System**

**Network Function**

**NF service**

**Service based interface**

\*\*\* 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].

NEF Network Exposure Function

PCF Policy Control Function

PDTQ Planned Data Transfer with QoS

QoS Quality of Service

SBI Service Based Interface

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

# 4 Overview

The Data Transfer Policy Control Services, as defined in 3GPP TS 23.502 [3] and 3GPP TS 23.503 [14], are part of the Npcf service based interface exhibited by the Policy Control Function (PCF).

The Network Exposure Function (NEF) is the only NF service consumer of the Data Transfer Policy Control Services.

The NEF accesses the Data Transfer Policy Control Services at the PCF via the N30 Reference point. In the roaming scenario, the N30 reference point is located between the PCF and the NEF in the home network only.

Figures°4-1 and 4-2 depict the Data Transfer Policy Control Services related reference architecture of the PCF respectively in SBI representation and reference point representation.



Figure 4-1: Reference Architecture for the Npcf Data Transfer Policy Control Services; SBI representation



Figure 4-2: Reference Architecture for the Npcf Data Transfer Policy Control Services; reference point representation

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

# 5 Data Transfer Policy Control Services offered by the PCF

## 5.1 Introduction

Table 5.1-1 summarizes the corresponding APIs defined for this specification.

Table 5.1-1: API Descriptions

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Service Name | Clause | Description | OpenAPI Specification File | apiName | Annex |
| Npcf\_PDTQPolicyControl | 5.2 | Planned Data Transfer with QoS (PDTQ) Policy Control service | TS29543\_Npcf\_PDTQPolicyControl.yaml | npcf-pdtq-policy-control | A.2 |

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

### 5.2.1 Service Description

The PDTQ Policy Control service, as defined in 3GPP TS 23.502 [3] and 3GPP TS 23.503 [14], provides negotiation for planned data transfer with QoS requirements (PDTQ) policies.

The PDTQ Policy Control service offers the following functionalities:

- provide PDTQ policies based on the request from the NF service consumer;

- update an existing PDTQ data based on the request from the NF service consumer; and

- provide a PDTQ warning notification to trigger renegotiation of a PDTQ policy.

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

### 5.2.2 Service Operations

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

#### 5.2.2.1 Introduction

The service operations defined for the Npcf\_PDTQPolicyControl service are shown in table 5.2.2.1-1.

Table 5.2.2.1-1: Operations of the Npcf\_PDTQPolicyControl service

| Service operation name | Description | Initiated by |
| --- | --- | --- |
| Npcf\_PDTQPolicyControl\_Create | Provides the requested PDTQ policies to the NF service consumer. | NF service consumer (e.g. NEF) |
| Npcf\_PDTQPolicyControl\_Update | Updates the existing PDTQ data. | NF service consumer (e.g. NEF) |
| Npcf\_PDTQPolicyControl\_Notify | Sends a PDTQ warning notification to the NF service consumer. | PCF |

\*\*\* End of Changes \*\*\*