**3GPP TSG-SA5 Meeting #133e *S5-205101***

**e-meeting 12th - 21st October 2020**

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| *CR-Form-v12.0* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **28.532** | **CR** | **0148** | **rev** | **1** | **Current version:** | **16.5.1** |  |
|  | | | | | | | | |
| *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 |  | Radio Access Network | **X** | Core Network | **X** |

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|  | | | | | | | | | | |
| ***Title:*** | Correction on generic file data report MnS | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Huawei | | | | | | | | | |
| ***Source to TSG:*** | S5 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | TEI16 | | | | |  | ***Date:*** | | | 2020-09-29 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | F |  | | | | | ***Release:*** | | | Rel-16 |
|  | *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:*** | | 1. The generic file report MnS is applicable for performance data file, trace data file, analytic data file and propriety data files, however, in notifyFileReady, there is no information in “fileInfoList” to indicate the type of the available files. 2. The number of several subclauses are not correct, for example, sub clause of 11.6.1.3 should be 11.6.1.3.1 instead of 11.3.11.1.3.1. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | 1. Add attribute “filetype” for attribute “fileInfoList” in notifyFileReady. 2. Correct the number of several subclauses. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | 1. there is no information in “fileInfoList” to indicate th type of the available files 2. The number of several subclauses are not correct | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 11.6.1.1.2, 11.3.1.1.3.1, 11.3.1.1.3.2,11.3.1.1.3.3, 11.3.1.1.3.4, 11.3.1.1.4, 11.3.1.1.4.1, 11.3.1.1.4.2, 11.3.1.1.4.3, 11.3.1.1.4.4, 11.3.1.1.5, 11.3.1.1.5.1, 11.3.1.1.5.2, 11.3.1.1.5.3, 11.3.1.1.5.4, 12.6.1.1.1, 12.6.1.2.1, 12.6.1.3.1, 12.6.1.3.2.1, 12.6.1.3.2.1.1, 12.6.1.3.2.1.2, 12.6.1.3.2.1.3, 12.6.1.3.2.2, 12.6.1.3.2.2.1, 12.6.1.3.2.2.2, 12.6.1.3.2.2.3, 12.6.1.3.2.3, 12.6.1.3.2.3.1, 12.6.1.3.2.3.2, 12.6.1.3.2.3.3, 12.6.1.3.2.4, 12.6.1.3.2.4.1, 12.6.1.3.2.4.2, 12.6.1.3.2.4.3, 12.6.1.4, 12.6.1.4.1, 12.6.1.4.2, 12.6.1.4.3, 12.6.1.4.4, 12.6.1.4.4.1, 12.6.1.4.4.2, 12.6.1.4.4.3, 12.6.1.4.4.4, 12.6.1.4.4.5, 12.6.1.4.4.6, 12.6.1.4.5, 12.6.1.4.5.1, 12.6.1.4.6, 12.6.1.4.6.1, 12.6.1.4.6.2, 12.6.1.4.6.3, 12.6.1.4.6.4, A.7.2 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | | Revision of S5-205101 | | | | | | | | |

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| **1st Change** |

## 11.6 File data reporting service

### 11.6.1 Operations and notifications

#### 11.6.1.1 Notification notifyFileReady (M)

##### 11.6.1.1.1 Definition

This notification supports the authorized file data reporting service consumer to be notified about the readiness of the file data by the file data reporting service producer.

After the file data has been prepared ready for the consumer(s), the file data reporting service producer emits the notification to the subject consumer(s) who have subscribed to this notification.

##### 11.6.1.1.2 Notification information

Table 11.6.1.1.2-1: Notification Information

| **Parameter Name** | **Qualifier** | **Information Type** | **Comment** |
| --- | --- | --- | --- |
| objectClass | M, Y | Type of the file data reporting related producer, e | It indicates the class, whose instance emitted this notification. The class indicates the type of the file data reporting service producer. |
| objectInstance | M, Y | Identifier of the file data reporting service producer | It identifies the file data reporting related service producer, who actually emitted the notification. |
| notificationId | M, N | This is an identifier of the notification, which may be used to correlate notifications. | The unique identifier of the notification across all notifications sent by a particular management service producer throughout the time that correlation is significant.  How identifiers of notifications are re-used to correlate notifications is outside of the scope of the present document. |
| eventTime | M, Y | It indicates the event occurrence time. | The semantics of Generalised Time specified by ITU-T shall be used here. |
| notificationType | M, Y | "notifyFileReady " | The type of notification, and it shall be assigned to "notifyFileReady" for this notification. |
| fileInfoList | M, N | List of struct <  fileLocation,  fileSize  fileReadyTime  fileExpirationTime  fileCompression,  fileFormat,  fileType,  >.  Each element is defined as following:  - fileLocation: It identifies the location of the file. The location may be a directory path or a URL.  E.g.:  "\\202.112.101.1\D:\user\Files\<xxx>" or  "[ftp://nms.telecom\_org.com/datastore/<xxx>](ftp://nms.telecom_org.com/datastore/%3cxxx%3e), where <xxx> is the filename and the file naming convention is defined in Annex A.3.  - fileSize: It identifies the size of the file. Its value is positive Integer (the unit is byte).  - fileReadyTime: It identifies the date and time when the file was last closed and made available in the management service producer and the file content will not be changed.  - fileExpirationTime: It identifies the date and time beyond which the file may be deleted. It shall not be empty and shall be later than fileReadyTime.  - fileCompression: It identifies the name of the compression algorithm used for the file. An empty fileCompression means that there is no compression on the file. Choice of compression algorithm is vendor-specific but is encouraged to use industrial standard algorithm such as GZIP.  - fileFormat: It identifies the encoding technique used by the file. Its value should indicate the version of the file format specification plus to indicate if "ASN1" or "XML-schema" is used.  - fileType: It identifies the type of the management data stored in the file. Following are the allowed values:  - For performance data (including measurement data and KPI) files, the value is assigned to "PERFORMANCE".  - For trace data files, the value is assigned to "TRACE".  - For analytic data files, the value is assigned to "ANALYTICS".  - For proprietary data files, the value is assigned to "PROPRIETARY". | It specifies the information of each available file. |
| additionalText | O, N | It provides additional information for this notification. | It carries vendor-specific semantics not defined in the present document. |

#### 11.6.1.2 Notification notifyFilePreparationError (M)

##### 11.6.1.2.1 Definition

This notification supports the authorized file data reporting service consumer to be notified about the occurrence of an error during the preparation of the data file by the file data reporting service producer. When such error occurs, the the file data reporting service producer emits the notification to the authorized consumer(s) who have subscribed to this notification when the reporting period arrives.

##### 11.6.1.2.2 Notification information

| **Parameter Name** | **Qualifier** | **Information Type** | **Comment** |
| --- | --- | --- | --- |
| objectClass | M, Y | See Table 11.6.1.1.2-1. | See Table 11.6.1.1.2-1. |
| objectInstance | M, Y | See Table 11.6.1.1.2-1. | See Table 11.6.1.1.2-1. |
| notificationId | M, N | See Table 11.6.1.1.2-1. | See Table 11.6.1.1.2-1. |
| eventTime | M, Y | See Table 11.6.1.1.2-1. | See Table 11.6.1.1.2-1. |
| notificationType | M, Y | "notifyFilePreparationError" | The type of notification, and it shall be assigned to "notifyFilePreparationError" for this notification. |
| fileInfoList | M, N | See Table 11.6.1.1.2-1. | If file is kept, this parameter identifies the file whose preparation provoked an error. If file is not generated, this parameter is empty. |
| reason | M, N | It specifies the reason of the error occurred during the file data preparation. | The detailed reason is given, including  errorInPreparation  hardDiskFull  hardDiskFailure  tooManyFiles  collectionTimeOut  incompleteTruncatedFile  corruptedFile  lowMemory  dataNotAvailable |
| additionalText | O, N | See Table Table 11.6.1.1.2-1. | See Table 11.6.1.1.2-1. |

#### 11.6.1.3 Operation subscribe (M)

##### 11.6.1.3.1 Definition

This operation enables the authorized file data reporting service consumer to subscribe to the notification(s) related to the services provided by the file data reporting service producer.

##### 11.6.1.3.2 Input parameters

| **Parameter Name** | **Qualifier** | **Information Type** | **Comment** |
| --- | --- | --- | --- |
| consumerReference | M | It specifies the reference of the consumer to which the notifications shall be sent. | The format of the reference may have dependency on the solution set. |
| timeTick | O | It specifies the value of a timer the subscription is hold by the file data reporting service producer for the subject consumer.  The value is in unit of whole minute. | A special infinite value is assumed when parameter is absent or present but equal to zero. |
| filter | O | It specifies a filter constraint that the file data reporting service producer shall use to filter notification(s).  Filter constraint grammar is solution set dependent | If this parameter is absent, then no filter constraint shall be applied. |

##### 11.6.1.3.3 Output parameters

| **Parameter Name** | **Qualifier** | **Matching Information** | **Comment** |
| --- | --- | --- | --- |
| subscriptionId | M | An unambiguous identity of this subscription. |  |
| status | M | ENUM (OperationSucceeded, OperationFailedExistingSubscription, OperationFailed) | If subscription is successfully created, status = OperationSuceeded.  If subscription is not created because it is duplicated or conflict with existing subscription(s), status = OperationFailedExistingSubscription  If the operation is failed for any other reason than being duplicated or conflict with existing subscription(s), status = OperationFailed. |

##### 11.6.1.3.4 Exceptions

|  |  |
| --- | --- |
| **Name** | **Definition** |
| operation\_failed\_existing\_subscription | **Condition:** The subscription is duplicated or conflict with existing subscription(s)  **Returned Information:** The output parameter status |
| operation\_failed | **Condition:** The operation is failed for any other reason than being duplicated or conflict with subscription(s)  **Returned Information:** The output parameter status |

#### 11.6.1.4 Operation unsubscribe (M)

##### 11.6.1.4.1 Definition

This operation enables the authorized file data reporting service consumer cancel subscription(s) at a management service producer.

The authorized file data reporting service consumer can cancel one subscription made with a consumerReference by providing the corresponding subscriptionId or all subscriptions made with the same consumerReference by leaving the subscriptionId parameter absent.

##### 11.6.1.4.2 Input parameters

| **Parameter Name** | **Qualifier** | **Information Type** | **Comment** |
| --- | --- | --- | --- |
| consumerReference | M | It specifies the reference of the authorized file data reporting service consumer whose subscription(s) are to be cancelled. | The format of the reference may have dependency on the solution set. |
| subscriptionId | O | It holds a subscriptionId carried as the output parameter in the subscribe operation. | If this parameter is absent, all subscriptions made with the same consumerReference shall be cancelled. |

##### 11.6.1.4.3 Output parameters

| **Parameter Name** | **Qualifier** | **Matching Information** | **Comment** |
| --- | --- | --- | --- |
| status | M | ENUM (OperationSucceeded, OperationFailed) | If subscription(s) as identified in the input parameter are cancelled, status = OperationSucceeded.  If the operation is failed, status = OperationFailed. |

##### 11.6.1.4.4 Exceptions

|  |  |
| --- | --- |
| **Name** | **Definition** |
| operation\_failed | **Condition:** the operation is failed  **Returned Information:** The output parameter status |

#### 11.6.1.5 Operation listAvailableFiles (M)

##### 11.6.1.5.1 Definition

This operation allows the authorized file data reporting service consumer to list all or specified available data files stored in the file data reporting service producer.

The file data reporting service producer shall only provide the information about the available management data files that are created for the subject consumer.

A Solution Set may choose to split this operation in several operations (e.g. operations to get "iterator" which fulfil the criteria and other operations to retrieve the detailed information of the files from the "iterator").

##### 11.6.1.5.2 Input parameters

| **Parameter Name** | **Qualifier** | **Information type** | **Comment** |
| --- | --- | --- | --- |
| fileType | M | It specifies the type of the management data stored in the file. | For performance data (including measurement data and KPI) files, the value is assigned to "PERFORMANCE".  For trace data files, the value is assigned to "TRACE".  For analytic data files, the value is assigned to "ANALYTICS".  For proprietary data files, the value is assigned to "PROPRIETARY". |
| beginTime | M | The consumer requests to list information about the available file(s) whose ready time(s) are later or equal to this time.  This parameter is expressed in UTC time. | This parameter indicates date and time.  If this parameter is empty, no restriction on begin time is applied on the file ready time. |
| endTime | M | The consumer requests to list information about the available file(s) whose ready time(s) are earlier than this time.  This parameter is expressed in UTC time. | This parameter indicates date and time.  If this parameter is empty, no restriction on end time is applied on the file ready time. |

##### 11.6.1.5.3 Output parameters

| **Parameter Name** | **Qualifier** | **Matching Information** | **Comment** |
| --- | --- | --- | --- |
| fileInfoList | M | See the fileInfoList defined in notifyFileReady notification (clause 11.6.1.1.1) | See the fileInfoList defined in notifyFileReady notification (clause 11.6.1.1.1) |
| status | M | ENUM (Success, Failure) |  |

##### 11.6.1.5.4 Exceptions

| **Exception Name** | **Definition** |
| --- | --- |
| invalidTimes | **Condition:** Either beginTime or endTime is invalid.  **Returned information:** output parameter status is set to Failure. |

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| **2nd Change** |

## 12.6 File data reporting service

### 12.6.1 RESTful HTTP-based solution set

#### 12.6.1.1 Mapping of operations

##### 12.6.1.1.1 Introduction

The IS operations are mapped to SS equivalents according to table 12.6.1.1.1-1.

Table 12.6.1.1.1-1: Mapping of IS operations to SS equivalents

|  |  |  |  |
| --- | --- | --- | --- |
| **IS operation** | **HTTP Method** | **Resource URI** | **Qualifier** |
| listAvailableFiles | GET | /Files | M |
| subscribe | POST | /subscriptions | M |
| unsubscribe | DELETE | /subscriptions | M |
| DELETE | /subscriptions/{subscriptionId} | M |

##### 12.6.1.1.2 Operation "listAvailableFiles"

The IS operation parameters are mapped to SS equivalents according to table 12.6.1.1.2-1 and table 12.6.1.1.2-2.

Table 12.6.1.1.2-1: Mapping of IS operation input parameters to SS equivalents (HTTP GET)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **IS operation parameter name** | **SS parameter location** | **SS parameter name** | **SS parameter type** | **Qualifier** |
| fileType | query | fileType | fileType-Type | M |
| beginTime | query | beginTime | dateTime-Type | M |
| endTime | query | endTime | dateTime-Type | M |

Table 12.6.1.1.2-2: Mapping of IS operation output parameters to SS equivalents (HTTP GET)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **IS operation parameter name** | **SS parameter location** | **SS parameter name** | **SS parameter type** | **Qualifier** |
| fileInfoList | response body | n/a | fileInfoRetrieval-ResponseType | M |
| status | response status codes  response body | n/a  error | n/a  error-ResponseType | M |

The message flow is as follows:

- 1. The Service Consumer sends a HTTP GET request to the Service Provider.

- The URI identifies the "…/Files" collection resource.

- The query part may contain filter parameter. Absence of the query part means all available management data files shall be returned.

- The request message body shall be empty.

2. The Service Provider sends a HTTP GET response to the Service Consumer.

- On success "200 OK" shall be returned. The response message body shall carry the information of available files. The response format is defined by "fileInfoRetrieval-ResponseType ".

- On failure, an appropriate error code shall be returned. The response message body may carry an error object.

##### 12.6.1.1.3 Operation "subscribe"

See clause 12.2.1.1.8, with the discrepance that the subscribe operation in this clause is for file data reporting related notifications (i.e., notifyFileReady and notifyFilePreparationError).

##### 12.6.1.1.4 Operation "unsubscribe"

See clause 12.2.1.1.9, with the discrepance that the unsubscribe operation in this clause is for file data reporting related notifications (i.e., notifyFileReady and notifyFilePreparationError).

#### 12.6.1.2 Mapping of notifications

##### 12.6.1.2.1 Introduction

The IS notifications are mapped to SS equivalents according to table 12.6.1.2.1-1.

**Table 12.6.1.2.1-1: Mapping of IS notifications to SS equivalents**

|  |  |  |  |
| --- | --- | --- | --- |
| **IS notifications** | **HTTP Method** | **Resource URI** | **SQ** |
| notifyFileReady | POST | /notificationSink | M |
| notifyFilePreparationError | POST | /notificationSink | M |

##### 12.6.1.2.2 Notification "notifyFileReady"

The IS notification parameters are mapped to SS equivalents according to table 12.6.1.2.2-1.

Table 12.6.1.2.2-1: Mapping of IS notification input parameters to SS equivalents (HTTP POST)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **IS operation parameter name** | **SS parameter location** | **SS parameter name** | **SS parameter type** | **SQ** |
| objectClass | request body | href | uri-Type | M |
| objectInstance |
| notificationId | request body | notificationId | notificationId-Type | M |
| eventTime | request body | eventTime | dateTime-Type | M |
| notificationType | request body | notificationType | notificationType-Type | M |
| fileInfoList | request body | fileInfoList | array(fileInfo-Type) | M |
| additionalText | request body | additionalText | additionalText-Type | O |

##### 12.6.1.2.3 Notification "notifyFilePreparationError"

The IS notification parameters are mapped to SS equivalents according to table 12.6.1.2.3-1.

Table 12.6.1.2.3-1: Mapping of IS notification input parameters to SS equivalents (HTTP POST)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **IS operation parameter name** | **SS parameter location** | **SS parameter name** | **SS parameter type** | **SQ** |
| objectClass | request body | href | uri-Type | M |
| objectInstance |
| notificationId | request body | notificationId | notificationId-Type | M |
| eventTime | request body | eventTime | dateTime-Type | M |
| notificationType | request body | notificationType | notificationType-Type | M |
| fileInfoList | request body | fileInfoList | array(fileInfo-Type) | M |
| reason | request body | reason | reason-Type | O |
| additionalText | request body | additionalText | additionalText-Type | O |

#### 12.6.1.3 Resources

##### 12.6.1.3.1 Resource structure

Figure 12.6.1.3.1-1 shows the resource structure of the file data reporting service.

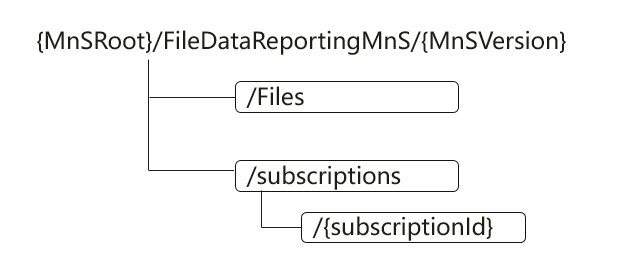


Figure 12.6.1.3.1-1: Resource URI structure of the file data reporting service

Table 12.6.1.3.1-2 provides an overview of the resources and applicable HTTP methods.

Table 12.6.1.3.1-2: Resources and methods overview

|  |  |  |  |
| --- | --- | --- | --- |
| Resource name | Resource URI | HTTP method | Description |
| Files | /Files | GET | Retrieve the information of the available files |
| subscriptions | /subscriptions | POST | Create a subscription |
| subscriptions | /subscriptions | DELETE | Delete all subscriptions made with a consumerReferenceId |
| subscription | /subscriptions/{subscriptionId} | DELETE | Delete a single subscription |
| notificationSink | /notificationSink | POST | Send notifications |

##### 12.6.1.3.2 Resource definitions

###### 12.6.1.3.2.1 Resource “/Files”

12.6.1.3.2.1.1 Description

This resource represents the information about a collection of available files.

12.6.1.3.2.1.2 URI

Resource URI = {MnSRoot}/FileDataReportingMnS/{MnSVersion}/Files

The resource URI variables a defined in the following table.

Table 12.6.1.3.2.1.1-1: URI variables

|  |  |
| --- | --- |
| **Name** | **Definition** |
| MnSRoot | See clause 4.4 of TS 32.158 [15] |

12.6.1.3.2.1.3 HTTP methods

12.6.1.3.2.1.3.1 HTTP GET

This method shall support the URI query parameters specified in the following table.

**Table 12.6.1.3.2.1.3.1-1: URI query parameters supported by the GET method on this resource**

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Data type** | **Description** | **SQ** |
| fileType | fileType | To filter the available files based on the file type. | M |
| beginTime | dateTime-Type | To filter the available files who became ready no later than this time stamp. | M |
| endTime | dateTime-Type | To filter the available files who became ready no earlier than this time stamp. | M |

This method shall support the request data structures, the response data structures and response codes specified in the following tables.

**Table 12.6.1.3.2.1.3.1-2: Data structures supported by the GET request body on this resource**

|  |  |  |
| --- | --- | --- |
| **Data type** | **Description** | **SQ** |
|  |  |  |

**Table 12.6.1.3.2.1.3.1-3: Data structures supported by the GET response body on this resource**

|  |  |  |  |
| --- | --- | --- | --- |
| **Data type** | **Response**  **codes** | **Description** | **SQ** |
| fileInfoRetrieval-ResponseType | 200 OK | The resource representation of the infomraiton about the available files retrieved. | M |
| error-ResponseType | 4xx/5xx | Returned in case of an error | M |

###### 12.6.1.3.2.2 Resource "/subscriptions"

12.6.1.3.2.2.1 Description

This resource is a container resource for individual subscriptions.

12.6.1.3.2.2.2 URI

The resource URI is:

Resource URI: {MnSRoot}/FileDataReportingMnS/{MnSVersion}/subscriptions

The resource URI variables a defined in the following table.

Table 12.6.1.3.3.2.2.2-1: URI variables

|  |  |
| --- | --- |
| **Name** | **Definition** |
| MnSRoot | See clause 4.4 of TS 32.158 [15] |

12.6.1.3.2.2.3 HTTP methods

12.6.1.3.2.2.3.1 POST

This method shall support the URI query parameters specified in table 12.6.1.3.2.2.3.1-1.

Table 12.6.1.3.2.2.3.1-1: URI query parameters supported by the POST method on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Data type | Description | Qualifier |
| n/a | n/a | n/a | n/a |

This method shall support the request data structures specified in table 12.6.1.3.2.2.3.1-2 and the response data structures and response codes specified in table 12.6.1.3.2.2.3.1-3.

Table 12.6.1.3.2.2.3.1-2: Data structures supported by the POST Request Body on this resource

|  |  |  |
| --- | --- | --- |
| Data type | Description | SQ |
| subscription-RequestType | Details of the subscription to be created | M |

Table 12.6.1.3.2.2.3.1-3: Data structures supported by the POST Response Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Response  codes | Description | SQ |
| subscription-ResponseType | 201 Created | In case of success the representation of the created subscription is returned. | M |
| error-ResponseType | 4xx/5xx | In case of failure the error object is returned. | M |

12.6.1.3.2.2.3.2 DELETE

This method shall support the URI query parameters specified in table 12.6.1.3.2.2.3.2-1.

Table 12.6.1.3.2.2.3.2-1: URI query parameters supported by the DELETE method on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Data type | Description | Qualifier |
| consumerReferenceId | consumerReferenceId-QueryType | Identifies the consumer whose subscriptions shall be deleted | M |

This method shall support the request data structures specified in table 12.6.1.3.2.2.3.2-2 and the response data structures and response codes specified in table 12.6.1.3.2.2.3.2-3.

Table 12.6.1.3.2.2.3.2-2: Data structures supported by the DELETE Request Body on this resource

|  |  |  |
| --- | --- | --- |
| Data type | Description | SQ |
| n/a | n/a | n/a |

Table 12.6.1.3.2.2.3.2-3: Data structures supported by the DELETE Response Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Response  codes | Description | SQ |
| n/a | 204 No Content | In case of success no message body is returned | n/a |
| error-ResponseType | 4xx/5xx | In case of failure the error object is returned. | M |

###### 12.6.1.3.2.3 Resource "/subscriptions/{subscriptionId}"

12.6.1.3.2.3.1 Description

This resource represents a subscription.

12.6.1.3.2.3.2 URI

The resource URI is:

Resource URI: {MnSRoot}/FileDataReportingMnS/{MnSVersion}/subscriptions/{subscriptionId}

Table 12.6.1.3.2.3.2-1: URI variables

|  |  |
| --- | --- |
| Name | Definition |
| MnSRoot | See clause 4.4 of TS 32.158 [15] |
| subscriptionId | Subscription identifier |

12.6.1.3.2.3.3 HTTP methods

12.6.1.3.2.3.3.1 DELETE

This method shall support the URI query parameters specified in table 12.6.1.3.2.3.3-1.

Table 12.6.1.3.2.3.3-1: URI query parameters supported by the DELETE method on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Data type | Description | Qualifier |
| n/a | n/a | n/a | n/a |

This method shall support the request data structures specified in table 12.6.1.3.2.3.3-2 and the response data structures and response codes specified in table 12.6.1.3.2.3.3-3.

Table 12.6.1.3.2.3.3-2: Data structures supported by the DELETE Request Body on this resource

|  |  |  |
| --- | --- | --- |
| Data type | Description | SQ |
| n/a | n/a | n/a |

Table 12.6.1.3.2.3.3-3: Data structures supported by the DELETE Response Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Response  codes | Description | SQ |
| n/a | 204 No Content | In case of success no message body is returned | M |
| error-ResponseType | 4xx/5xx | In case of failure the error object is returned. | M |

###### 12.6.1.3.2.4 Resource "/notificationSink"

12.6.1.3.2.4.1 Description

This resource represents a resource to which notifications are sent to.

12.6.1.3.2.4.2 URI

The resource URI is provided by the notification subscriber when creating the subscription.

12.6.1.3.2.4.3 HTTP methods

12.6.1.3.2.4.3.1 POST

This method shall support the URI query parameters specified in table 12.6.1.3.2.4.3.1-1.

Table 12.6.1.3.2.4.3.1-1: URI query parameters supported by the POST method on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Data type | Description | Qualifier |
| n/a | n/a | n/a | n/a |

This method shall support the request data structures specified in table 12.6.1.3.2.4.3.1-2 and the response data structures and response codes specified in table 12.6.1.3.2.4.3.1-3.

Table 12.6.1.3.2.4.3.1-2: Data structures supported by the POST Request Body on this resource

|  |  |  |
| --- | --- | --- |
| Data type | Description | SQ |
| notifyFileReady-NotifType | Type in case a notifyFileReady notification is sent | M |
| notifyFilePreparationError-NotifType | Type in case a notifyFilePreparationError notification is sent | M |

Table 12.6.1.3.2.4.3.1-3: Data structures supported by the POST Response Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Response  codes | Description | SQ |
| n/a | 204 No Content | In case of success no message body is returned | M |
| error-ResponseType | 4xx/5xx | In case of failure the error object is returned. | M |

#### 12.6.1.4 Data type definitions

##### 12.6.1.4.1 General

Table 12.6.1.4.1-1: Data types defined in this specification

|  |  |  |
| --- | --- | --- |
| **Data type** | **Reference** | **Description** |
| **General types** | | |
| dataTime-Type | 12.6.1.4.6.2 | Data type of date and time. |
| uri-Type | 12.6.1.4.6.2 | The data type of a URI. |
| **Types used in paths** | | |
|  |  |  |
| **Types used in query parts** | | |
| file-Type | 12.6.1.4.6.3 | Used in listing the information of available files describing the type of the files. |
| consumerReferenceId-QueryType | 12.6.1.4.6.2 | Used in the query part of HTTP DELETE on /Subscriptions to delete all subscriptions made with a specific consumerReferenceId |
| **Types used in request bodies** | | |
| subscription-RequestType | 12.6.1.4.4.1 | Used in the request body of HTTP POST on /subscriptions to create file data reporting notifications subscriptions. |
| **Types used in response bodies** | | |
| fileInfoRetrieval-ResponseType | 12.6.1.4.4.2 | Used in the response body of HTTP GET describing the information of the listed files. |
| error-ResponseType | 12.6.1.4.4.3 | Used in the response body describing the error. |
| **Types used for resources** | | |
| subscription-ResourceType | 12.6.1.4.4.4 | Representation of a subscription resource. |
| **Types used in notifications** |  |  |
| notifyFileReady-NotifType | 12.6.1.4.4.5 | Used in the request body of HTTP POST for the notification type notifyFileReady. |
| notifyFilePreparationError-NotifType | 12.6.1.4.4.6 | Used in the request body of HTTP POST for the notification type notifyFilePreparationError. |
| **Types referenced by the definitions above** | | |
| fileInfo-Type | 12.6.1.4.5.1 | Used for describing the file information. |
| notificationId-Type | 12.6.1.4.6.2 | Notification identifier as defined in ITU-T Rec. X. 733 [4] |
| notificationType-Type | 12.6.1.4.6.2 | Notification type (notifyFileReady, etc.) |
| additionalText-Type | 12.6.1.4.6.2 | Allows a free form text description to be reported as defined in ITU-T Rec. X. 733 [4] |
| reason-Type | 12.6.1.4.6.2 | Used to describe the reason causing the file preparation error. |

Table 12.6.1.4.1-2: Data types imported

|  |  |  |
| --- | --- | --- |
| **Data type** | **Reference** | **Description** |
|  |  |  |

##### 12.6.1.4.2 Structured general data types

None.

##### 12.6.1.4.3 Structured path data types

None.

##### 12.6.1.4.4 Query, message body and resource data types

###### 12.6.1.4.4.1 Type subscription-RequestType

**Table 12.6.1.4.4.1-1: Definition of type subscription-RequestType**

|  |  |  |  |
| --- | --- | --- | --- |
| **Attribute name** | **Data type** | **Description** | **SQ** |
| data | subscription-ResourceType | Used in the request body of HTTP POST on /subscriptions describing the representation of the subscription to be created | M |

###### 12.6.1.4.4.2 Type fileInfoRetrieval-ResponseType

Table 12.6.1.4.4.2-1: Definition of type fileInfoRetrieval-ResponseType

|  |  |  |  |
| --- | --- | --- | --- |
| **Attribute name** | **Data type** | **Description** | **SQ** |
| data | array(fileInfoType) | The information of the available files | M |

###### 12.6.1.4.4.3 Type error-ResponseType

Table 12.6.1.4.4.3-1: Definition of type error-ResponseType

|  |  |  |  |
| --- | --- | --- | --- |
| **Attribute name** | **Data type** | **Description** | **SQ** |
| error | object | Key indicating the response body containing an error | M |
| > errorInfo | string | Attribute allowing to convey error information in string format | M |

###### 12.6.1.4.4.4 Type subscription-ResourceType

**Table 12.6.1.4.4.4-1: Definition of type subscription-ResourceType**

|  |  |  |  |
| --- | --- | --- | --- |
| **Attribute name** | **Data type** | **Description** | **SQ** |
| consumerReference | uri-Type | The URI of the endpoint to send the notification to (/notificationSink). | M |
| timeTick | long-Type | Time window within which the subscriber intends to subscribe again to confirm its subscription, see clause 11.2.2.2.5.1 | O |
| filter | filter-Type | Filter settings for this subscription, to define the subset of all notifications this subscription relates to. A notification is sent to the subscriber if the filter matches, or if there is no filter. | O |

###### 12.6.1.4.4.5 Type notifyFileReady-NotifType

**Table 12.6.1.4.4.5-1: Definition of type notifyFileReady-NotifType**

|  |  |  |  |
| --- | --- | --- | --- |
| **Attribute name** | **Data type** | **Description** | **SQ** |
| header |  |  |  |
| > href | uri-Type | URI of the resource indicating the file data reporting service | M |
| > notificationId | notificationId-Type | Notification identifier as defined in ITU-T Rec. X. 733 [4] | M |
| > notificationType | notificationType-Type | Notification type (notifyFileReady, etc.) | M |
| > eventTime | dateTime-Type | Event occurrence time (e.g., the file ready time) | M |
| body |  |  |  |
| > fileInfoList | array(fileInfo-Type) | The information of the available files | M |
| > additionalText | additionalText-Type | Allows a free form text description to be reported as defined in ITU-T Rec. X. 733 [4] | O |

###### 12.6.1.4.4.6 Type notifyFilePreparationError-NotifType

**Table 12.6.1.4.4.6-1: Definition of type notifyFilePreparationError-NotifType**

|  |  |  |  |
| --- | --- | --- | --- |
| **Attribute name** | **Data type** | **Description** | **SQ** |
| header |  |  |  |
| > href | uri-Type | URI of the resource indicating the file data reporting service | M |
| > notificationId | notificationId-Type | Notification identifier as defined in ITU-T Rec. X. 733 [4] | M |
| > notificationType | notificationType-Type | Notification type (notifyFileReady, etc.) | M |
| > eventTime | dateTime-Type | Event occurrence time (e.g., the file ready time) | M |
| body |  |  |  |
| > fileInfoList | array(fileInfo-Type) | The information of the available files | M |
| > reason | reason-Type | The reason that caused the error of the file preparation. |  |
| > additionalText | additionalText-Type | Allows a free form text description to be reported as defined in ITU-T Rec. X. 733 [4] | O |

##### 12.6.1.4.5 Referenced structured data types

###### 12.6.1.4.5.1 Type fileInfo-Type

Table 12.6.1.4.5.1-1: Definition of fileInfo-Type

|  |  |  |  |
| --- | --- | --- | --- |
| **Attribute name** | **Data type** | **Description** | **SQ** |
| fileLocation | uri-Type | Usd to indicate the location of the file. | M |
| fileSize | long-Type | The size of the file with positive Integer value (the unit is byte). | M |
| fileReadyTime | dataTime-Type | Indicates the date and time when the file was last closed and made available in the management service producer and the file content will not be changed. | M |
| fileExpirationTime | dataTime-Type | Indicates the date and time beyond which the file may be deleted. | M |
| fileCompression | string | Identifies the name of the compression algorithm used for the file. | M |
| fileFormat | string | Identifies the encoding technique used by the file. Its value should indicate the version of the file format specification plus to indicate if "ASN1" or "XML-schema" is used. | M |
| fileType | file-Type | It identifies the the type of the management data stored in the file. Following are the allowed values:  - For performance data (including measurement data and KPI) files, the value is assigned to "PERFORMANCE".  - For trace data files, the value is assigned to "TRACE".  - For analytic data files, the value is assigned to "ANALYTICS".  - For proprietary data files, the value is assigned to "PROPRIETARY". | M |

##### 12.6.1.4.6 Simple data types and enumerations

###### 12.6.1.4.6.1 General

This clause defines simple data types and enumerations that are used by the data structures defined in the previous clauses.

###### 12.6.1.4.6.2 Simple data types

Table 12.6.1.4.6.2-1: Simple data types

|  |  |  |
| --- | --- | --- |
| Type name | Type definition | Description |
| dataTime-Type | string | The data type for date and time in “date-time” format. |
| uri-Type | string | The type of a URI. |
| consumerReferenceId-QueryType | uri-Type | Used in the query part of HTTP DELETE on /subscriptions to delate all subscriptions made with a specific consumerReferenceId. |
| filter-Type | string | Filter of a subscription resource. |
| notificationId-Type | long | Notification identifier as defined in ITU-T Rec. X. 733 [4] |
| additionalText-Type | string | Allows a free form text description to be reported as defined in ITU-T Rec. X. 733 [4] |
| reason-Type | string | THe type for describing the reason that caused the file preparation error. |

###### 12.6.1.4.6.3 Enumeration fileType-Type

Table 12.6.1.4.6.3-1: Enumeration fileType-Type

|  |  |
| --- | --- |
| Enumeration value | Description |
| PERFORMANCE | It indicates that the file type is “Performance data file” |
| TRACE | It indicates that the file type is “Trace data file” |
| ANALYTICS | It indicates that the file type is “Analytics data file” |
| PROPRIETARY | It indicates that the file type is “Proprietary data file” |

###### 12.6.1.4.6.4 Enumeration notificationType-Type

Table 12.6.1.4.6.4-1: Enumeration notificationType-Type

|  |  |
| --- | --- |
| Enumeration value | Description |
| notifyFileReady | Notification type is notifyFileReady |
| notifyFilePreparationError | Notification type is notifyFilePreparationError |

|  |
| --- |
| **3rd Change** |

# A.7 File data reporting management service

## A.7.1 Introduction

Clause A.7.2 contains the OpenAPI specification of the File data reporting MnS.

## A.7.2 OpenAPI document "FileDataReportingMnS.yaml"

openapi: 3.0.1

info:

title: TS 28.532 File data reporting Service

version: 16.6.0

description: >-

OAS 3.0.1 specification of the File data reporting Management Service © 2020,

3GPP Organizational Partners (ARIB, ATIS, CCSA, ETSI, TSDSI, TTA, TTC). All

rights reserved.

externalDocs:

description: 3GPP TS 28.532 V16.5.0; Generic management services

url: 'http://www.3gpp.org/ftp/Specs/archive/28\_series/28.532/'

servers:

- url: '{MnSRoot}/FileDataReportingMnS/{MnSversion}'

variables:

MnSRoot:

description: See subclause 4.4 of TS 32.158

default: http://example.com/3GPPManagement

version:

description: Indicates the current version of the specification

default: 16.5.0

paths:

/Files:

get:

summary: Read resources of information of available files

description: With HTTP GET, resources of information of available files are read. The resources to be read are identified with the path component (base resource) and the query component (fileaType, beginTime and endTime) of the URI. The fields query component allows to select the resource properties to be returned.

parameters:

- name: fileType

in: query

description: This parameter identifies the type of management data that the file contains to select the resources from the collection resources identified with the path component of the URI.

required: true

schema:

$ref: '#/components/schemas/fileType-Type'

- name: beginTime

in: query

description: This parameter identifies the time stamp no later than which the file became available to select the resources from the collection resources identified with the path component of the URI.

required: true

schema:

$ref: '#/components/schemas/dateTime-Type'

- name: endTime

in: query

description: This parameter identifies the time stamp no earlier than which the file became available to select the resources from the collection resources identified with the path component of the URI.

required: true

schema:

$ref: '#/components/schemas/dateTime-Type'

responses:

'200':

description: 'Success case ("200 OK"). The resources identified in the request for retrieval are returned in the response message body. In case the fields query parameter is used, the selected resources are returned.'

content:

application/json:

schema:

$ref: '#/components/schemas/fileInfoRetrieval-ResponseType'

default:

description: Error case.

content:

application/json:

schema:

$ref: '#/components/schemas/error-ResponseType'

/subscriptions:

post:

summary: Create a subscription

description: To create a subscription the representation of the subscription is POSTed on the /subscriptions collection resource.

requestBody:

required: true

content:

application/json:

schema:

$ref: '#/components/schemas/subscription-RequestType'

responses:

'201':

description: Success case ("201 Created"). The representation of the newly created subscription resource shall be returned.

content:

application/json:

schema:

$ref: '#/components/schemas/subscription-ResponseType'

default:

description: Error case.

content:

application/json:

schema:

$ref: '#/components/schemas/error-ResponseType'

callbacks:

notifyFileReady:

'{request.body#/consumerReference}':

post:

requestBody:

required: true

content:

application/json:

schema:

$ref: '#/components/schemas/notifyFileReady-NotifType'

responses:

'204':

description: Success case ("204 No Content"). The notification is successfully delivered. The response message body is absent.

default:

description: Error case.

content:

application/json:

schema:

$ref: '#/components/schemas/error-ResponseType'

notifyFilePreparationError:

'{request.body#/consumerReference}':

post:

requestBody:

required: true

content:

application/json:

schema:

$ref: '#/components/schemas/notifyFilePreparationError-NotifType'

responses:

'204':

description: Success case ("204 No Content"). The notification is successfully delivered. The response message body is absent.

default:

description: Error case.

content:

application/json:

schema:

$ref: '#/components/schemas/error-ResponseType'

delete:

summary: Delete all subscriptions made with a specific consumerReferenceId

description: The subscriptions are deleted by deleting the corresponding subscription resources. The resources to be deleted are identified with the path component of the URI pointing to the /subscription collection resource and filtering on the consumerReferenceId provided in the query part.

parameters:

- name: consumerReferenceId

in: query

description: Identifies the subscriptions to be deleted.

required: true

schema:

$ref: '#/components/schemas/consumerReferenceId-QueryType'

responses:

'204':

description: Success case ("204 No Content"). The subscription resources have been deleted. The response message body is absent.

default:

description: Error case.

content:

application/json:

schema:

$ref: '#/components/schemas/error-ResponseType'

'/subscriptions/{subscriptionId}':

delete:

summary: Delete a single subscription

description: The subscription is deleted by deleting the corresponding subscription resource. The resource to be deleted is identified with the path component of the URI.

parameters:

- name: subscriptionId

in: path

description: Identifies the subscription to be deleted.

required: true

schema:

$ref: '#/components/schemas/subscriptionId-PathType'

responses:

'204':

description: Success case ("204 No Content"). The subscription resource has been deleted. The response message body is absent.

default:

description: Error case.

content:

application/json:

schema:

$ref: '#/components/schemas/error-ResponseType'

components:

schemas:

dateTime-Type:

type: string

format: date-Time

uri-Type:

type: string

long-Type:

type: string

format: long

additionalText-Type:

type: string

reason-Type:

type: string

fileInfoRetrieval-ResponseType:

type: object

properties:

data:

type: array

items:

$ref: '#/components/schemas/fileInfo-Type'

fileInfo-Type:

type: object

properties:

fileLocation:

$ref: '#/components/schemas/uri-Type'

fileSize:

$ref: '#/components/schemas/long-Type'

fileReadyTime:

$ref: '#/components/schemas/dateTime-Type'

fileExpirationTime:

$ref: '#/components/schemas/dateTime-Type'

fileCompression:

type: string

fileFormat:

type: string

fileType:

$ref: '#/components/schemas/fileType-Type'

error-ResponseType:

type: object

properties:

error:

type: object

properties:

errorInfo:

type: string

fileType-Type:

type: string

enum:

- PERFORMANCE

- TRACE

- ANALYTICS

- PROPRIETARY

header-Type:

description: Header used in notifications as notification header

type: object

properties:

uri:

$ref: '#/components/schemas/uri-Type'

notificationId:

$ref: '#/components/schemas/notificationId-Type'

notificationType:

$ref: '#/components/schemas/notificationType-Type'

eventTime:

$ref: '#/components/schemas/dateTime-Type'

subscriptionId-PathType:

type: string

filter-Type:

type: string

notificationId-Type:

$ref: '#/components/schemas/long-Type'

notificationType-Type:

type: string

enum:

- notifyFileReady

- notifyFilePreparationError

subscription-ResourceType:

type: object

properties:

consumerReference:

$ref: '#/components/schemas/uri-Type'

timeTick:

$ref: '#/components/schemas/long-Type'

filter:

$ref: '#/components/schemas/filter-Type'

subscription-RequestType:

type: object

properties:

data:

$ref: '#/components/schemas/subscription-ResourceType'

subscription-ResponseType:

type: object

properties:

data:

$ref: '#/components/schemas/subscription-ResourceType'

consumerReferenceId-QueryType:

$ref: '#/components/schemas/uri-Type'

notifyFileReady-NotifType:

type: object

properties:

header:

$ref: '#/components/schemas/header-Type'

body:

type: object

properties:

fileInfoList:

type: array

items:

$ref: '#/components/schemas/fileInfo-Type'

additionalText:

$ref: '#/components/schemas/additionalText-Type'

notifyFilePreparationError-NotifType:

type: object

properties:

header:

$ref: '#/components/schemas/header-Type'

body:

type: object

properties:

fileInfoList:

type: array

items:

$ref: '#/components/schemas/fileInfo-Type'

reason:

$ref: '#/components/schemas/reason-Type'

additionalText:

$ref: '#/components/schemas/additionalText-Type'

|  |
| --- |
| **End of Change** |