**3GPP TSG-CT1 Meeting #134-e *C1-221xyz***

**Online, , 17th Feb 2022 - 25th Feb 2022**

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| *CR-Form-v12.2* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **24.582** | **CR** | **0031** | **rev** | **1** | **Current version:** | **16.3.0** |  |
|  | | | | | | | | |
| *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:*** | Corrections for multiple IPConn communications | | | | | | | | | |
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| ***Source to WG:*** | Kontron Transportation France | | | | | | | | | |
| ***Source to TSG:*** | C1 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | MONASTERY2 | | | | |  | ***Date:*** | | | 2022-02-09 |
|  |  | | | |  | |  | | |  |
| ***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-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | The current specification for MCDatat IP connectivity does not include the necessary details to handle multiple simultaneous IP connectivity communications. This CR adds the required changes. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | * Update 13.1.2 with details what IP address and key to use for the GRE tunnel * Update 13.1.3 with details what IP address and key to use for the GRE tunnel * Add to 13.1.3 with details what IP address and key to use for the GRE tunnel * Add to 13.2.1 what keys and IP addresses to use for the legs of the GRE tunnel that procedure is involved in * Add to 13.2.1 what keys and IP addresses to use for the legs of the GRE tunnel that procedure is involved in * Add to 13.3 what keys and IP addresses to use for the legs of the GRE tunnel that procedure is involved in | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | MCData IP connectivity will not be able to handle multiple simultaneous communications | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 13.1.2, 13.1.3, 13.2.1, 13.2.2, 13.3 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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 \* \* \* \*

### 13.1.2 Originating MCData client procedures

Upon receiving a request by an MCData user, or an IP packet from an IP application, the MCData client shall follow the procedure in 20.2.1 in 3GPP TS 24.282 [8]. The IP tunnel shall be based on Generic Routing Encapsulation (GRE) as specified in RFC 2784 [19], and as explained in subclause 13.4.

The MCData client shall use the IP address present in the SDP answer and the value of the <gre-tunnel-key> element contained in the <anyExt> element of the <mcdata-Params> element of the <mcdatainfo> element of the application/vnd.3gpp.mcdata-info+xml MIME body included in the received in the SIP 200 OK response to establish the GRE tunnel.

The Key field value of each GRE packet header uniquely identifies the IP connectivity session that the GRE packet payload is associated with.

The MCData client shall act as an IP relay for IP traffic between the IP application and the IP tunnel to the far endpoint. Once the IP tunnel is established, the IP applications can exchange IP data. The client that receives the IP packets from the IP application shall perform encapsulation to the tunnelling protocol, while the client that receives IP packets from the IP tunnel shall perform decapsulation from the tunnelling protocol before passing the IP data to the IP application.

### 13.1.3 Terminating MCData client procedures

The successful outcome of the procedure 20.2.2 in 3GPP TS 24.282 [8] shall be the trigger to start the establishment of the IP tunnel. The IP tunnel shall be based on GRE as specified in RFC 2784 [19], and as explained in subclause 13.4.

The MCData client shall use the IP address present in the SDP offer and the value of the <gre-tunnel-key> element as determined in clause 20.2.2 of 3GPP TS 24.282 [8] to establish the GRE tunnel.

The Key field value of each GRE packet header uniquely identifies the IP connectivity session that the GRE packet payload is associated with.

The MCData client shall act as an IP relay for IP traffic between the IP tunnel and the IP application. Once the IP tunnel is established, the IP applications can exchange IP data. The client that receives the IP packets from the IP application shall perform encapsulation to the tunnelling protocol, while the client that receives IP packets from the IP tunnel shall perform decapsulation from the tunnelling protocol before passing the IP data to the IP application.

## 13.2 Participating MCData function procedures

### 13.2.1 Originating procedures

The originating participating MCData function shall provide an endpoint for an IP tunnel towards the originating MCData client, and a second endpoint for an IP tunnel towards the controlling MCData function. Once the IP tunnel from the MCData client is established, the participating MCData function shall establish a second IP tunnel towards the controlling MCData function. The IP tunnels shall be based on GRE as explained in subclause 13.4.

The originating participating MCData function shall use the IP address present in the SDP offer reveived in the SIP INVITE request as described in clause 20.3.1 of 3GPP TS 24.282 [8] and the value of the <gre-tunnel-key> element contained in the <anyExt> element of the <mcdata-Params> element of the <mcdatainfo> element of the application/vnd.3gpp.mcdata-info+xml MIME body included in the received SIP 200 OK response as defined in procedure 20.3.1 of 3GPP TS 24.282 [8] to create the GRE tunnel towards the originating client.

The originating participating MCData function shall use the IP address present in the SDP answer reveived in the SIP 200 OK response as described in clause 20.4.1 of 3GPP TS 24.282 [8] and the value of the <gre-tunnel-key> element contained in the <anyExt> element of the <mcdata-Params> element of the <mcdatainfo> element of the application/vnd.3gpp.mcdata-info+xml MIME body included in the SIP 200 OK response as defined in procedure 20.4.1 of 3GPP TS 24.282 [8] to create the GRE tunnel towards the originating controlling function.

The Key field value of each GRE packet header uniquely identifies the IP connectivity session that the GRE packet payload is associated with. Additionally the originating participating MCData function shall act as an IP relay for the IP traffic between these two IP tunnels.

### 13.2.2 Terminating procedures

The terminating participating MCData function shall provide an endpoint for an IP tunnel towards the terminating MCData client, and a second endpoint for an IP tunnel towards the controlling MCData function. Once the IP tunnel from the MCData client is established, the terminating participating MCData function shall establish a second IP tunnel towards the controlling MCData function. The IP tunnels shall be based on GRE as explained in clause 13.4.

The terminating participating MCData function shall use the IP address present in the SDP answer reveived in the SIP 200 OK response as described in clause 20.3.2 of 3GPP TS 24.282 [8] and the value of the <gre-tunnel-key> element contained in the <anyExt> element of the <mcdata-Params> element of the <mcdatainfo> element of the application/vnd.3gpp.mcdata-info+xml MIME body included in the SIP 200 OK response as defined in procedure of 20.3.2 in 3GPP TS 24.282 [8] to create the GRE tunnel towards the terminating client.

The terminating participating MCData function shall use the IP address present in the SDP offer reveived in the SIP INVITE request as described in clause 20.4.1 in 3GPP TS 24.282 [8] and the value of the <gre-tunnel-key> element contained in the <anyExt> element of the <mcdata-Params> element of the <mcdatainfo> element of the application/vnd.3gpp.mcdata-info+xml MIME body included in the SIP 200 OK response as defined in procedure of 20.4.1 in 3GPP TS 24.282 [8] to create the GRE tunnel towards the controlling function.

The Key field value of each GRE packet header uniquely identifies the IP connectivity session that the GRE packet payload is associated with. Additionally the terminating participating MCData function shall act as an IP relay for the IP traffic between these two IP tunnels.

## 13.3 Controlling MCData function procedures

The controlling MCData function shall provide an endpoint for an IP tunnel towards the MCData originating participating MCData function, and a second endpoint for an IP tunnel towards the terminating participating MCData function. The IP tunnels shall be based on GRE as explained in clause 13.4.

The controlling MCData function shall use the IP address present in the SDP answer reveived in the SIP 200 OK response as described in clause 20.3.2 of 3GPP TS 24.282 [8] and the value of the <gre-tunnel-key> element contained in the <anyExt> element of the <mcdata-Params> element of the <mcdatainfo> element of the application/vnd.3gpp.mcdata-info+xml MIME body included in the SIP 200 OK response as defined in procedure of 20.3.2 in 3GPP TS 24.282 [8] to create the GRE tunnel towards the terminating participatring function.

The controlling MCData function shall use the IP address in the SDP offer reveived in the SIP INVITE request received as described in clause 20.3.1 of 3GPP TS 24.282 [8] and the value of the <gre-tunnel-key> element contained in the <anyExt> element of the <mcdata-Params> element of the <mcdatainfo> element of the application/vnd.3gpp.mcdata-info+xml MIME body included in the SIP 200 OK response as defined in procedure in 20.3.1 of 3GPP TS 24.282 [8] to create the GRE tunnel towards the originating participating function.

The Key field value of each GRE packet header uniquely identifies the IP connectivity session that the GRE packet payload is associated with. Additionally the controlling MCData function shall act as an IP relay for the IP traffic between these two IP tunnels.

\* \* \* Next Change \* \* \* \*

\* \* \* Next Change \* \* \* \*

\* \* \* End of Changes \* \* \* \*