**3GPP TSG-CT WG3 Meeting #119-bis-eC3-220031**

**E-Meeting, 17th – 21st January 2022**

**Source: Nokia, Nokia Shanghai Bell, Huawei**

**Title: Pseudo-CR on the Npcf\_MBSPolicyControl Service description**

**Spec: 3GPP TS 29.537 V0.0.0**

**Agenda item: 17.31 (5MBS)**

**Document for: Approval**

**1. Introduction**

TS 29.537 has been allocated under the 5MBS work item to define the MBS Policy Control services. The associated TS Skeleton is provided in C3-220031. This new TS needs hence to be populated.

**2. Reason for Change**

The Multicast/Broadcast services supported by the PCF need to be defined in clause 5.

**3. Conclusions**

N/A.

**4. Proposal**

It is proposed to agree the following changes to 3GPP TS 29.537 V0.0.0.

\* \* \* 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 23.501: "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".

[x] 3GPP TS 23.247: "Architectural enhancements for 5G multicast-broadcast services; Stage 2".

[y] 3GPP TS 29.532: "5G System; 5G Multicast-Broadcast Session Management Services; Stage 3".

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

## 5.2 Npcf\_MBSPolicyControl Service

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

### 5.2.1 Service Description

The MBS Session Management Policy Control Service enables the Policy Control Function (PCF) to provision, update and terminate MBS session related policies and PCC rules to NF service consumers (e.g. MB-SMF), i.e.:

- enable NF service consumers to request the creation, update and termination of an MBS Session Policy Association;

- enable the PCF to provision/update/terminate MBS policies towards NF service consumers;

Editor's Note: There may be updates (e.g. additional scope) depending on the progress of the related stage 2 work.

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

### 5.2.2 Service Operations

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

#### 5.2.2.1 Introduction

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

Table 5.2.2.1-1: Npcf\_MBSPolicyControl Operations

|  |  |  |
| --- | --- | --- |
| Service Operation Name | Description | Initiated by |
| Npcf\_MBSPolicyControl\_Create | Request the creation of an MBS Session Policy Association with the PCF to receive the policies for an MBS session. | NF service consumer (e.g. MB-SMF) |
| Npcf\_MBSPolicyControl\_UpdateNotify | Update/ Provision/Terminate MBS policies. | PCF |

Editor's Note: There may be updates (e.g. additional scope) depending on the progress of the related stage 2 work.

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

#### 5.2.2.2 Npcf\_MBSPoliyControl\_Create

##### 5.2.2.2.1 General

The Npcf\_MBSPolicyControl\_Create service operation enablesan NF service consumer (e.g. MB-SMF) to request the creation of an MBS Session Policy Association with the PCF for a multicast or a broadcast MBS session.

The MBS Session Management procedures of the MB-SMF and related policies are defined in 3GPP TS 23.247 [x] and 3GPP TS 29.532 [y].

The following procedures using the Npcf\_MBSPolicyControl\_Create service operation are supported:

- MBS Session Policy Association Establishment.

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

##### 5.2.2.2.2 MBS Session Policy Association Establishment



Figure 5.2.2.2.2-1: MBS Session Policy Association establishment

1. In order to request the creation of an MBS Session Policy Association, the NF service consumer (e.g. MB-SMF) shall send an HTTP POST request to the PCF, as described in step 1of figure 5.2.2.2.2-1, with the request body containing the "MbsPolicyCtxtData" data structure that shall contain:

- the concerned MBS Session Id, within the "mbsSessionId" attribute;

- the DNN of the MBS session, within the "dnn" attribute;

- the S-NSSAI of the MBS session, within the "snssai" attribute; and

- the URI towards which MBS policies update notifications should be sent by the PCF, within the "notificationUri" attribute.

Editor's Note: The complete list of attributes is FFS.

2a. Upon reception of the HTTP POST request from the NF service consumer, the PCF shall perform MBS perform MBS policy authorization based on the information received from the NF service consumer and operator policies that are pre-configured at the PCF. If MBS policy authorization is successful, the PCF shall create a new "Individual MBS Policy" resource, addressed by a URI as defined in clause 6.1.3.2 and containing a PCF created resource identifier. The PCF shall then respond to the NF service consumer with an HTTP 201 Created response, including a Location header field containing the URI of the created resource and the MbsPolicyData data structure in the response body.

Editor's Note: The detailed content of the MbsPolicyData data structure is FFS.

The NF service consumer shall use the URI received in the Location header in subsequent requests to the PCF to refer to the created "Individual MBS Policy" resource.

If errors occur when processing the HTTP POST request, the PCF shall apply the error handling procedures specified in clause 6.1.7.

Editor's Note: Error / redirection cases and the related status codes are FFS.

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

#### 5.2.2.3 Npcf\_MBSPoliyControl\_UpdateNotify

##### 5.2.2.3.1 General

The Npcf\_MBSPolicyControl\_UpdateNotify service operation enables the PCF to update/provision/terminate MBS Session policies to the NF service consumer (e.g. MB-SMF).

The following procedures using the Npcf\_MBSPolicyControl\_UpdateNotify service operation are supported:

- PCF-initiated MBS Session Policy Association Update.

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

##### 5.2.2.3.2 PCF initiated MBS Session Policy Association Update



Figure 5.2.2.3.2-1: MBS Session Policy Association update

1. The PCF may decide to provision policies related to an Individual MBS Policy resource in response to e.g. an internal trigger within the PCF. The PCF shall send for this purpose an HTTP POST request to the NF service consumer (e.g. MB-SMF) using the URI"{notificationUri}/update" with the "notificationUri" set to the notification URI received during MBS Session Policy Association establishment procedure as defined in clause 5.2.2.2. The request message body shall contain a MbsPolicyNotif data structure that shall contain:

- the representation of the updated policies within the "mbsPolicyDecision" attribute; and

- the identifier of the Individual MBS Policy resource related to the notification, within the "mbsPolicyId" attribute.

2a. In case of a successful update of MBS policies, a "204 No Content" response code shall be returned in the response.

If errors occur when processing the HTTP POST request, the NF service consumer shall send an HTTP error response as specified in clause 6.1.7

Editor's Note: Error / redirection cases and the related status codes are FFS.

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