**3GPP TSG-CT WG1 Meeting #125-eC1-204637**

**Electronic meeting, 20-28 August 2020**

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| *CR-Form-v12.0* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **24.486** | **CR** | **0011** | **rev** | **-** | **Current version:** | **16.0.0** |  |
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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 |  | Radio Access Network |  | Core Network | **x** |

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| ***Title:*** | File distribution procedure | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Ericsson | | | | | | | | | |
| ***Source to TSG:*** | C1 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | V2XAPP | | | | |  | ***Date:*** | | | 2020-08-13 |
|  |  | | | |  | |  | | |  |
| ***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)* | |
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| ***Reason for change:*** | | Stage 2 of File distribution is specified in 23.286 subclause 9.5. The corresponding stage 3 has been included in both 24.486 and 29.486, i.e. a duplication stage 3 requirements. It is proposed to remove File distribution procedure from 24.486. | | | | | | | | |
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| ***Summary of change:*** | | File distribution procedure is voided. Clause renumbering | | | | | | | | |
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| ***Consequences if not approved:*** | | Duplicated stage 3 requirements risks misalignment and contradictions leading to incompatible implementations. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 4, 6.9, 6.9.1, 6.10, 6.10.1, 6.10.1.1, 6.10.1.2, 6.10.1.3, 6.10.2, 6.10.2.1, 6.10.2.2, 6.11, 6.11.1, 6.11.1.1, 6.11.1.2, 6.11.2, 6.11.2.1 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | | Clause and bullet renumbering is based on additional clause and bullet removal in 24.486 CR#0010 | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

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

# 4 General description

The UE can contain a VAE client (VAE-C). The VAE-C communicates with the VAE server (VAE-S) over the V1-AE interface (see 3GPP TS 23.286 [4]). Furthermore, the VAE-C of a UE can communicate with the VAE-C of another UE over the V5-AE interface (see 3GPP TS 23.286 [4]). Both the VAE-C and the VAE-S can act as an HTTP client or an HTTP server (see IETF RFC 2616 [19]). The HTTP protocol interactions are described in detail in clause 6 and 7.

The VAE layer supports UEs in the LTE-Uu communication range assigning a ProSe Layer-2 Group ID for application layer V2X dynamic group formation (on-network dynamic group creation procedure as defined in clause 6.10).

Additionally, the VAE layer supports UEs in assigning a ProSe Layer-2 Group ID for application layer V2X dynamic group formation (off-network dynamic group creation procedure as defined in clause 6.10).

By means of using the V1-AE interface:

a) V2X UE registration and de-registration towards the VAE-S can be provided as defined by clause 6.2 and 6.3;

b) application level location tracking can be provided as defined by clause 6.4;

c) V2X message delivery can be provided as defined by clause 6.5;

d) V2X service discovery information can be provided as defined by clause 6.6;

e) V2X service continuity can be provided as defined by clause 6.7;

f) V2X application resource management can be provided as defined by clause 6.8;

f) dynamic local service information for V2X service continuity can be obtained as defined by clause 6.8;

g) network monitoring by the V2X UE can be provided as defined by clause 6.9;

h) V2X USD provisioning can be provided as defined by clause 7.2; and

i) PC5 parameters provisioning can be provided as defined by clause 7.3.

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



Void.

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

## 6.8 Dynamic group management procedure

### 6.8.1 On-network dynamic group creation procedure

#### 6.8.1.1 V2X application specific server procedure

In order to create a V2X group, the V2X application specific server shall generate an HTTP POST request message according to procedures specified in IETF RFC 2616 [19]. In the HTTP POST request, the V2X application specific server:

a) shall include a Request-URI set to the URI corresponding to the identity of the VAE-S;

b) shall include a Content-Type header field set to "application/vnd.3gpp.vae-info +xml";

c) shall include an application/vnd.3gpp.vae-info+xml MIME body with a <configure-dynamic-group-request> element in the <VAE-info> root element which shall include:

1) a <dynamic-group-info> element which shall include:

i) a <dynamic-group-id> element set to the identity of the dynamic group;

ii) a <group-leader-id> element set to the identity of the group leader; and

iii) a <group-definition> element indicating the conditions for creating the group; and

2) an <endpoint-info> element set to the endpoint information to which the configure dynamic group notification has to be sent; and

d) shall send the HTTP POST request message towards the VAE-S according to IETF RFC 2616 [19].

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

#### 6.8.1.2 Server procedure

Upon receiving an HTTP POST request message containing:

a) a Content-Type header field set to "application/vnd.3gpp.vae-info +xml"; and

b) an application/vnd.3gpp.vae-info+xml MIME body with a <configure-dynamic-group-request> element in the <VAE-info> root element;

the VAE-S:

a) shall assign a ProSe Layer-2 Group ID to the received dynamic group information from the available ProSe Layer-2 Group ID pool and generate an HTTP 200 (OK) response message according to procedures specified in IETF RFC 2616 [19]. In the HTTP 200 (OK) response message, the VAE-S:

1) shall include a Content-Type header field set to "application/vnd.3gpp.vae-info +xml";

2) shall include an application/vnd.3gpp.vae-info+xml MIME body with a <configure-dynamic-group-result> element in the <VAE-info> root element indicating "success" or "failure" of the dynamic group creation;

3) shall send the HTTP 200 (OK) response message towards the V2X application specific server according to IETF RFC 2616 [19].

Then the VAE-S shall generate an HTTP PUT request message according to procedures specified in IETF RFC 2616 [19]. In the HTTP PUT request message, the VAE-S:

a) shall include a Request-URI set to the URI corresponding to the identity of the VAE-C of the group leader;

b) shall include a Content-Type header field set to "application/vnd.3gpp.vae-info +xml";

c) shall include an application/vnd.3gpp.vae-info+xml MIME body with a <layer2-group-id-mapping> element in the <VAE-info> root element which shall include:

1) a <dynamic-group-info> element which shall include:

i) a <dynamic-group-id> element set to the identity of the dynamic group;

ii) a <group-leader-id> element set to the identity of the group leader; and

2) a <prose-layer2-group-id> element corresponding to the dynamic group information; and

d) shall send the HTTP PUT request message towards the VAE-C according to IETF RFC 2616 [19].

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

#### 6.8.1.3 Client procedure

Upon receiving an HTTP PUT request message containing:

a) a Content-Type header field set to "application/vnd.3gpp.vae-info +xml"; and

b) an application/vnd.3gpp.vae-info+xml MIME body with a <layer2-group-id-mapping> element in the <VAE-info> root element;

the VAE-C shall store the content of the <layer2-group-id-mapping> element and may further announce the dynamic group information including the corresponding ProSe Layer-2 Group ID to the other VAE clients within the PC5 communication proximity on a PC5 channel dedicated for V5-AE communications, enabling more V2X UEs to join the dynamic group.

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

### 6.8.2 On-network dynamic group notification procedure

#### 6.8.2.1 Client procedure

Once the on-network dynamic group is created as defined in clause 6.8.1, if the group changes (i.e. UE joins or leaves the group), the VAE-C shall generate an HTTP POST request message according to procedures specified in IETF RFC 2616 [19]. In the HTTP POST request, the VAE-C:

a) shall include a Request-URI set to the URI corresponding to the identity of the VAE-S;

b) shall include a Content-Type header field set to "application/vnd.3gpp.vae-info +xml";

c) shall include an application/vnd.3gpp.vae-info+xml MIME body with an <id-list-notification> element in the <VAE-info> root element which shall include:

1) a <dynamic-group-id> element set to the identity of the dynamic group; and

2) one or more <group-member-id> element(s), each of which contains a <UE-id> child element set to the identity of the joined or left V2X UE and a <group-scope> child element that has the value "joined" or "left"; and

d) shall send the HTTP POST request message towards the VAE-S according to IETF RFC 2616 [19].

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

#### 6.8.2.2 Server procedure

Upon receiving an HTTP POST request message containing:

a) a Content-Type header field set to "application/vnd.3gpp.vae-info +xml"; and

b) an application/vnd.3gpp.vae-info+xml MIME body with an <id-list-notification> element in the <VAE-info> root element;

the VAE-S shall generate an HTTP POST request message according to procedures specified in IETF RFC 2616 [19]. In the HTTP POST request, the VAE-S:

a) shall include a Request-URI set to the URI corresponding to the identity of the V2X application specific server;

b) shall include a Content-Type header field set to "application/vnd.3gpp.vae-info +xml";

c) shall include an application/vnd.3gpp.vae-info+xml MIME body with a <configure-dynamic-group-notification> element in the <VAE-info> root element which shall include:

1) a <dynamic-group-id> element set to the identity of the dynamic group; and

2) one or more <group-member-id> element(s), each of which contains a <UE-id> child element set to the identity of the joined or left V2X UE and a <group-scope> child element that has the value "joined" or "left"; and

d) shall send the HTTP POST request message towards the V2X application specific server according to IETF RFC 2616 [19].

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

## 6.9 Network monitoring by the V2X UE procedure

### 6.9.1 V2X UE subscription for network monitoring information

#### 6.9.1.1 Client procedure

In order to subscribe for the network monitoring information from the VAE-S, the VAE-C shall send an HTTP POST request according to procedures specified in IETF RFC 2616 [19]. In the HTTP POST request, the VAE-C:

a) shall set the Request-URI to the URI corresponding to the identity of the VAE-S;

b) shall include a Content-Type header field set to "application/vnd.3gpp.vae-info+xml";

c) shall include an application/vnd.3gpp.vae-info+xml MIME body with a <subscription-request> element in the <VAE-info> root element:

1) shall include a <identity> element with a <V2X-UE-id> child element set to the identity of the UE which requests the registration;

2) shall include a <subscription-events> element with one or more <event> child element set to the network monitoring events (e.g. uplink degradation, congestion, overload, coverage) to be subscribed; and

3) shall include a <triggering-criteria> element set to the criteria to indicate when the VAE-S sends the monitoring reports to the VAE-C;

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

#### 6.9.1.2 Server procedure

Upon reception of an HTTP POST request message containing:

a) a Content-Type header field set to "application/vnd.3gpp.vae-info+xml"; and

b) an application/vnd.3gpp.vae-info+xml MIME body with a <subscription-request> element in the <VAE-info> root element;

the VAE-S:

a) shall store the received geographical area information if the VAE-C is authorized and allowed to access the network monitoring information;

b) shall include with a <V2X-UE-id> child element within the <identity> element of the <subscription-response> element, and set it to the identity of the UE which requests to subscribe for the network monitoring information from the VAE-S; and

c) shall reply with a HTTP response with a <result> element of the <subscription-response> element set to a value "success" or "fail".

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

### 6.9.2 Notifications for network monitoring information

#### 6.9.2.1 Server procedure

Based on the UE subscription for network monitoring information, the VAE-S shall generate an HTTP POST request message according to procedures specified in IETF RFC 2616 [19]. In the HTTP POST request, the VAE-S:

a) shall include a Request-URI set to the URI corresponding to the identity of the VAE-C;

b) shall include a Content-Type header field set to "application/vnd.3gpp.vae-info +xml";

c) shall include an application/vnd.3gpp.vae-info+xml MIME body with a <network-monitoring-info-notification> element in the <VAE-info> root element which shall include:

1) a <V2X-ue-id> element set to the identity of the subscribed V2X UE;

2) a <network-monitoring-info> element, which:

i) shall include a <triggering-criteria> element identifying when the VAE-S will send the monitoring reports to the VAE-C;

ii) may include an <uplink-qulity-level> element set to the uplink quality level;

iii) may include a <congestion-level> element set to the congestion level;

iv) may include a <overload-level> element set to the overload level;

v) may include a <geographical-area> element which shall include at least on of the followings:

A) <cell-area>, an element specifying an NCGI which when entered triggers a request for a location report coded as specified in clause 19.6A in 3GPP TS 23.003 [2] for which the monitoring applies;

B) <tracking-area>, an element specifying a tracking area identity coded as specified in clause 19.4.2.3 in 3GPP TS 23.003 [2] for which the monitoring applies;

vi) may include a <time-validity> element set to the period for which the monitoring applies; and

vii) may include an <MBMS-level> element, which may include:

A) an <MBMS-coverage-level> element set to the coverage level for MBMS; and

B) an <MBMS-bearer-level-event> element set to the MBMS bearer level events; and

d) shall send the HTTP POST request message towards the VAE-C according to IETF RFC 2616 [19].

\*\*\* End of changes \*\*\*