**3GPP TSG-CT WG4 Meeting #98eC4-203**

**E-Meeting, 02nd – 12th June 2020 was C4-203124**

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| --- |
| *CR-Form-v12.0* |
| **CHANGE REQUEST** |
|  |
|  | **29.503** | **CR** | **0430** | **rev** | **1** | **Current version:** | **16.3.0** |  |
|  |
| *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** |

|  |
| --- |
|  |
| ***Title:***  | N5GC device Authentication |
|  |  |
| ***Source to WG:*** | Nokia, Nokia Shanghai Bell, CableLabs, Charter Communications |
| ***Source to TSG:*** | CT4 |
|  |  |
| ***Work item code:*** | 5WWC |  | ***Date:*** | 2020-06-03 |
|  |  |  |  |  |
| ***Category:*** | **B** |  | ***Release:*** | Rel-16 |
|  | *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-12 (Release 12)**Rel-13 (Release 13)Rel-14 (Release 14)Rel-15 (Release 15)Rel-16 (Release 16)* |
|  |  |
| ***Reason for change:*** | For Non-5G Capable (N5GC) devices an indication within Authentication Info Request is needed; see TS 33.501 Annex O. |
|  |  |
| ***Summary of change:*** | Add an N5GC Indicator to AuthenticationInfoRequest |
|  |  |
| ***Consequences if not approved:*** | Misalignment with stage 2 |
|  |  |
| ***Clauses affected:*** | 3.2, 5.4.2.1, 6.3.6.2.2, 6.3.6.3.3, A.4 |
|  |  |
|  | **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 introduces backward compatible new features to the Nudm\_UEAU API. |
|  |  |
| ***This CR's revision history:*** |  |

\* \* \* \* Begin of Change \* \* \* \*

## 3.2 Abbreviations

For the purposes of the present document, the abbreviations given in 3GPP TR 21.905 [1] and the following apply. An abbreviation defined in the present document takes precedence over the definition of the same abbreviation, if any, in 3GPP TR 21.905 [1].

5GC 5G Core Network

ACS Auto-Configuration Server

AMF Access and Mobility Management Function

AUSF Authentication Server Function

NIDD Non-IP Data Delivery

DNN Data Network Name

FQDN Fully Qualified Domain Name

FN-RG Fixed Network RG

GMLC Gateway Mobile Location Centre

GPSI Generic Public Subscription Identifier

GUAMI Globally Unique AMF Identifier

HGMLC Home GMLC

JSON Javascript Object Notation

LCS LoCation Services

LPI LCS Privacy Indicator

MICO Mobile Initiated Connection Only

N5GC Non-5G-Capable

NAI Network Access Identifier

NAS Non-Access Stratum

NEF Network Exposure Function

NRF Network Repository Function

NSSAI Network Slice Selection Assistance Information

NWDAF Network Data Analytics Function

PEI Permanent Equipment Identifier

QFI QoS Flow Identifier

5G-RG 5G Residential Gateway

RG Residential Gateway

SBI Service Based Interface

SMF Session Management Function

SMSF Short Message Service Function

SUCI Subscription Concealed Identifier

SUPI Subscription Permanent Identifier

UDM Unified Data Management

UDR Unified Data Repository

W-AGF Wireline Access Gateway Function

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

#### 5.4.2.1 Introduction

For the Nudm\_UEAuthentication service the following service operations are defined:

- Get

- GetHssAv

- ResultConfirmation

The Nudm\_UEAuthentication service is used by the AUSF to request the UDM to select an authentication method, calculate a fresh authentication vector (AV) if required for the selected method, and provide it to the AUSF by means of the Get service operation. See 3GPP TS 33.501 [6] clause 14.2.2. The service may also be used by the AUSF to indicate to the UDM that the user is using a N5GC device behind Cable RGs in private networks or in isolated deployment scenarios with wireline access and that therefore the applicable authentication method shall be EAP based. See 3GPP TS 23.316 [37] clause 4.10a.

The Nudm\_UEAuthentication service is also used by the HSS to request UDM to generate the authentication vector(s) for EPS or IMS domain by means of GetHssAv service operation. See 3GPP TS 23.632 [32] clause 5.6.3.

The Nudm\_UEAuthentication service is also used by the AUSF to inform the UDM about the occurrence of a successful or unsuccessful authentication by means of the ResultConfirmation service operation. See3GPP TS 33.501 [6] clause 14.2.3.

The Nudm\_UEAuthentication service is also used by the AUSF to request the UDM to authenticate the FN-RG accessing to 5GC via W-AGF. See 3GPP TS 23.316 [37] clause 7.2.1.3.

The Nudm\_UEAuthentication service is also used by the NF service consumer to request the UDM to remove the UE authentication result during the Purge of subscriber data in AMF after the UE deregisters from the network or NAS SMC fails following the successful authentication in the registration procedure.

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

##### 6.3.6.2.2 Type: AuthenticationInfoRequest

Table 6.3.6.2.2-1: Definition of type AuthenticationInfoRequest

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description |
| servingNetworkName | ServingNetworkName | M | 1 | See 3GPP TS 33.501 [6] clause 6.1.1.4 |
| resynchronizationInfo | ResynchronizationInfo | O | 0..1 | Contains RAND and AUTS; see 3GPP TS 33.501 [6] clause 7.5 |
| supportedFeatures | SupportedFeatures | O | 0..1 | See clause 6.3.8 |
| ausfInstanceId | NfInstanceId | M | 1 | NF Instance Id of the AUSF |
| cagId | CagId | O | 1 | CAG ID of the CAG cell. |
| n5gcInd | boolean | O | 0..1 | N5GC device Indicator indicates whether the user uses a N5GC device:See 3GPP TS 33.501 [6]true: N5GC devicefalse (default): used device is 5G capableSee NOTE |
| NOTE: The attribute n5gcInd is used for EAP-TLS, which is described in the informative annex O of 3GPP TS 33.501 [6] and is not mandatory to support. |

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

##### 6.3.6.3.3 Enumeration: AuthType

Table 6.3.6.3.3-1: Enumeration AuthType

|  |  |
| --- | --- |
| Enumeration value | Description |
| "EAP\_AKA\_PRIME" | EAP-AKA' |
| "5G\_AKA" | 5G AKA |
| "EAP\_TLS" | EAP-TLS. See NOTE |
| NOTE: EAP-TLS is described in the Informative Annex B and Annex O of 3GPP TS 33.501 [6] and is not mandatory to support. |

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

## A.4 Nudm\_UEAU API

openapi: 3.0.0

\*\*\*\*\*\*\*\*\*\*\*\*\*\*text not shown for clarity\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

 AuthenticationInfoRequest:

 type: object

 required:

 - servingNetworkName

 - ausfInstanceId

 properties:

 supportedFeatures:

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

 servingNetworkName:

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

 resynchronizationInfo:

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

 ausfInstanceId:

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

 cagId:

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

 n5gcInd:

 type: boolean

 default: false

\*\*\*\*\*\*\*\*\*\*\*\*\*\*text not shown for clarity\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

\* \* \* \* End Of Change \* \* \* \*