**3GPP TSG-CT WG1 Meeting #136-eC1-22XXXX**

**E-Meeting, 12th – 20th May 2022**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **24.549** | **CR** | **0002** | **rev** | **3** | **Current version:** | **17.0.0** |  |
|  | | | | | | | | |
| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* | | | | | | | | |
|  | | | | | | | | |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME | **X** | Radio Access Network |  | Core Network | **X** |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | | | | |
| ***Title:*** | CoAP encoding | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Lenovo | | | | | | | | | |
| ***Source to TSG:*** | C1 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | eSEAL | | | | |  | ***Date:*** | | | 2022-05-12 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **B** |  | | | | | ***Release:*** | | | Rel-17 |
|  | *Use one of the following categories:* ***F*** *(correction)* ***A*** *(mirror corresponding to a change in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)*  Detailed explanations of the above categories can be found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | | | | | | | | *Use one of the following releases: Rel-8 (Release 8) Rel-9 (Release 9) Rel-10 (Release 10) Rel-11 (Release 11) … Rel-15 (Release 15) Rel-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | CoAP encoding needs to be specified. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Specified CoAP encoding.  Add related references. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Stage 3 is not complete. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 2, B, B.1, B.2(new), B.2.1(new), B.2.1.1(new), B.2.1.2(new), B.2.1.2.1(new), B.2.1.2.2(new), B.2.1.2.2.1(new), B.2.1.2.2.2(new), B.2.1.2.2.3(new), B.2.1.2.2.3.1(new), B.2.1.3(new) | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **X** | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | |  | **X** | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

**\*\*\*\*\*\*\***

\* \* \* 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 23.434: "Service Enabler Architecture Layer for Verticals (SEAL); Functional architecture and information flows;".

[3] 3GPP TS 24.526: "User Equipment (UE) policies for 5G System (5GS); Stage 3".

[4] 3GPP TS 24.547: "Identity management - Service Enabler Architecture Layer for Verticals (SEAL); Protocol specification;".

[4A] 3GPP TS 24.546: "Configuration management - Service Enabler Architecture Layer for Verticals (SEAL); Protocol specification;".

[5] OMA OMA-TS-XDM\_Group-V1\_1\_1-20170124-A: "Group XDM Specification".

[6] IETF RFC 4825: "The Extensible Markup Language (XML) Configuration Access Protocol (XCAP)".

[7] IETF RFC 7231: "Hypertext Transfer Protocol (HTTP/1.1): Semantics and Content".

[8] IETF RFC 6750: "The OAuth 2.0 Authorization Framework: Bearer Token Usage".

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

[10] 3GPP TS 23.502: "Procedures for the 5G System (5GS); Stage 2".

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

Annex <B> (normative):  
CoAP resource representation and encoding

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

# B.1 General

The information in this annex provides a description of CoAP resource representation and encoding transmitted by the SNSCE-C to the SNSCE-S to trigger a network configuration i.e. the network slice configuration in this case for one or more VAL UEs within a VAL service.The general rules for resource URI structure, cache usage, error handling and common data types are described in Annex C.1 of 3GPP TS 24.546 [4A].

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

# B.2 Resource representation and APIs for event triggered network slice configuration

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

## B.2.1 ETN\_Configuration API

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

### B.2.1.1 API URI

The CoAP URIs used in CoAP requests from SNSCE-C towards the SNSCE-S shall have the Resource URI structure as defined in clause C.1.1 of 3GPP TS 24.546 [4A] with the following clarifications:

- the <apiName>shall be "su\_nsc";

- the <apiVersion> shall be "v1"; and

- the <apiSpecificSuffixes> shall be set as described in clause B.2.1.2.

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

### B.2.1.2 Resources

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

#### B.2.1.2.1 Overview



Figure B.2.1.2.1-1: Resource URI structure of the ETN\_Configuration API

Table B.2.1.2.1-1 provides an overview of the resources and applicable CoAP method.

Table B.2.1.2.1-1: Resources and method overview

|  |  |  |  |
| --- | --- | --- | --- |
| Resource name | Resource URI | CoAP method | Description |
| Configuration | /val-services/{valServiceId}/configurations/{configurationId} | PUT (NOTE) | Performs configuration. |
| NOTE: In this release, the only configuration is the slice adaptation as described in 3GPP TS 23.434 [2]. | | | |

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

#### B.2.1.2.2 Resource: Configuration

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

##### B.2.1.2.2.1 Description

The Configuration resource allows an SNSCE-C a specific configuration identified by a configuration ID, to send a request containing:

a) a list of one or more VAL UEs;

b) a requested S-NSSAI;

c) optionally a requested DNN; and

d) optionally a requested configuration cause,

for a specific VAL service identified by a VAL service ID, toward a SNSCE-S to perform a network triggered slice configuration for the list of one or more VAL UEs for that specific VAL service.

NOTE: In this release, S-NSSAI and DNN are only used route selection descriptors of the URSP rules described in 3GPP TS 24.526 [3].

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

##### B.2.1.2.2.2 Resource Definition

Resource URI: **{apiRoot}/su\_nsc/<apiVersion>/val-services/{valServiceId}/configurations/{configurationId}**

This resource shall support the resource URI variables defined in the table B.2.1.2.2.2-1.

Table B.2.1.2.2.2-1: Resource URI variables for this resource

|  |  |  |
| --- | --- | --- |
| Name | Data Type | Definition |
| apiRoot | string | See clause B.1.1 |
| apiVersion | string | See clause B.2.1.1 |
| valServiceId | string | Identifier of a VAL service. |
| configurationId | string | Identifier of a configuration |

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

##### B.2.1.2.2.3 Resource Standard Method

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

###### B.2.1.2.2.3.1 PUT

This operation is to update a given configuration for one or more VAL UEs for a given VAL service which is provided by the SNSCE-S.

This method shall support the request data structures specified in table B.2.1.2.2.3.1-1, the response data structures and response codes specified in table B.2.1.2.2.3.1-2.

Table B.2.1.2.2.3.1-1: Data structures supported by the PUT Request payload on this resource

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| VAL UE List | string | M | 1..N | Represents a space-separated of VAL UE IDs within a given VAL service, for which a given network slice configuration trigger applies. The VAL service is identified by the value "valServiceId" and the network slice configuration is identified by the value "configurationId". |  |
| Requested S-NSSAI | string | M | 1 | The new S-NSSAI which is requested. |  |
| Requested DNN | string | O | 1 | The new DNN which is requested. |  |
| configuration cause | string | O | 1 | Indicates the cause for the configuration. |  |

Table B.2.1.2.2.3.1-2: Data structures supported by the PUT Response payload on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Response  Codes (NOTE) | Description |
| n/a | M | 1 | 2.04 Changed | The configuration of the VAL UEs with VAL UE List within the VAL service identified by the value "valServiceId" and for the network slice configuration identified by the value "configurationId, was successfull. |
| NOTE: The mandatory CoAP error status codes for the PUT method listed in table B.1.3-1 shall also apply. | | | | |

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

### B.2.1.3 Error Handling

General error responses are defined in clause B.1.3.

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