**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 can be 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 discriminator  9.2 | M | V | 1/2 |
|  | Security header type | Security header type  9.3.1 | M | V | 1/2 |
|  | Attach accept message identity | Message type  9.8 | M | V | 1 |
|  | EPS attach result | EPS attach result  9.9.3.10 | M | V | 1/2 |
|  | Spare half octet | Spare half octet  9.9.2.9 | M | V | 1/2 |
|  | T3412 value | GPRS timer  9.9.3.16 | M | V | 1 |
|  | TAI list | Tracking area identity list  9.9.3.33 | M | LV | 7-97 |
|  | ESM message container | ESM message container  9.9.3.15 | M | LV-E | 5-n |
| 50 | GUTI | EPS mobile identity  9.9.3.12 | O | TLV | 13 |
| 13 | Location area identification | Location area identification  9.9.2.2 | O | TV | 6 |
| 23 | MS identity | Mobile identity  9.9.2.3 | O | TLV | 7-10 |
| 53 | EMM cause | EMM cause  9.9.3.9 | O | TV | 2 |
| 17 | T3402 value | GPRS timer  9.9.3.16 | O | TV | 2 |
| 59 | T3423 value | GPRS timer  9.9.3.16 | O | TV | 2 |
| 4A | Equivalent PLMNs | PLMN list  9.9.2.8 | O | TLV | 5-47 |
| 34 | Emergency number list | Emergency number list  9.9.3.37 | O | TLV | 5-50 |
| 64 | EPS network feature support | EPS network feature support  9.9.3.12A | O | TLV | 3-4 |
| F- | Additional update result | Additional update result  9.9.3.0A | O | TV | 1 |
| 5E | T3412 extended value | GPRS timer 3  9.9.3.16B | O | TLV | 3 |
| 6A | T3324 value | GPRS timer 2  9.9.3.16A | O | TLV | 3 |
| 6E | Extended DRX parameters | Extended DRX parameters  9.9.3.46 | O | TLV | 3 |
| 65 | DCN-ID | DCN-ID  9.9.3.48 | O | TLV | 4 |
| E- | SMS services status | SMS services status  9.9.3.4B | O | TV | 1 |
| D- | Non-3GPP NW provided policies | Non-3GPP NW provided policies  9.9.3.49 | O | TV | 1 |
| 6B | T3448 value | GPRS timer 2  9.9.3.16A | O | TLV | 3 |
| C- | Network policy | Network policy  9.9.3.52 | O | TV | 1 |
| 6C | T3447 value | GPRS timer 3  9.9.3.16B | O | TLV | 3 |
| 7A | Extended emergency number list | Extended emergency number list  9.9.3.37A | O | TLV-E | 7-65538 |
| 7C | Ciphering key data | Ciphering key data  9.9.3.56 | O | TLV-E | 35-2291 |
| 66 | UE radio capability ID | UE radio capability ID  9.9.3.60 | O | TLV | 3-n |
| B- | UE radio capability ID deletion indication | UE radio capability ID deletion indication  9.9.3.61 | O | TV | 1 |
| 35 | Negotiated WUS assistance information | WUS assistance information  9.9.3.62 | O | TLV | 3-n |
| K- | Negotiated DRX parameter in NB-S1 mode | NB-S1 DRX parameter  9.9.3.63 | 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 discriminator  9.2 | M | V | 1/2 |
|  | Security header type | Security header type  9.3.1 | M | V | 1/2 |
|  | Attach request message identity | Message type  9.8 | M | V | 1 |
|  | EPS attach type | EPS attach type  9.9.3.11 | M | V | 1/2 |
|  | NAS key set identifier | NAS key set identifier  9.9.3.21 | M | V | 1/2 |
|  | EPS mobile identity | EPS mobile identity  9.9.3.12 | M | LV | 5-12 |
|  | UE network capability | UE network capability  9.9.3.34 | M | LV | 3-14 |
|  | ESM message container | ESM message container  9.9.3.15 | M | LV-E | 5-n |
| 19 | Old P-TMSI signature | P-TMSI signature  9.9.3.26 | O | TV | 4 |
| 50 | Additional GUTI | EPS mobile identity  9.9.3.12 | O | TLV | 13 |
| 52 | Last visited registered TAI | Tracking area identity  9.9.3.32 | O | TV | 6 |
| 5C | DRX parameter | DRX parameter  9.9.3.8 | O | TV | 3 |
| 31 | MS network capability | MS network capability  9.9.3.20 | O | TLV | 4-10 |
| 13 | Old location area identification | Location area identification  9.9.2.2 | O | TV | 6 |
| 9- | TMSI status | TMSI status  9.9.3.31 | O | TV | 1 |
| 11 | Mobile station classmark 2 | Mobile station classmark 2  9.9.2.4 | O | TLV | 5 |
| 20 | Mobile station classmark 3 | Mobile station classmark 3  9.9.2.5 | O | TLV | 2-34 |
| 40 | Supported Codecs | Supported Codec List  9.9.2.10 | O | TLV | 5-n |
| F- | Additional update type | Additional update type 9.9.3.0B | O | TV | 1 |
| 5D | Voice domain preference and UE's usage setting | Voice domain preference and UE's usage setting  9.9.3.44 | O | TLV | 3 |
| D- | Device properties | Device properties  9.9.2.0A | O | TV | 1 |
| E- | Old GUTI type | GUTI type  9.9.3.45 | 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 container  9.9.3.24A | O | TLV | 4 |
| 6A | T3324 value | GPRS timer 2  9.9.3.16A | O | TLV | 3 |
| 5E | T3412 extended value | GPRS timer 3  9.9.3.16B | O | TLV | 3 |
| 6E | Extended DRX parameters | Extended DRX parameters  9.9.3.46 | O | TLV | 3 |
| 6F | UE additional security capability | UE additional security capability  9.9.3.53 | O | TLV | 6 |
| 6D | UE status | UE status  9.9.3.54 | O | TLV | 3 |
| 17 | Additional information requested | Additional information requested  9.9.3.55 | O | TV | 2 |
| 32 | N1 UE network capability | N1 UE network capability  9.9.3.57 | O | TLV | 3-15 |
| 34 | UE radio capability ID availability | UE radio capability ID availability  9.9.3.58 | O | TLV | 3 |
| 35 | Requested WUS assistance information | WUS assistance information  9.9.3.62 | O | TLV | 3-n |
| K- | DRX parameter in NB-S1 mode | NB-S1 DRX parameter  9.9.3.63 | 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 discriminator  9.2 | | M | | V | | 1/2 | |
|  | | Security header type | | Security header type  9.3.1 | | M | | V | | 1/2 | |
|  | | Security mode command message identity | | Message type  9.8 | | M | | V | | 1 | |
|  | | Selected NAS security algorithms | | NAS security algorithms  9.9.3.23 | | M | | V | | 1 | |
|  | | NAS key set identifier | | NAS key set identifier  9.9.3.21 | | M | | V | | 1/2 | |
|  | | Spare half octet | | Spare half octet  9.9.2.9 | | M | | V | | 1/2 | |
|  | | Replayed UE security capabilities | | UE security capability  9.9.3.36 | | M | | LV | | 3-6 | |
| C- | | IMEISV request | | IMEISV request  9.9.3.18 | | O | | TV | | 1 | |
| 55 | | Replayed nonceUE | | Nonce  9.9.3.25 | | O | | TV | | 5 | |
| 56 | | NonceMME | | Nonce  9.9.3.25 | | O | | TV | | 5 | |
| 4F | | HashMME | | HashMME  9.9.3.50 | | O | | TLV | | 10 | |
| 6F | | Replayed UE additional security capability | | UE additional security capability  9.9.3.53 | | O | | TLV | | 6 | |
| 34 | | UE radio capability ID request | | UE radio capability ID request  9.9.3.59 | | 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 discriminator  9.2 | M | V | 1/2 |
|  | Security header type | Security header type  9.3.1 | M | V | 1/2 |
|  | Tracking area update accept message identity | Message type  9.8 | M | V | 1 |
|  | EPS update result | EPS update result  9.9.3.13 | M | V | 1/2 |
|  | Spare half octet | Spare half octet  9.9.2.9 | M | V | 1/2 |
| 5A | T3412 value | GPRS timer  9.9.3.16 | O | TV | 2 |
| 50 | GUTI | EPS mobile identity  9.9.3.12 | O | TLV | 13 |
| 54 | TAI list | Tracking area identity list  9.9.3.33 | O | TLV | 8-98 |
| 57 | EPS bearer context status | EPS bearer context status  9.9.2.1 | O | TLV | 4 |
| 13 | Location area identification | Location area identification  9.9.2.2 | O | TV | 6 |
| 23 | MS identity | Mobile identity  9.9.2.3 | O | TLV | 7-10 |
| 53 | EMM cause | EMM cause  9.9.3.9 | O | TV | 2 |
| 17 | T3402 value | GPRS timer  9.9.3.16 | O | TV | 2 |
| 59 | T3423 value | GPRS timer  9.9.3.16 | O | TV | 2 |
| 4A | Equivalent PLMNs | PLMN list  9.9.2.8 | O | TLV | 5-47 |
| 34 | Emergency number list | Emergency number list  9.9.3.37 | O | TLV | 5-50 |
| 64 | EPS network feature support | EPS network feature support  9.9.3.12A | O | TLV | 3-4 |
| F- | Additional update result | Additional update result 9.9.3.0A | O | TV | 1 |
| 5E | T3412 extended value | GPRS timer 3  9.9.3.16B | O | TLV | 3 |
| 6A | T3324 value | GPRS timer 2  9.9.3.16A | O | TLV | 3 |
| 6E | Extended DRX parameters | Extended DRX parameters  9.9.3.46 | O | TLV | 3 |
| 68 | Header compression configuration status | Header compression configuration status  9.9.4.27 | O | TLV | 4 |
| 65 | DCN-ID | DCN-ID  9.9.3.48 | O | TLV | 4 |
| E- | SMS services status | SMS services status  9.9.3.4B | O | TV | 1 |
| D- | Non-3GPP NW policies | Non-3GPP NW provided policies  9.9.3.49 | O | TV | 1 |
| 6B | T3448 value | GPRS timer 2  9.9.3.16A | O | TLV | 3 |
| C- | Network policy | Network policy  9.9.3.52 | O | TV | 1 |
| 6C | T3447 value | GPRS timer 3  9.9.3.16B | O | TLV | 3 |
| 7A | Extended emergency number list | Extended emergency number list  9.9.3.37A | O | TLV-E | 7-65538 |
| 7C | Ciphering key data | Ciphering key data  9.9.3.56 | O | TLV-E | 35-2291 |
| 66 | UE radio capability ID | UE radio capability ID  9.9.3.60 | O | TLV | 3-n |
| B- | UE radio capability ID deletion indication | UE radio capability ID deletion indication  9.9.3.61 | O | TV | 1 |
| 35 | Negotiated WUS assistance information | WUS assistance information  9.9.3.62 | O | TLV | 3-n |
| K- | Negotiated DRX parameter in NB-S1 mode | NB-S1 DRX parameter  9.9.3.63 | 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 discriminator  9.2 | M | V | 1/2 |
|  | Security header type | Security header type  9.3.1 | M | V | 1/2 |
|  | Tracking area update request message identity | Message type  9.8 | M | V | 1 |
|  | EPS update type | EPS update type  9.9.3.14 | M | V | 1/2 |
|  | NAS key set identifier | NAS key set identifier  9.9.3.21 | M | V | 1/2 |
|  | Old GUTI | EPS mobile identity  9.9.3.12 | M | LV | 12 |
| B- | Non-current native NAS key set identifier | NAS key set identifier  9.9.3.21 | 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 signature  9.9.3.26 | O | TV | 4 |
| 50 | Additional GUTI | EPS mobile identity  9.9.3.12 | O | TLV | 13 |
| 55 | NonceUE | Nonce  9.9.3.25 | O | TV | 5 |
| 58 | UE network capability | UE network capability  9.9.3.34 | O | TLV | 4-15 |
| 52 | Last visited registered TAI | Tracking area identity  9.9.3.32 | O | TV | 6 |
| 5C | DRX parameter | DRX parameter  9.9.3.8 | O | TV | 3 |
| A- | UE radio capability information update needed | UE radio capability information update needed  9.9.3.35 | O | TV | 1 |
| 57 | EPS bearer context status | EPS bearer context status  9.9.2.1 | O | TLV | 4 |
| 31 | MS network capability | MS network capability  9.9.3.20 | O | TLV | 4-10 |
| 13 | Old location area identification | Location area identification  9.9.2.2 | O | TV | 6 |
| 9- | TMSI status | TMSI status  9.9.3.31 | O | TV | 1 |
| 11 | Mobile station classmark 2 | Mobile station classmark 2  9.9.2.4 | O | TLV | 5 |
| 20 | Mobile station classmark 3 | Mobile station classmark 3  9.9.2.5 | O | TLV | 2-34 |
| 40 | Supported Codecs | Supported Codec List  9.9.2.10 | O | TLV | 5-n |
| F- | Additional update type | Additional update type 9.9.3.0B | O | TV | 1 |
| 5D | Voice domain preference and UE's usage setting | Voice domain preference and UE's usage setting  9.9.3.44 | O | TLV | 3 |
| E- | Old GUTI type | GUTI type  9.9.3.45 | O | TV | 1 |
| D- | Device properties | Device properties  9.9.2.0A | 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 container  9.9.3.24A | O | TLV | 4 |
| 6A | T3324 value | GPRS timer 2  9.9.3.16 | O | TLV | 3 |
| 5E | T3412 extended value | GPRS timer 3  9.9.3.16B | O | TLV | 3 |
| 6E | Extended DRX parameters | Extended DRX parameters  9.9.3.46 | O | TLV | 3 |
| 6F | UE additional security capability | UE additional security capability  9.9.3.53 | O | TLV | 6 |
| 6D | UE status | UE status  9.9.3.54 | O | TLV | 3 |
| 17 | Additional information requested | Additional information requested  9.9.3.55 | O | TV | 2 |
| 32 | N1 UE network capability | N1 UE network capability  9.9.3.57 | O | TLV | 3-15 |
| 34 | UE radio capability ID availability | UE radio capability ID availability  9.9.3.58 | O | TLV | 3 |
| 35 | Requested WUS assistance information | WUS assistance information  9.9.3.62 | O | TLV | 3-n |
| K- | DRX parameter in NB-S1 mode | NB-S1 DRX parameter  9.9.3.63 | 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 availability  value | | | |  | |
| 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 \* \* \* \*