**3GPP TSG-CT Meeting #88eCP-201311**

**E-Meeting, 29th June – 1st July 2020 (was C1-204093)**

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| --- |
| *CR-Form-v12.0* |
| **CHANGE REQUEST** |
| 1 |
|  | **24.501** | **CR** | **2229** | **rev** | **2** | **Current version:** | **16.4.1** |  |
|  |
| *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:***  | Resolve EN for Ciphering Key data IE regarding positioning SIBs |
|  |  |
| ***Source to WG:*** | Qualcomm Incorporated |
| ***Source to TSG:*** | Qualcomm Incorporated |
|  |  |
| ***Work item code:*** | 5G\_eLCS |  | ***Date:*** | 2020-06-18 |
|  |  |  |  |  |
| ***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)* |
|  |  |
| ***Reason for change:*** | TS 24.501 has the Editor’s notes Editor's note [WI: 5G\_eLCS, CR#1705]: The Ciphering key data IE includes positioning SIBs that are still being discussed in RAN2 for Rel-16. The minimum and maximum length for this IE will need to be calculated and added to table 8.2.7.1.1 after RAN2 agreements for Rel-16.According to CR 1592 to TS 38.331 (R2-2005890) agreed by RAN2, RAN2 has now finalized the NR Positioning SIBs. Therefore, the ciphering key data IE should be finalized and the min/max length for this IE should be clarified.In addition, E-UTRA posSIBtype parameters are not aligned with TS 36.331. |
|  |  |
| ***Summary of change:*** | Alignment of NR posSIBtype parameters with RAN WG specification.Alignment of E-UTRA posSIBtype parameters with RAN WG specification.Clarification of mininum and maximum length of the IE. |
|  |  |
| ***Consequences if not approved:*** | Editor’s notes for an issue that has been resolved will remain in the specification. Transfer of ciphering key data will not be supported in stage 3. |
|  |  |
| ***Clauses affected:*** | 8.2.7.1, 9.11.3.18C |
|  |  |
|  | **Y** | **N** |  |  |
| ***Other specs*** | **x** |  |  Other core specifications  | TS 38.331 CR 1592  |
| ***affected:*** |  | **X** |  Test specifications | TS/TR ... CR ...  |
| ***(show related CRs)*** |  | **X** |  O&M Specifications | TS/TR ... CR ...  |
|  |  |
| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** | Revision 2 (CT#88e):* Changed the linkage from: CR 1508 to TS 38.331 (R2-2002598), to: CR 1592 to TS 38.331 (R2-2005890), since the contents of CR 1508 have been merged into CR 1592 in RAN2.
* Updated the Reason for change to refer to R2-2005890 rather than R2-2002598
 |

\*\*\* First change \*\*\*

#### 8.2.7.1 Message definition

The REGISTRATION ACCEPT message is sent by the AMF to the UE. See table 8.2.7.1.1.

Message type: REGISTRATION ACCEPT

Significance: dual

Direction: network to UE

Table 8.2.7.1.1: REGISTRATION ACCEPT message content

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| IEI | Information Element | Type/Reference | Presence | Format | Length |
|  | Extended protocol discriminator | Extended protocol discriminator9.2 | M | V | 1 |
|  | Security header type | Security header type9.3 | M | V | 1/2 |
|  | Spare half octet | Spare half octet9.5 | M | V | 1/2 |
|  | Registration accept message identity | Message type9.7 | M | V | 1 |
|  | 5GS registration result | 5GS registration result9.11.3.6 | M | LV | 2 |
| 77 | 5G-GUTI | 5GS mobile identity9.11.3.4 | O | TLV-E | 14 |
| 4A | Equivalent PLMNs | PLMN list9.11.3.45 | O | TLV | 5-47 |
| 54 | TAI list | 5GS tracking area identity list9.11.3.9 | O | TLV | 9-114 |
| 15 | Allowed NSSAI | NSSAI9.11.3.37 | O | TLV | 4-74 |
| 11 | Rejected NSSAI | Rejected NSSAI9.11.3.46 | O | TLV | 4-42 |
| 31 | Configured NSSAI | NSSAI9.11.3.37 | O | TLV | 4-146 |
| 21 | 5GS network feature support | 5GS network feature support9.11.3.5 | O | TLV | 3-5 |
| 50 | PDU session status | PDU session status9.11.3.44 | O | TLV | 4-34 |
| 26 | PDU session reactivation result | PDU session reactivation result9.11.3.42 | O | TLV | 4-34 |
| 72 | PDU session reactivation result error cause | PDU session reactivation result error cause9.11.3.43 | O | TLV-E | 5-515 |
| 79 | LADN information | LADN information9.11.3.30 | O | TLV-E | 12-1715 |
| B- | MICO indication | MICO indication9.11.3.31 | O | TV | 1 |
| 9- | Network slicing indication | Network slicing indication9.11.3.36 | O | TV | 1 |
| 27 | Service area list | Service area list9.11.3.49 | O | TLV | 6-114 |
| 5E | T3512 value | GPRS timer 39.11.2.5 | O | TLV | 3 |
| 5D | Non-3GPP de-registration timer value | GPRS timer 29.11.2.4 | O | TLV | 3 |
| 16 | T3502 value | GPRS timer 29.11.2.4 | O | TLV | 3 |
| 34 | Emergency number list | Emergency number list9.11.3.23 | O | TLV | 5-50 |
| 7A | Extended emergency number list | Extended emergency number list9.11.3.26 | O | TLV-E | 7-65538 |
| 73 | SOR transparent container | SOR transparent container9.11.3.51 | O | TLV-E | 20-n |
| 78 | EAP message | EAP message9.11.2.2 | O | TLV-E | 7-1503 |
| A- | NSSAI inclusion mode | NSSAI inclusion mode9.11.3.37A | O | TV | 1 |
| 76 | Operator-defined access category definitions | Operator-defined access category definitions9.11.3.38 | O | TLV-E | 3-n |
| 51 | Negotiated DRX parameters | 5GS DRX parameters9.11.3.2A | O | TLV | 3 |
| D- | Non-3GPP NW policies | Non-3GPP NW provided policies9.11.3.36A | O | TV | 1 |
| 60 | EPS bearer context status | EPS bearer context status9.11.3.23A | O | TLV | 4 |
| 6E | Negotiated extended DRX parameters | Extended DRX parameters9.11.3.26A | O | TLV | 3 |
| 6C | T3447 value | GPRS timer 39.11.2.5 | O | TLV | 3 |
| 6B | T3448 value | GPRS timer 39.11.2.4 | O | TLV | 3 |
| 6A | T3324 value | GPRS timer 39.11.2.5 | O | TLV | 3 |
| 67 | UE radio capability ID | UE radio capability ID9.11.3.68 | O | TLV | 3-n |
| 68 | UE radio capability ID deletion indication | UE radio capability ID deletion indication9.11.3.69 | O | TV | 1 |
| 39 | Pending NSSAI | NSSAI9.11.3.37 | O | TLV | 4-74 |
| 74 | Ciphering key data | Ciphering key data9.11.3.18C | O | TLV-E | 34-n |
| 75 | CAG information list | CAG information list9.11.3.18A | O | TLV-E | 3-n |
| 1B | Truncated 5G-S-TMSI configuration | Truncated 5G-S-TMSI configuration9.11.3.70 | O | TLV | 3 |
| 1C | Negotiated WUS assistance information | WUS assistance information9.11.3.71 | O | TLV | 3-n |

\*\*\* Second changes \*\*\*

#### 9.11.3.18C Ciphering key data

The purpose of the Ciphering key data information element is to transfer a list of ciphering data sets from the network to the UE for deciphering of ciphered assistance data.

The Ciphering key data information element is coded as shown in figure 9.11.3.18C.1, figure 9.11.3.18C.2 and table 9.11.3.18C.1.

The Ciphering key data is a type 6 information element, with a minimum length of 34 octets and a maximum length of 2675 octets. The list can contain a maximum of 16 ciphering data sets.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Ciphering key data IEI | octet 1 |
| Length of ciphering key data contents | octet 2octet 3 |
| Ciphering data set 1 | octet 4octet i |
| Ciphering data set 2 | octet i+1\*octet l\* |
| … | octet l+1\*octet m\* |
| Ciphering data set p | octet m+1\*octet n\* |

Figure 9.11.3.18C.1: Ciphering key data information element

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Ciphering set ID | octet 1octet 2 |
| Ciphering key | octet 3octet 18 |
| 0 | 0 | 0 | c0 length | octet 19 |
| Spare |
| c0 | octet 20octet k |
| 0 | 0 | 0 | 0 | E-UTRA posSIB length | octet k+1 |
| Spare |  |
| PosSIBType1-1 | PosSIBType1-2 | PosSIBType1-3 | PosSIBType1-4 | PosSIBType1-5 | PosSIBType1-6 | PosSIBType1-7 | PosSIBType1-8 | octet k+2octet k+3 |
| PosSIBType2-1 | PosSIBType2-2 | PosSIBType2-3 | PosSIBType2-4 | PosSIBType2-5 | PosSIBType2-6 | PosSIBType2-7 | PosSIBType2-8 |
| PosSIBType2-9 | PosSIBType2-10 | PosSIBType2-11 | PosSIBType2-12 | PosSIBType2-13 | PosSIBType2-14 | PosSIBType2-15 | PosSIBType2-16 |
| PosSIBType2-17 | PosSIBType2-18 | PosSIBType2-19 | PosSIBType2-20 | PosSIBType2-21 | PosSIBType2-22 | PosSIBType2-23 | PosSIBType2-24 |
| PosSIBType2-25 | PosSIBType3-1 | PosSIBType4-1 | PosSIBType5-1 | 0Spare | 0Spare | 0Spare | 0Spare | octect p |
| 0 | 0 | 0 | 0 | NR posSIB length | octet p+1 |
| Spare |  |
| PosSIBType1-1 | PosSIBType1-2 | PosSIBType1-3 | PosSIBType1-4 | PosSIBType1-5 | PosSIBType1-6 | PosSIBType1-7 | PosSIBType1-8 | octet p+2octet p+3octet q |
| PosSIBType2-1 | PosSIBType2-2 | PosSIBType2-3 | PosSIBType2-4 | PosSIBType2-5 | PosSIBType2-6 | PosSIBType2-7 | PosSIBType2-8 |
| PosSIBType2-9 | PosSIBType2-10 | PosSIBType2-11 | PosSIBType2-12 | PosSIBType2-13 | PosSIBType2-14 | PosSIBType2-15 | PosSIBType2-16 |
| PosSIBType2-17 | PosSIBType2-18 | PosSIBType2-19 | PosSIBType2-20 | PosSIBType2-21 | PosSIBType2-22 | PosSIBType2-23 | PosSIBType3-1 |
| PosSIBType4-1 | PosSIBType5-1 | PosSIBType6-1 | PosSIBType6-2 | PosSIBType6-3 | 0Spare | 0Spare | 0Spare |
| Validity start time | octet q+1octe q+5 |
| Validity duration | octet q+6octet q+7 |
| TAIs list | octet q+8octet r |

Figure 9.11.3.18C.2: Ciphering data set

Table 9.11.3.18C.1: Ciphering key data information element

|  |
| --- |
| Value part of the Ciphering key data information element (octets 4 to n) |
|  |
| The value part of the Ciphering key data information element consists of one or several ciphering data sets. |
| The UE shall store the complete list received. If more than 16 ciphering data sets are included in this information element, the UE shall store the first 16 ciphering data sets and ignore the remaining octets of the information element. |
|  |
|  |
| Ciphering data set: |
|  |
| Ciphering set ID (octets 1 to 2) |
|  |
| This field contains the binary encoding of the ID identifying the ciphering set. |
|  |
| Ciphering key (octets 3 to octet 18) |
|  |
| This field contains the 128 bit ciphering key. |
|  |
| c0 length (octet 19, bits 5 to 1)This field contains the binary encoding of the length, in octets, of the c0 counter. The maximum value for the length of the c0 counter is 16 octets. |
|  |
| Bits 8 to 6 of octect 19 are spare and shall be coded as zero. |
|  |
|  |
| c0 (octets 20 to k) |
|  |
| This field contains the binary encoding of the c0 counter. |
|  |
|  |
| E-UTRA posSIB length (octet k+1, bits 4 to 1)This field contains the length in octets of the E -UTRA Positioning SIB types. A length of zero means E -UTRA Positioning SIB types are not included.E-UTRA Positioning SIB types for which the ciphering data set is applicable (octets k+2 to p). Unassigned bits shall be ignored by a UE. Non-included bits shall be assumed to be zero by a UE. |
|  |
| Ciphering data set applicable for positioning SIB type 1-1 (octet k+2, bit 8) |
| 0 |  |  |  | Ciphering data set not applicable to positioning SIB type 1-1 |
| 1 |  |  |  | Ciphering data set applicable to positioning SIB type 1-1 |
|  |
| Ciphering data set applicable for positioning SIB type 1-2 (octet k+2, bit 7) |
| 0 |  |  |  | Ciphering data set not applicable to positioning SIB type 1-2 |
| 1 |  |  |  | Ciphering data set applicable to positioning SIB type 1-2 |
|  |
| Ciphering data set applicable for positioning SIB type 1-3 (octet k+2, bit 6) |
| 0 |  |  |  | Ciphering data set not applicable to positioning SIB type 1-3 |
| 1 |  |  |  | Ciphering data set applicable to positioning SIB type 1-3 |
|  |
| Ciphering data set applicable for positioning SIB type 1-4 (octet k+2, bit 5) |
| 0 |  |  |  | Ciphering data set not applicable to positioning SIB type 1-4 |
| 1 |  |  |  | Ciphering data set applicable to positioning SIB type 1-4 |
|  |
| Ciphering data set applicable for positioning SIB type 1-5 (octet k+2, bit 4) |
| 0 |  |  |  | Ciphering data set not applicable to positioning SIB type 1-5 |
| 1 |  |  |  | Ciphering data set applicable to positioning SIB type 1-5 |
|  |
| Ciphering data set applicable for positioning SIB type 1-6 (octet k+2, bit 3) |
| 0 |  |  |  | Ciphering data set not applicable to positioning SIB type 1-6 |
| 1 |  |  |  | Ciphering data set applicable to positioning SIB type 1-6 |
|  |
| Ciphering data set applicable for positioning SIB type 1-7 (octet k+2, bit 2) |
| 0 |  |  |  | Ciphering data set not applicable to positioning SIB type 1-7 |
| 1 |  |  |  | Ciphering data set applicable to positioning SIB type 1-7 |
|  |
| Ciphering data set applicable for positioning SIB type 1-8 (octet k+2, bit 1) |
| 0 |  |  |  | Ciphering data set not applicable to positioning SIB type 1-8 |
| 1 |  |  |  | Ciphering data set applicable to positioning SIB type 1-8 |
|  |
|  |
| Ciphering data set applicable for positioning SIB type 2-1 (octet k+3, bit 8) |
| 0 |  |  |  | Ciphering data set not applicable to positioning SIB type 2-1 |
| 1 |  |  |  | Ciphering data set applicable to positioning SIB type 2-1 |
|  |
| Ciphering data set applicable for positioning SIB type 2-2 (octet k+3, bit 7) |
| 0 |  |  |  | Ciphering data set not applicable to positioning SIB type 2-2 |
| 1 |  |  |  | Ciphering data set applicable to positioning SIB type 2-2 |
|  |
| Ciphering data set applicable for positioning SIB type 2-3 (octet k+3, bit 6) |
| 0 |  |  |  | Ciphering data set not applicable to positioning SIB type 2-3 |
| 1 |  |  |  | Ciphering data set applicable to positioning SIB type 2-3 |
|  |
| Ciphering data set applicable for positioning SIB type 2-4 (octet k+3, bit 5) |
| 0 |  |  |  | Ciphering data set not applicable to positioning SIB type 2-4 |
| 1 |  |  |  | Ciphering data set applicable to positioning SIB type 2-4 |
|  |
| Ciphering data set applicable for positioning SIB type 2-5 (octet k+3, bit 4) |
| 0 |  |  |  | Ciphering data set not applicable to positioning SIB type 2-5 |
| 1 |  |  |  | Ciphering data set applicable to positioning SIB type 2-5 |
|  |
| Ciphering data set applicable for positioning SIB type 2-6 (octet k+3, bit 3) |
| 0 |  |  |  | Ciphering data set not applicable to positioning SIB type 2-6 |
| 1 |  |  |  | Ciphering data set applicable to positioning SIB type 2-6 |
|  |
| Ciphering data set applicable for positioning SIB type 2-7 (octet k+3, bit 2) |
| 0 |  |  |  | Ciphering data set not applicable to positioning SIB type 2-7 |
| 1 |  |  |  | Ciphering data set applicable to positioning SIB type 2-7 |
|  |
| Ciphering data set applicable for positioning SIB type 2-8 (octet k+3, bit 1) |
| 0 |  |  |  | Ciphering data set not applicable to positioning SIB type 2-8 |
| 1 |  |  |  | Ciphering data set applicable to positioning SIB type 2-8 |
|  |
| Ciphering data set applicable for positioning SIB type 2-9 (octet k+4, bit 8) |
| 0 |  |  |  | Ciphering data set not applicable to positioning SIB type 2-9 |
| 1 |  |  |  | Ciphering data set applicable to positioning SIB type 2-9 |
|  |
| Ciphering data set applicable for positioning SIB type 2-10 (octet k+4, bit 7) |
| 0 |  |  |  | Ciphering data set not applicable to positioning SIB type 2-10 |
| 1 |  |  |  | Ciphering data set applicable to positioning SIB type 2-10 |
|  |
| Ciphering data set applicable for positioning SIB type 2-11 (octet k+4, bit 6) |
| 0 |  |  |  | Ciphering data set not applicable to positioning SIB type 2-11 |
| 1 |  |  |  | Ciphering data set applicable to positioning SIB type 2-11 |
|  |
| Ciphering data set applicable for positioning SIB type 2-12 (octet k+4, bit 5) |
| 0 |  |  |  | Ciphering data set not applicable to positioning SIB type 2-12 |
| 1 |  |  |  | Ciphering data set applicable to positioning SIB type 2-12 |
|  |
| Ciphering data set applicable for positioning SIB type 2-13 (octet k+4, bit 4) |
| 0 |  |  |  | Ciphering data set not applicable to positioning SIB type 2-13 |
| 1 |  |  |  | Ciphering data set applicable to positioning SIB type 2-13 |
|  |
| Ciphering data set applicable for positioning SIB type 2-14 (octet k+4, bit 3) |
| 0 |  |  |  | Ciphering data set not applicable to positioning SIB type 2-14 |
| 1 |  |  |  | Ciphering data set applicable to positioning SIB type 2-14 |
|  |
| Ciphering data set applicable for positioning SIB type 2-15 (octet k+4, bit 2) |
| 0 |  |  |  | Ciphering data set not applicable to positioning SIB type 2-15 |
| 1 |  |  |  | Ciphering data set applicable to positioning SIB type 2-15 |
|  |
| Ciphering data set applicable for positioning SIB type 2-16 (octet k+4, bit 1) |
| 0 |  |  |  | Ciphering data set not applicable to positioning SIB type 2-16 |
| 1 |  |  |  | Ciphering data set applicable to positioning SIB type 2-16 |
|  |
| Ciphering data set applicable for positioning SIB type 2-17 (octet k+5, bit 8) |
| 0 |  |  |  | Ciphering data set not applicable to positioning SIB type 2-17 |
| 1 |  |  |  | Ciphering data set applicable to positioning SIB type 2-17 |
|  |
| Ciphering data set applicable for positioning SIB type 2-18 (octet k+5, bit 7) |
| 0 |  |  |  | Ciphering data set not applicable to positioning SIB type 2-18 |
| 1 |  |  |  | Ciphering data set applicable to positioning SIB type 2-18 |
|  |
| Ciphering data set applicable for positioning SIB type 2-19 (octet k+5, bit 6) |
| 0 |  |  |  | Ciphering data set not applicable to positioning SIB type 2-19 |
| 1 |  |  |  | Ciphering data set applicable to positioning SIB type 2-19 |
|  |
| Ciphering data set applicable for positioning SIB type 2-20 (octet k+5, bit 5) |
| 0 |  |  |  | Ciphering data set not applicable to positioning SIB type 2-20 |
| 1 |  |  |  | Ciphering data set applicable to positioning SIB type 2-20 |
|  |
| Ciphering data set applicable for positioning SIB type 2-21 (octet k+5, bit 4) |
| 0 |  |  |  | Ciphering data set not applicable to positioning SIB type 2-21 |
| 1 |  |  |  | Ciphering data set applicable to positioning SIB type 2-21 |
|  |
| Ciphering data set applicable for positioning SIB type 2-22 (octet k+5, bit 3) |
| 0 |  |  |  | Ciphering data set not applicable to positioning SIB type 2-22 |
| 1 |  |  |  | Ciphering data set applicable to positioning SIB type 2-22 |
|  |
| Ciphering data set applicable for positioning SIB type 2-23 (octet k+5, bit 2) |
| 0 |  |  |  | Ciphering data set not applicable to positioning SIB type 2-23 |
| 1 |  |  |  | Ciphering data set applicable to positioning SIB type 2-23 |
|  |
| Ciphering data set applicable for positioning SIB type 2-24 (octet k+5, bit 1) |
| 0 |  |  |  | Ciphering data set not applicable to positioning SIB type 2-24 |
| 1 |  |  |  | Ciphering data set applicable to positioning SIB type 2-24 |
|  |
| Ciphering data set applicable for positioning SIB type 2-25 (octet k+6, bit 8) |
| 0 |  |  |  | Ciphering data set not applicable to positioning SIB type 2-25 |
| 1 |  |  |  | Ciphering data set applicable to positioning SIB type 2-25 |
|  |
| Ciphering data set applicable for positioning SIB type 3-1 (octet k+6, bit 7) |
| 0 |  |  |  | Ciphering data set not applicable to positioning SIB type 3-1 |
| 1 |  |  |  | Ciphering data set applicable to positioning SIB type 3-1 |
|  |
| Ciphering data set applicable for positioning SIB type 4-1 (octet k+6, bit 6) |
| 0 |  |  |  | Ciphering data set not applicable to positioning SIB type 4-1 |
| 1 |  |  |  | Ciphering data set applicable to positioning SIB type 4-1 |
|  |
| Ciphering data set applicable for positioning SIB type 5-1 (octet k+6, bit 5) |
| 0 |  |  |  | Ciphering data set not applicable to positioning SIB type 5-1 |
| 1 |  |  |  | Ciphering data set applicable to positioning SIB type 5-1 |
|  |
| Any unassigned bits shall be coded as zero. |
|  |
|  |
| NR posSIB length (octet p+1, bits 4 to 1)This field contains the length in octets of the NR Positioning SIB types. A length of zero means NR Positioning SIB types are not included.NR Positioning SIB types for which the ciphering data set is applicable (octets p+2 to q). Unassigned bits shall be ignored. Non-included bits shall be assumed to be zero. |
|  |
| Ciphering data set applicable for positioning SIB type 1-1 (octet p+2, bit 8) |
| 0 |  |  |  | Ciphering data set not applicable to positioning SIB type 1-1 |
| 1 |  |  |  | Ciphering data set applicable to positioning SIB type 1-1 |
|  |
| Ciphering data set applicable for positioning SIB type 1-2 (octet p+2, bit 7) |
| 0 |  |  |  | Ciphering data set not applicable to positioning SIB type 1-2 |
| 1 |  |  |  | Ciphering data set applicable to positioning SIB type 1-2 |
|  |
| Ciphering data set applicable for positioning SIB type 1-3 (octet p+2, bit 6) |
| 0 |  |  |  | Ciphering data set not applicable to positioning SIB type 1-3 |
| 1 |  |  |  | Ciphering data set applicable to positioning SIB type 1-3 |
|  |
| Ciphering data set applicable for positioning SIB type 1-4 (octet p+2, bit 5) |
| 0 |  |  |  | Ciphering data set not applicable to positioning SIB type 1-4 |
| 1 |  |  |  | Ciphering data set applicable to positioning SIB type 1-4 |
|  |
| Ciphering data set applicable for positioning SIB type 1-5 (octet p+2, bit 4) |
| 0 |  |  |  | Ciphering data set not applicable to positioning SIB type 1-5 |
| 1 |  |  |  | Ciphering data set applicable to positioning SIB type 1-5 |
|  |
| Ciphering data set applicable for positioning SIB type 1-6 (octet p+2, bit 3) |
| 0 |  |  |  | Ciphering data set not applicable to positioning SIB type 1-6 |
| 1 |  |  |  | Ciphering data set applicable to positioning SIB type 1-6 |
|  |
| Ciphering data set applicable for positioning SIB type 1-7 (octet p+2, bit 2) |
| 0 |  |  |  | Ciphering data set not applicable to positioning SIB type 1-7 |
| 1 |  |  |  | Ciphering data set applicable to positioning SIB type 1-7 |
|  |
| Ciphering data set applicable for positioning SIB type 1-8 (octet p+2, bit 1) |
| 0 |  |  |  | Ciphering data set not applicable to positioning SIB type 1-8 |
| 1 |  |  |  | Ciphering data set applicable to positioning SIB type 1-8 |
|  |
|  |
| Ciphering data set applicable for positioning SIB type 2-1 (octet p+3, bit 8) |
| 0 |  |  |  | Ciphering data set not applicable to positioning SIB type 2-1 |
| 1 |  |  |  | Ciphering data set applicable to positioning SIB type 2-1 |
|  |
| Ciphering data set applicable for positioning SIB type 2-2 (octet p+3, bit 7) |
| 0 |  |  |  | Ciphering data set not applicable to positioning SIB type 2-2 |
| 1 |  |  |  | Ciphering data set applicable to positioning SIB type 2-2 |
|  |
| Ciphering data set applicable for positioning SIB type 2-3 (octet p+3, bit 6) |
| 0 |  |  |  | Ciphering data set not applicable to positioning SIB type 2-3 |
| 1 |  |  |  | Ciphering data set applicable to positioning SIB type 2-3 |
|  |
| Ciphering data set applicable for positioning SIB type 2-4 (octet p+3, bit 5) |
| 0 |  |  |  | Ciphering data set not applicable to positioning SIB type 2-4 |
| 1 |  |  |  | Ciphering data set applicable to positioning SIB type 2-4 |
|  |
| Ciphering data set applicable for positioning SIB type 2-5 (octet p+3, bit 4) |
| 0 |  |  |  | Ciphering data set not applicable to positioning SIB type 2-5 |
| 1 |  |  |  | Ciphering data set applicable to positioning SIB type 2-5 |
|  |
| Ciphering data set applicable for positioning SIB type 2-6 (octet p+3, bit 3) |
| 0 |  |  |  | Ciphering data set not applicable to positioning SIB type 2-6 |
| 1 |  |  |  | Ciphering data set applicable to positioning SIB type 2-6 |
|  |
| Ciphering data set applicable for positioning SIB type 2-7 (octet p+3, bit 2) |
| 0 |  |  |  | Ciphering data set not applicable to positioning SIB type 2-7 |
| 1 |  |  |  | Ciphering data set applicable to positioning SIB type 2-7 |
|  |
| Ciphering data set applicable for positioning SIB type 2-8 (octet p+3, bit 1) |
| 0 |  |  |  | Ciphering data set not applicable to positioning SIB type 2-8 |
| 1 |  |  |  | Ciphering data set applicable to positioning SIB type 2-8 |
|  |
| Ciphering data set applicable for positioning SIB type 2-9 (octet p+4, bit 8) |
| 0 |  |  |  | Ciphering data set not applicable to positioning SIB type 2-9 |
| 1 |  |  |  | Ciphering data set applicable to positioning SIB type 2-9 |
|  |
| Ciphering data set applicable for positioning SIB type 2-10 (octet p+4, bit 7) |
| 0 |  |  |  | Ciphering data set not applicable to positioning SIB type 2-10 |
| 1 |  |  |  | Ciphering data set applicable to positioning SIB type 2-10 |
|  |
| Ciphering data set applicable for positioning SIB type 2-11 (octet p+4, bit 6) |
| 0 |  |  |  | Ciphering data set not applicable to positioning SIB type 2-11 |
| 1 |  |  |  | Ciphering data set applicable to positioning SIB type 2-11 |
|  |
| Ciphering data set applicable for positioning SIB type 2-12 (octet p+4, bit 5) |
| 0 |  |  |  | Ciphering data set not applicable to positioning SIB type 2-12 |
| 1 |  |  |  | Ciphering data set applicable to positioning SIB type 2-12 |
|  |
| Ciphering data set applicable for positioning SIB type 2-13 (octet p+4, bit 4) |
| 0 |  |  |  | Ciphering data set not applicable to positioning SIB type 2-13 |
| 1 |  |  |  | Ciphering data set applicable to positioning SIB type 2-13 |
|  |
| Ciphering data set applicable for positioning SIB type 2-14 (octet p+4, bit 3) |
| 0 |  |  |  | Ciphering data set not applicable to positioning SIB type 2-14 |
| 1 |  |  |  | Ciphering data set applicable to positioning SIB type 2-14 |
|  |
| Ciphering data set applicable for positioning SIB type 2-15 (octet p+4, bit 2) |
| 0 |  |  |  | Ciphering data set not applicable to positioning SIB type 2-15 |
| 1 |  |  |  | Ciphering data set applicable to positioning SIB type 2-15 |
|  |
| Ciphering data set applicable for positioning SIB type 2-16 (octet p+4, bit 1) |
| 0 |  |  |  | Ciphering data set not applicable to positioning SIB type 2-16 |
| 1 |  |  |  | Ciphering data set applicable to positioning SIB type 2-16 |
|  |
| Ciphering data set applicable for positioning SIB type 2-17 (octet p+5, bit 8) |
| 0 |  |  |  | Ciphering data set not applicable to positioning SIB type 2-17 |
| 1 |  |  |  | Ciphering data set applicable to positioning SIB type 2-17 |
|  |
| Ciphering data set applicable for positioning SIB type 2-18 (octet p+5, bit 7) |
| 0 |  |  |  | Ciphering data set not applicable to positioning SIB type 2-18 |
| 1 |  |  |  | Ciphering data set applicable to positioning SIB type 2-18 |
|  |
| Ciphering data set applicable for positioning SIB type 2-19 (octet p+5, bit 6) |
| 0 |  |  |  | Ciphering data set not applicable to positioning SIB type 2-19 |
| 1 |  |  |  | Ciphering data set applicable to positioning SIB type 2-19 |
|  |
| Ciphering data set applicable for positioning SIB type 2-20 (octet p+5, bit 5) |
| 0 |  |  |  | Ciphering data set not applicable to positioning SIB type 2-20 |
| 1 |  |  |  | Ciphering data set applicable to positioning SIB type 2-20 |
|  |
| Ciphering data set applicable for positioning SIB type 2-21 (octet p+5, bit 4) |
| 0 |  |  |  | Ciphering data set not applicable to positioning SIB type 2-21 |
| 1 |  |  |  | Ciphering data set applicable to positioning SIB type 2-21 |
|  |
| Ciphering data set applicable for positioning SIB type 2-22 (octet p+5, bit 3) |
| 0 |  |  |  | Ciphering data set not applicable to positioning SIB type 2-22 |
| 1 |  |  |  | Ciphering data set applicable to positioning SIB type 2-22 |
|  |
| Ciphering data set applicable for positioning SIB type 2-23 (octet p+5, bit 2) |
| 0 |  |  |  | Ciphering data set not applicable to positioning SIB type 2-23 |
| 1 |  |  |  | Ciphering data set applicable to positioning SIB type 2-23 |
|  |
| Ciphering data set applicable for positioning SIB type 3-1 (octet p+5, bit 1) |
| 0 |  |  |  | Ciphering data set not applicable to positioning SIB type 3-1 |
| 1 |  |  |  | Ciphering data set applicable to positioning SIB type 3-1 |
|  |
| Ciphering data set applicable for positioning SIB type 4-1 (octet p+6, bit 8) |
| 0 |  |  |  | Ciphering data set not applicable to positioning SIB type 4-1 |
| 1 |  |  |  | Ciphering data set applicable to positioning SIB type 4-1 |
|  |
| Ciphering data set applicable for positioning SIB type 5-1 (octet p+6, bit 7) |
| 0 |  |  |  | Ciphering data set not applicable to positioning SIB type 5-1 |
| 1 |  |  |  | Ciphering data set applicable to positioning SIB type 5-1 |
|  |
| Ciphering data set applicable for positioning SIB type 6-1 (octet p+6, bit 6) |
| 0 |  |  |  | Ciphering data set not applicable to positioning SIB type 6-1 |
| 1 |  |  |  | Ciphering data set applicable to positioning SIB type 6-1 |
| Ciphering data set applicable for positioning SIB type 6-2 (octet p+6, bit 5) |
| 0 |  |  |  | Ciphering data set not applicable to positioning SIB type 6-2 |
| 1 |  |  |  | Ciphering data set applicable to positioning SIB type 6-3 |
| Ciphering data set applicable for positioning SIB type 6-3 (octet p+6, bit 4) |
| 0 |  |  |  | Ciphering data set not applicable to positioning SIB type 6-3 |
| 1 |  |  |  | Ciphering data set applicable to positioning SIB type 6-3 |
| Any unassigned bits shall be coded as zero. |
|  |
|  |
| Validity start time (octets q+1 to q+5) |
|  |
| This field contains the UTC time when the ciphering data set becomes valid, encoded as octets 2 to 6 of the Time zone and time IE specified in 3GPP TS 24.008 [12]. |
|  |
|  |
| Validity duration (octets q+6 to q+7) |
|  |
| This field contains the duration for which the ciphering data set is valid after the validity start time, in units of minutes. |
|  |
|  |
| TAIs list (octets q+8 to r) |
|  |
| This field contains the list of tracking areas for which the ciphering data set is applicable, encoded as octets 2 to n of the Tracking area identity list IE as specified in subclause 9.11.3.9. If the TAIs list is empty (as indicated by a zero length), the ciphering data set is applicable to the entire serving PLMN. |
|  |

\*\*\* End of changes \*\*\*