**3GPP TSG-SA WG6 Meeting #52-e bis S6-230201**

**e-meeting, 11st – 20th January 2023 (revision of S6-xxxxxx)**

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| *CR-Form-v12.2* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **23.558** | **CR** | **0192** | **rev** | **0** | **Current version:** | **18.1.0** |  |
|  | | | | | | | | |
| *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:*** | EAS discovery in edge node sharing | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Huawei, Hisilicon, | | | | | | | | | |
| ***Source to TSG:*** | S6 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | EDGEAPP\_Ph2 | | | | |  | ***Date:*** | | | 2022-12-28 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | B |  | | | | | ***Release:*** | | | Rel-18 |
|  | *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:*** | | For edge node sharing, there is a case that the EES in partner’s OP can be shared to both home OP and partner OP, and the EAS deployed in partner OP but by the Home OP can only provide service to the Home OP’s user.  In such case, the shared EES need to identify the Home OP’s EAS as the T-EAS for the Home OP’s user considering the user’s PLMN/ECSP information. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Enhance the EAS discovery procedure: the UE PLMN/ECSP information and EAS PLMN/ECSP information should be considered in the EAS discovery procedure | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Solution for EAS discovery in edge node sharing will remain under specified. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 8.2.4, 8.5.2.2, 8.5.3.2 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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 \* \* \* \*

## 8.X EAS discovery on EES sharing case

### 8.X.1 General

EAS discovery on EES sharing case allows the EES which can be shared to the Home ECSP and Partner ECSP, then the shared EES of partner ECSP identifies the EAS considering the EAS's supported ECSP information and UE's serving ECSP information.

### 8.X.2 Procedure

#### 8.X.2.1 General

#### 8.X.2.2 EAS discovery on EES sharing case

Pre-conditions:

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

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

3. The shared EES is configured with ECSP's policy for EAS discovery.

NOTE 1: Details of ECSP's policy are out of scope.



Figure 8.X.2.2-1: EAS Discovery on EES sharing case procedure

1. The EEC sends an EAS discovery request to the shared EES. It includes all the information element specified in 8.5.3.2, additionally, the UEs serving ECSP ID (i.e. PLMN ID) is also included.

2. Upon receiving the request from the EEC, the shared EES performs the authorization check and discovers the suitable EAS(s) as specified in clause 8.5.3.3 and identifies the EAS considering the EAS's supported ECSP information and UE's serving ECSP information.

3. The shared EES sends the EAS discovyer response message to EEC as specified in 8.5.3.3.

\* \* \* NEXT Change \* \* \* \*

### 8.2.4 EAS Profile

Table 8.2.4-1: EAS Profile

|  |  |  |
| --- | --- | --- |
| Information element | Status | Description |
| EASID | M | The identifier of the EAS |
| EAS Endpoint | M | Endpoint information (e.g. URI, FQDN, IP address) used to communicate with the EAS. This information maybe discovered by EEC and exposed to ACs so that ACs can establish contact with the EAS. |
| ACID(s) | O | Identifies the AC(s) that can be served by the EAS |
| EAS Provider Identifier | O | The identifier of the ASP that provides the EAS. |
| ECSP Identifier served by the EAS (NOTE1) | O | The identifier of the ECSP (e.g. ECSP ID, PLMN ID) to which the EAS provides services. |
| EAS Type | O | The category or type of EAS (e.g. V2X) |
| EAS description | O | Human-readable description of the EAS |
| EAS Schedule | O | The availability schedule of the EAS (e.g. time windows) |
| EAS Geographical Service Area | O | The geographical service area that the EAS serves. ACs in UEs that are located outside that area shall not be served. |
| EAS Topological Service Area | O | The EAS serves UEs that are connected to the Core Network from one of the cells included in this service area. ACs in UEs that are located outside this area shall not be served. See possible formats in Table 8.2.7-1. |
| EAS Service KPIs | O | Service characteristics provided by EAS, detailed in Table 8.2.5-1 |
| EAS service permission level | O | Level of service permissions e.g. trial, gold-class supported by the EAS |
| EAS Feature(s) | O | Service features e.g. single vs. multi-player gaming service supported by the EAS |
| EAS Service continuity support | O | Indicates if the EAS supports service continuity or not. This IE also indicates which ACR scenarios are supported by the EAS. |
| General context holding time duration (NOTE2) | O | The time duration that the EAS holds the context before the AC connects to the EAS in case of ACR for service continuity planning. It is an indication of the time the EAS holds the application context for a UE to move to its service area after receiving an ACR notification from the EES following an ACR request from the EEC. |
| List of EAS DNAI(s) | O | DNAI(s) associated with the EAS. This IE is used as Potential Locations of Applications in clause 5.6.7 of 3GPP TS 23.501 [2].  It is a subset of the DNAI(s) associated with the EDN where the EAS resides. |
| List of N6 Traffic Routing requirements | O | The N6 traffic routing information and/or routing profile ID corresponding to each EAS DNAI. |
| EAS Availability Reporting Period | O | The availability reporting period (i.e. heartbeat period) that indicates to the EES how often it needs to check the EAS's availability after a successful registration. |
| EAS Status | O | The status of the EAS (e.g. enabled, disabled, etc.) |
| NOTE: Since the EASID of the EAS identifies the type of the application (e.g. SA6Video, SA6Game etc) as described in clause 7.2.4, "General context holding time duration" determined by EAS can depend on the EASID (type of the application). | | |

\* \* \* NEXT Change \* \* \* \*

#### 8.5.3.2 EAS discovery request

Table 8.5.3.2-1 describes information elements for the EAS discovery request. Table 8.5.3.2-2 provides further detail about the EAS Discovery Filter information element.

Table 8.5.3.2-1: EAS discovery request

|  |  |  |
| --- | --- | --- |
| Information element | Status | Description |
| Requestor identifier | M | The ID of the requestor (e.g. EECID) |
| 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. |
| EAS discovery filters | O | Set of characteristics to determine required EASs, as detailed in Table 8.5.3.2-2. |
| UE location | O | The location information of the UE. The UE location is described in clause 7.3.2. |
| UE’ serving ECSP Identifier(NOTE1) | O | The identifier of serving ECSP (i.e. PLMN ID) whichi the ECSP is serving the UE. |
| Target DNAI (NOTE) | O | Target DNAI information which can be associated with potential T-EAS(s) |
| EEC Service Continuity Support | O | Indicates if the EEC supports service continuity or not. The IE also indicates which ACR scenarios are supported by the EEC or, if this message is sent by the EEC to discover a T‑EAS, which ACR scenario(s) are intended to be used for the ACR. |
| EES Service Continuity Support (NOTE2) | O | The IE indicates if the S-EES supports service continuity or not. The IE also indicates which ACR scenarios are supported by the S-EES or, if the EAS discovery is used for an S‑EES executed ACR according to clause 8.8.2.5, which ACR scenario is to be used for the ACR. |
| EAS Service Continuity Support (NOTE2) | O | The IE indicates if the S-EAS supports service continuity or not. The IE also indicates which ACR scenarios are supported by the S-EAS or, if the EAS discovery is used for an S‑EAS decided ACR according to clause 8.8.2.4, which ACR scenario is to be used for the ACR. |
| NOTE1: This IE shall be included when the shared EES is used.  NOTE2: This IE shall not be included when the request originates from the EEC. | | |

Table 8.5.3.2-2: EAS discovery filters

|  |  |  |
| --- | --- | --- |
| Information element | Status | Description |
| List of AC characteristics (NOTE 1) | O | Describes the ACs for which a matching EAS is needed. |
| > AC profile (NOTE 2) | M | AC profile containing parameters used to determine matching EAS. AC profiles are further described in Table 8.2.2-1. |
| List of EAS characteristics (NOTE 1, NOTE 3) | O | Describes the characteristic of required EASs. |
| > EASID | O | Identifier of the required EAS. |
| > EAS provider identifier | O | Identifier of the required EAS provider |
| > EAS type | O | The category or type of required EAS (e.g. V2X) |
| > EAS schedule | O | Required availability schedule of the EAS (e.g. time windows) |
| > EAS Geographical Service Area | O | Location(s) (e.g. geographical area, route) where the EAS service should be available. |
| > EAS Topological Service Area | O | Topological area (e.g. cell ID, TAI) for which the EAS service should be available. See possible formats in Table 8.2.7-1. |
| > Service continuity support | O | Indicates if the service continuity support is required or not. |
| > Service permission level | O | Required level of service permissions e.g. trial, gold-class |
| > Service feature(s) | O | Required service features e.g. single vs. multi-player gaming service |
| NOTE 1: Either "List of AC characteristics" or "List of EAS characteristics" shall be present.  NOTE 2: "Preferred ECSP list" IE shall not be present.  NOTE 3: The "List of EAS characteristics" IE must include at least one optional IE, if used as an EAS discovery filter. | | |

\* \* \* END of Change \* \* \* \*