**3GPP TSG-SA WG6 Meeting #42-e S6-210490**

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

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| *CR-Form-v12.1* |
| **CHANGE REQUEST** |
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|  |  | **CR** | **0266** | **rev** | **-** | **Current version:** |  |  |
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| *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 group FD using HTTP procedure 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 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)* |
|  |  |
| ***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 the group standalone file distribution using HTTP 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 downloads based on HTTP. |
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| ***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. |
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| ***Clauses affected:*** | 7.5.2.1.10, 7.5.2.1.11, 7.5.2.6.2 |
|  |  |
|  | **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 \* \* \*

##### 7.5.2.1.10 MCData group standalone FD request (using HTTP)

Table 7.5.2.1.10-1 describes the information flow for the MCData group standalone FD request (in subclause 7.5.2.6) sent from the MCData client to the MCData server.

Table 7.5.2.1.10-1: MCData group standalone 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 group ID | M | The MCData group ID to which the file is to be 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 (see NOTE 1) | O | Indicates that the data request is for MCData emergency communication |
| Alert indicator (see NOTE 2) | O | Indicates whether an emergency alert is to be sent |
| Imminent peril indicator (see NOTE 1) | O | Indicates that the data request is for MCData imminent peril communication |
| NOTE 1: If used, only one of these information elements shall be present.NOTE 2: This information element may be present only when Emergency indicator is present. |

Table 7.5.2.1.10-2 describes the information flow for the MCData group standalone FD request (in subclause 7.5.2.6) sent from the MCData server to the MCData client.

Table 7.5.2.1.10-2: MCData group standalone 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 functional alias associated with MCData user sending the file. |
| MCData group ID | M | The MCData group ID to which the file is to be sent |
| MCData ID | M | The identity of the MCData user receiving the 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 |
| Emergency indicator (see NOTE 1) | O | Indicates that the data request is for MCData emergency communication |
| Alert indicator (see NOTE 2) | O | Indicates whether an emergency alert is to be sent |
| Imminent peril indicator (see NOTE 1) | O | Indicates that the data request is for MCData imminent peril communication |
| NOTE 1: If used, only one of these information elements shall be present.NOTE 2: This information element may be present only when Emergency indicator is present. |

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

##### 7.5.2.1.11 MCData group standalone FD response (using HTTP or MBMS download delivery method)

Table 7.5.2.1.11-1 describes the information flow for the MCData group standalone FD response (in subclause 7.5.2.6) sent from the MCData client to the MCData server.

Table 7.5.2.1.11-1: MCData group standalone 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 group ID | M | The MCData group ID to which the file is to be sent |
| MCData ID | M | The identity of the MCData user sending response |
| Conversation Identifier | M | Identifies the conversation |
| Result | M | 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 7.5.2.1.11-2 describes the information flow for the MCData group standalone FD response (in subclause 7.5.2.6) sent from the MCData server to the MCData client.

Table 7.5.2.1.11-2: MCData group standalone FD response (using HTTP) from MCData server to MCData client

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

NOTE: Table 7.5.2.1.11-2 describes the information flow for the MCData group standalone FD response from the MCData client to the MCData server and from the MCData server to the MCData client for the group standalone file distribution using the MBMS download delivery method (clause 7.5.2.10).

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

##### 7.5.2.6.2 Procedure

The procedure in figure 7.5.2.6.2-1 describes the case where a MCData user is initiating group standalone data communication for sending a file to multiple MCData users, with or without download completed report request from the MCData user.

Pre-conditions:

1. The MCData users on the MCData clients 1 to n belong to the same MCData group and are already registered for receiving MCData service and affiliated to the group.

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

3. The MCData client may have an 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 clients 2 to n know the 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 clients know the IP addresses and ports to be used for the file download is implementation specific and out of the scope of this specification.



Figure 7.5.2.6.2-1: Group standalone FD using HTTP

1. The user at the MCData client 1 initiates a file distribution request to multiple MCData users selecting a pre-configured group (identified by MCData group ID) and optionally particular members from that group.

2. The MCData client 1 sends a MCData group standalone 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 group standalone data request contains either the selected MCData group ID or the target recipients as selected by the user at MCData client 1. The MCData group standalone FD request contains conversation identifier for message thread indication. The MCData group standalone 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 group standalone FD request contains mandatory download indication. The MCData group standalone FD request may contain a 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.

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

i) the MCData group standalone FD request shall contain an emergency indicator;

ii) the MCData group standalone FD request shall set an alert indicator if configured to send an MCData emergency alert while initiating an MCData group standalone FD request for the emergency FD communication; and

iii) if the 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.

If the MCData user at MCData client 1 initiates an MCData imminent peril FD communication:

i) the MCData group standalone FD request shall contain imminent peril indicator.

3. If either emergency indicator or imminent peril indicator is present in the received MCData group standalone FD request, the MCData server implicitly affiliates MCData client 1 to the MCData group if the client is not already affiliated.

4. The MCData server checks whether the MCData user at MCData client 1 is authorized to send an MCData group standalone FD request and that the size of the file is below maximum data size for FD from the group configuration. MCData server verifies whether the provided functional alias, if present, can be used and has been activated for the user. If the MCData group ID is used, the MCData server resolves the MCData group ID to determine the members of that group and their affiliation status, based on the information from the group management server.

i) If an emergency indicator is present in the received MCData group standalone FD request and if the MCData group is not in the in-progress emergency state, the MCData group is considered to be in the in-progress emergency state until cancelled;

NOTE 3: While the MCData group is in the in-progress emergency state, all types of MCData communications within the group are processed as emergency group communications by the MCData server. MCData group members that are not in the emergency state do not indicate emergency in group communication requests.

ii) If an imminent peril indicator is present in the received MCData group standalone FD request and if the MCData group is not in the in-progress imminent peril state, the MCData group is considered to be in the in-progress imminent peril state until cancelled;

5. 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 group standalone 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.

6. The MCData server sends the MCData group standalone FD request towards each MCData user determined in step 4. The MCData server includes a file download completed report indication within the request if it was not already requested by the MCData client 1. The MCData group standalone FD request towards each MCData client also contains:

i) an emergency indicator if it is present in the received MCData group standalone FD request from the MCData client 1;

ii) an imminent peril indicator if it is present in the received MCData group standalone FD request from the MCData client 1; and

iii) an alert indicator if requested to initiate an emergency alert in the received MCData group standalone FD request from the MCData client 1.

7. The receiving MCData clients 2 to n notify the user about the incoming MCData group standalone FD request (including file metadata, if present) which may be either accepted or rejected or ignored.

8. The MCData user on MCData clients 2 to n provides a response (accept or reject or ignore) to the notification, then the respective MCData client sends an MCData group standalone FD response to the MCData server. MCData clients 2 to n automatically send an accepted MCData group standalone FD response when the received request included a mandatory download indication. The MCData clients 2 to n providing an accepted response include 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).

9. The MCData server forwards the MCData group standalone FD responses to the MCData client 1. The MCData server removes, if present in the received MCData group standalone FD responses, the information associated to the MCData client identification (e.g. IP address, and port), and the target MCData content server (e.g. URI or IP address, and port).

10. For the MCData clients 2 to n providing an accepted response, the MCData server may send 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 11). 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.

NOTE 4: Step 10 can occur after step 8.

NOTE 5: Step 11 can occur at any time following step 8, and prior to step 12 depending on the conditions to proceed with the file transmission.

11. The media storage client of the MCData client(s) accepting the request 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 subsequent action. The MCData clients successfully receiving the file through the media storage clients record file download completed and notify the MCData users.

12. The MCData clients, successfully receiving the file through the media storage client, provide an MCData download completed report to the MCData server for reporting file download completed.

13. The MCData file download completed reports from MCData clients may be stored by the MCData server for download history interrogation from the authorized MCData users. The MCData file download completed report from each MCData user may be aggregated.

14. An aggregated or individual 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 received MCData download completed reports and for the case that the MCData server requested dedicated resources (step 10), the MCData server requests to the 3GPP system to release the network resources allocated for the corresponding file download.

NOTE 6: Step 15 can occur at any time following step 12.