**3GPP TSG-SA WG6 Meeting #45 bis-e S6-212464**

**e-meeting, 11st – 19th Oct 2021 (revision of S6-212312, 2415)**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **23.558** | **CR** | **0058** | **rev** | **2** | **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:*** | Correction on ACR information subscription request | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Huawei, HiSilicon | | | | | | | | | |
| ***Source to TSG:*** | S6 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | EDGEAPP | | | | |  | ***Date:*** | | | 2021-09-27 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | F |  | | | | | ***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:*** | | Based on bussiness relationship, not all AC(s) in EEC need to receive the ACR information via EEL. Some ACs can receive the ACR information via application layer directly, for which case the ACR information from EES via Edge-1 is not required. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Add ACID in ACR information subscription request message, to let EES to determine for which AC(s) it should performe ACR related processing and send Edge-1 notification . | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | EES behavior is conflict with processing of the EEC side. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 8.8.3.5.2, 8.8.3.7, 8.8.4.8, 8.8.4.10, 8.8.4.17, 8.8.4.4, 8.8.4.19, 8.8.3.5.3 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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 \* \* \* \*

##### 8.8.3.5.2 Subscribe

Figure 8.8.3.5.2-1 illustrates the ACR information subscription procedure between the EEC and the EES.

Pre-conditions:

1. The EEC has received information (e.g. URI, IP address) related to the EES;

2. The EEC has received appropriate security credentials authorizing it to communicate with the EES as specified in clause 8.11; and

3. The EEC has optionally acquired a Notification Target Address to be used in its subscriptions to notifications.

NOTE: How the EEC acquires the notification target address or a notification channel URI to receive the notifications is out of scope of this release. The notification target address can terminate at the EEC (e.g. in an IoT device) if the deployment supports EEC reachability, or it can terminate at a push notification service. Details of the push notification service are out of scope of this release.



Figure 8.8.3.5.2-1: ACR information subscription

1. The EEC sends an ACR information subscription request to the EES. The request from EEC may include the ACIDs to indicate to the EES which ACs are served by the EEC that need to receive ACR information via EEL.

2. Upon receiving the request from the EEC, the EES checks if the EEC is authorized to subscribe ACR information about the requested EAS(s). If the request is authorized, the EES creates and stores the subscription for ACR information.

3. The EES sends an ACR information subscription response to the EEC, which includes the subscription identifier and may include the expiration time, indicating when the subscription will automatically expire. To maintain the subscription, the EEC shall send an ACR information subscription update request prior to the expiration time. If an ACR information subscription update request is not received prior to the expiration time, the EES shall treat the EEC as implicitly unsubscribed.

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

#### 8.8.3.7 Selected T-EAS declaration

Figure 8.8.3.7-1 illustrates the interactions between the S-EAS and the S-EES for the selected T-EAS declaration.

Pre-conditions:

1. The S-EAS has discovered and selected the T-EAS as described in clause 8.8.3.2.



Figure 8.8.3.7-1: Selected target EAS declaration procedure

1. The S-EAS sends Selected target EAS declaration request message to the S-EES. The request includes the information of the selected T-EAS and may include ACID to indicate which AC the T-EAS is intended for.

2. The S-EES checks whether the requesting EAS is authorized to perform operation. If authorized, the S-EES responds to the received request with Selected target EAS notification declaration response message. The S-EES also determines the selected T-EES based on the declared T-EAS selection, then S-EES checks whether the EEC (serving the ACs) has subscribed for ACR related information. If the EEC (serving the ACs) has subscribed for the target information notification, then the selected T-EES may be included in the target information and the ACID which corresponds to the Selected target EAS is included in the notification sent to the EEC as described in clause 8.8.3.5.

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

#### 8.8.4.8 ACR information subscription request

Table 8.8.4.8-1 describes the information elements for ACR information subscription request from the EEC to the EES.

Table 8.8.4.8-1: ACR information subscription request

|  |  |  |
| --- | --- | --- |
| Information element | Status | Description |
| EECID | M | Unique identifier of the EEC. |
| UE Identifier | O | The identifier of the UE (i.e. GPSI or identity token) |
| Security credentials | M | Security credentials resulting from a successful authorization for the edge computing service. |
| EASID(s) | M | The identifier of the EAS(s) |
| ACID(s) | O (NOTE) | The identifier of the AC(s) |
| Event ID(s) | M | Event ID:  - Target information notification  - ACR complete |
| Notification target address | M | Notification target address |
| Proposed expiration time | O | Proposed expiration time for the subscription |
| NOTE: If ACID(s) IE is not included, it implies that the subscription corresponds to all ACs that can be served by the EAS(s) included the this message.. | | |

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

#### 8.8.4.10 ACR information notification

Table 8.8.4.10-1 describes the information elements for ACR information notification from the EES to the EEC.

Table 8.8.4.10-1: ACR information notification

|  |  |  |
| --- | --- | --- |
| Information element | Status | Description |
| Subscription ID | M | Subscription identifier corresponding to the subscription stored in the EES for the request |
| EASID | M | The identifier of the EAS |
| ACID | O | The identifier of the AC corresponding to the Selected target EAS |
| Event ID | M | Either Target information notification or ACR complete |
| Target information (NOTE 1) | O | Details of the selected T-EAS and the T-EES. |
| > T-EAS information | M | Details of the selected T-EAS as described in 'Discovered EAS' IE of Table 8.5.3.3-1. |
| > T-EES information (NOTE 4) | O | Details of the selected T-EES as described in 'EDN configuration information' IE of Table 8.3.3.3.3-1. |
| Result of ACR (NOTE 2) | O | Indicates whether the ACR is successful or failure |
| Cause information (NOTE 3) | O | Indicates the cause information for the failure |
| NOTE 1: This IE shall be included when Event ID indicates 'Target information notification' event  NOTE 2: This IE shall be included when Event ID indicates 'ACR complete' event  NOTE 3: This IE shall be included when the Result of ACR indicates failure.  NOTE 4: This IE shall be included if the selected T-EES is different from the S-EES. Otherwise, it may be skipped. | | |

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

#### 8.8.4.17 Selected target EAS declaration request

Table 8.8.4.17-1 describes information elements for the selected target EAS declaration request sent from the S-EAS to the S-EES.

Table 8.8.4.17-1: Selected target EAS declaration request

|  |  |  |
| --- | --- | --- |
| Information element | Status | Description |
| UE ID | M | The identifier of the UE. |
| Security credentials | M | Security credentials. |
| Selected EAS ID | M | Selected EAS identifier. |
| ACID | O | The identifier of the AC |
| Selected EAS Endpoint | M | Endpoint of the selected EAS. |

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

#### 8.8.4.4 ACR request

Table 8.8.4.4-1 describes information elements for the ACR request sent either from the EEC to the S-EES or T-EES, or by the S-EAS to the S-EES.

Table 8.8.4.4-1: ACR request

|  |  |  |
| --- | --- | --- |
| Information element | Status | Description |
| Requestor Identifier | M | Unique identifier of the requestor (i.e. EECID or EASID). |
| Security credentials | M | Security credentials resulting from a successful authorization for the edge computing service. |
| EASID | O | Identifier of the EAS |
| UE identifier (NOTE 4) | O | The identifier of the UE (i.e. GPSI). |
| ACID | O | The identifier of the AC. |
| ACR action (NOTE 3) | M | Indicates the ACR action (ACR initiation or ACR determination) |
| ACR initiation data (NOTE 2) | O | ACR initiation IEs to be included in an ACR request message when ACR action indicates it is ACR initiation request. |
| > T-EAS Endpoint | M | Endpoint information (e.g. URI, FQDN, IP 3-tuple) of the T-EAS. |
| > DNAI of the T-EAS | O | DNAI information associated with the T-EAS. |
| > N6 Traffic Routing requirements | O | The N6 traffic routing information and/or routing profile ID corresponding to the T-EAS DNAI. |
| > EAS notification indication | M | Indicates whether to notify the EAS about the need of ACR. |
| > S-EAS endpoint (NOTE 1) | O | Endpoint information of the S-EAS |
| > EEC context relocation details | O | Information required for EEC context relocation using the EEC context push or EEC context pull mechanisms. |
| >> EEC Context ID (NOTE 5) | O | Identifier of the EEC Context |
| >> S-EES ID (NOTE 5) | O | Identifier of the EES that provided EEC context ID. |
| >> S-EES endpoint (NOTE 5) | O | The endpoint address (e.g. URI, IP address) of the EES that provided EEC context ID. |
| >> T-EES ID (NOTE 6) | O | Identifier of the T-EES. |
| >> T-EES endpoint (NOTE 6) | O | The endpoint address (e.g. URI, IP address) of the T-EES. |
| ACR determination data (NOTE 2) | O | ACR determination IEs to be included in an ACR request message when ACR action indicates it is ACR determination request. |
| > S-EAS endpoint | M | Endpoint information of the S-EAS |
| NOTE 1: This IE shall be present if the EAS notification indication indicates that the EAS needs to be informed.  NOTE 2: Either ACR initiation or ACR determination shall be included corresponding to the ACR action.  NOTE 3: This IE shall indicate ACR determination if the request originates from the S‑EAS.  NOTE 4: This IE shall be present if the request originates from the EEC.  NOTE 5: This IE may be present only if the request originates from the EEC towards the T-EES.  NOTE 6: This IE may be present only if the request originates from the EEC towards the S-EES. | | |

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

#### 8.8.4.19 ACR status update request

Table 8.8.4.19-1 describes the information elements for the ACR status update request from EAS to EES.

Table 8.8.4.19-1: ACR status update request

|  |  |  |
| --- | --- | --- |
| Information element | Status | Description |
| EASID | M | The identifier of the EAS providing the update |
| Security credentials | M | Security credentials of the EAS |
| ACID | O | The identifier of the AC |
| ACT result (NOTE 1) | O | Indicates whether the ACT was successful or failed. |
| List of EDGE-3 subscription ID(s) (NOTE 2) | O | A list of the EDGE-3 subscription identifiers. |
| Notification Target Address for EDGE-3 subscription (NOTE 2) | O | Notification Target Address of the EAS where the notification is to be sent by the EES for EDGE-3 subscription. |
| NOTE 1: This IE may be included by the S-EAS and T-EAS. In case of EELManagedACR, this IE is not included by the T-EAS.  NOTE 2: This IE may be included only by the T-EAS. | | |

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

##### 8.8.3.5.3 Notify

Figure 8.8.3.5.3-1 illustrates the ACR information notification procedure between the EEC and the EES, which can be used by the EES to notify the EEC of the following:

- target information, i.e. the details of the selected T-EAS and, if required, the selected T-EES, during the ACR procedures;

NOTE: The T-EAS and T-EES information can be used to determine the PDU session(s) to provide connectivity to the T-EAS and the T-EES. If the ACR does not require change in EES, i.e. T-EES is same as S-EES, then the T-EES information can be skipped.

- ACR complete events.

Pre-conditions:

1. The EEC has subscribed with the EES for the ACR information as specified in clause 8.8.3.5.2.



Figure 8.8.3.5.3-1: ACR information notification

1. An event (e.g. ACR complete, or Target information notification) occurs at the EES that satisfies trigger conditions for providing ACR information to a subscribed EEC.

2. The EES sends an ACR information notification to the EEC with the ACR information determined in step 1. The ACR information notification may include ACID to indicate the application context relocation of the AC is complete.

\* \* \* End of Change \* \* \* \*