**3GPP TSG-SA5 Meeting #155 *S5-243255***

Jeju, South Korea, 27 - 31 May 2024 revision of S5-242882

**Source: Nokia**

**Title: Rel-19 pCR TR 28.879 Add potential solution for discovering management services through the CCF**

**Document for: Approval**

**Agenda Item: 6.19.21**

# 1 Decision/action requested

***In this box give a very clear / short /concise statement of what is wanted.***

# 2 References

[1] 3GPP TR 28.879, " Study on OAM for service management and exposure to external consumers".

# 3 Rationale

This pCR proposes adding a new potential solution for discovering management services to clause 5.1 of TR 28.879 [1].

# 4 Detailed proposal

It is proposed that the following changes be made in clause 5.1 of TR 28.879 [1].

|  |
| --- |
| **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 28.533: "Management and orchestration; Architecture Framework".

[3] 3GPP TS 28.622: "Telecommunication management; Generic Network Resource Model (NRM) Integration Reference Point (IRP); Information Service (IS)"

[4] 3GPP TS 28.537: "Management and orchestration; Management capabilities".

[5] 3GPP TS 23.222: "Functional architecture and information flows to support Common API Framework for 3GPP Northbound APIs; Stage 2"

[6] SP-231669: "LS on collaboration and alignment of 3GPP defined application enablers with GSMA Open Gateway".

[7] 3GPP [TS 23.434](https://portal.3gpp.org/desktopmodules/Specifications/SpecificationDetails.aspx?specificationId=3587): "Service Enabler Architecture Layer for Verticals (SEAL); Functional architecture and information flows".

[8] 3GPP [TS 23.255](https://portal.3gpp.org/desktopmodules/Specifications/SpecificationDetails.aspx?specificationId=3843): "Application layer support for Vehicle-to-Everything (V2X) services; Functional architecture and information flows".

[9] 3GPP [TS 23.286](https://portal.3gpp.org/desktopmodules/Specifications/SpecificationDetails.aspx?specificationId=3562): "Application layer support for Uncrewed Aerial Systems (UAS) services; Functional architecture and information flows".

[10] 3GPP [TS 23.545](https://portal.3gpp.org/desktopmodules/Specifications/SpecificationDetails.aspx?specificationId=3948): "Application layer support for Factories of the Future (FF) ".

[11] 3GPP [TS 23.542](https://portal.3gpp.org/desktopmodules/Specifications/SpecificationDetails.aspx?specificationId=4156): "Application layer support for Personal IoT Networks".

[12] 3GPP [TS 23.554](https://portal.3gpp.org/desktopmodules/Specifications/SpecificationDetails.aspx?specificationId=3818): "Application architecture for MSGin5G Service; Stage 2".

[13] 3GPP [TS 29.222](https://portal.3gpp.org/desktopmodules/Specifications/SpecificationDetails.aspx?specificationId=3450): "Common API Framework for 3GPP Northbound APIs; stage 3".

[14] 3GPP [TS 33.122](https://portal.3gpp.org/desktopmodules/Specifications/SpecificationDetails.aspx?specificationId=3420): "Security aspects of Common API Framework (CAPIF) for 3GPP Northbound APIs".

[15] "The Ecosystem for Open Gateway NaaS API Development", white paper, June 2023 [[link](https://www.gsma.com/solutions-and-impact/gsma-open-gateway/wp-content/uploads/2023/05/The-Ecosystem-for-Open-Gateway-NaaS-API-development.pdf)]

[16] "GSMA Operator Platform Group – Requirements and Architecture", version 5.0, July 2023 [[link](https://www.gsma.com/futurenetworks/wp-content/uploads/2023/07/OPG.02-v5.0-Operator-Platform-Requirements-and-Architecture.pdf)]

[17] 3GPP TS 28.532: "Management and orchestration; Generic management services".

[18] 3GPP [TS 28.531](https://portal.3gpp.org/desktopmodules/Specifications/SpecificationDetails.aspx?specificationId=3274): "Management and orchestration; Provisioning"

[19] 3GPP [TS 23.435](https://portal.3gpp.org/desktopmodules/Specifications/SpecificationDetails.aspx?specificationId=4092): "Procedures for Network Slice Capability Exposure for Application Layer Enablement Service"

|  |
| --- |
| **Second Change** |

## 5.1 Exposure of management services

#### 5.1.Z.3 Potential solutions

##### 5.1.Z.3.X Potential solution #X: Discovery of management services through CCF

###### 5.1.Z.3.X.1 Introduction

This potential solution describes how an external MnS consumer can discover the published management services through the CCF.

###### 5.1.Z.3.X.2 Description

The external MnS consumer needs to initially perform the onboarding procedure to the CCF to discover management services. To do this, the external MnS consumer should be provided with the onboarding information (e.g., the end-point URL of the CCF and the authentication and authorization information). Accordingly, the external MnS consumer and the CCF should be configured with the authentication and authorization information to enable successful onboarding.

The external MnS consumer can discover the management services upon successful onboarding.

For the external MnS consumer to discover the available management services through the CCF, the external MnS consumer sends an HTTP GET request to the CCF. This HTTP GET request supports optional query parameters of type "query information element," as shown in Table 5.1.Y.3.X.2-1(see clause 8.7 TS 23.222[5] and clause 8.1 TS 29.222[13]).

Table 5.1.Y.3.X.2-1: CAPIF discovery query information element to support the discovery of management services (extract from Table 8.1.2.2.3.1-1 of TS 29.222[13]).

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description | Equivalent MnS Info IOC attribute/Comments |
| api-invoker-id | string | M | 1 | It represents the identifier (assigned by the CCF) ofthe API invoker that is sending the request. It may also represent the identifier of the CCF that is sending the request if the request is sent over the CAPIF-6/6e reference point. (NOTE) | Identifier for the external MnS consumer inside the CCF. |
| api-name | string | O | 0..1 | Contains the API name as {apiName} part of the URI structure as defined in clause 5.2.4 of 3GPP TS 29.122 [14]. | mnsLabel |
| api-version | string | O | 0..1 | Contains the API major version conveyed in the URI (e.g. v1). | mnsVersion |
| comm-type | CommunicationType | O | 0..1 | Communication type used by the API (e.g. REQUEST\_RESPONSE). | Shall be either REQUEST\_RESPONSE or SUBSCRIBE\_NOTIFY |
| protocol | Protocol | O | 0..1 | Protocol used by the API. |  |
| aef-id | string | O | 0..1 | AEF identifier. | Identifier of the MnS producer inside the CCF. |
| data-format | DataFormat | O | 0..1 | Data format used by the API (e.g. serialization protocol JSON). |  |
| api-cat | string | O | 0..1 | The service API category to which the service API belongs. |  |
| preferred-aef-loc | AefLocation | O | 0..1 | The preferred AEF location. If this parameter is present, the CCF shall try to discover a matched AEF location the service API supports. This parameter is ignored by the CCF if there is no matching record found. |  |
| supported-features | SupportedFeatures | O | 0..1 | To filter irrelevant responses related to unsupported features. |  |
| api-supported-features | SupportedFeatures | C | 0..1 | Features supported by the discovered service API indicated by api-name parameter. This may only be present if the api-name query parameter is present. |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
| NOTE: This parameter is not part of API filter criteria so that it is not used in matching APIs published in the CCF. | | | | | |

|  |
| --- |
| **End of Changes** |