**3GPP TSG-CT WG3 Meeting #121-eC3-222069**

**E-Meeting, 6th – 12th April 2022**

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| *CR-Form-v12.1* |
| **CHANGE REQUEST** |
|  |
|  | **29.522** | **CR** | **0559** | **rev** | **-** | **Current version:** | **17.5.0** |  |
|  |
| *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:***  | AKID encoding clarification |
|  |  |
| ***Source to WG:*** | Nokia, Nokia Shanghai Bell |
| ***Source to TSG:*** | CT3 |
|  |  |
| ***Work item code:*** | AKMA-CT |  | ***Date:*** | 2022-03-30 |
|  |  |  |  |  |
| ***Category:*** | F |  | ***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 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-15 (Release 15)Rel-16 (Release 16)Rel-17 (Release 17)Rel-18 (Release 18)* |
|  |  |
| ***Reason for change:*** | AF/NEF needs to discover AAnF based on “Routing Indicator” which is part of A-KID (AKMA Key Identifier). * Based on RID description from Ts 23.003, the routing indicator consists of 1 to 4 decimal digits.
* Also, A-TID (AKMA temporary Id) is also of variable length.

As per the current standards (TS 23.003), RID can be of variable length and 012 and 12 should not be considered as same RID in Stage3. For example:Case1: RID: 012 and A-TID is: 019345346, So username would be: 012019345346Case 2: RID: 12 and A-TID is: 019345346, So username would be: 12019345346Because A-TID length is not fixed (varied per operator as defined in TS 33.535 section A.3), and RID length is also not fixed, then AF (or NEF) can not differentiate RID and A-TID from the username. Hence AF/NEF can not discover AAnF.Hence this presents a challenge on how to encode the username value, so that AF/NEF is able to understand the “Routing Identifier” from it and use it to discover AAnF. |
|  |  |
| ***Summary of change:*** | AKID encoding is clarified in the clause 5.14.5.4.2 to address above cited issue. |
|  |  |
| ***Consequences if not approved:*** | Incomplete requirements.  |
|  |  |
| ***Clauses affected:*** | 2, 5.14.5.4.2 |
|  |  |
|  | **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 does not impact the OpenAPI file. |
|  |  |
| ***This CR's revision history:*** |  |

\* \* \* 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 23.502: "Procedures for the 5G system".

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

[4] 3GPP TS 29.122: "T8 reference point for northbound Application Programming Interfaces (APIs)".

[5] OpenAPI: "OpenAPI Specification Version 3.0.0", <https://spec.openapis.org/oas/v3.0.0>.

[6] 3GPP TS 33.501: "Security architecture and procedures for 5G System".

[7] 3GPP TS 29.514: "5G System; Policy Authorization Service; Stage 3".

[8] 3GPP TS 29.571: "5G System; Common Data Types for Service Based Interfaces; Stage 3".

[9] 3GPP TS 29.521: "5G System; Binding Support Management Service; Stage 3".

[10] Void.

[11] 3GPP TS 23.222: "Common API Framework for 3GPP Northbound APIs; Stage 2".

[12] 3GPP TS 29.222: "Common API Framework for 3GPP Northbound APIs; Stage 3".

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

[14] 3GPP TS 33.122: "Security Aspects of Common API Framework for 3GPP Northbound APIs".

[15] Void.

[16] Void

[17] 3GPP TS 29.503: "5G System; Unified Data Management Services; Stage 3".

[18] 3GPP TS 29.518: "5G System; Access and Mobility Management Services; Stage 3".

[19] 3GPP TS 29.554: "5G System; Background Data Transfer Policy Control Service; Stage 3".

[20] 3GPP TS 29.504: "5G System; Unified Data Repository Services; Stage 3".

[21] 3GPP TR 21.900: "Technical Specification Group working methods".

[22] 3GPP TS 29.523: "5G System; Policy Control Event Exposure Service; Stage 3".

[23] 3GPP TS 29.519: "5G System; Usage of the Unified Data Repository service for Policy Control Data, Application Data and Structured Data for Exposure; Stage 3".

[24] 3GPP TS 29.541: "5G System; Network Exposure (NE) function services for Non-IP Data Delivery (NIDD); Stage 3".

[25] 3GPP TS 29.542: "5G System, Session management services for Non-IP Data Delivery (NIDD); Stage 3".

[26] 3GPP TS 29.508: "5G System; Session Management Event Exposure Service; Stage 3".

[27] 3GPP TS 29.520: "5G System; Network Data Analytics Services; Stage 3".

[28] 3GPP TS 23.316: "Wireless and wireline convergence access support for the 5G system (5GS)".

[29] 3GPP TS 23.288: "Architecture enhancements for 5G System (5GS) to support network data analytics services".

[30] 3GPP TS 23.032: "Universal Geographical Area Description (GAD)".

[31] Void

[32] 3GPP TS 29.501: "5G System; Principles and Guidelines for Services Definition; Stage 3".

[33] 3GPP TS 24.588: "Vehicle-to-Everything (V2X) services in 5G System (5GS); User Equipment (UE) policies; Stage 3".

[34] 3GPP TS 29.572: "5G System; Location Management Services; Stage 3".

[35] 3GPP TS 29.515: "5G System; Gateway Mobile Location Services; Stage 3".

[36] 3GPP TS 23.273: "5G System Location Services (LCS)".

[37] 3GPP TS 33.535: "Authentication and Key Management for Applications (AKMA) based on 3GPP credentials in the 5G System (5GS)".

[38] 3GPP TS 29.535: "5G System; AKMA Anchor Services; Stage 3".

[39] 3GPP TS 33.220: "Generic Authentication Architecture (GAA); Generic Bootstrapping Architecture (GBA)".

[40] IETF RFC 7542: "The Network Access Identifier".

[41] 3GPP TS 29.512: "5G System; Session Management Policy Control Service; Stage 3".

[42] 3GPP TS 23.548: "5G System Enhancements for Edge Computing; Stage 2".

[43] 3GPP TS 29.534: "5G System; Access and Mobility Policy Authorization Service; Stage 3".

[44] IETF RFC 3986: "Uniform Resource Identifier (URI): Generic Syntax".

[45] IEEE Std 1588-2019: "IEEE Standard for a Precision Clock Synchronization Protocol for Networked Measurement and Control".

[46] IEEE Std 802.1AS-2020: "IEEE Standard for Local and metropolitan area networks--Timing and Synchronization for Time-Sensitive Applications".

[47] 3GPP TS 29.536: "5G System; Network Slice Admission Control Services; Stage 3".

[48] 3GPP TS 24.526: "User Equipment (UE) policies for 5G System (5GS); Stage 3".

[49] 3GPP TS 24.555: "Proximity based services (ProSe) in 5G system (5GS); User Equipment (UE) policies; Stage 3".

[50] 3GPP TS 29.565: "5G System; Time Sensitive Communication and Time Synchronization Function Services; Stage 3".

[51] IEEE 802.1Q: "Virtual Bridged Local Area Networks".

[52] 3GPP TS 29.532: "5G System; 5G Multicast-Broadcast Session Management Services; Stage 3".

[53] 3GPP TS 23.247: "Architectural enhancements for 5G multicast-broadcast services; Stage 2".

[54] IETF RFC 6733: "Diameter Base Protocol".

[xx] 3GPP TS 23.003: "Numbering, addressing and identification".

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

##### 5.14.5.4.2 Simple data types

The simple data types defined in table 5.14.5.4.2-1 shall be supported.

Table 5.14.5.4.2-1: Simple data types

|  |  |  |  |
| --- | --- | --- | --- |
| Type Name | Type Definition | Description | Applicability |
| AfId | string | Identification of AF which is formatted as the following string:"<FQDN>.<Ua\* security protocol id>", wherein, <FQDN> is the FQDN of the AF and <Ua\* security protocol id> is the identification of the Ua\* security protocol specified as Ua security protocol identifier in Annex H of 3GPP TS 33.220 [39] that the AF will use with the UE. |  |
| AKId | string | AKMA Key Identifier shall be in NAI format as specified in subclause 2.2 of IETF RFC 7542 [40], which is formatted as the following string:"<username>@<realm>", wherein, <username> shall include Routing Indicator and the A-TID in the format rid<value>.atid<value>, where "rid" and "atid" are labels indicating Routing Indicator and A-TID and <realm> shall include Home Network Id.Example: 1. If Routing Indicator: 012, A-TID: 019345346 and Home Network Id: 5gc.mnc012.mcc345.3gppnetwork.org, then AKId: rid012.akid019345346@5gc.mnc012.mcc345.3gppnetwork.orgRouting Indicator, Home Network Id are specified in 3GPP TS 23.003 [xx]A-TID is specified in 3GPP TS 33.535 [38] |  |

Editor’s Note: The definition of AfId needs to align with CT1.,

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