**3GPP TSG-SA WG6 Meeting #42-bis-e S6-210824**

**e-meeting, 12th – 20th April 2021 (revision of S6-21xxxx)**

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| *CR-Form-v12.1* |
| **CHANGE REQUEST** |
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|  |  | **CR** | **0271** | **rev** | **-** | **Current version:** |  |  |
|  |
| *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:***  | MCData file download including request of network resources with required QoS |
|  |  |
| ***Source to WG:*** | Ericsson |
| ***Source to TSG:*** | S6 |
|  |  |
| ***Work item code:*** | eMCData3 |  | ***Date:*** | 2021-04-12 |
|  |  |  |  |  |
| ***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 canbe 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)* |
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| ***Reason for change:*** | MCData file download based on HTTP is defined directly between an MCData client and the MCData content server without the involvement of the MCData server, as described in clause 7.5.2.3. This leads to provide such a service with a best effort QoS since. However, as specified within the architectural requirements in clause 5.8.2, the MCData system shall request network resources with required QoS based on PCC procedures (e.g. via Rx to a PCRF) for MCData communications, e.g. MCData file downloads. Providing such MCData communications with a best effort QoS becomes specially critical for the case of congested network loads and an MCData user in an emergency state. Therefore, it is needed to introduce a procedure where the MCData server is able to request the 3GPP system the configuration of the required priority of the underlying bearers to be used for the corresponding MCData file downloads. |
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| ***Summary of change:*** | Likewise, as defined for the case of MCData file upload in clause 7.5.2.2.4, a procedure is introduced to enable the request of network resources with required QoS to the 3GPP system for MCData file downloads based on HTTP. Therefore, the MCData file download can be provided with required QoS after a notification to the MCData users from the MCData server. |
|  |  |
| ***Consequences if not approved:*** | MCData services such as file download based on HTTP can only be reliably provided with a best effort QoS when there is low or normal network load, but not in congested network loads. Also, HTTP-based MCData communications for MCData users in an emergency state cannot be established with the required priority of the underlying bearers. |
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| ***Clauses affected:*** | (new) 7.5.2.1.x, (new) 7.5.2.1.y, 7.5.2.3.2, (new) 7.5.2.3.x |
|  |  |
|  | **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 \* \* \*

##### 7.5.2.1.x MCData file download request

Table 7.5.2.1.x-1 describes the information flow for the MCData file download request sent from the MCData client to the MCData server.

Table 7.5.2.1.x-1: MCData file download request

|  |  |  |
| --- | --- | --- |
| Information element | Status | Description |
| MCData ID | M | The identity of the MCData user downloading the file |
| Transaction Identifier | M | Identifies the MCData transaction |
| Access information | M | Provides access resource details to be used by the MCData client for the file download, e.g. IP address and port |
| MCData content server information | M | Provides information about the target MCData content server, where the file is intended to be downloaded from, e.g. URI or IP address, and port (e.g. standard port 80 for HTTP) |
| Content reference | M | URL reference to the content to download |
| Emergency indicator | O | Indicates that the request is for an MCData emergency communication |

##### 7.5.2.1.y MCData file download response

Table 7.5.2.1.y-1 describes the information flow for the MCData file download response sent from the MCData server to the MCData client.

Table 7.5.2.1.y-1: MCData file download response

|  |  |  |
| --- | --- | --- |
| Information element | Status | Description |
| MCData ID | M | The identity of the MCData user requesting to dowload the file |
| Transaction Identifier | M | Identifies the MCData transaction |
| File download confirmation | M | Indicates whether the file download from the MCData content server can proceed or not |

##### 7.5.2.1.w MCData file availability request

Table 7.5.2.1.w-1 describes the information flow for the MCData file availability request sent from the MCData server to the MCData content server.

Table 7.5.2.1.w-1: MCData file availability request

|  |  |  |
| --- | --- | --- |
| Information element | Status | Description |
| Content reference | M | URL reference of the file required to check its availability in the MCData content server |

##### 7.5.2.1.z MCData file availability response

Table 7.5.2.1.z-1 describes the information flow for the MCData file availability response sent from the MCData content server to the MCData server.

Table 7.5.2.1.z-1: MCData file availability response

|  |  |  |
| --- | --- | --- |
| Information element | Status | Description |
| Content reference | M | URL reference of the file required to check its availability in the MCData content server |
| Result | M | Indicates whether the file is available or not |

\* \* \* Next change \* \* \*

##### 7.5.2.3.2 Procedure for file download from the MCData content server

The procedure in figure 7.5.2.3.2-1 describes the case where an MCData user is downloading a file from the media storage function of the MCData content server.

Pre-conditions:

1. The MCData user on the media storage client is registered for receiving MCData service.



Figure 7.5.2.3.2-1: File download using HTTP

1. The user at the media storage client initiates a file download request available at the indicated URL.

2. The file available at the URL (received in MCData FD request or MCData group standalone FD request) is requested to be downloaded by the media storage client from the media storage function on the MCData content server using a MCData download data request. If emergency indicator is set in received in MCData FD request or MCData group standalone FD request, the media storage client sets emergency indicator in MCData download data request.

NOTE: The media storage client can perform partial download requests to complete the missing parts after an incomplete file transfer.

3. The media storage function on the MCData content server may apply reception control policy and provides a MCData download data response including the file to the media storage client.

\* \* \* Next change \* \* \*

##### 7.5.2.3.x Procedure for file download including request of network resources with required QoS

The procedure in figure 7.5.2.3.x-1 describes the case where an MCData client sends a request to the MCData server for the download of a file from the media storage client on the MCData client to the media storage function on the MCData content server. The MCData server can, therefore, request network resources with the required QoS for the corresponding file download.

Pre-conditions:

1. The MCData user on the MCData client is registered on the MCData server for receiving MCData service.

2. The MCData client has been requested to download a file using HTTP and has received the corresponding file URL (via an MCData FD request or MCData group standalone FD request).

3. The MCData client is required to download a file from the MCData content server over network resources with required QoS.

NOTE 1: It is implementation specific whether an MCData system enables that network resources with required QoS are required for file downloads.

4. The MCData client knows its IP address/port to be used for the file download as well as the URI or IP address/port of the target MCData content server.

NOTE 2: How the MCData client knows the IP addresses and ports to be used for the file download is implementation specific and out of the scope of this specification.



Figure 7.5.2.3.x-1: File download using HTTP over network resources with required QoS

1. The MC user on the MCData client intends to download a file from the MCData content server based on a received MCData FD request or MCData group standalone FD request. If the MCData emergency state is already set for the MCData client, the MCData client sets the emergency indicator in the request.

2. The MCData client sends the MCData file download request to the MCData server. This request contains information about the MCData client (including IP address and port to be used for the file download), and the target MCData content server (including associated URI or IP address, and port). The request also contains the corresponding file URL on the MCData content server.

3. The MCData server may verify, based on the received file URL, whether the file is available in the MCData content server via the MCData-FD-5 reference point. For that, the MCData server sends an MCData file availability request to the MCData content server. Upon the receipt of the request, the MCData content server provides an MCData file availability response to the MCData server. If the MCData server identifies that the corresponding file is not available in the MCData content server, the MCData server provides a response to the MCData client indicating that the file download request cannot proceed due to the unavailability of the file in the MCData content server.

4. The MCData server verifies that the corresponding MCData client is authorized to download the file from the corresponding MCData content server.

5. If the MCData client is authorized for the file download, the MCData server sends a request to the 3GPP system for the allocation of network resources with the required QoS for the corresponding file download communication between the MCData client and the MCData content server. For that, the MCData server performs policy and charging control (PCC) procedures, e.g., over the Rx reference point as described in 3GPP TS 23.203 [14] for the case of an EPS system.

6. The MCData server sends a MCData file download response to the MCData client indicating whether it can proceed with the file download from the MCData content server.

7. The media storage client on the MCData client sends an MCData download data request to the media storage function on the MCData content server to download the corresponding file.

8. The MCData content server provides an MCData download data response to the MCData client including the file for the case of a successful response.

9. The MCData client provides to the MCData server an MCData download completed report indicating that the file download is completed.

10. Based on the MCData download completed report, the MCData server requests to the 3GPP system to release the network resources allocated for the corresponding file download.