**3GPP TSG-CT WG1 Meeting #146C1-240abc**

**Online, 22– 26 January 2024**

**Source: Huawei, HiSilicon**

**Title:** **Pseudo-CR on CoAP definition of the Sdd\_URLLCTransmissionConnection API**

**Spec: 3GPP TS 24.543 v1.0.0**

**Agenda item: 18.2.16**

**Document for: Agreement**

**1. Reason for Change**

The current specification misses to define the CoAP definition of the Sdd\_URLLCTransmissionConnection API described by 3GPP TS 23.433. Hence, it is proposed to add the necessary information for the CoAP resource representation and encoding.

**2. Proposal**

It is proposed to agree the following changes to 3GPP TS 24.543 v1.0.0.

**3. Revision history**

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

## A.3.2 Sdd\_URLLCTransmissionConnection API

### A.3.2.1 API URI

The CoAP URIs used in CoAP requests from SDDM-S towards the SDMM-C shall have the Resource URI structure as defined in Annex C.1.1 of 3GPP TS 24.546 [6] with the following clarifications:

a) the <apiName>shall be "sdd-rtc-s";

b) the <apiVersion> shall be "v1"; and

c) the <apiSpecificSuffixes> shall be set as described in clause A.3.2.2.

### A.3.2.2 Resources

#### A.3.2.2.1 Overview



Figure A.3.2.2.1.1: Resource URI structure of the Sdd\_URLCCTransmissionConnection API provided by SDDM-S

Table A.3.2.2.1.1 provides an overview of the resources and applicable CoAP methods.

Table A.3.2.2.1.1: Resources and methods overview

|  |  |  |  |
| --- | --- | --- | --- |
| Resource name | Resource URI | CoAP method | Description |
| URLLC Transmission Connection | val-services/{valServiceId}/urllc-transmission-connection | POST | Establish a URLLC transmission connection. |
| PUT | Update a URLLC transmission connection. |
| DELETE | Releases a URLLC transmission connection. |

#### A.3.2.2.2 Resource: URLLC Transmission Connection

##### A.3.2.2.2.1 Description

The URLLC transmission connection resource represents a URLLC transmission connection to be created, updated or released at a given SDDM-S.

##### A.3.2.2.2.2 Resource Definition

Resource URI: **{apiRoot}/sdd-rtc-s/<apiVersion>/val-services/{valServiceId}/establishment-request**

This resource shall support the resource URI variables defined in the table A.3.2.2.2.2.1.

Table A.3.2.2.2.2.1: Resource URI variables for this resource

|  |  |  |
| --- | --- | --- |
| Name | Data Type | Definition |
| apiRoot | string | See clause C.1.1 of 3GPP TS 24.546 [6]. |
| apiVersion | string | See clause A.3.2.1. |
| valServiceId | string | Identifier of a VAL service. |

##### A.3.2.2.2.3 Resource Standard Methods

A.3.2.2.2.3.1 POST

This operation allows to establish a URLLC transmission connection.

This method shall support the request data structures the data structures and request codes specified in table A.3.2.2.2.3.1.1.

Table A.3.2.2.2.3.1.1: Data structures supported by the POST Request payload on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| URLLCEstablishmentRequest | M | 1 | The information of request of establishment of an SDDM URLLC transmission connection. |

A.3.2.2.2.3.2 PUT

This operation updates a URLLC transmission connection.

This method shall support the request data structures the data structures and response codes specified in table A.3.2.2.2.3.2.1.

Table A.3.2.2.2.3.2.1: Data structures supported by the PUT Response payload on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Response  codes | Description |
| URLLCUpdateResponse | M | 1 | 2.04 Changed | URLLC transmission connection updated successfully. |
| NOTE: The mandatory CoAP error status codes for the PUT method listed in table C.1.3-1 of 3GPP TS 24.546 [31] shall also apply. | | | | |

A.3.2.2.2.3.3 DELETE

This operation releases a URLLC transmission connection.

This method shall support the request data structures the data structures and response codes specified in table A.3.2.2.2.3.3.1 and A.3.2.2.2.3.3.2.

Table A.3.2.2.2.3.3.1: Data structures supported by the DELETE Response payload on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Response  codes | Description |
| n/a |  |  | 2.02 Deleted | URLLC transmission connection released successfully. |
| NOTE: The mandatory CoAP error status codes for the DELETE method listed in table C.1.3-1 of 3GPP TS 24.546 [31] shall also apply. | | | | |

### A.3.2.3 Data Model

#### A.3.2.3.1 General

Table A.3.2.3.1.1 specifies the data types defined specifically for the SDD\_URLCCTransmissionConnection API service provided by SDDM-S.

Table A.3.2.3.1.1: SDD\_URLLCTransmissionConnection API provided by SDDM-S specific data types

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Section defined | Description | Applicability |

Editor’s note: The table is FFS.

Table A.3.2.3.1.2 specifies the simple data types defined specifically for the SDD\_URLCCTransmissionConnection API service provided by SDDM-S.

Table A.3.2.3.1.2: SDD\_URLLCTransmissionConnection API provided by SDDM-S specific simple data types

|  |  |  |
| --- | --- | --- |
| Data type | Section defined | Description |

Editor’s note: The table is FFS.

Table A.3.2.3.1.3 specifies the enumerations defined specifically for the SDD\_URLLCTransmissionConnection API service provided by SDDM-S.

Table A.3.2.3.1.3: SDD\_URLCCTransmissionConnection API provided by SDDM-S specific enumeration

|  |  |  |
| --- | --- | --- |
| Data type | Section defined | Description |

Editor’s note: The table is FFS.

#### A.3.2.3.2 Structured data types

#### A.3.2.3.3 Simple data types and enumerations

None.

### A.3.2.4 Error Handling

General error responses are defined in Annex C.1.3 of 3GPP TS 24.546 [6].

### A.3.2.5 CDDL Specification

#### A.3.2.5.1 Introduction

The data model described in clause A.3.1.3 shall be binary encoded in the CBOR format as described in IETF RFC 8949 [17].

Clause A.3.1.5.2 uses the concise data definition language described in IETF RFC 8610 [r8610] and provides corresponding representation of the SDD\_RegularTransmissionConnection API provided by SDDM-S data model.

#### A.3.2.5.2 CDDL document

Editor’s note: The CDDL document is FFS.

### A.3.2.6 Media Types

Editor’s note: The media types are FFS.

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

## A.4.2 Sdd\_URLCCTransmissionConnection API

### A.4.2.1 API URI

The CoAP URIs used in CoAP requests from SDDM-C towards the SDMM-S shall have the Resource URI structure as defined in Annex C.1.1 of 3GPP TS 24.546 [6] with the following clarifications:

a) the <apiName>shall be "sdd-rtc-c";

b) the <apiVersion> shall be "v1"; and

c) the <apiSpecificSuffixes> shall be set as described in clause A.4.2.2.

### A.4.2.2 Resources

#### A.4.2.2.1 Overview



Figure A.4.2.2.1.1: Resource URI structure of the Sdd\_URLLCTransmissionConnection API provided by SDDM-C

Table A.4.2.2.1.1 provides an overview of the resources and applicable CoAP methods.

Table A.4.2.2.1.1: Resources and methods overview

|  |  |  |  |
| --- | --- | --- | --- |
| Resource name | Resource URI | CoAP method | Description |
| URLLC Transmission Connection | val-services/{valServiceId}/urllc-transmission-connection | POST | Establish a URLLC transmission connection. |
| PUT | Update a URLLC transmission connection. |
| DELETE | Releases a URLLC transmission connection. |

#### A.4.2.2.2 Resource: URLLC Transmission Connection

##### A.4.2.2.2.1 Description

The URLLC transmission connection resource allows an SDDM-S to manage a URLCC transmission connection of an SDDM-C.

##### A.4.2.2.2.2 Resource Definition

Resource URI: **{apiRoot}/su-lr/<apiVersion>/val-services/{valServiceId}/establishment-request**

This resource shall support the resource URI variables defined in the table A.4.2.2.2.2.1.

Table A.4.1.2.2.2.1: Resource URI variables for this resource

|  |  |  |
| --- | --- | --- |
| Name | Data Type | Definition |
| apiRoot | string | See clause C.1.1 of 3GPP TS 24.546 [6]. |
| apiVersion | string | See clause A.4.2.1. |
| valServiceId | string | Identifier of a VAL service. |

##### A.4.2.2.2.3 Resource Standard Methods

A.4.2.2.2.3.1 POST

This operation retrieves the allowed registration.

This method shall support the request data structures and response codes specified in table A.4.2.2.2.3.1.1.

Table A.4.2.2.2.3.1.1: Data structures supported by the POST Response payload on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Response  codes | Description |
| URLLCEstablishmentResponse | M | 1 | 2.01 Created | URLLC transmission connection created successfully. |
| NOTE: The mandatory CoAP error status codes for the GET Request listed in table C.1.3-1 of 3GPP TS 24.546 [31] shall also apply. | | | | |

A.4.2.2.2.3.2 PUT

This operation updates a URLLC transmission connection.

This method shall support the request data structures the data structures and resquest codes specified in table A.4.2.2.2.3.2.1.

Table A.4.2.2.2.3.2.1: Data structures supported by the PUT Request payload on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| URLLCUpdateRequest | M | 1 | The information of request of update a URLLC transmission connection. |

A.4.2.2.2.3.3 DELETE

This operation releases a URLLC transmission connection.

This method shall support the request data structures the data structures and, request codes specified in table A.4.2.2.2.3.3.1.

Table A.4.2.2.2.3.3.1: Data structures supported by the DELETE Request payload on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| ReleaseRequest | M | 1 | The information of request of release of a URLCCr transmission connection. |

### A.4.2.3 Data Model

#### A.4.2.3.1 General

Table A.4.2.3.1.1 specifies the data types defined specifically for the SDD\_URLLCTransmissionConnection API service provided by SDDM-C.

Table A.4.2.3.1.1: SDD\_RegularTransmissionConnection API provided by SDDM-C specific data types

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Section defined | Description | Applicability |

Editor’s note: The table is FFS.

Table A.4.2.3.1.2 specifies the simple data types defined specifically for the SDD\_RegularTransmissionConnection API service provided by SDDM-C.

Table A.4.2.3.1.2: SDD\_RegularTransmissionConnection API provided by SDDM-C specific simple data types

|  |  |  |
| --- | --- | --- |
| Data type | Section defined | Description |

Editor’s note: The table is FFS.

Table A.4.2.3.1.3 specifies the enumerations defined specifically for the SDD\_URLLCTransmissionConnection API service provided by SDDM-C.

Table A.4.2.3.1.3: SDD\_RegularTransmissionConnection API provided by SDDM-C specific enumeration

|  |  |  |
| --- | --- | --- |
| Data type | Section defined | Description |

Editor’s note: The table is FFS.

#### A.4.2.3.2 Structured data types

#### A.4.2.3.3 Simple data types and enumerations

None.

### A.4.2.4 Error Handling

General error responses are defined in Annex C.1.3 of 3GPP TS 24.546 [6].

### A.4.2.5 CDDL Specification

#### A.4.2.5.1 Introduction

The data model described in clause A.4.2.3 shall be binary encoded in the CBOR format as described in IETF RFC 8949 [17].

Clause A.4.2.5.2 uses the concise data definition language described in IETF RFC 8610 [r8610] and provides corresponding representation of the SDD\_URLLCTransmissionConnection API provided by SDDM-C data model.

#### A.4.2.5.2 CDDL document

Editor’s note: The CDDL document is FFS.

### A.4.2.6 Media Types

Editor’s note: The media types are FFS.

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