**3GPP TSG-CT WG3 Meeting #130C3-234054**

**Xiamen, China, 9 - 13 October, 2023 (revision of C3-233abc)**

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| *CR-Form-v12.2* |
| **CHANGE REQUEST** |
|  |
|  | **29.522** | **CR** | **1042** | **rev** |  | **Current version:** | **18.3.0** |  |
|  |
| *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 |  | Radio Access Network |  | Core Network | **X** |

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|  |
| ***Title:***  | Support of the filtering criteria of Member UE selection |
|  |  |
| ***Source to WG:*** | Huawei, Samsung, Nokia, Nokia Shanghai Bell, Ericsson |
| ***Source to TSG:*** | CT3 |
|  |  |
| ***Work item code:*** | AIMLsys |  | ***Date:*** | 2023-09-20 |
|  |  |  |  |  |
| ***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 canbe 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:*** | The AF may provide the filter criteria for Member UE selection in the request as per clause 4.15.13.2 in TS 23.502, which is not defined in stage 3. |
|  |  |
| ***Summary of change:*** | Define the data models for filtering criteria of Member UE selection. |
|  |  |
| ***Consequences if not approved:*** | Open issue in the specification and misalignment between stage 2 and stage 3. |
|  |  |
| ***Clauses affected:*** | 5.32.5.1, 5.32.5.2.2, 5.32.5.2.4(new), 5.32.5.2.5(new), 5.32.5.2.6(new), 5.32.5.2.7(new), 5.32.5.2.8(new), 5.32.5.2.9(new), 5.32.5.2.10(new), 5.32.5.2.11(new), 5.32.5.2.12(new) |
|  |  |
|  | **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 does not impact the OpenAPI file. |
|  |  |
| ***This CR's revision history:*** |  |

**Additional discussion(if needed):**

**Proposed changes:**

\*\*\* 1st Change \*\*\*

#### 5.32.5.1 General

This clause specifies the application data model supported by the MemberUESelectionAssistance API. Table 5.32.5.1-1 specifies the data types defined for the MemberUESelectionAssistance API.

Table 5.32.5.1-1: MemberUESelectionAssistance API specific Data Types

|  |  |  |
| --- | --- | --- |
| Data type | Clause defined | Description |
| AccessRatTypeFilterCriteria | 5.32.5.2.5 | The Access types and Rat types filtering criteria for Member UE selection. |
| DnnFilterCriteria | 5.32.5.2.12 | The DNN filtering criteria for Member UE selection. |
| E2ETransTimeFilterCriteria | 5.32.5.2.6 | The End-to-end data volume transfer time filtering criteria for Member UE selection. |
| MemUeSeletAssistNotif | 5.32.5.2.3 | The notification for Member UE selection. |
| MemUeSelectAssistSubsc | 5.32.5.2.2 | The subscription for Member UE selection. |
| UeDirectionFilterCriteria | 5.32.5.2.9 | The UE direction filtering criteria for Member UE selection. |
| UeDistanceFilterCriteria | 5.32.5.2.10 | The UE distance filtering criteria for Member UE selection. |
| UeHisLocFilterCriteria | 5.32.5.2.8 | The UE historical location filtering criteria for Member UE selection. |
| UeLocFilterCriteria | 5.32.5.2.7 | The UE location filtering criteria for Member UE selection. |
| QoSFilterCriteria | 5.32.5.2.4 | The QoS filtering criteria for Member UE selection. |
| ServiceExpFilterCriteria | 5.32.5.2.11 | The Service Experience filtering criteria for Member UE selection. |

Table 5.32.5.1-2 specifies data types re-used by the MemberUESelectionAssistance API from other specifications, including a reference to their respective specifications, and when needed, a short description of their use within the MemberUESelectionAssistance API.

Table 5.32.5.1-2: Re-used Data Types

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Reference | Comments | Applicability |
| AccessType | 3GPP TS 29.571 [8] | Indicates the access type. |  |
| AmfEventType | 3GPP TS 29.518 [18] | Indicates the events exposed by AMF. |  |
| DataVolumeTransferTime | 3GPP TS 29.520 [27] | Indicates the End-to-end data volume transfer time. |  |
| DateTime | 3GPP TS 29.122 [4] | Represents a date and a time. |  |
| Direction | 3GPP TS 29.520 [27] | Represents the UE direction. |  |
| Dnai | 3GPP TS 29.571 [8] | Identifies a user plane access to one or more DN(s). |  |
| Dnn | 3GPP TS 29.571 [8] | Represents a DNN. |  |
| DurationSec | 3GPP TS 29.122 [4] | Indicates the time window. |  |
| Gpsi | 3GPP TS 29.571 [8] | Identifies a GPSI. |  |
| LocationArea5G | 3GPP TS 29.122 [4] | Represents a user location area when the UE is attached to 5G. |  |
| NwdafEvent | 3GPP TS 29.520 [27] | Indicates the events exposed by NWDAF. |  |
| RatType | 3GPP TS 29.571 [8] | Represents the RAT types. |  |
| ServiceExperienceType | 3GPP TS 29.520 [27] | Represents the type of Service Experience Analytics. |  |
| SmfEvent | 3GPP TS 29.508 [26] | Indicates the events exposed by SMF. |  |
| Snssai | 3GPP TS 29.571 [8] | Represents an S-NSSAI. |  |
| Uinteger | 3GPP TS 29.571 [8] | Unsigned integer. |  |
| Uri | 3GPP TS 29.571 [8] | Identifies a referenced resource. |  |

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

##### 5.32.5.2.2 Type: MemUeSelectAssistSubsc

Table 5.32.5.2.2-1: Definition of type MemUeSelectAssistSubsc

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| tgtUes | array(Gpsi) | M | 1..N | Identifies the list of UEs for Member Selection Assistance Reporting. |  |
| notifUri | Uri | M | 1 | Notification URI for reporting. |  |
| notifId | string | M | 1 | Notification Correlation ID assigned by the AF. |  |
|  |  |  |  |  |  |
| qosFilters | array(QoSFilterCriteria) | C | 1..N | The QoS filtering criteria for Member UE selection.(NOTE) |  |
| accRatTypeFilters | array(AccessRatTypeFilterCriteria) | C | 1..N | The Access types and Rat types filtering criteria for Member UE selection.(NOTE) |  |
| e2eTransTimeFilters | array(E2ETransTimeFilterCriteria) | C | 1..N | The End-to-end data volume transfer time filtering criteria for Member UE selection.(NOTE) |  |
| ueLocFilters | array(UeLocFilterCriteria) | C | 1..N | The UE location filtering criteria for Member UE selection.(NOTE) |  |
| ueHisLocFilters | array(UeHisLocFilterCriteria) | C | 1..N | The UE historical location filtering criteria for Member UE selection.(NOTE) |  |
| ueDirFilters | array(UeDirectionFilterCriteria) | C | 1..N | The UE direction filtering criteria for Member UE selection.(NOTE) |  |
| ueDistanceFilters | array(UeDistanceFilterCriteria) | C | 1..N | The UE distance filtering criteria for Member UE selection.(NOTE) |  |
| serviceExpFilters | array(ServiceExpFilterCriteria) | C | 1..N | The Service Experience filtering criteria for Member UE selection.(NOTE) |  |
| dnnFilters | array(DnnFilterCriteria) | C | 1..N | The DNN filtering criteria for Member UE selection.(NOTE) |  |
|  |  |  |  |  |  |
| expTime | DateTime | O | 0..1 | Indicates the expiry time. |  |
|  |  |  |  |  |  |
| NOTE: At least one of the attribtues shall be present. |

Editor's note: The data model definitions needs to align with the stage 2 requirement once stable.

Editor's note: The OpenAPI file needs to be updated once the data models are stable.

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

##### 5.32.5.2.4 Type: QoSFilterCriteria

Table 5.32.5.2.4-1: Definition of type QoSFilterCriteria

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| event | SmfEvent | O | 0..1 | Indicates the SMF event which may be used to retrieve the QoS monitoring information. The event value shall be set as "QOS\_MON". |  |
| appId | string | O | 0..1 | Identifies an application. |  |
| dnn | Dnn | O | 0..1 | Identifies DNN, a full DNN with both the Network Identifier and Operator Identifier, or a DNN with the Network Identifier only. |  |
| snssai | Snssai | O | 0..1 | Identifies the network slice information. |  |
| ulDelay | Uinteger | O | 0..1 | Uplink packet delay in units of milliseconds. |  |
| dlDelay | Uinteger | O | 0..1 | Downlink packet delay in units of milliseconds. |  |
| rtDelay | Uinteger | O | 0..1 | Round trip delay in units of milliseconds.  |  |

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

##### 5.32.5.2.5 Type: AccessRatTypeFilterCriteria

Table 5.32.5.2.5-1: Definition of type AccessRatTypeFilterCriteria

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| event | array(SmfEvent) | O | 1..N | Indicates the SMF event which may be used to retrieve the Access Type and/or RAT Type of the selected UE. The event value shall be set as "AC\_TY\_CH” and/or "RAT\_TY\_CH”. |  |
| dnn | Dnn | O | 0..1 | Identifies DNN, a full DNN with both the Network Identifier and Operator Identifier, or a DNN with the Network Identifier only. |  |
| snssai | Snssai | O | 0..1 | Identifies the network slice information. |  |
| accTypes | array(AccessType) | O | 1..N | Indicates the Access Type of the selected UE. |  |
| ratTypes | array(RatType) | O | 1..N | Indicate the RAT Type of the selected UE. |  |

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

##### 5.32.5.2.6 Type: E2ETransTimeFilterCriteria

Table 5.32.5.2.6-1: Definition of type E2ETransTimeFilterCriteria

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| event | NwdafEvent | O | 0..1 | Indicates the NWDAF event which may be used to retrieve the End-to-end data volume transfer time. The event value shall be set as "E2E\_DATA\_VOL\_TRANS\_TIME". |  |
| appId | string | O | 0..1 | Identifies an application. |  |
| dnn | Dnn | O | 0..1 | Identifies DNN, a full DNN with both the Network Identifier and Operator Identifier, or a DNN with the Network Identifier only. |  |
| snssai | Snssai | O | 0..1 | Identifies the network slice information. |  |
| dataVolTransTime | DataVolumeTransferTime | O | 0..1 | Indicates the E2E data volume transfer time and the data volume used to derive the transfer time. |  |
| locationArea | LocationArea5G | O | 0..1 | Indicates the location area of the candidate UEs. |  |
| timeWin | TimeWindow | O | 0..1 | Indicates the start time and stop time for selecting the candidate UEs. |  |

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

##### 5.32.5.2.7 Type: UeLocFilterCriteria

Table 5.32.5.2.7-1: Definition of type UeLocFilterCriteria

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| event | AmfEventType | O | 0..1 | Indicates the AMF event which may be used to retrieve the UE location. The event value shall be set as "LOCATION\_REPORT". |  |
| loc | LocationArea5G | O | 0..1 | Indicate the certain area that the selected UE currently located in. |  |

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

##### 5.32.5.2.8 Type: UeHisLocFilterCriteria

Table 5.32.5.2.8-1: Definition of type UeHisLocFilterCriteria

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| event | NwdafEvent | O | 0..1 | Indicates the NWDAF event which may be used to retrieve the UE Mobility. The event value shall be set as "UE\_MOBILITY". |  |
| loc | LocationArea5G | O | 0..1 | Indicates the historical location of the UEs. |  |
| startTs | DateTime | O | 0..1 | UTC time indicating the start time of target period. |  |
| endTs | DateTime | O | 0..1 | UTC time indicating the end time of the target period. |  |

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

##### 5.32.5.2.9 Type: UeDirectionFilterCriteria

Table 5.32.5.2.9-1: Definition of type UeDirectionFilterCriteria

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| event | NwdafEvent | O | 0..1 | Indicates the NWDAF event which may be used to retrieve the UE Mobility. The event value shall be set as "UE\_MOBILITY". |  |
| directions | array(Direction) | O | 1..N | Indicates the moving directions of the UEs. |  |

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

##### 5.32.5.2.10 Type: UeDistanceFilterCriteria

Table 5.32.5.2.10-1: Definition of type UeDistanceFilterCriteria

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| event | NwdafEvent | O | 0..1 | Indicates the NWDAF event which may be used to retrieve the Relative Proximity. The event value shall be set as "RELATIVE\_PROXIMITY”. |  |
| distance | Uinteger | O | 0..1 | Indicates the minimum separation distance between each other of the selected UEs. |  |

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

##### 5.32.5.2.11 Type: ServiceExpFilterCriteria

Table 5.32.5.2.11-1: Definition of type ServiceExpFilterCriteria

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| event | NwdafEvent | O | 0..1 | Indicates the NWDAF event which may be used to retrieve the Service Experience. The event value shall be set as "SERVICE\_EXPERIENCE". |  |
| snssai | Snssai | O | 0..1 | Identifies the network slice information. |  |
| dnn | Dnn | O | 0..1 | Identifies DNN, a full DNN with both the Network Identifier and Operator Identifier, or a DNN with the Network Identifier only. |  |
| appId | string | O | 0..1 | Identifies an application. |  |
| dnai | Dnai | O | 0..1 | Identification of user plane access to DN which the subscription applies. |  |
| loc | LocationArea5G | O | 0..1 | Indicates the Area of Interest. |  |
| contribWeightThr | Uinteger | O | 0..1 | Indicates the Service Experience Contribution weight reporting threshold. |  |
| timeWin | TimeWindow | O | 0..1 | Indicates the start time and stop time for selecting the candidate UEs. |  |
| expTypes | array(ServiceExperienceType) | O | 1..N | Indicates the Service Experience Type. |  |

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

##### 5.32.5.2.12 Type: DnnFilterCriteria

Table 5.32.5.2.12-1: Definition of type DnnFilterCriteria

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| event | SmfEvent | O | 0..1 | Indicates the SMF event which may be used to retrieve the DNN. The event value shall be set as "QFI\_ALLOC". |  |
| dnn | Dnn | O | 0..1 | Indicates the DNN of the selected UE for the PDU Session used by the application. |  |

\*\*\* End of Changes \*\*\*