**3GPP TSG-CT WG4 Meeting #97eC4-202abc**

**E-Meeting, 15th – 23th April 2020 *was* C4-202018**

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| *CR-Form-v12.0* |
| **CHANGE REQUEST** |
|  |
|  | **23.003** | **CR** | **0577** | **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)*.* |
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| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network |  | Core Network | **X** |

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|  |
| ***Title:***  | Definition of Truncated 5G-S-TMSI |
|  |  |
| ***Source to WG:*** | Huawei |
| ***Source to TSG:*** | CT4 |
|  |  |
| ***Work item code:*** | 5G\_CIoT |  | ***Date:*** | 2020-03-31 |
|  |  |  |  |  |
| ***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)* |
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| ***Reason for change:*** | The Truncated 5G-S-TMSI is used in RRC Connection Re-Establishment for the control plane for NB-IoT, and format of the Truncated 5G-S-TMSI in 23.501 CR 1667 was approved by SA#86 see also LS from SA2 in C4-200366. Truncated 5G-S-TMSIhas to be defined in 23.003. |
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| ***Summary of change:*** | Introduce the definition of the Truncated 5G-S-TMSI in C4-200366. |
|  |  |
| ***Consequences if not approved:*** |  |
|  |  |
| ***Clauses affected:*** | 1.1.1, 2.xx |
|  |  |
|  | **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:*** | Rev1:1. Corret typo : "T The values "2. remove the text in Other comments: on cover page. |

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*The start of changes\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

### 1.1.1 Normative 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 TS 21.905: "Vocabulary for 3GPP Specifications ".

[2] 3GPP TS 23.008: "Organization of subscriber data".

[3] 3GPP TS 23.060: "General Packet Radio Service (GPRS); Service description; Stage 2"

[4] 3GPP TS 23.070: "Routeing of calls to/from Public Data Networks (PDN)".

[5] 3GPP TS 24.008: "Mobile Radio Interface Layer 3 specification; Core Network Protocols; Stage 3".

[6] 3GPP TS 29.060: "GPRS Tunnelling protocol (GTP) across the Gn and Gp interface".

[7] 3GPP TS 43.020: "Digital cellular telecommunications system (Phase 2+); Security related network functions".

[8] void

[9] 3GPP TS 51.011: " Specification of the Subscriber Identity Module - Mobile Equipment (SIM - ME) interface".

[10] ITU-T Recommendation E.164: "The international public telecommunication numbering plan".

[11] ITU-T Recommendation E.212: "The international identification plan for public networks and subscriptions ".

[12] ITU-T Recommendation E.213: "Telephone and ISDN numbering plan for land Mobile Stations in public land mobile networks (PLMN)".

[13] ITU-T Recommendation X.121: "International numbering plan for public data networks".

[14] IETF RFC 791: "Internet Protocol".

[15] IETF RFC 2373: "IP Version 6 Addressing Architecture".

[16] 3GPP TS 25.401: "UTRAN Overall Description".

[17] 3GPP TS 25.413: "UTRAN Iu Interface RANAP Signalling".

[18] IETF RFC 2181: "Clarifications to the DNS Specification".

[19] IETF RFC 1035: "Domain Names - Implementation and Specification".

[20] IETF RFC 1123: "Requirements for Internet Hosts -- Application and Support".

[21] IETF RFC 2462: "IPv6 Stateless Address Autoconfiguration".

[22] IETF RFC 3041: "Privacy Extensions for Stateless Address Autoconfiguration in IPv6".

[23] 3GPP TS 23.236: "Intra Domain Connection of RAN Nodes to Multiple CN Nodes".

[24] 3GPP TS 23.228: "IP Multimedia (IM) Subsystem – Stage 2"

[25] Void

[26] IETF RFC 3261: "SIP: Session Initiation Protocol"

[27] 3GPP TS 31.102: "Characteristics of the USIM Application."

[28] Void

[29] 3GPP TS 44.118: "Radio Resource Control (RRC) Protocol, Iu Mode".

[30] Void

[31] 3GPP TS 29.002: "Mobile Application Part (MAP) specification"

[32] 3GPP TS 22.016: "International Mobile Equipment Identities (IMEI)"

[33] Void

[34] Void

[35] 3GPP TS 45.056: "CTS-FP Radio Sub-system"

[36] 3GPP TS 42.009: "Security aspects"

[37] 3GPP TS 25.423: "UTRAN Iur interface RNSAP signalling"

[38] 3GPP TS 25.419: "UTRAN Iu-BC interface: Service Area Broadcast Protocol (SABP)"

[39] 3GPP TS 25.410: "UTRAN Iu Interface: General Aspects and Principles"

[40] ISO/IEC 7812: "Identification cards - Numbering system and registration procedure for issuer identifiers"

[41] Void

[42] 3GPP TS 33.102 "3G security; Security architecture"

[43] 3GPP TS 43.130: "Iur‑g interface; Stage 2"

[45] IETF RFC 3966: "The tel URI for Telephone Numbers"

[46] 3GPP TS 44.068: "Group Call Control (GCC) protocol".

[47] 3GPP TS 44.069: "Broadcast Call Control (BCC) Protocol ".

[48] 3GPP TS 24.234 Release 12: "3GPP System to WLAN Interworking; UE to Network protocols; Stage 3".

[49] Void

[50] IETF RFC 4187: "EAP AKA Authentication".

[51] IETF RFC 4186: "EAP SIM Authentication".

[52] 3GPP TS 23.246: "Multimedia Broadcast/Multicast Service (MBMS); Architecture and functional description"

[53] IETF RFC 4282: "The Network Access Identifier".

[54] IETF RFC 2279: "UTF-8, a transformation format of ISO 10646".

[55] 3GPP TS 33.234 Release 12: "Wireless Local Area Network (WLAN) interworking security".

[56] Void

[58] 3GPP TS 33.221 "Generic Authentication Architecture (GAA); Support for Subscriber Certificates".

[60] IEEE 1003.1-2004, Part 1: Base Definitions

[61] 3GPP TS 43.318: "Generic Access to the A/Gb interface; Stage 2"

[62] 3GPP TS 44.318: "Generic Access (GA) to the A/Gb interface; Mobile GA interface layer 3 specification"

[63] 3GPP TS 29.163: "Interworking between the IP Multimedia (IM) Core Network (CN) subsystem and Circuit Switched (CS) networks"

[64] IETF RFC 2606: "Reserved Top Level DNS Names"

[65] Void

[66] 3GPP TS 51.011 Release 4: "Specification of the Subscriber Identity Module - Mobile Equipment (SIM - ME) interface"

[67] 3GPP2 X.S0013-004: "IP Multimedia Call Control Protocol based on SIP and SDP; Stage 3"

[68] 3GPP TS 23.402: "Architecture Enhancements for non-3GPP accesses"

[69] 3GPP TS 33.402: "3GPP System Architecture Evolution: Security Aspects of non-3GPP accesses"

[70] 3GPP TS 23.292: "IP Multimedia Subsystem (IMS) Centralized Services; Stage 2"

[71] 3GPP TS 23.237: "IP Multimedia Subsystem (IMS) Service Continuity"

[72] 3GPP TS 23.401: "General Packet Radio Service (GPRS) enhancements for Evolved Universal Terrestrial Radio Access Network (E-UTRAN) access"

[73] 3GPP TS 29.303: "Domain Name System Procedures; Stage 3"

[74] IETF RFC 3958: "Domain-Based Application Service Location Using SRV RRs and the Dynamic Delegation Discovery Service (DDDS)"

[75] Void

[76] 3GPP TS 23.237: "Mobility between 3GPP-Wireless Local Area Network (WLAN) interworking and 3GPP systems"

[77] 3GPP TS 24.302: "Access to the 3GPP Evolved Packet Core (EPC) via non-3GPP access networks; Stage 3"

[78] 3GPP TS 29.273: "Evolved Packet System; 3GPP EPS AAA Interfaces"

[79] IETF RFC 7254: "A Uniform Resource Name Namespace for the Global System for Mobile Communications Association (GSMA) and the International Mobile station Equipment Identity (IMEI)".

[80] IETF RFC 4122: "A Universally Unique IDentifier (UUID) URN Namespace".

[81] 3GPP TS 24.229: "IP multimedia call control protocol based on Session Initiation Protocol (SIP) and Session Description Protocol (SDP); Stage 3".

[82] IETF RFC5448: "Improved Extensible Authentication Protocol Method for 3rd Generation Authentication and Key Agreement (EAP-AKA') "

[83] 3GPP TS 22.011: "Service accessibility".

[84] 3GPP TS 36.413: "Evolved Universal Terrestrial Radio Access Network (E-UTRAN) ; S1 Application Protocol (S1AP)".

[85] Guidelines for use of a 48-bit Extended Unique Identifier (EUI-48™), http://standards.ieee.org/regauth/oui/tutorials/EUI48.html

[86] GUIDELINES FOR 64-BIT GLOBAL IDENTIFIER (EUI-64) REGISTRATION AUTHORITY, <http://standards.ieee.org/regauth/oui/tutorials/EUI64.html>

[87] The Broadband Forum TR-069: "CPE WAN Management Protocol v1.1", Issue 1 Amendment 2, December 2007

[88] 3GPP TS 29.274: "Evolved General Packet Radio Service (GPRS) Tunnelling Protocol for Control plane (GTPv2-C); Stage 3".

[89] 3GPP TS 33.401: "3GPP System Architecture Evolution: Security Architecture".

[90] 3GPP TS 24.301: "Non-Access-Stratum (NAS) protocol for Evolved Packet System (EPS); Stage 3".

[91] 3GPP TS 36.300: " Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Universal Terrestrial Radio Access Network (E-UTRAN); Overall description; Stage 2".

[92] 3GPP TS 23.216: "Single Radio Voice Call Continuity (SRVCC)".

[93] 3GPP TS 31.103: "IP Multimedia Services Identity Module (ISIM) application".

[94] IETF RFC 4825: "The Extensible Markup Language (XML) Configuration Access Protocol (XCAP)".

[95] 3GPP TS 29.229: " Cx and Dx interfaces based on the Diameter protocol; Protocol details".

[96] 3GPP TS 29.329: " Sh Interface based on the Diameter protocol; Protocol details".

[97] 3GPP TS 29.165: "Inter-IMS Network to Network Interface (NNI); Stage 3".

[98] 3GPP TS 23.682: "Architecture Enhancements to facilitate communications with Packet Data Networks and Applications".

[99] 3GPP TS 44.018: "Mobile radio interface layer 3 specification; Radio Resource Control (RRC) protocol".

[100] 3GPP TS 44.060: "General Packet Radio Service (GPRS); Mobile Station (MS) – Base Station System (BSS) interface; Radio Link Control / Medium Access Control (RLC/MAC) protocol".

[101] 3GPP TS 23.251: "Network Sharing; Architecture and functional description".

[102] 3GPP TS 32.508: "Procedure flows for multi-vendor plug-and-play eNB connection to the network".

[103] 3GPP TS 23.303: "Proximity-based services (ProSe)".

[104] IETF RFC 7255: "Using the International Mobile station Equipment Identity (IMEI) Uniform Resource Name (URN) as an Instance ID".

[105] 3GPP TS 26.346: "Multimedia Broadcast/Multicast Service (MBMS); Protocols and codecs".

[106] 3GPP TS 29.212: "Policy and Charging Control (PCC); Reference points".

[107] 3GPP TS 23.203: "Policy and charging control architecture".

[108] 3GPP TS 29.272: "Evolved Packet System (EPS); Mobility Management Entity (MME) and Serving GPRS Support Node (SGSN) related interfaces based on Diameter protocol".

[110] Void.

[111] 3GPP TS 24.379: "Mission Critical Push To Talk (MCPTT) call control Protocol specification".

[112] 3GPP TS 43.064: "General Packet Radio Service (GPRS); Overall description of the GPRS Radio Interface; Stage 2".

[113] IETF RFC 6696: "EAP Extensions for the EAP Re-authentication Protocol (ERP)".

[114] 3GPP TS 23.280: "Common functional architecture to support mission critical services".

[115] 3GPP TS 24.281: "Mission Critical Video (MCVideo) signalling control; Protocol specification".

[116] 3GPP TS 24.282: "Mission Critical Data (MCData) signalling control; Protocol specification".

[117] 3GPP TS 23.285: "Architecture enhancements for V2X services".

[118] 3GPP TS 24.116: "Stage 3 aspects of system architecture enhancements for TV services".

[119] 3GPP TS 23.501: "System Architecture for the 5G System; Stage 2".

[120] 3GPP TS 23.502: "Procedures for the 5G System; Stage 2".

[121] 3GPP TS 23.503: "Policy and Charging Control Framework for the 5G System; Stage 2".

[122] ITU-T Recommendation E.101: "Definitions of terms used for identifiers (names, numbers, addresses and other identifiers) for public telecommunication services and networks in the E-series Recommendations".

[123] 3GPP TS 38.413: "NG Radio Access Network (NG-RAN); NG Application Protocol (NGAP)".

[124] 3GPP TS 33.501: "Security architecture and procedures for 5G system".

[125] 3GPP TS 24.501: "Non-Access-Stratum (NAS) protocol for 5G System (5GS); stage 3".

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

[127] IETF RFC 2818: "HTTP over TLS".

[128] 3GPP TS 29.501: "5G System; Principles and Guidelines for Services Definition; Stage 3".

[129] 3GPP TS 29.571: "5G System; Common Data Types for Service Based Interfaces; Stage 3".

[130] 3GPP TS 29.510: "5G System; Network Function Repository Services; Stage 3".

[131] 3GPP TS 23.316: "Wireless and wireline convergence access support for the 5G System (5GS); Stage 2".

[132] IETF RFC 7042: "IANA Considerations and IETF Protocol and Documentation Usage for IEEE 802 Parameters".

[133] BBF WT-470: "5G FMC Architecture".

[134] CableLabs WR-TR-5WWC-ARCH: "5G Wireless Wireline Converged Core Architecture".

[135] CableLabs DOCSIS MULPI: "Data-Over-Cable Service Interface Specifications DOCSIS 3.1, MAC and Upper Layer Protocols Interface Specification".

[136] IEEE "Guidelines for Use of Extended Unique Identifier (EUI), Organizationally Unique Identifier (OUI), and Company ID (CID)", <https://standards.ieee.org/content/dam/ieee-standards/standards/web/documents/tutorials/eui.pdf>

[x] 3GPP TS 36.331: "Evolved Universal Terrestrial Radio Access (E-UTRA); Radio Resource Control (RRC); Protocol specification"

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*Next change\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

## 2.xx Structure of the Truncated 5G-S-Temporary Mobile Subscriber Identity (Truncated 5G-S-TMSI)

The Truncated 5G-S-TMSI is a 40 bit UE identifier constructed from the 5G-S-TMSI. It is used in RRC Connection Re-Establishment for the control plane for NB-IoT as described in 3GPP TS 36.300 [91]. The Truncated 5G-S-TMSI shall be constructed from the Truncated AMF set ID, the Truncated AMF Pointer and the Truncated 5G-TMSI:

<Truncated 5G-S-TMSI> = <Truncated AMF set ID><Truncated AMF Pointer><Truncated 5G-TMSI>

Truncated AMF set ID is n least significant bits of AMF Set ID, where n is no greater than 10 bits.

Truncated AMF Pointer is m least significant bits of AMF Pointer, where m is no greater than 6 bits.

Truncated 5G-TMSI is (40-n-m) least significant bits of 5G-TMSI.

T The values n and m are configurable based on network deployment. The value n+m shall be larger or equal to 8 bits.

NOTE: Depending on network deployment it is up to operator configuration to ensure that Truncated AMF Set ID and Truncated AMF Pointer identify the AMF uniquely, and that Truncated 5G-TMSI identifies the UE uniquely within the serving AMF.

The NG-RAN is configured with the values n and m, and it is configured with how to recreate AMF Set ID from Truncated AMF Set ID, AMF Pointer from Truncated AMF Pointer, and 5G-TMSI from Truncated 5G-TMSI. The configuration of these parameters are specific to each PLMN.

The NG-RAN configures the UE with n and m during RRC connection reconfiguration as described in 3GPP TS 36.331 [x]. The configuration applies only to the registered PLMN.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*The end of changes\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*