**3GPP TSG-CT WG1 Meeting #126-eC1-20xxxx**

**Electronic meeting, 15-23 October 2020**

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| *CR-Form-v12.0* |
| **CHANGE REQUEST** |
|  |
|  | **24.301** | **CR** | **3448** | **rev** | **1** | **Current version:** | **16.6.0** |  |
|  |
| *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 | **X** | Radio Access Network |  | Core Network | **X** |

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|  |
| ***Title:***  | Providing undefined IEIs |
|  |  |
| ***Source to WG:*** | Huawei, HiSilicon, Nokia, Nokia Shanghai Bell, MediaTek Inc., Ericsson |
| ***Source to TSG:*** | C1 |
|  |  |
| ***Work item code:*** | TEI16, RACS |  | ***Date:*** | 2020-09-28 |
|  |  |  |  |  |
| ***Category:*** | **F** |  | ***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)Rel-17 (Release 17)* |
|  |  |
| ***Reason for change:*** | R16 was frozen but the IEIs for three IEs (Requested WUS assistance information IE, Negotiated WUS assistance information IE, UE radio capability ID availability IE) are still not defined in the related message coding. This will make the whole related features cannot be implemented anymore.Futhermore, about UE radio capability ID availability IE, it was indicated TLV format in the message coding but as per IE coding in sub 9.9.3.58, it was defined as type 1 IE. However, in the TRACKING AREA UPDATE REQUEST message, all IEIs for type 1 IE have been used out and there is no any IEI for type 1 IE available anymore. Hence, the format of UE radio capability ID availability IE shall be changed from type 1 to type 4 with TLV.Also for UE radio capability ID request IE, it was indicated TV format in the message coding but as per IE coding in sub 9.9.3.59, it was defined as type 4 IE with TLV. |
|  |  |
| ***Summary of change:*** | It proposes to provide the IEIs for three IEs (Requested WUS assistance information IE, Negotiated WUS assistance information IE, UE radio capability ID availability IE) in the related message coding.It proposes to change the format of UE radio capability ID availability IE from type 1 to type 4 with TLV in the IE coding.It proposes to change the format of UE radio capability ID request IE in the message coding from type 1 to type 4 with TLV to align with the IE coding.This is FASMO as the missing IEIs will make the whole WUS assistance feature and the RACS feature cannot be implemented well. |
|  |  |
| ***Consequences if not approved:*** | The IEIs are missing and IE format is wrong, which results in the whole WUS assistance feature and the RACS feature cannot be implemented well. |
|  |  |
| ***Clauses affected:*** | 8.2.1.1, 8.2.4.1, 8.2.20.1, 8.2.26.1, 8.2.29.1, 9.9.3.58 |
|  |  |
|  | **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:*** | Rev#1: Additionally to change the format of UE radio capability ID availability IE from type 1 to type 4 with TLV in the IE coding and to change the format of UE radio capability ID request IE from TV to TLV in the message coding. |

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

#### 8.2.1.1 Message definition

This message is sent by the network to the UE to indicate that the corresponding attach request has been accepted. See table 8.2.1.1.

Message type: ATTACH ACCEPT

Significance: dual

Direction: network to UE

Table 8.2.1.1: ATTACH ACCEPT message content

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| IEI | Information Element | Type/Reference | Presence | Format | Length |
|  | Protocol discriminator | Protocol discriminator9.2 | M | V | 1/2 |
|  | Security header type | Security header type9.3.1 | M | V | 1/2 |
|  | Attach accept message identity | Message type9.8 | M | V | 1 |
|  | EPS attach result | EPS attach result9.9.3.10 | M | V | 1/2 |
|  | Spare half octet | Spare half octet9.9.2.9 | M | V | 1/2 |
|  | T3412 value | GPRS timer9.9.3.16 | M | V | 1 |
|  | TAI list | Tracking area identity list9.9.3.33 | M | LV | 7-97 |
|  | ESM message container | ESM message container9.9.3.15 | M | LV-E | 5-n |
| 50 | GUTI | EPS mobile identity9.9.3.12 | O | TLV | 13 |
| 13 | Location area identification | Location area identification9.9.2.2 | O | TV | 6 |
| 23 | MS identity | Mobile identity9.9.2.3 | O | TLV | 7-10 |
| 53 | EMM cause | EMM cause9.9.3.9 | O | TV | 2 |
| 17 | T3402 value | GPRS timer9.9.3.16 | O | TV | 2 |
| 59 | T3423 value | GPRS timer9.9.3.16 | O | TV | 2 |
| 4A | Equivalent PLMNs | PLMN list9.9.2.8 | O | TLV | 5-47 |
| 34 | Emergency number list | Emergency number list9.9.3.37 | O | TLV | 5-50 |
| 64 | EPS network feature support | EPS network feature support9.9.3.12A | O | TLV | 3-4 |
| F- | Additional update result | Additional update result9.9.3.0A | O | TV | 1 |
| 5E | T3412 extended value | GPRS timer 39.9.3.16B | O | TLV | 3 |
| 6A | T3324 value | GPRS timer 29.9.3.16A | O | TLV | 3 |
| 6E | Extended DRX parameters | Extended DRX parameters9.9.3.46 | O | TLV | 3 |
| 65 | DCN-ID | DCN-ID9.9.3.48 | O | TLV | 4 |
| E- | SMS services status | SMS services status9.9.3.4B | O | TV | 1 |
| D- | Non-3GPP NW provided policies | Non-3GPP NW provided policies9.9.3.49 | O | TV | 1 |
| 6B | T3448 value | GPRS timer 29.9.3.16A | O | TLV | 3 |
| C- | Network policy | Network policy9.9.3.52 | O | TV | 1 |
| 6C | T3447 value | GPRS timer 39.9.3.16B | O | TLV | 3 |
| 7A | Extended emergency number list | Extended emergency number list9.9.3.37A | O | TLV-E | 7-65538 |
| 7C | Ciphering key data | Ciphering key data9.9.3.56 | O | TLV-E | 35-2291 |
| 66 | UE radio capability ID | UE radio capability ID9.9.3.60 | O | TLV | 3-n |
| B- | UE radio capability ID deletion indication | UE radio capability ID deletion indication9.9.3.61 | O | TV | 1 |
| 35 | Negotiated WUS assistance information | WUS assistance information9.9.3.62 | O | TLV | 3-n |
| K- | Negotiated DRX parameter in NB-S1 mode | NB-S1 DRX parameter9.9.3.63 | O | TV | 1 |

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

#### 8.2.4.1 Message definition

This message is sent by the UE to the network in order to perform an attach procedure. See table 8.2.4.1.

Message type: ATTACH REQUEST

Significance: dual

Direction: UE to network

Table 8.2.4.1: ATTACH REQUEST message content

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| IEI | Information Element | Type/Reference | Presence | Format | Length |
|  | Protocol discriminator | Protocol discriminator9.2 | M | V | 1/2 |
|  | Security header type | Security header type9.3.1 | M | V | 1/2 |
|  | Attach request message identity | Message type9.8 | M | V | 1 |
|  | EPS attach type | EPS attach type9.9.3.11 | M | V | 1/2 |
|  | NAS key set identifier | NAS key set identifier9.9.3.21 | M | V | 1/2 |
|  | EPS mobile identity | EPS mobile identity9.9.3.12 | M | LV | 5-12 |
|  | UE network capability | UE network capability9.9.3.34 | M | LV | 3-14 |
|  | ESM message container | ESM message container9.9.3.15 | M | LV-E | 5-n |
| 19 | Old P-TMSI signature | P-TMSI signature9.9.3.26 | O | TV | 4 |
| 50 | Additional GUTI | EPS mobile identity9.9.3.12 | O | TLV | 13 |
| 52 | Last visited registered TAI | Tracking area identity9.9.3.32 | O | TV | 6 |
| 5C | DRX parameter | DRX parameter9.9.3.8 | O | TV | 3 |
| 31 | MS network capability | MS network capability9.9.3.20 | O | TLV | 4-10 |
| 13 | Old location area identification | Location area identification9.9.2.2 | O | TV | 6 |
| 9- | TMSI status | TMSI status9.9.3.31 | O | TV | 1 |
| 11 | Mobile station classmark 2 | Mobile station classmark 29.9.2.4 | O | TLV | 5 |
| 20 | Mobile station classmark 3 | Mobile station classmark 39.9.2.5 | O | TLV | 2-34 |
| 40 | Supported Codecs | Supported Codec List9.9.2.10 | O | TLV | 5-n |
| F- | Additional update type | Additional update type9.9.3.0B | O | TV | 1 |
| 5D | Voice domain preference and UE's usage setting | Voice domain preference and UE's usage setting9.9.3.44 | O | TLV | 3 |
| D- | Device properties | Device properties9.9.2.0A | O | TV | 1 |
| E- | Old GUTI type | GUTI type9.9.3.45 | O | TV | 1 |
| C-  | MS network feature support | MS network feature support 9.9.3.20A | O | TV | 1 |
| 10 | TMSI based NRI container | Network resource identifier container9.9.3.24A | O | TLV | 4 |
| 6A | T3324 value | GPRS timer 29.9.3.16A | O | TLV | 3 |
| 5E | T3412 extended value | GPRS timer 39.9.3.16B | O | TLV | 3 |
| 6E | Extended DRX parameters | Extended DRX parameters9.9.3.46 | O | TLV | 3 |
| 6F | UE additional security capability | UE additional security capability9.9.3.53 | O | TLV | 6 |
| 6D | UE status | UE status9.9.3.54 | O | TLV | 3 |
| 17 | Additional information requested | Additional information requested9.9.3.55 | O | TV | 2 |
| 32 | N1 UE network capability | N1 UE network capability9.9.3.57 | O | TLV | 3-15 |
| 34 | UE radio capability ID availability | UE radio capability ID availability9.9.3.58 | O | TLV | 3 |
| 35 | Requested WUS assistance information | WUS assistance information9.9.3.62 | O | TLV | 3-n |
| K- | DRX parameter in NB-S1 mode | NB-S1 DRX parameter9.9.3.63 | O | TV | 1 |

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

#### 8.2.20.1 Message definition

This message is sent by the network to the UE to establish NAS signalling security. See table 8.2.20.1.

Message type: SECURITY MODE COMMAND

Significance: dual

Direction: network to UE

Table 8.2.20.1: SECURITY MODE COMMAND message content

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| IEI | Information Element | Type/Reference | Presence | Format | Length |
|  | Protocol discriminator | Protocol discriminator9.2 | M | V | 1/2 |
|  | Security header type | Security header type9.3.1 | M | V | 1/2 |
|  | Security mode command message identity | Message type9.8 | M | V | 1 |
|  | Selected NAS security algorithms | NAS security algorithms9.9.3.23 | M | V | 1 |
|  | NAS key set identifier | NAS key set identifier9.9.3.21 | M | V | 1/2 |
|  | Spare half octet | Spare half octet9.9.2.9 | M | V | 1/2 |
|  | Replayed UE security capabilities | UE security capability9.9.3.36 | M | LV | 3-6 |
| C- | IMEISV request | IMEISV request9.9.3.18 | O | TV | 1 |
| 55 | Replayed nonceUE | Nonce9.9.3.25 | O | TV | 5 |
| 56 | NonceMME | Nonce9.9.3.25 | O | TV | 5 |
| 4F | HashMME | HashMME9.9.3.50 | O | TLV | 10 |
| 6F | Replayed UE additional security capability | UE additional security capability9.9.3.53 | O | TLV | 6 |
| 34 | UE radio capability ID request | UE radio capability ID request9.9.3.59 | O | TLV | 3 |
|  |  |  |  |  |  |

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

#### 8.2.26.1 Message definition

This message is sent by the network to the UE to provide the UE with EPS mobility management related data in response to a tracking area update request message. See table 8.2.26.1.

Message type: TRACKING AREA UPDATE ACCEPT

Significance: dual

Direction: network to UE

Table 8.2.26.1: TRACKING AREA UPDATE ACCEPT message content

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| IEI | Information Element | Type/Reference | Presence | Format | Length |
|  | Protocol discriminator | Protocol discriminator9.2 | M | V | 1/2 |
|  | Security header type | Security header type9.3.1 | M | V | 1/2 |
|  | Tracking area update accept message identity | Message type9.8 | M | V | 1 |
|  | EPS update result | EPS update result9.9.3.13 | M | V | 1/2 |
|  | Spare half octet | Spare half octet9.9.2.9 | M | V | 1/2 |
| 5A | T3412 value | GPRS timer9.9.3.16 | O | TV | 2 |
| 50 | GUTI | EPS mobile identity9.9.3.12 | O | TLV | 13 |
| 54 | TAI list | Tracking area identity list9.9.3.33 | O | TLV | 8-98 |
| 57 | EPS bearer context status | EPS bearer context status9.9.2.1 | O | TLV | 4 |
| 13 | Location area identification | Location area identification9.9.2.2 | O | TV | 6 |
| 23 | MS identity | Mobile identity9.9.2.3 | O | TLV | 7-10 |
| 53 | EMM cause | EMM cause9.9.3.9 | O | TV | 2 |
| 17 | T3402 value | GPRS timer9.9.3.16 | O | TV | 2 |
| 59 | T3423 value | GPRS timer9.9.3.16 | O | TV | 2 |
| 4A | Equivalent PLMNs | PLMN list9.9.2.8 | O | TLV | 5-47 |
| 34 | Emergency number list | Emergency number list9.9.3.37 | O | TLV | 5-50 |
| 64 | EPS network feature support | EPS network feature support9.9.3.12A | O | TLV | 3-4 |
| F- | Additional update result | Additional update result9.9.3.0A | O | TV | 1 |
| 5E | T3412 extended value | GPRS timer 39.9.3.16B | O | TLV | 3 |
| 6A | T3324 value | GPRS timer 29.9.3.16A | O | TLV | 3 |
| 6E | Extended DRX parameters | Extended DRX parameters9.9.3.46 | O | TLV | 3 |
| 68 | Header compression configuration status | Header compression configuration status9.9.4.27 | O | TLV | 4 |
| 65 | DCN-ID | DCN-ID9.9.3.48 | O | TLV | 4 |
| E- | SMS services status | SMS services status9.9.3.4B | O | TV | 1 |
| D- | Non-3GPP NW policies | Non-3GPP NW provided policies9.9.3.49 | O | TV | 1 |
| 6B | T3448 value | GPRS timer 29.9.3.16A | O | TLV | 3 |
| C- | Network policy | Network policy9.9.3.52 | O | TV | 1 |
| 6C | T3447 value | GPRS timer 39.9.3.16B | O | TLV | 3 |
| 7A | Extended emergency number list | Extended emergency number list9.9.3.37A | O | TLV-E | 7-65538 |
| 7C | Ciphering key data | Ciphering key data9.9.3.56 | O | TLV-E | 35-2291 |
| 66 | UE radio capability ID | UE radio capability ID9.9.3.60 | O | TLV | 3-n |
| B- | UE radio capability ID deletion indication | UE radio capability ID deletion indication9.9.3.61 | O | TV | 1 |
| 35 | Negotiated WUS assistance information | WUS assistance information9.9.3.62 | O | TLV | 3-n |
| K- | Negotiated DRX parameter in NB-S1 mode | NB-S1 DRX parameter9.9.3.63 | O | TV | 1 |

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

#### 8.2.29.1 Message definition

The purposes of sending the tracking area update request by the UE to the network are described in subclause 5.5.3.1. See table 8.2.29.1.

Message type: TRACKING AREA UPDATE REQUEST

Significance: dual

Direction: UE to network

Table 8.2.29.1: TRACKING AREA UPDATE REQUEST message content

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| IEI | Information Element | Type/Reference | Presence | Format | Length |
|  | Protocol discriminator | Protocol discriminator9.2 | M | V | 1/2 |
|  | Security header type | Security header type9.3.1 | M | V | 1/2 |
|  | Tracking area update request message identity | Message type9.8 | M | V | 1 |
|  | EPS update type | EPS update type9.9.3.14 | M | V | 1/2 |
|  | NAS key set identifier | NAS key set identifier9.9.3.21 | M | V | 1/2 |
|  | Old GUTI  | EPS mobile identity9.9.3.12 | M | LV | 12 |
| B- | Non-current native NAS key set identifier | NAS key set identifier9.9.3.21 | O | TV | 1 |
| 8- | GPRS ciphering key sequence number | Ciphering key sequence number 9.9.3.4a | O | TV | 1 |
| 19 | Old P-TMSI signature | P-TMSI signature9.9.3.26 | O | TV | 4 |
| 50 | Additional GUTI | EPS mobile identity9.9.3.12 | O | TLV | 13 |
| 55 | NonceUE | Nonce9.9.3.25 | O | TV | 5 |
| 58 | UE network capability | UE network capability9.9.3.34 | O | TLV | 4-15 |
| 52 | Last visited registered TAI | Tracking area identity9.9.3.32 | O | TV | 6 |
| 5C | DRX parameter | DRX parameter9.9.3.8 | O | TV | 3 |
| A- | UE radio capability information update needed | UE radio capability information update needed9.9.3.35 | O | TV | 1 |
| 57 | EPS bearer context status | EPS bearer context status9.9.2.1 | O | TLV | 4 |
| 31 | MS network capability | MS network capability9.9.3.20 | O | TLV | 4-10 |
| 13 | Old location area identification | Location area identification9.9.2.2 | O | TV | 6 |
| 9- | TMSI status | TMSI status9.9.3.31 | O | TV | 1 |
| 11 | Mobile station classmark 2 | Mobile station classmark 29.9.2.4 | O | TLV | 5 |
| 20 | Mobile station classmark 3 | Mobile station classmark 39.9.2.5 | O | TLV | 2-34 |
| 40 | Supported Codecs | Supported Codec List9.9.2.10 | O | TLV | 5-n |
| F- | Additional update type | Additional update type9.9.3.0B | O | TV | 1 |
| 5D | Voice domain preference and UE's usage setting | Voice domain preference and UE's usage setting9.9.3.44 | O | TLV | 3 |
| E- | Old GUTI type | GUTI type9.9.3.45 | O | TV | 1 |
| D- | Device properties | Device properties9.9.2.0A | O | TV | 1 |
| C- | MS network feature support  | MS network feature support9.9.3.20A | O | TV | 1 |
| 10 | TMSI based NRI container | Network resource identifier container9.9.3.24A | O | TLV | 4 |
| 6A | T3324 value | GPRS timer 29.9.3.16 | O | TLV | 3 |
| 5E | T3412 extended value | GPRS timer 39.9.3.16B | O | TLV | 3 |
| 6E | Extended DRX parameters | Extended DRX parameters9.9.3.46 | O | TLV | 3 |
| 6F | UE additional security capability | UE additional security capability9.9.3.53 | O | TLV | 6 |
| 6D | UE status | UE status9.9.3.54 | O | TLV | 3 |
| 17 | Additional information requested | Additional information requested9.9.3.55 | O | TV | 2 |
| 32 | N1 UE network capability | N1 UE network capability9.9.3.57 | O | TLV | 3-15 |
| 34 | UE radio capability ID availability | UE radio capability ID availability9.9.3.58 | O | TLV | 3 |
| 35 | Requested WUS assistance information | WUS assistance information9.9.3.62 | O | TLV | 3-n |
| K- | DRX parameter in NB-S1 mode | NB-S1 DRX parameter9.9.3.63 | O | TV | 1 |

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

#### 9.9.3.58 UE radio capability ID availability

The purpose of the UE radio capability ID availabilityinformation element is to indicate that the UE has an applicable UE radio capability ID for the current UE radio configuration in the selected PLMN.

The UE radio capability ID availabilityis a type 4 information element with a length of 3 octets.

The UE radio capability ID availabilityinformation element is coded as shown in figure 9.9.3.58.1 and table 9.9.3.58.1.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| UE radio capability ID availability IEI | octet 1 |
| Length of UE radio capability ID availability contents | octet 2 |
| 0 | 0 | 0 | 0 | 0 | UE radio capability ID availabilityvalue |  |
| Spare | octet 3 |
|  |  |  |  |

Figure 9.9.3.58.1: UE radio capability ID availability information element

Table 9.9.3.58.1: UE radio capability ID availability information element

|  |
| --- |
| UE radio capability ID availability value (bits 3 to 1 of octet 3) |
| Bits |
| 3 | 2 | 1 |  |  |
| 0 | 0 | 0 |  | UE radio capability ID not available |
| 0 | 0 | 1 |  | UE radio capability ID available |
|  |
| All other values are interpreted as UE radio capability ID not available by this version of the protocol. |
| Bits 4 to 8 of octet 3 are spare and shall be coded as zero. |

\* \* \* End of Change \* \* \* \*