**3GPP TSG-CT4 Meeting #101-e C4-205xxx**

**E-Meeting, 3rd Nov 2020 - 13th Nov 2020 Revision of C4-205114**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **29.550** | **CR** | **0014** | **rev** | **1** | **Current version:** | **16.2.0** |  |
|  | | | | | | | | |
| *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)*.* | | | | | | | | |
|  | | | | | | | | |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network |  | Core Network | **x** |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | | | | |
| ***Title:*** | Evolution of SoR delivery mechanism – SoR-AF API Changes | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Samsung | | | | | | | | | |
| ***Source to TSG:*** | CT4 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | eCPSOR\_CON-CT | | | | |  | ***Date:*** | | | 2020-11-04 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **C** |  | | | | | ***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:*** | | As detailed in Discussion Paper C4-205111, this CR proposes to modify the encoding of *SorInformation* attribute so that SoR information can be transparently sent by UDM to AUSF for protecting using Nausf\_SoRProtection Service. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | *SorInformation* attribute is modified to include *SorHeader and SoRTransparentInfo* attribute. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Requires software changes to UDM if extended SoR information needs to be sent. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 2, 6.1.6.1, 6.1.6.2.2, 6.1.6.3.2, 6.1.8, A.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 makes Backward Compatible Changes to OpenAPI file for Nsoraf\_SOR API | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | | Rev1: a) Changed WI from SBIProtoc17 to eCPSOR\_CON-CT  b) Added clarification note in Clause 6.1.8  c) Change Feature name to sorTransparentSupport instead of sorTransparentInfo to avoid confusing with attribute with similar name | | | | | | | | |

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

# 2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non‑specific.

- For a specific reference, subsequent revisions do not apply.

- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

[1] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

[2] 3GPP TS 23.501: "System Architecture for the 5G System; Stage 2".

[3] 3GPP TS 23.502: "Procedures for the 5G System; Stage 2".

[4] 3GPP TS 29.500: "5G System; Technical Realization of Service Based Architecture; Stage 3".

[5] 3GPP TS 29.501: "5G System; Principles and Guidelines for Services Definition; Stage 3".

[6] OpenAPI: "OpenAPI 3.0.0 Specification", <https://github.com/OAI/OpenAPI-Specification/blob/master/versions/3.0.0.md>.

[7] 3GPP TR 21.900: "Technical Specification Group working methods".

[8] 3GPP TS 33.501: "Security architecture and procedures for 5G system".

[9] IETF RFC 6749: "The OAuth 2.0 Authorization Framework".

[10] 3GPP TS 29.510: "5G System; Network Function Repository Services; Stage 3".

[11] IETF RFC 7540: "Hypertext Transfer Protocol Version 2 (HTTP/2)".

[12] IETF RFC 8259: "The JavaScript Object Notation (JSON) Data Interchange Format".

[13] IETF RFC 7807: "Problem Details for HTTP APIs".

[14] 3GPP TS 23.122: "Non-Access-Stratum (NAS) functions related to Mobile Station (MS) in idle mode".

[15] 3GPP TS 29.503: "5G System; Unified Data Management Services; Stage 3".

[16] 3GPP TS 29.571: "5G System; Common Data Types for Service Based Interfaces Stage 3".

[17] 3GPP TS 31.115: "Secured packet structure for (Universal) Subscriber Identity Module (U)SIM Toolkit applications".

[XX] 3GPP TS 24.501: "Non-Access-Stratum (NAS) protocol for 5G System (5GS); Stage 3".

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

#### 6.1.6.1 General

This clause specifies the application data model supported by the API.

Table 6.1.6.1-1 specifies the data types defined for the Nsoraf\_SOR service based interface protocol.

Table 6.1.6.1-1: Nsoraf specific Data Types

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Clause defined | Description | Applicability |
| SorInformation | 6.1.6.2.2 | Contains the SoR information to be conveyed to the UE. |  |
| SorAckInfo | 6.1.6.2.3 | Contains an indication to the SOR-AF on the reception status of the acknowledgment of successful reception of SoR Information by the UE. |  |
| SorAckStatus | 6.1.6.3.3 | Contains the reception status of the acknowledgment of successful reception of SoR Information by the UE. |  |
| SorHeader | 6.1.6.3.2 | Contains SoR Header | sorTransparentSupport |
| SorTransparentInfo | 6.1.6.3.2 | Contains SoR Transparent Information | sorTransparentSupport |

Table 6.1.6.1-2 specifies data types re-used by the Nsoraf\_SOR service based interface protocol from other specifications, including a reference to their respective specifications and when needed, a short description of their use within the Nsoraf service based interface.

Table 6.1.6.1-2: Nsoraf re-used Data Types

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Reference | Comments | Applicability |
| PlmnId | 3GPP TS 29.571 [16] | PLMN Identity |  |
| ProblemDetails | 3GPP TS 29.571 [16] | Common data type used in response bodies |  |
| SupportedFeatures | 3GPP TS 29.571 [16] | see 3GPP TS 29.500 [4] clause 6.6 |  |
| SteeringContainer | 3GPP TS 29.503 [15] | Contains the SoR Information |  |
| Supi | 3GPP TS 29.571 [16] | Contains the SUPI information. |  |
| DateTime | 3GPP TS 29.571 [16] | Date Time |  |
| AccessType | 3GPP TS 29.571 [16] | Access type (e.g. 3GPP) |  |

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

##### 6.1.6.2.2 Type: SorInformation

Table 6.1.6.2.2-1: Definition of type SorInformation

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| steeringContainer | SteeringContainer | C | 0..1 | When present, this attribute contains the information needed to update the "Operator Controlled PLMN Selector with Access Technology" list stored in the UE, either as an array of preferred PLMN/Access Technologies combinations in priority order (with the first entry in the array indicating the highest priority and the last entry indicating the lowest) or a secured packet.  If no change of the "Operator Controlled PLMN Selector with Access Technology" list stored in the UE is needed, then this attribute shall be absent.  This attribute shall be absent if sorTransparentInfo is present. |  |
| sorAckIndication | Boolean | M | 1 | This attribute indicates to the NF consumer (e.g. UDM) whether an Acknowledgment of successful reception of SoR information shall be requested to the UE (when set to "True") or not (when set to "False"). |  |
| sorSendingTime | DateTime | M | 1 | Contains the date and time at which SOR-AF returns SorInformation.  It is used to correlate the SoR acknowledgement with the associated SoR information. |  |
| sorHeader | SorHeader | C | 0..1 | When present, this attribute contains SoR Header. | sorTransparentSupport |
| sorTransparentInfo | SorTransparentInfo | C | 0..1 | When present, this attribute contains SoR Transparent Information. If no change of the "Operator Controlled PLMN Selector with Access Technology" list stored in the UE is needed, then this attribute may be absent. | sorTransparentSupport |

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

##### 6.1.6.3.2 Simple data types

The simple data types defined in table 6.1.6.3.2-1 shall be supported.

Table 6.1.6.3.2-1: Simple data types

|  |  |  |  |
| --- | --- | --- | --- |
| Type Name | Type Definition | Description | Applicability |
| SorHeader | Bytes | String with format "byte" as defined in OpenAPI Specification [6], i.e. base64-encoded characters, encoding the "SOR Header" IE as specified in clause 9.11.3.51 of 3GPP TS 24.501 [XX] (octet 4). | sorTransparentSupport |
| SorTransparentInfo | Bytes | String with format "byte" as defined in OpenAPI Specification [6], i.e. base64-encoded characters, encoding the "SOR transparent container" IE as specified in clause 9.11.3.51 of 3GPP TS 24.501 [XX] (starting from octet 23). | sorTransparentSupport |

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

## 6.1.8 Feature negotiation

The optional features in table 6.1.8-1 are defined for the Nsoraf\_SOR API. They shall be negotiated using the extensibility mechanism defined in clause 6.6 of 3GPP TS 29.500 [4].

Table 6.1.8-1: Supported Features

|  |  |  |
| --- | --- | --- |
| Feature number | Feature Name | Description |
| 1 | sorTransparentSupport | This flag indicates NF Consumer (e.g. UDM) support of receiving SoR Information as transparent containers instead of individual IEs. |
| NOTE: If UDM and SOR-AF support receiving SoR Information as transparent containers but AUSF does not, UDM may still need to covert received information into individual IEs. | | | |

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

## A.2 Nsoraf\_SOR API

openapi: 3.0.0

info:

title: 'Nsoraf\_SOR'

version: 1.0.0

description: |

Nsoraf Steering Of Roaming Service.

© 2020, 3GPP Organizational Partners (ARIB, ATIS, CCSA, ETSI, TSDSI, TTA, TTC).

All rights reserved.

\*\*\*\*\*\*\*\*skipped for clarity\*\*\*\*\*\*\*\*

schemas:

# API specific definitions

SorInformation:

type: object

required:

- sorAckIndication

- sorSendingTime

properties:

steeringContainer:

$ref: 'TS29503\_Nudm\_SDM.yaml#/components/schemas/SteeringContainer'

sorAckIndication:

type: boolean

sorSendingTime:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/DateTime'

sorHeader:

$ref: '#/components/schemas/SorHeader'

sorTransparentInfo:

$ref: '#/components/schemas/SorTransparentInfo'

SorAckInfo:

type: object

required:

- sorAckStatus

- sorSendingTime

properties:

sorAckStatus:

$ref: '#/components/schemas/SorAckStatus'

sorSendingTime:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/DateTime'

SorAckStatus:

anyOf:

- type: string

enum:

- ACK\_SUCCESSFUL

- ACK\_NOT\_RECEIVED

- ACK\_NOT\_SUCCESSFUL

- type: string

# SIMPLE DATA TYPES:

SorHeader:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Bytes'

SorTransparentInfo:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Bytes'

\*\*\*\*\*\*\*\*skipped for clarity\*\*\*\*\*\*\*\*

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