**3GPP TSG-CT WG1 Meeting #131-eC1-21XXX**

**Electronic meeting, 19 – 27 Aug 2021 *was C1-214625***

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| *CR-Form-v12.0* |
| **CHANGE REQUEST** |
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|  | **24.501** | **CR** | **3530** | **rev** | **1** | **Current version:** | **17.3.1** |  |
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| *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 | **x** | Radio Access Network |  | Core Network | **x** |

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| ***Title:***  | UE radio capability ID contains an odd number of hexadecimal digits |
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| ***Source to WG:*** | Huawei, HiSilicon |
| ***Source to TSG:*** | C1 |
|  |  |
| ***Work item code:*** | 5GProtoc17, RACS |  | ***Date:*** | 2021-08-12 |
|  |  |  |  |  |
| ***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)* |
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| ***Reason for change:*** | * As the text quoted from clause 29.2 of TS 23.003 specified, the length of UE radio capability ID is 20 hexadecimal digits (when TF=0), or 14 hexadecimal digits (when TF=1), or 12 hexadecimal digits (when TF=2~F).

*Figure 29.2-1: Structure of UE radio capability ID**The UE radio capability ID is composed of the following elements (each element shall consist of hexadecimal digits only):**1) Type Field (TF): identifies the type of UE radio capability ID. The following values are defined:**- 0: manufacturer-assigned UE radio capability ID;**- 1: network-assigned UE radio capability ID; and**- 2 to F: spare values for future use.**2) The Vendor ID is an identifier of UE manufacturer. This is defined by a value of Private Enterprise Number issued by Internet Assigned Numbers Authority (IANA) in its capacity as the private enterprise number administrator, as maintained at https://www.iana.org/assignments/enterprise-numbers/enterprise-numbers. Its length is 8 hexadecimal digits. This field is present only if the Type Field is set to 0;**NOTE: The private enterprise number issued by IANA is a decimal number in the range between 0 and 4294967295 that needs to be converted to a fixed length 8 digit hexadecimal number when used within the UE Radio Capability ID. E.g. 32473 is converted to 00007ED9.**3) The Version ID is the current Version ID configured in the UCMF. This field is present only if the Type Field is set to 1. Its length is 2 hexadecimal digits.** Furthermore, according to the following text quoted from Table 9.11.3.68.1 of TS 24.501 specified, each hexadecimal digit coded over 4 bits. That is a UE radio capability ID occupy 80 bits (i.e., 10 octets, when TF=0), or 56 bits (i.e., 7 octets, when TF=1), or 48 bits (i.e., 6 octets, when TF=2~F).

*Table 9.11.3.68.1: UE radio capability ID information element*

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| *UE radio capability ID (octets 3 to n)* |
| *The UE radio capability ID contents contain the UE radio capability ID as specified in 3GPP TS 23.003 [4], with each hexadecimal digit coded over 4 bits, starting with the first hexadecimal digit coded in bits 4 to 1 of octet 3, the second hexadecimal digit coded in bits 8 to 5 of octet 3, and so on. If the UE radio capability ID contains an odd number of hexadecimal digits, bits 8 to 5 of the last octet (octet n) shall be coded as "1111".* |

Base on the above 2 points we know, the length of the UE radio capability ID IE only can be 12 octets (when TF=0), 9 octets (when TF=1), or 8 octets (when TF=2~F). |
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| ***Summary of change:*** | Clarify that the length of the UE radio capability ID IE can only be 12, 9 or 8 octets |
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| ***Consequences if not approved:*** | Clarification for the value of n |
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| ***Clauses affected:*** | 9.11.3.68 |
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|  | **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 ...  |
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| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** |  |

\*\*\*\*\* start of 1st change \*\*\*\*\*

#### 9.11.3.68 UE radio capability ID

The purpose of the UE radio capability ID information element is to carry a UE radio capability ID.

The UE radio capability ID information element is coded as shown in figure 9.11.3.68.1 and table 9.11.3.68.1.

The UE radio capability ID is a type 4 information element with a length of n octets (NOTE X).

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| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| UE radio capability ID IEI | octet 1 |
| Length of UE radio capability ID contents | octet 2 |
| UE radio capability ID | octet 3 |
| octet n |

Figure 9.11.3.68.1: UE radio capability ID information element

Table 9.11.3.68.1: UE radio capability ID information element

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| UE radio capability ID (octets 3 to n) |
| The UE radio capability ID contents contain the UE radio capability ID as specified in 3GPP TS 23.003 [4], with each hexadecimal digit coded over 4 bits, starting with the first hexadecimal digit coded in bits 4 to 1 of octet 3, the second hexadecimal digit coded in bits 8 to 5 of octet 3, and so on. If the UE radio capability ID contains an odd number of hexadecimal digits, bits 8 to 5 of the last octet (octet n) shall be coded as "1111". |
| NOTE X: The value of n is equal to 12 (when the type field of the UE radio capability ID is "manufacturer-assigned UE radio capability ID"), 9 (when the type field of the UE radio capability ID is "network-assigned UE radio capability ID"), or 8 (when the type field of the UE radio capability ID is other values). |

\*\*\*\*\* end of 1st change \*\*\*\*\*