**3GPP TSG- Meeting # *S4-200588***

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| *CR-Form-v12.0* | | | | | | | | |
| **DRAFT CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **TS 26.512** | **CR** | **TBA** | **rev** |  | **Current version:** | x.X.X |  |
|  | | | | | | | | |
| *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)*.* | | | | | | | | |
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| ***Proposed change affects:*** | UICC apps |  | ME | **X** | Radio Access Network |  | Core Network | **X** |

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|  | | | | | | | | | | |
| ***Title:*** | Consumption Reporting Procedure API- M1d and M5d | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Enensys | | | | | | | | | |
| ***Source to TSG:*** |  | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** |  | | | | |  | ***Date:*** | | | 2020-03-XX |
|  |  | | | |  | |  | | |  |
| ***Category:*** |  |  | | | | | ***Release:*** | | |  |
|  | *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-12 (Release 12)* *Rel-13 (Release 13) Rel-14 (Release 14) Rel-15 (Release 15) Rel-16 (Release 16)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | Add consumption Reporting APIs in M1d and and the support of Sample percentage in Consumption Reporting API in M5D | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Fill the section 4.2.5 with the operations used to configure the Consumption Reporting  Add a new API for consumption reporting procedure – M1d  Add the support of Sample percentage in the M5d APIs | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | It would be impossible to configure the consumption report in interface M1d | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 4.2.5, 5.4 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **X** | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | |  |  | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  |  | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

***================================START OF FIRST CHANGE==============================***

### 4.2.5 Consumption Reporting Configuration procedures

#### 4.2.5.1 General

These procedures are used by the 5GMSd Application Provider to activate and to configure consumption reporting. They are further elaborated in clause 5.4.2.

#### 4.2.5.2 Create Consumption Reporting Configuration

This procedure is used by the 5GMSd Application Provider to activate consumption reporting for a particular Provisioning Session. The 5GMSd Application Provider shall use the HTTP POST method to activate the Consumption reporting procedure and to transmit the Consumption Reporting Configuration to the 5GMSd AF. Upon successful operation, the 5GMSd AF shall respond with a 201 (Created) response message and the same resource URL shall be returned in the Location header field.

#### 4.2.5.3 Read Provisioning Session properties

This procedure is used by the 5GMSd Application Provider to obtain the Consumption Reporting Configuration from the 5GMSd AF. The 5GMSd Application Provider uses the GET method for this purpose.

#### 4.2.5.4 Update Provisioning Session properties

The update operation is invoked by the 5GMSd Application Provider to modify the Consumption Reporting Configuration. All available parameters may be updated. The HTTP PATCH or HTTP PUT methods shall be used for the update operation.

If the procedure is successful, the 5GMSd AF shall respond with a 200 (OK) reflecting the successful update operation.

#### 4.2.5.5 Delete Provisioning Session

This operation is used by the 5GMSd Application Provider to terminate the related consumption reporting procedure. The HTTP DELETE method shall be used for this purpose. As a result, the 5GMSd AF will release any associated resources, purge any cached data, and delete any corresponding configurations.

If the procedure is successful, the 5GMSd AF shall respond with a 200 (OK) response message.

***=================================END OF FIRST CHANGE===============================***

***===============================START OF SECOND CHANGE=============================***

## 5.4 Consumption Reporting Configuration API -M1d

Editor Note: How the document will be structured. Several Options are possible:

1. Gather all Consumption Reporting APIs in one section
2. Gather Provisionning APIs in one section
3. Put all APIs in separate 5.x Sections (this proposal).

### 4 Overview

The Consumption Reporting Configuration API is a RESTful API that allows a 5GMSd Application Provider to configureProvisioning Sat Each Consumption Reporting Configuration is represented by a ConsumptionReportingConfiguration, the data model for which is specified in clause 5.4.2 below. The RESTful resources for managing Consumption Reporting Configurations are specified in clause 5.4.3.

### 4m

#### 5.4.2.1 Re-used data types

Note: Should we gather all these imported Data types in one section?

Table 5.4.2.1-1 specifies data types re-used from other specifications by the consumption reporting procedures, including a reference to their respective specifications and, when needed, a short description of their use within the 5GMS Consumption Reporting API.

Table 5.4.2.1-1: 5GMS Consumption Reporting re-used Data Types

|  |  |  |
| --- | --- | --- |
| Data type | Reference | Comments |
| DurationSec | TS 29.122 [x3] | Unsigned integer identifying a period of time in units of seconds. |
|  |  |  |
| DateTime | TS 29.122 [x3] | string with format "date-time" as defined in OpenAPI Specification [x4]. |

#### 4resource

This type represents the different parameters that initialise the consumption report.



The data model for the ConsumptionReportingConfiguration resource is specified in table 5.4.2.1‑1 below:

4.2.1resource (alternative)

|  |  |  |  |
| --- | --- | --- | --- |
| Property | T |  |  |
| reportingInterval |  |  | iess.  amaydetermine |
| samplePpercentage |  |  | consumption |
| locationType |  |  | ies  reporting dis |

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Configuration

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Editor Note: to be updated according to the last version of the Spec

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## 5.5 Consumption Reporting API - M4d

### 5.5.1 Overview

Editor Will this specification include M7d APIs?

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |
|  |  |  |  |

The Consumption Reporting API is a RESTful API that allows the Media Session Handler to report media consumption to the 5GMSd AF at interface M4d.

### 5.5.2 Data model

#### 5.5.2.1 Re-used data types

Note: Should we gather all these imported Data types in one section?

Table 5.4.2.1-1 specifies data types re-used from other specifications by the consumption reporting procedures, including a reference to their respective specifications and, when needed, a short description of their use within the 5GMS Consumption Reporting API.

Table 5.4.2.1-1: 5GMS Consumption Reporting re-used Data Types

|  |  |  |
| --- | --- | --- |
| Data type | Reference | Comments |
| DurationSec | TS 29.122 [x3] | Unsigned integer identifying a period of time in units of seconds. |
| DateTime | TS 29.122 [x3] | string with format "date-time" as defined in OpenAPI Specification [x4]. |
| domainNames | TS 29.122 [x3] | Indicates a Fully-Qualified Domain Name or a regular expression as a domain name matching criteria. |







#### 5.5.2.2 ConsumptionReportingConfiguration resource

This type represents the different parameters that initialise the consumption report in the Media Session Handler.

Note: Maybe this type should be only defined in section 5.x Aquiring Service Access Information as proposed in S4-200577

Table 5.4.2.1-1: Definition of ConsumptionReportingConfiguration resource

|  |  |  |  |
| --- | --- | --- | --- |
| Property name | Type | Cardinality | Description |
| reportingInterval | DurationSec | 1..1 | Identifies the interval between two consecutive consumption reports. |
| consumptionReportingServerAddress | domainNames | 1..N | A list of addresses where the consumption report shall be sent by the 5GMS Media Session Handler. |
| locationReporting | Boolean | 1..1 | Identifies whether the 5GMS Media Session Handler is requiered to provide the location data in its consumption reports. |
| samplePercentage | PercentType | 0..1 | The proportion of clients that shall report media consumption.  If not specified, all clients shall send consumption reports |

#### 5.5.2.3 ConsumptionReport resource

This type represents a consumption report. This structure is used by the Media Session Handler to report the consumption.

Table 5.5.2.1.3-1: Definition of ConsumptionReporting resource

|  |  |  |  |
| --- | --- | --- | --- |
| Attribute name | Data type | Cardinality | Description |
| mediaPlayerEntry | String | 1..1 | Identify the Media player entry. In case of DASH, the media player entry pointer can be a URL of the MPD. |
| reportingClientId | String | 1..1 | Identify the identifier of the UE that consumes data.The client ID can be a MSISDN. |
| locationType | Integer | 0..1 | Identify the UE location type if location reporting is enabled (only for trusted AF). CGI, ECGI and NCGI shall be represented by the values 0, 1 and 2, respectively (See [7]) |
| location | String | 0..1 | Identify the UE location where the consumption media if location reporting is enabled (only for trusted AF). |
| ConsumptionReportingUnit | ConsumptionReportingUnit | 1..N | Identify a list of consumption reporting units. |

#### 5.5.2.3 ConsumptionReportingUnit type

This type represents each consumption report unit.

Table 5.5.2.2-1: Definition of type ConsumptionReportingUnit

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Attribute name | Data type | Cardinality | Description | Applicability (NOTE) |
| mediaConsummed | String | 1..1 | Identify the media consummed. In case of DASH, the Representation@id may be used. |  |
| startTime | DateTime | 1..1 | Define the time where the consumption starts of this unit. |  |
| duration | DurationSec | 1..1 | Identify the duration of the consumption of the quality of this unit. |  |

### 5.5.3 Resource structure

Editor’s Note: URI definition shall be unified in this document. A global section where the URI is defined should be created. This section may define the URI as a global URI. It may also simplify the URI construction in a way that for instance {apiRoot}/3gpp-5gms-consumption-reporting/v1/ would be replaced by {5GMSAconsumptionReportApiRoot} where is just defined as a global URI by the AF without any constraint on the way this URI is build.  
If this section exists, it will impact every Resource structure defined in this section.

All resource URIs of this API shall have the following root:

**{apiRoot}/3gpp-5gms-consumption-reporting/v1/**

"apiRoot" is set as described in subclause X. "apiName" shall be set to "3gpp-5gms-consumption-reporting " and "apiVersion" shall be set to "v1" for the version defined in the present document. All resource URIs in the subclauses below are defined relative to the above root URI.

The following resources and HTTP methods initiated by the 5GMS Client are supported for this API:

Table 5.4.3.1-1: Resources and methods overview

|  |  |  |  |
| --- | --- | --- | --- |
| Resource name | Resource URI | HTTP method | Meaning |
| Consumption Reporting Session | 3gpp-5gms-consumption-reporting/v1/{aspId}  /session/ | GET | Forbidden. |
| PUT | Create a Consumption Reporting Session resource. |
| Consumption Reporting Configuration Acquisition | 3gpp-5gms-consumption-reporting/v1/{aspId}  /session/{sessionId}/acquire | GET | Acquire consumption reporting configuration. |
| POST | Forbidden. |
| Consumption Reporting Data | 3gpp-5gms-consumption-reporting/v1/{aspId}  /session/{sessionId} | GET | Forbidden. |
| POST | Report media consumption. |

#### 5.4.3.2 Consumption Reporting Session resource

##### 5.4.3.2.1 Introduction

This resource allows the Media Session Handler to create Consumption Reporting Data resources when the Consumption Reporting is used for a Downlink Streaming session.

##### 5.4.3.2.2 Resource definition

Resource URI:

{apiRoot}/3gpp-5gms-consumption-reporting/v1/{aspId}/session

This resource shall support the resource URI variables defined in table 5.X.2.3.2.2-1.

Table 5.4.3.2.2-1: Resource URI variables for resource "Consumption Reporting Session"

|  |  |
| --- | --- |
| Name | Definition |
| apiRoot | See clause 5.2.4 of [x3]. |
| aspId | Identifier of the 5GMS Application Provider. |

##### 5.4.3.2.3 Resource methods

###### 5.4.3.2.3.1 GET

This HTTP method is not supported for the resource.

###### 5.4.3.2.3.2 PUT

The PUT method allows the Media Session Handler create a Consumption Reporting resource. It is initiated by the Media Session Handler and answered by the 5GMSd AF.

This method shall support request and response data structures, and response codes, as specified in the table 5.4.3.2.3.2-1.

Table 5.4.3.2.3.2-1: Data structures supported by the PUT request/response by the resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Request body | Data type | Cardinality | Remarks | |
| None |  |  | |
| Response body | Data type | Cardinality | Response  codes | Remarks |
| ConsumptionReportingConfiguration | 0..1 | 201 OK | The consumption reporting parameters may be returned. |
| NOTE: The mandatory HTTP error status codes for the PUT method listed in table 5.2.6-1 [x3] also apply. | | | | |

###### 5.4.3.2.3.3 PATCH

This HTTP method is not supported for the resource.

###### 5.4.3.2.3.4 POST

This HTTP method is not supported for the resource.

###### 5.4.3.2.3.5 DELETE

This HTTP method is not supported for the resource.

##### 5.4.3.3 Consumption Reporting Configuration Acquisition resource

###### 5.4.3.3.1 Introduction

This method allows the Media Session Handler to acquire Consumption Reporting configuration parameters when the Consumption Reporting is used for a Downlink Streaming session.

###### 5.4.3.3.2 Resource definition

Resource URI: **{apiRoot}/3gpp-5gms-consumption-reporting/v1/{aspId}/session/{sessionId}/acquire**

This method shall support the resource URI variables defined in table 5.4.3.3.2-1.

Table 5.4.2.3.3.2-1: Resource URI variables for resource "Consumption Reporting Configuration Acquisition"

|  |  |
| --- | --- |
| Name | Definition |
| apiRoot | See clause 5.2.4 of TS 29.122 [x3]. |
| aspId | Identifier of the 5GMS Application Provider. |
| sessionId | Identifier of the 5GMS Downlink Streaming session. |

###### 5.4.3.3.3 Resource methods

5.4.3.3.3.1 GET

The GET method allows the Media Session Handler to acquire Consumption Reporting configuration parameters. It is initiated by the Media Session Handler and answered by the 5GMSd AF.

This method shall support request and response data structures, and response codes, as specified in the table 5.4.3.3.3.3-1.

Table 5.4.3.3.3.3-1: Data structures supported by the GET request/response by the resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Request body | Data type | Cardinality | Remarks | |
| none |  |  | |
| Response body | Data type | Cardinality | Response  codes | Remarks |
| ConsumptionReportingConfiguration | 1..1 | 200 OK | The consumption reporting configuration parameters shall be returned. |
| NOTE: The mandatory HTTP error status codes for the GET method listed in table 5.2.6-1 [x3] also apply. | | | | |

5.4.3.3.3.2 PUT

This HTTP method is not supported for the resource.

5.4.3.3.3.3 PATCH

This HTTP method is not supported for the resource.

5.4.3.3.3.4 POST

This HTTP method is not supported for the resource.

5.4.3.3.3.5 DELETE

This HTTP method is not supported for the resource.

##### 5.4.3.4 Consumption Reporting Data resource

###### 5.4.3.4.1 Introduction

Editor’s Note: Whether reports should be sent as RESTful resources is still under consideration

This resource allows the Media Session Handler to send the actual consumption data when the Consumption Reporting is used for a Downlink Streaming session.

###### 5.4.3.4.2 Resource definition

Resource URI: **{apiRoot}/3gpp-5gms-consumption-reporting/v1/{aspId}/session/{sessionId}**

This resource shall support the resource URI variables defined in table 5.4.3.4.2-1.

Table 5.4.3.4.2-1: Resource URI variables for resource "Consumption Reporting Data"

|  |  |
| --- | --- |
| Name | Definition |
| apiRoot | See clause 5.2.4 of TS 29.122 [x3]. |
| aspId | Identifier of the 5GMS Application Provider. |
| sessionId | Identifier of the 5GMS Downlink Streaming session. |

###### 5.4.3.4.3 Resource methods

5.4.3.4.3.1 GET

This HTTP method is not supported for the resource.

5.4.3.4.3.2 PUT

This HTTP method is not supported for the resource.

5.4.3.4.3.3 PATCH

This HTTP method is not supported for the resource.

5.4.3.4.3.4 POST

The POST method allows the Media Session Handler to send consumption data. It is initiated by the 5GMS Media Session Handler and acknowledged by the 5GMSd AF.

This method shall support request and response data structures, and response codes, as specified in the table 5.4.3.4.3.3-1.

Table 5.4.3.4.3.3-1: Data structures supported by the POST request/response by the resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Request body | Data type | Cardinality | Remarks | |
| ConsumptionReporting | 1..1 | Consumption Reporting data to send to the Media AF. | |
| Response body | Data type | Cardinality | Response  codes | Remarks |
| none |  | 200 OK | The consumption reporting data is received by the Media AF. |
| NOTE: The mandatory HTTP error status codes for the POST method listed in table 5.2.6-1 [x3] also apply. | | | | |

5.4.3.4.3.5 DELETE

This HTTP method is not supported for the resource.***================================END OF SECOND CHANGE==============================***