**3GPP TSG-SA WG6 Meeting #42-e S6-210491**

**e-meeting, 1st – 9th March 2021 (revision of S6-21xxxx)**

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| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **23.282** | **CR** | **0267** | **rev** | **-** | **Current version:** | **17.5.0** |  |
|  | | | | | | | | |
| *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)*.* | | | | | | | | |
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| ***Proposed change affects:*** | UICC apps |  | ME | **X** | Radio Access Network |  | Core Network | **X** |

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| ***Title:*** | Enhanced one-to-one FD using HTTP procedure (for single MCData system) including request of network resources with required QoS for the MCData file download | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Ericsson | | | | | | | | | |
| ***Source to TSG:*** | S6 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | eMCData3 | | | | |  | ***Date:*** | | | 2021-03-01 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **C** |  | | | | | ***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:*** | | 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 the MCData server is the only functional entity that can request the allocation of network resources with the required QoS for MCData communications.  This becomes specially critical for the case of congested network loads and an MCData user indicating an emergency state. The MCData content server does not support the capability to request the 3GPP system the configuration of the required priority of the underlying bearers since it can be only done by the MCData server. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | The procedure for one-to-one file distribution using HTTP (single MCData system) is enhanced by enabling that the MCData server sends to the 3GPP system a request for network resources with required QoS for the corresponding MCData file download based on HTTP. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | MCData services such as file download based on HTTP can only be reliably provided 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. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 7.5.2.1.5, 7.5.2.1.6, 7.5.2.4.2 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | |  | | | | | | | | |

\* \* \* First change \* \* \*

##### 7.5.2.1.5 MCData FD request (using HTTP)

Table 7.5.2.1.5-1 describes the information flow for the MCData FD request (in subclause 7.5.2.4) sent from the MCData client to the MCData server.

Table 7.5.2.1.5-1: MCData FD request (using HTTP) from MCData client to MCData server

|  |  |  |
| --- | --- | --- |
| Information element | Status | Description |
| MCData ID | M | The identity of the MCData user sending file |
| Functional alias | O | The functional alias associated with MCData user sending the file. |
| MCData ID (see NOTE) | O | The identity of the MCData user receiving file |
| Functional alias (see NOTE) | O | The associated functional alias of the MCData user identity towards which the data is sent. |
| Conversation Identifier | M | Identifies the conversation |
| Transaction Identifier | M | Identifies the MCData transaction |
| Reply Identifier | O | Identifies the original MCData transaction to which the current transaction is a reply to |
| Disposition indication | O | Indicates whether file download completed reported is expected or not |
| Download indication | O | Indicates mandatory download |
| Application metadata container | O | Implementation specific information that is communicated to the recipient |
| Content reference | M | URL reference to the content and file metadata information |
| Emergency indicator | O | Indicates that the data request is for MCData emergency communication |
| Deposit file indication | O | Indicates whether the file to be stored into the MCData message store account of the MCData user |
| NOTE: Either the MCData ID or the functional alias must be present. | | |

Table 7.5.2.1.5-2 describes the information flow for the MCData FD request (in clause 7.5.2.4) sent from an MCData server to a partner MCData server.

Table 7.5.2.1.5-2: MCData FD request (using HTTP) from an MCData server to another MCData server

|  |  |  |
| --- | --- | --- |
| Information element | Status | Description |
| MCData ID | M | The identity of the MCData user sending file |
| Functional alias | O | The associated functional alias of the MCData user identity sending the file. |
| MCData ID | M | The identity of the MCData user receiving file |
| Functional alias | O | The associated functional alias of the MCData user identity towards which the data is sent. |
| Conversation Identifier | M | Identifies the conversation |
| Transaction Identifier | M | Identifies the MCData transaction |
| Reply Identifier | O | Identifies the original MCData transaction to which the current transaction is a reply to |
| Disposition indication | O | Indicates whether file download completed reported is expected or not |
| Download indication | O | Indicates mandatory download |
| Application metadata container | O | Implementation specific information that is communicated to the recipient |
| Content reference | M | URL reference to the content and file metadata information |

Table 7.5.2.1.5-3 describes the information flow for the MCData FD request (in clause 7.5.2.4) sent from the MCData server to the MCData client.

Table 7.5.2.1.5-3: MCData FD request (using HTTP) from MCData server to MCData client

|  |  |  |
| --- | --- | --- |
| Information element | Status | Description |
| MCData ID | M | The identity of the MCData user sending file |
| Functional alias | O | The associated functional alias of the MCData user sending the file. |
| MCData ID | M | The identity of the MCData user receiving file |
| Conversation Identifier | M | Identifies the conversation |
| Transaction Identifier | M | Identifies the MCData transaction |
| Reply Identifier | O | Identifies the original MCData transaction to which the current transaction is a reply to |
| Disposition indication | O | Indicates whether file download completed reported is expected or not |
| Download indication | O | Indicates mandatory download |
| Application metadata container | O | Implementation specific information that is communicated to the recipient |
| Content reference | M | URL reference to the content and file metadata information |

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

##### 7.5.2.1.6 MCData FD response (using HTTP)

Table 7.5.2.1.6-1 describes the information flow for the MCData FD response (in subclause 7.5.2.4) sent from the MCData client to the MCData server, from the MCData server to another MCData client and from an MCData server to a partner MCData server.

Table 7.5.2.1.6-1: MCData FD response (using HTTP) from MCData client to MCData server

|  |  |  |
| --- | --- | --- |
| Information element | Status | Description |
| MCData ID | M | The identity of the MCData user sending FD request |
| MCData ID | M | The identity of the MCData user sending response |
| Conversation Identifier | M | Identifies the conversation |
| Result | O | Indicates if the request is accepted or not |
| Access information (see NOTE) | O | 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 (see NOTE) | O | Provides information about the target MCData content server from where the file is intended to be downloaded, e.g. URI or IP address, and port (e.g. standard port 80 for HTTP) |
| NOTE: This information element is present when the response indicates acceptance. | | |

Table 7.5.2.1.6-2 describes the information flow for the MCData FD response (in subclause 7.5.2.4) sent from the MCData server to the MCData client and from an MCData server to a partner MCData server.

Table 7.5.2.1.6-2: MCData FD response (using HTTP) from MCData server to MCData client and from an MCData server to another MCData server

|  |  |  |
| --- | --- | --- |
| Information element | Status | Description |
| MCData ID | M | The identity of the MCData user sending FD request |
| MCData ID | M | The identity of the MCData user sending response |
| Conversation Identifier | M | Identifies the conversation |
| Result | O | Indicates if the request is accepted or not |

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

##### 7.5.2.4.2 Procedure for single MCData system

The procedure in figure 7.5.2.4.2-1 describes the case where a MCData user is initiating one-to-one data communication for sending file to the other MCData user, with or without download completed report request.

Pre-conditions:

1. The MCData users on the MCData client 1 and the MCData client 2 are already registered for receiving MCData service.

2. The file to be distributed is uploaded to media storage function on MCData content server using the procedures defined in subclause 7.5.2.2.

3. The MCData client may have activated functional alias to be used.

4. The MCData server has subscribed to the MCData functional alias controlling server within the MC system for functional alias activation/de-activation updates.

5. The MCData client 2 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 1: How the MCData client knows the IP address and port to be used for the file download is implementation specific and out of the scope of this specification.



Figure 7.5.2.4.2-1: One-to-one file distribution using HTTP

1. The user at the MCData client 1 initiates a file distribution request to the chosen MCData user.

2. The MCData client 1 sends a MCData FD request towards the MCData server. The MCData FD request contains content payload in the form of file URL and may contain the file metadata information. The MCData FD request contains one MCData user for one-to-one data communication as selected by the user at MCData client 1. The MCData FD request contains conversation identifier for message thread indication. The MCData FD request may include additional implementation specific information in the application metadata container. If MCData user at MCData client 1 has requested to mandatory download at the recipient side, then MCData FD request contains mandatory download indication. The MCData FD request may contain download completed report indication if selected by the user at MCData client 1. The MCData user at MCData client 1 may include a functional alias within the FD data transfer and may address the target MCData client 2 using a functional alias.

a) If the MCData user at the MCData client 1 initiates an MCData emergency file distribution using HTTP or MCData emergency state is already set for the MCData client 1 (due to previously triggered MCData emergency alert):

i) The MCData FD request shall contain emergency indicator; and

ii) If MCData emergency state is not set already, MCData client 1 sets its MCData emergency state. The MCData emergency state of MCData client 1 is retained until explicitly cancelled by the user of MCData client 1.

NOTE 2: While MCData client 1 is in the emergency state, all types of MCData one-to-one and group communications initiated by MCData client 1 are initiated as MCData emergency communications.

3. MCData server checks whether the MCData user at MCData client 1 is authorized to send MCData FD request and that the size of the file is below maximum data size for FD from the service configuration. MCData server verifies whether the provided functional alias of MCData client 1, if present, can be used and has been activated for the user. If functional alias is used to address that target MCData user, the MCData server resolves the functional alias to the corresponding MCData IDs for which the functional alias is active and proceed with step 4 otherwise proceed with step 6.

NOTE 3: If the MCData server detects that the functional alias used as the target of the MCData FD request is simultaneously active for multiple MCData users, then the MCData server can proceed by selecting an appropriate MCData ID based on some selection criteria. The selection of an appropriate MCData ID is left to implementation. These selection criteria can include rejection of the MCData FD request, if no suitable MCData ID is selected.

4. The MCData server may verify whether the corresponding file is available in the MCData content server over the MCData-FD-5 reference point using the received file URL in the MCData FD request. 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 1 indicating that the file distribution request cannot proceed due to the unavailability of the file in the MCData content server.

5. The MCData server responds back to MCData client 1 with a functional alias resolution response message that contains the resolved MCData ID.

6. If the MCData server replies with a MCData functional alias resolution response message, the MCData client 1 sends a new MCData FD request towards the resolved MCData ID.

7. MCData server initiates the MCData FD request towards MCData client 2. The MCData FD request towards the MCData user contains an emergency indicator if it is present in the received MCData FD request from MCData client 1. The MCData server also includes a file download completed report indication within the request if it was not already requested by the MCData client 1.

NOTE 4: MCData client 2 does not set its emergency state as a result of receiving the MCData FD request containing the emergency indicator.

8. The receiving MCData client 2 notifies the user about the incoming MCData FD request (including file metadata, if present) which may be either accepted or rejected or ignored.

9. MCData user 2 may provide a response (accept or reject) or not (ignore) to the notification, then MCData client 2 sends the MCData FD response to the MCData server. MCData client 2 automatically sends accepted MCData FD response when the received request includes a mandatory download indication. If the MCData client 2 provides an accepted response, it includes information to be used for the file download by the MCData client (indicating IP address and port) and the target MCData content server (indicating the associated URI or IP address, and port).

10. 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 respective MCData client and the MCData content server (step 12). 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.

11. The MCData server forwards the MCData FD response to the MCData client 1. The MCData server removes, if present in the received MCData FD response, the information associated to the MCData client 2 (e.g. IP address, and port), and the target MCData content server (e.g. URI or IP address, and port).

12. The media storage client of MCData client 2 downloads the file from the MCData content server using the procedures defined in subclause 7.5.2.3, either automatically (for mandatory download) or based upon the MCData user 2 subsequent action. The MCData client 2 records file download completed and notifies MCData user 2.

13. MCData client 2 provides an MCData download completed report to the MCData server for reporting file download completed.

14. The MCData file download completed report from MCData user may be stored by the MCData server for download history interrogation from the authorized MCData users. MCData download completed report is sent by the MCData server to the MCData user at MCData client 1, if requested by the MCData client 1.

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

NOTE 5: Step 15 can occur at any time following step 13.