**3GPP TSG-SA WG6 Meeting #42-bis-e S6-21xxxx**

**e-meeting, 12th – 20th April 2021 (revision of S6-210926)**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **23.286** | **CR** | **0055** | **rev** | **1** | **Current version:** | **17.1.0** |  |
|  | | | | | | | | |
| *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:*** | Information flows and API definitions for session-oriented service | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Huawei, Hisilicon | | | | | | | | | |
| ***Source to TSG:*** | S6 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | eV2XAPP | | | | |  | ***Date:*** | | | 2021-04-05 |
|  |  | | | |  | |  | | |  |
| ***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 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:*** | | The Information flows and API definition for Session-oriented service is to be completed. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Information flows and API definition | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | The procedures will be incomplete. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 9.19.1, 9.19.2.1 (new), 9.19.2.2 (new), 9.19.2.3 (new), 9.19.2.4 (new), 9.19.2.5 (new), 9.19.2.6 (new), .9.19.3.1, 10.2.1, 10.2.x (new), 10.2.x.1 (new), 10.2.x.2 (new) , 10.2.x.3 (new), 10.2.x.4 (new) | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **N** | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | |  | **N** | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  | **N** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

\* \* \* First Change \* \* \* \*

### 9.19.1 General

The VAE layer provides support at the application layer for V2X application specific server and V2X UE to initiate session-oriented services by providing mechanisms for establishing, updating and terminating sessions.

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

#### 9.19.2.1 Session-oriented service trigger request

Table 9.19.2.1-1 describes the information flow session-oriented service trigger request from the V2X application specific server to the VAE server.

Table 9.19.2.1-1: Session-oriented service trigger request

|  |  |  |
| --- | --- | --- |
| Information element | Status | Description |
| Remote V2X UE ID | M | Identity of the V2X UE (VAE client) which is the remote vehicle. |
| V2X service ID | M | The V2X service ID for which application requirement corresponds to. |
| V2X application specific server identity information | M | Identity information of the V2X application specific server. |
| Session ID | O | The session identifier to be used for the session-oriented service. |
| V2X application QoS requirements for the session | O | The application QoS requirements (reliability, delay, jitter) for the session-oriented service. |

#### 9.19.2.2 Session-oriented service trigger response

Table 9.19.2.2-1 describes the information flow session-oriented service trigger response from the VAE server to the V2X application specific server.

Table 9.19.2.2-1: Session-oriented service trigger response

|  |  |  |
| --- | --- | --- |
| Information element | Status | Description |
| Acknowledgement | M | Acknowledgement for the request |

#### 9.19.2.3 Session-oriented service establishment notification

Table 9.19.2.3-1 describes the information flow session-oriented service establishment notification from the VAE server to the V2X application specific server.

Table 9.19.2.3-1: Session-oriented service establishment notification

|  |  |  |
| --- | --- | --- |
| Information element | Status | Description |
| Result | M | The result indicating success or failure to establish session-oriented service |
| Remote V2X UE ID | M | Identity of the V2X UE (VAE client) which is the remote vehicle. |
| Session ID | O (NOTE) | The session identifier to be used for the session-oriented service. |
| NOTE: This IE is present when Result is success. It is generated by the VAE server if not provided by the requester. | | |

#### 9.19.2.4 Session-oriented change trigger request

Table 9.19.2.4-1 describes the information flow session-oriented change trigger request from the V2X application specific server to the VAE server.

Table 9.19.2.4-1: Session-oriented change trigger request

|  |  |  |
| --- | --- | --- |
| Information element | Status | Description |
| Session ID | M | The session identifier of the session-oriented service. |
| V2X application QoS requirements for the session | M | The application QoS requirements (reliability, delay, jitter) for the session-oriented service that is to be updated. |

#### 9.19.2.5 Session-oriented change trigger response

Table 9.19.2.5-1 describes the information flow session-oriented change trigger response from the VAE server to the V2X application specific server.

Table 9.19.2.5-1: Session-oriented change trigger response

|  |  |  |
| --- | --- | --- |
| Information element | Status | Description |
| Acknowledgement | M | Acknowledgement for the request |

#### 9.19.2.6 Session-oriented service change notification

Table 9.19.2.6-1 describes the information flow session-oriented service change notification from the VAE server to the V2X application specific server.

Table 9.19.2.6-1: Session-oriented service change notification

|  |  |  |
| --- | --- | --- |
| Information element | Status | Description |
| Result | M | The result indicating success or failure to change session-oriented service |

#### 9.19.2.7 Session-oriented termination trigger request

Table 9.19.2.7-1 describes the information flow session-oriented termination trigger request from the V2X application specific server to the VAE server.

Table 9.19.2.7-1: Session-oriented termination trigger request

|  |  |  |
| --- | --- | --- |
| Information element | Status | Description |
| Session ID | M | The session identifier of the session-oriented service. |

#### 9.19.2.8 Session-oriented termination trigger response

Table 9.19.2.8-1 describes the information flow session-oriented termination trigger response from the VAE server to the V2X application specific server.

Table 9.19.2.8-1: Session-oriented termination trigger response

|  |  |  |
| --- | --- | --- |
| Information element | Status | Description |
| Acknowledgement | M | Acknowledgement for the request |

#### 9.19.2.9 Session-oriented service termination notification

Table 9.19.2.9-1 describes the information flow session-oriented service termination notification from the VAE server to the V2X application specific server.

Table 9.19.2.9-1: Session-oriented service termination notification

|  |  |  |
| --- | --- | --- |
| Information element | Status | Description |
| Result | M | The result indicating success or failure to terminate session-oriented service |

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

#### 9.19.3.1 General

The VAE layer provides support at the application layer for V2X UE to initiate session-oriented services by providing mechanisms for establishing, updating and terminating sessions.

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

### 10.2.1 General

Table 10.2.1-1 illustrates the VAE server APIs.

Table 10.2.1-1: List of VAE server APIs

|  |  |  |  |
| --- | --- | --- | --- |
| API Name | API Operations | Known Consumer(s) | Communication Type |
| VAE\_MessageDelivery API | Deliver\_DL\_Message | V2X application specific server | Request/ Response |
| Deliver\_UL\_Message | V2X application specific server | Subscribe/notify |
| VAE\_FileDistribution API | Distribute\_File | V2X application specific server | Request/ Response |
| VAE\_ApplicationRequirement API | Reserve\_NetworkResource | V2X application specific server | Subscribe/notify |
| Notify\_NetworkResource |
| VAE\_DynamicGroup API | Configure\_DynamicGroup | V2X application specific server | Request/Response |
| Notify\_DynamicGroup |
| VAE\_ServiceContinuity API | Query\_ServiceContinuity | VAE server | Request/Response |
| VAE\_HDMapDynamicInfo API | Subscribe\_HDMapDynamicInfo | V2X application specific server | Subscribe/notify |
| Notify\_HDMapDynamicInfo |
| VAE\_SessionOrientedService API | Establish\_Session | V2X application specific server | Subscribe/notify |
| Notify\_Establish\_Session |
| Update\_Session |
| Notify\_Update\_Session |
| Terminate\_Session |
| Notify\_Terminate\_Session |

The SEAL server(s) APIs available via SEAL-S reference point as specified in 3GPP TS 23.434 [6] are consumed by the V2X application specific server via the VAE server (acting as a VAL server) over the Vs reference point. When V2X application specific server invokes a SEAL server API via the VAE server over the Vs reference point, the VAE server shall interact with the corresponding SEAL server over the SEAL-S reference point for the API invocation request and response.

NOTE: When V2X application specific server invokes a SEAL server API directly, the V2X application specific server acting as VAL server shall interact with the corresponding SEAL server over the SEAL-S reference point for the API invocation request and response as specified in 3GPP TS 23.434 [6].

Editor's note: Whether the VAE\_DynamicGroup API is to be moved to SEAL is FFS.

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

### 10.2.X VAE\_SessionOrientedService API

#### 10.2.X.1 General

**API description:** This API enables the V2X application specific server to communicate with the VAE server to trigger establishment, update and termination of session-oriented service.

#### 10.2.X.2 Establish\_Session operation

**API operation name:** Establish\_Session

**Description:** Triggers the establishment of the session-oriented service by the VAE server.

**Known Consumers:** V2X application specific server.

**Inputs:** Refer subclause 9.19.2.1.

**Outputs:** Refer subclause 9.19.2.2.

See subclause 9.19.4.2 for the details of usage of this API operation.

#### 10.2.X.3 Notify\_Establish\_Session operation

**API operation name:** Notify\_Establish\_Session

**Description:** Notification about the establishment of the session-oriented service by the VAE server.

**Known Consumers:** V2X application specific server.

**Inputs:** Refer subclause 9.19.2.3.

**Outputs:** None.

See subclause 9.19.5.2 for the details of usage of this API operation.

#### 10.2.X.4 Update\_Session operation

**API operation name:** Update\_Session

**Description:** Triggers the update to the session-oriented service by the VAE server.

**Known Consumers:** V2X application specific server.

**Inputs:** Refer subclause 9.19.2.4.

**Outputs:** Refer subclause 9.19.2.5.

See subclause 9.19.4.3 for the details of usage of this API operation.

#### 10.2.X.5 Notify\_Update\_Session operation

**API operation name:** Notify\_Update\_Session

**Description:** Notification about the update to the session-oriented service by the VAE server.

**Known Consumers:** V2X application specific server.

**Inputs:** Refer subclause 9.19.2.6.

**Outputs:** None.

See subclause 9.19.5.3 for the details of usage of this API operation.

#### 10.2.X.6 Terminate\_Session operation

**API operation name:** Terminate\_Session

**Description:** Triggers the termination of the session-oriented service by the VAE server.

**Known Consumers:** V2X application specific server.

**Inputs:** Refer subclause 9.19.2.7.

**Outputs:** Refer subclause 9.19.2.8.

See subclause 9.19.5.4 for the details of usage of this API operation.

#### 10.2.X.7 Notify\_Terminate\_Session operation

**API operation name:** Notify\_Terminate\_Session

**Description:** Notification about the termination of the session-oriented service by the VAE server.

**Known Consumers:** V2X application specific server.

**Inputs:** Refer subclause 9.19.2.9.

**Outputs:** None.

See subclause 9.19.5.4 for the details of usage of this API operation.