**3GPP TSG-CT WG1 Meeting #130-e****C1-21xyz**

**Electronic meeting, 20 – 28 May 2021 (rev of C1-213004, 2175)**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **24.301** | **CR** | **3514** | **rev** | **2** | **Current version:** | **17.2.0** |  |
|  | | | | | | | | |
| *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)*.* | | | | | | | | |
|  | | | | | | | | |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network |  | Core Network | **x** |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | | | | |
| ***Title:*** | Multi-USIM UE support indications in EPS | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Ericsson | | | | | | | | | |
| ***Source to TSG:*** | C1 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | MUSIM | | | | |  | ***Date:*** | | | 2021-05-12 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **B** |  | | | | | ***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 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-15 (Release 15) Rel-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | Network in EPS supporting Multi-USIM UE has to indicate its support according to TS 23.401 v17.1.0 and CR 3622 and 3630 on TS 23.401. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | New flags in EPS network feature support IE are defined. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Specification of Multi-USIM UE support incomplete. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 9.9.3.12A | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | | **x** |  | Other core specifications | | | | TS 23.401 CR 3622, 3630 | | |
| ***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: UE indicates support per Multi-USIM feature. Additional Multi-USIM feature added.  Rev2: Revoked all changes except new network capabilities. | | | | | | | | |

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

#### 9.9.3.12A EPS network feature support

The purpose of the EPS network feature support information element is to indicate whether certain features are supported by the network.

The EPS network feature support information element is coded as shown in figure 9.9.3.12A.1 and table 9.9.3.12A.1.

The EPS network feature support is a type 4 information element with a minimum length of 3 octets and a maximum length of 5 octets.

If the network does not include octet 4 or octet 5 as defined below in the present version of the protocol, then the UE shall interpret this as a receipt of an information element with all bits of octet 4 and 5 coded as zero.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | | 7 | | 6 | | 5 | | 4 | | 3 | | 2 | | 1 | |  | |
| EPS network feature support IEI | | | | | | | | | | | | | | | | octet 1 | |
| Length of EPS network feature support contents | | | | | | | | | | | | | | | | octet 2 | |
| CP CIoT | | ERw/oPDN | | ESR PS | | CS-LCS | | | | EPC-LCS | | EMC BS | | IMS VoPS | | octet 3 | |
| 15 bearers | | IWKN26 | | RestrictDCNR | | RestrictEC | | ePCO | | HC-CP CIoT | | S1-U data | | UP CIoT | | octet 4\* | |
| 0  Spare | | 0  Spare | | 0  Spare | | PTCC | | PR | | RPR | | PIV | | NCR | | octet 5\* | |

Figure 9.9.3.12A.1: EPS network feature support information element

Table 9.9.3.12A.1: EPS network feature support information element

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| IMS voice over PS session indicator (IMS VoPS) (octet 3, bit 1) | | | | |
|  | | | | |
| Bit | | | | |
| 1 |  |  |  |  |
| 0 |  |  |  | IMS voice over PS session in S1 mode not supported |
| 1 |  |  |  | IMS voice over PS session in S1 mode supported |
|  | | | | |
| Emergency bearer services indicator (EMC BS) (octet 3, bit 2) | | | | |
|  | | | | |
| Bit | | | | |
| 2 |  |  |  |  |
| 0 |  |  |  | emergency bearer services in S1 mode not supported |
| 1 |  |  |  | emergency bearer services in S1 mode supported |
|  | | | | |
| Location services indicator in EPC (EPC-LCS) (octet 3, bit 3) | | | | |
|  | | | | |
| Bit | | | | |
| 3 |  |  |  |  |
| 0 |  |  |  | location services via EPC not supported |
| 1 |  |  |  | location services via EPC supported |
|  | | | | |
| Location services indicator in CS (CS-LCS) (octet 3, bit 4 to 5) | | | | |
|  | | | | |
| Bit | | | | |
| 5 | 4 |  |  |  |
| 0 | 0 |  |  | no information about support of location services via CS domain is available |
| 0 | 1 |  |  | location services via CS domain supported |
| 1 | 0 |  |  | location services via CS domain not supported |
| 1 | 1 |  |  | reserved |
|  | | | | |
| Support of EXTENDED SERVICE REQUEST for packet services (ESRPS)  (octet 3, bit 6) | | | | |
|  | | | | |
| Bit | | | | |
| 6 |  |  |  |  |
| 0 |  |  |  | network does not support use of EXTENDED SERVICE REQUEST to request for packet services |
| 1 |  |  |  | network supports use of EXTENDED SERVICE REQUEST to request for packet services |
|  | | | | |
| EMM REGISTERED without PDN connectivity (ERw/oPDN)  (octet 3, bit 7) | | | | |
| This bit indicates the capability for EMM-REGISTERED without PDN connection | | | | |
| Bit | | | | |
| 7 |  |  |  |  |
| 0 |  |  |  | EMM-REGISTERED without PDN connection not supported |
| 1 |  |  |  | EMM-REGISTERED without PDN connection supported |
|  | | | | |
| Control plane CIoT EPS optimization (CP CIoT)  (octet 3, bit 8) | | | | |
| This bit indicates the capability for control plane CIoT EPS optimization | | | | |
| Bit | | | | |
| **8** | | | | |
| 0 |  |  |  | Control plane CIoT EPS optimization not supported |
| 1 |  |  |  | Control plane CIoT EPS optimization supported |
|  | | | | |
| User plane CIoT EPS optimization (UP CIoT)  (octet 4, bit 1) | | | | |
| This bit indicates the capability for user plane CIoT EPS optimization | | | | |
| Bit | | | | |
| **1** | | | | |
| 0 |  |  |  | User plane CIoT EPS optimization not supported |
| 1 |  |  |  | User plane CIoT EPS optimization supported |
|  | | | | |
| S1-u data transfer (S1-U data)  (octet 4, bit 2) | | | | |
| This bit indicates the capability for S1-u data transfer. This bit shall be considered only if the Control plane CIoT EPS optimization (CP CIoT) bit (octet 3, bit 8) is set to 1. If the Control plane CIoT EPS optimization (CP CIoT) bit (octet 3, bit 8) is set to 0, the UE shall assume S1-u data transfer is supported. | | | | |
| Bit | | | | |
| **2** | | | | |
| 0 |  |  |  | S1-u data transfer not supported |
| 1 |  |  |  | S1-u data transfer supported |
|  | | | | |
| Header compression for control plane CIoT EPS optimization (HC-CP CIoT)  (octet 4, bit 3) | | | | |
| This bit indicates the capability for header compression for control plane CIoT EPS optimization | | | | |
| Bit | | | | |
| **3** | | | | |
| 0 |  |  |  | Header compression for control plane CIoT EPS optimization not supported |
| 1 |  |  |  | Header compression for control plane CIoT EPS optimization supported |
|  | | | | |
| Extended protocol configuration options (ePCO) (octet 4, bit 4)  This bit indicates the support of the extended protocol configuration options IE. | | | | |
| Bit | | | | |
| **4** | | | | |
| 0 |  |  |  | Extended protocol configuration options IE not supported |
| 1 |  |  |  | Extended protocol configuration options IE supported |
|  | | | | |
| Restriction on enhanced coverage (RestrictEC) (octet 4, bit 5)  This bit indicates if the use of enhanced coverage is restricted or not. | | | | |
| Bit | | | | |
| **5** | | | | |
| 0 |  |  |  | Use of enhanced coverage is not restricted |
| 1 |  |  |  | Use of enhanced coverage is restricted |
| Restriction on the use of dual connectivity with NR (RestrictDCNR) (octet 4, bit 6)  This bit indicates if the use of dual connectivity with NR is restricted or not. | | | | |
| Bit | | | | |
| **6** | | | | |
| 0 |  |  |  | Use of dual connectivity with NR is not restricted |
| 1 |  |  |  | Use of dual connectivity with NR is restricted |
| Interworking without N26 interface indicator (IWK N26) (octet 4, bit 7)  This bit indicates whether interworking without N26 interface is supported. | | | | | |
| Bit | | | | | |
| **7** | | | | | |
| 0 |  |  |  | Interworking without N26 interface not supported | |
| 1 |  |  |  | Interworking without N26 interface supported | |
| Signalling for a maximum number of 15 EPS bearer contexts (15 bearers) (octet 4, bit 8)  This bit indicates the support of signalling for a maximum number of 15 EPS bearer contexts. | | | | | |
| Bit | | | | | |
| **8** | | | | | |
| 0 |  |  |  | Signalling for a maximum number of 15 EPS bearer contexts not supported | |
| 1 |  |  |  | Signalling for a maximum number of 15 EPS bearer contexts supported | |
|  | | | | |
| NAS signaling connection release (NCR) (octet 5, bit 1) | | | | |
| This bit indicates the support of NAS signlaling connection release. | | | | |
| Bit | | | | |
| **1** | | | | |
| 0 |  |  |  | NAS signaling connection release not supported | |
| 1 |  |  |  | NAS signaling connection release supported | |
|  | | | | |
| Paging indication for voice services (PIV) (octet 5, bit 2) | | | | |
| This bit indicates the support of paging indication for voice services. | | | | |
| Bit | | | | |
| **2** | | | | |
| 0 |  |  |  | paging indication for voice services not supported | |
| 1 |  |  |  | paging indication for voice services supported | |
|  | | | | |
| Reject paging request (RPR) (octet 5, bit 3) | | | | |
| This bit indicates the support of reject paging request. | | | | |
| Bit | | | | |
| **3** | | | | |
| 0 |  |  |  | reject paging request not supported | |
| 1 |  |  |  | reject paging request supported | |
|  | | | | |
| Paging restriction (PR) (octet 5, bit 4) | | | | |
| This bit indicates the support of paging restriction. | | | | |
| Bit | | | | |
| **4** | | | | |
| 0 |  |  |  | paging restriction not supported | |
| 1 |  |  |  | paging restriction supported | |
|  | | | | |
| Paging timing collision control (PTCC) (octet 5, bit 5) | | | | |
| This bit indicates the support of paging timing collision control. | | | | |
| Bit | | | | |
| **5** | | | | |
| 0 |  |  |  | paging timing collision control not supported | |
| 1 |  |  |  | paging timing collision control supported | |
|  | | | | |
| Bits 6 to 8 in octet 5 are spare and shall be coded as zero if included. | | | | |
|  | | | | |

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