**3GPP TSG-SA WG6 Meeting #56 S6-232638**

**Gothenburg, Sweden 21st – 25th August 2023 (revision of S6-232346)**

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| *CR-Form-v12.2* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  |  | **CR** | **0431** | **rev** | **1** | **Current version:** |  |  |
|  | | | | | | | | |
| *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:*** | Adding federation identifier for operations related to EWBI | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Samsung | | | | | | | | | |
| ***Source to TSG:*** | SA6 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | EDGEAPP\_Ph2 | | | | |  | ***Date:*** | | | 2023-04-10 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | F |  | | | | | ***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:*** | | * LS S6-232251 from GSMA OPG to 3GPP SA6 clarifies usage of Federation identifier.   “The federation id is an identifier which uniquely identifies an Operator Platform (OP) instance among the federating OPs. The East-Westbound Interface APIs (v2.0) from GSMA OPAG specifies exchange of the federation id in the E/WBI interactions to enable the identification of the telco in charge of a given OP instance. Before establishing the federation, the operators are expected to exchange their federation id with each other using the procedures beyond the scope of the E/WBI APIs (v2.0).”   * Furhter, As per clause 4.1.5.2 of East-Westbound Interface APIs (v2.0) from GSMA,   + “federationContextId” is required to identify the existing federation relationship between Lead ECSP and partner ECSP. * Further clause 2.1.3 of East-Westbound Interface APIs (v2.0) from GSMA, has following requirement.   “2.1.3 Federation Identifier  A federation identifier is a dynamically generated identifier created by the OP which receives the federation creation request from its partner OPs. Based on the prior information if the OP accepts the federation creation request, then the federation identifier is generated and returned to the requesting OP to represent the successful creation of the federation.  This federation identifier shall be included in all the subsequent E/WBI APIs invocations having operations associated to this federation.”   * As per LS S6-232251 from GSMA OPG to 3GPP SA6:   “The federation context identifier is assigned by the Partner OP (e.g., OP-B) when the Originating OP (e.g., OP-A) initiate a federation create request towards OP-B.  The mechanisms to manage the generation and assignment of the federation id to an OP instance are for further studies.” | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Added federation identifier in procedures related to EWBI | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | ENS procedures will remain incomplete and will not be aligned with GSMA OPG requriements in Rel-18 | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 8.4.3.3.2, 8.5.3.2, 8.3.3.3.3, 8.17.3.8, 8.17.3.10, 8.17.3.13 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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 \* \* \* \*

##### 8.4.3.3.2 EAS registration request

Table 8.4.3.3.1-2 describes information elements in the EAS registration request from the EAS to the EES.

Table 8.4.3.3.2-1: EAS registration request

|  |  |  |
| --- | --- | --- |
| Information element | Status | Description |
| EAS Profile | M | EAS Profile as described in Table 8.2.4-1 |
| Security credentials | M | Security credentials of the EAS. |
| Proposed expiration time | O | Proposed expiration time for the registration |
| Federation information (NOTE 1) | O | Information about a federation |
| > lead ECSP ID | O | Identifies the federation relation for which EAS is deployed by lead ECSP on shared resources of partner ECSP |
| NOTE 1: This IE may be included when EAS is deployed in partner ECSP by lead ECSP. | | |

\* \* \* 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. |
| Serving MNO information (NOTE 2) | O | The serving MNO information (e.g. MNO name, PLMN ID) which is serving the subscriber. |
| Lead ECSP ID (NOTE 2) | O | Identifies the federation relation for which EAS is deployed by lead ECSP on shared resources of partner ECSP |
| Target DNAI (NOTE 1) | 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 (NOTE 1) | 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 (NOTE 1) | 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. |
| EAS Instantiation Triggering Suppress | O | Indicates to the EES that EAS instantiation triggering should not be performed for the current request. |
| EAS selection request indicator | O | Indicates the request for EAS selection support from the EES (e.g., for constrained device). |
| Indication of service continuity planning | O | Indicates that this EAS discovery request is triggered for service continuity planning. |
| Prediction expiration time | O | The estimated time the UE may reach the Predicted/Expected UE location or EAS service area at the latest. This IE is used by EES as analytics input to get edge load analytics information from ADAES service as described in clause 8.8 of TS 23.436 [27]. |
| NOTE 1: This IE shall not be included when the request originates from the EEC.  NOTE 2: This IE shall be included if edge node sharing is used. | | |

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. |
| > Application group profile | O | Application group profile associated with the AC Profile, as defined in Table 8.2.11-1. |
| List of EAS characteristics (NOTE 1, NOTE 3) | O | Describes the characteristic of required EASs. |
| > EASID | O | Identifier of the required EAS. |
| > Application Group ID | O | Identity of a group of UEs using the same application service. |
| > EAS synchronization support | O | Indicates if the EAS synchronization support is required or not. |
| > Bundle ID or list of EASID | O | A list of EASIDs or a bundle ID as described in clause 7.2.10. |
| > Bundle type (NOTE 4) | O | Type of the EAS bundle as described in clause 7.2.10 |
| > EAS bundle requirements (NOTE 4) | O | Requirements associated with the EAS bundle as described in clause 8.2.10. |
| > 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.  NOTE 4: When EAS discovery request is sent by the EEC, this IE shall not be included. | | |

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

##### 8.3.3.3.3 Service provisioning response

Table 8.3.3.3.3-1 describes the information elements for service provisioning response from the ECS to the EEC.

Table 8.3.3.3.3-1: Service provisioning response

|  |  |  |
| --- | --- | --- |
| Information element | Status | Description |
| Successful response | O | Indicates that the service provisioning request was successful. |
| > List of EDN configuration information | M | List of EDN configuration information as defined in Table 8.3.3.3.3-2. |
| Failure response | O | Indicates that the service provisioning request failed. |
| > Cause | O | Indicates the cause of service provisioning request failure. |
| Redirect | O | Indicates redirection to (an)other ECS(s). |
| > ECS(s) information | M | Endpoint address of ECS(s) to which the UE is redirected for service provisioning. |
| > DNN | O | DNN required for establishing PDU Session to the redirected ECS |
| > S-NSSAI | O | S-NSSAI required for establishing PDU Session to the redirected ECS |

Table 8.3.3.3.3-2: EDN configuration information

|  |  |  |
| --- | --- | --- |
| Information element | Status | Description |
| EDN connection information (NOTE 1) | M | Information required by the UE to establish connection with the EDN. |
| > DNN/APN | M | Data Network Name/Access Point Name |
| > S-NSSAI | O | Network Slice information |
| > EDN Topological Service Area | O | The EDN serves UEs that are connected to the Core Network from one of the cells included in this service area. See possible formats in Table 8.2.7-1. |
| List of EESs | M | List of EESs of the EDN. |
| > EESID | M | The identifier of the EES |
| > EES Endpoint | M | The endpoint address (e.g. URI, IP address) of the EES |
| > EASIDs (NOTE 2) | O | List of EASID registered or expected to be registered with the EES. |
| > Application Group ID list | O | List of Application Group IDs associated with EAS |
| >> List of EAS bundle information | O | List of EAS bundles to which the EAS belongs and related bundling requirements. |
| >>> Bundle ID or list of EASID | M | A list of EASIDs or a bundle ID as described in clause 7.2.10. |
| > Instantiable EAS information | O | The EAS instantiation status per EASID (e.g. instantiated, instantiable but not be instantiated yet) |
| >> Instantiation criteria (NOTE 3) | O | The criteria upon which EAS can be instantiated (e.g. based on specific date and time). |
| > ECSP ID | O | The identifier of the ECSP that provides the EES. |
| > EES Topological Service Area | O | The EES serves UEs that are connected to the Core Network from one of the cells included in this service area. EECs in UEs that are located outside this area shall not be served. See possible formats in Table 8.2.7-1. |
| > EES Geographical Service Area | O | The area being served by the EES in Geographical values (as specified in clause 7.3.3.3) |
| > List of EES DNAI(s) | O | DNAI(s) associated with the EES/EAS. This IE is used as Potential Locations of Applications in clause 5.6.7 of 3GPP TS 23.501 [2]. |
| > EES Service continuity support | O | Indicates if the EES supports service continuity or not. This IE also indicates which ACR scenarios are supported by the EES. |
| > EEC registration configuration | M | Indicates whether the EEC is required to register on the EES to use edge services or not. |
| > Security Credential | O | Indicates the security credential sent by the ECS. The security credential is used by EEC to communicate with the EES as specified in 3GPP TS 33.558 [23], clause 6.2. |
| Lifetime | O | Time duration for which the EDN configuration information is valid and supposed to be cached in the EEC. |
| Federation information (NOTE 4) | O | List of information for different federation agreements related to the ECS |
| > lead ECSP ID | O | Identifier of the federation |
| > ECSP identifiers | O | The list of ECSPs preferred by the ECS. This information is used by the ECS-ER to filter the discovered partner ECS information. |
| NOTE 1: If the UE is provisioned or pre-configured with URSP rules by the HPLMN or serving SNPN, the UE handles the precedence between EDN connection info and URSP rules as defined in 3GPP TS 23.503 [12] clause 6.1.2.2.1. EDN connection info is considered to be part of UE Local Configurations.  NOTE 2: EAS information is limited to the EEC requested applications. If no AC profiles were present in the service provisioning request, the EAS information is subject to the ECSP policy (e.g. no EAS information or a subset of EAS information related to the EES).  NOTE 3: "Instantiation criteria" IE shall be present only when the value of "Instantiable EAS information" IE is "instantiable but not be instantiated yet".  NOTE 4: This IE shall be included in retrieve T-EES response if edge node sharing is used. This IE shall not be included when the response is sent towards EEC. | | |

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

#### 8.17.3.8 ECS discovery request

Table 8.17.3.8-1 describes the information elements for ECS discovery request; from the ECS to the ECS-ER.

Table 8.17.3.8-1: ECS discovery request

|  |  |  |
| --- | --- | --- |
| Information element | Status | Description |
| ECS address | M | Endpoint information of ECS (e.g. URI, FQDN, IP address) |
| Security credentials | M | Security credentials of the ECS. |
| Federation information | O | List of information for different federation agreements related to the ECS |
| > Lead ECSP ID | O | Identifier of the federation |
| > ECSP identifiers | O | The list of ECSPs preferred by the ECS. This information is used by the ECS-ER to filter the discovered partner ECS information. |
| AC Profile(s) | O | Filter information about required services as described in Table 8.2.2-1. |
| Connectivity information | O | Connectivity information such as serving PLMN information where the services are required. |
| UE location | O | Location of the UE for which the services are required. |

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

#### 8.17.3.10 ECS discovery subscription request

Table 8.17.3.10-1 describes the information elements for ECS discovery subscription request; from the ECS to the ECS-ER.

Table 8.17.3.10-1: ECS discovery subscription request;

|  |  |  |
| --- | --- | --- |
| Information element | Status | Description |
| ECS address | M | Endpoint information of ECS (e.g. URI, FQDN, IP address) |
| Security credentials | M | Security credentials of the ECS. |
| Notification Target Address | O | The Notification Target Address (e.g. URL) where the notifications destined for the ECS should be sent to. |
| Federation information | O | List of information for different federation agreements related to the ECS |
| > Lead ECSP ID | O | Identifier of the federation |
| > ECSP identifiers | O | The list of ECSPs preferred by the ECS. This information is used by the ECS-ER to filter the discovered partner ECS information. |
| AC Profile(s) | O | Filter information about required services as described in Table 8.2.2-1. |
| Connectivity information | O | Connectivity information such as serving PLMN information where the services are required. |
| UE location | O | Location of the UE for which the services are required. |
| Proposed expiration time | O | Proposed expiration time for the subscription |

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

#### 8.17.3.13 ECS discovery subscription update request

Table 8.17.3.13-1 describes the information elements for ECS discovery subscription update request from the ECS to the ECS-ER.

Table 8.17.3.13-1: ECS discovery subscription update request

|  |  |  |
| --- | --- | --- |
| Information element | Status | Description |
| Subscription ID | M | Subscription identifier corresponding to the subscription to be updated |
| Security credentials | M | Security credentials of the ECS. |
| Notification Target Address | O | The Notification Target Address (e.g. URL) where the notifications destined for the ECS should be sent to. |
| Federation information | O | List of information for different federation agreements related to the ECS |
| > Lead ECSP ID | O | Identifier of the federation |
| > ECSP identifiers | O | The list of ECSPs preferred by the ECS. This information is used by the ECS-ER to filter the discovered partner ECS information. |
| AC Profile(s) | O | Filter information about required services as described in Table 8.2.2-1. |
| Connectivity information | O | Connectivity information such as serving PLMN information where the services are required. |
| UE location | O | Location of the UE for which the services are required. |
| Proposed expiration time | O | Proposed expiration time for the subscription |

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