**3GPP TSG-CT WG1 Meeting #130-eC1-213003**

**Electronic meeting, 20 – 28 May 2021 (rev of C1-213003, 2173)**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **24.501** | **CR** | **3121** | **rev** | **2** | **Current version:** | **17.2.1** |  |
|  | | | | | | | | |
| *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)*.* | | | | | | | | |
|  | | | | | | | | |

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

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | | | | |
| ***Title:*** | Multi-USIM UE support indications in 5GS | | | | | | | | | |
|  |  | | | | | | | | | |
| ***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 5GS supporting Multi-USIM UE has to indicate its support according to agreed CR 2553 on TS 23.501. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | New flags in 5GS network feature support IE are defined. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Specification of Multi-USIM UE support incomplete. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 9.11.3.5 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | | **x** |  | Other core specifications | | | | TS 23.501 CR 2553 | | |
| ***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 \*\*\*

#### 9.11.3.5 5GS network feature support

The purpose of the 5GS network feature support information element is to indicate whether certain features are supported by the network.

The 5GS network feature support information element is coded as shown in figure 9.11.3.5.1 and table 9.11.3.5.1.

The 5GS 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 as defined in figure 9.11.3.5.1 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 coded as zero.

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | | 4 | | 3 | 2 | 1 |  |
| 5GS network feature support IEI | | | | | | | | | | octet 1 |
| Length of 5GS network feature support contents | | | | | | | | | | octet 2 |
| MPSI | IWK N26 | EMF | | EMC | | | | IMS- VoPS-N3GPP | IMS- VoPS-3GPP | octet 3 |
| 5G-UP CIoT | 5G-IPHC-CP CIoT | N3 data | 5G-CP CIoT | | RestrictEC | | | MCSI | EMCN3 | octet 4\* |
| 0 Spare | PR | RPR | PIV | | NCR | 5G-EHC-CP CIoT | | ATS-IND | 5G-LCS | octet 5\* |

Figure 9.11.3.5.1: 5GS network feature support information element

Table 9.11.3.5.1: 5GS network feature support information element

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| IMS voice over PS session over 3GPP access indicator (IMS-VoPS-3GPP) (octet 3, bit 1) | | | | | | | | | |
| This bit indicates the support of IMS voice over PS session over 3GPP access (see NOTE 1). | | | | | | | | | |
| Bit | | | | | | | | | |
| 1 | |  | |  | |  | |  | |
| 0 | |  | |  | |  | | IMS voice over PS session not supported over 3GPP access | |
| 1 | |  | |  | |  | | IMS voice over PS session supported over 3GPP access | |
|  | | | | | | | | | |
| IMS voice over PS session over non-3GPP access indicator (IMS-VoPS-N3GPP) (octet 3, bit 2) | | | | | | | | | |
| This bit indicates the support of IMS voice over PS session over non-3GPP access. | | | | | | | | | |
| Bit | | | | | | | | | |
| 2 | |  | |  | |  | |  | |
| 0 | |  | |  | |  | | IMS voice over PS session not supported over non-3GPP access | |
| 1 | |  | |  | |  | | IMS voice over PS session supported over non-3GPP access | |
|  | | | | | | | | | |
| Emergency service support indicator for 3GPP access (EMC) (octet 3, bit 3 and bit 4) | | | | | | | | | |
| These bits indicate the support of emergency services in 5GS for 3GPP access (see NOTE 1). | | | | | | | | | |
| Bits | | | | | | | | | |
| 4 | | 3 | |  | |  | |  | |
| 0 | | 0 | |  | |  | | Emergency services not supported | |
| 0 | | 1 | |  | |  | | Emergency services supported in NR connected to 5GCN only | |
| 1 | | 0 | |  | |  | | Emergency services supported in E-UTRA connected to 5GCN only | |
| 1 | | 1 | |  | |  | | Emergency services supported in NR connected to 5GCN and E-UTRA connected to 5GCN | |
|  | | | | | | | | | |
| Emergency services fallback indicator for 3GPP access (EMF) (octet 3, bit 5 and bit 6) | | | | | | | | | |
| These bits indicate the support of emergency services fallback for 3GPP access (see NOTE 1). | | | | | | | | | |
| Bits | | | | | | | | | |
| 6 | | 5 | |  | |  | |  | |
| 0 | | 0 | |  | |  | | Emergency services fallback not supported | |
| 0 | | 1 | |  | |  | | Emergency services fallback supported in NR connected to 5GCN only | |
| 1 | | 0 | |  | |  | | Emergency services fallback supported in E-UTRA connected to 5GCN only | |
| 1 | | 1 | |  | |  | | Emergency services fallback supported in NR connected to 5GCN and E-UTRA connected to 5GCN | |
|  | | | | | | | | | |
| Interworking without N26 interface indicator (IWK N26) (octet 3, 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 | |
|  | | | | | | | | | |
| MPS indicator (MPSI) (octet 3, bit 8) | | | | | | | | | |
| This bit indicates the validity of MPS. | | | | | | | | | |
| Bit | | | | | | | | | |
| 8 | |  | |  | |  | |  | |
| 0 | |  | |  | |  | | Access identity 1 not valid | |
| 1 | |  | |  | |  | | Access identity 1 valid | |
|  | | | | | | | | | |
| Emergency service support for non-3GPP access indicator (EMCN3) (octet 4, bit 1) | | | | | | | | | |
| This bit indicates the support of emergency services in 5GS for non-3GPP access. | | | | | | | | | |
| Bit (see NOTE 2) | | | | | | | | | |
| 1 | |  | |  | |  | |  | |
| 0 | |  | |  | |  | | Emergency services not supported over non-3GPP access | |
| 1 | |  | |  | |  | | Emergency services supported over non-3GPP access | |
|  | |  | |  | |  | |  | |
| MCS indicator (MCSI) (octet 4, bit 2) | | | | | | | | | |
| This bit indicates the validity of MCS. | | | | | | | | | |
| Bit | | | | | | | | | |
| 2 | |  | |  | |  | |  | |
| 0 | |  | |  | |  | | Access identity 2 not valid | |
| 1 | |  | |  | |  | | Access identity 2 valid | |
|  | | | | | | | | | |
| Restriction on enhanced coverage (RestrictEC) (octet 4, bit 3 and bit 4)  These bits indicate enhanced coverage restricted information. | | | | | | | | | |
| In WB-N1 mode these bits are set as follows:  Bits | | | | | | | | | |
| 3 | | 4 | |  | |  | |  | |
| 0 | | 0 | |  | |  | | Both CE mode A and CE mode B are not restricted | |
| 0 | | 1 | |  | |  | | Both CE mode A and CE mode B are restricted | |
| 1 | | 0 | |  | |  | | CE mode B is restricted | |
| 1 | | 1 | |  | |  | | Reserved | |
| In NB-N1 mode these bits are set as follows | | | | | | | | | |
| Bits | | | | | | | | | |
| 3 | | 4 | |  | |  | |  | |
| 0 | | 0 | |  | |  | | Use of enhanced coverage is not restricted | |
| 0 | | 1 | |  | |  | | Use of enhanced coverage is restricted | |
| 1 | | 0 | |  | |  | | Reserved | |
| 1 | | 1 | |  | |  | | Reserved | |
|  | | | | | | | | | |
| Control plane CIoT 5GS optimization (5G-CP CIoT) (octet 4, bit 5) | | | | | | | | | |
| This bit indicates the capability for control plane CIoT 5GS optimization. | | | | | | | | | |
| Bit | | | | | | | | | |
| **5** | | | | | | | | | |
| 0 | |  | |  | |  | | Control plane CIoT 5GS optimization not supported | |
| 1 | |  | |  | |  | | Control plane CIoT 5GS optimization supported | |
|  | | | | | | | | | |
| N3 data transfer (N3 data) (octet 4, bit 6) | | | | | | | | | |
| This bit indicates the capability for N3 data transfer. | | | | | | | | | |
| Bit | | | | | | | | | |
| **6** | | | | | | | | | |
| 0 | |  | |  | |  | | N3 data transfer supported | |
| 1 | |  | |  | |  | | N3 data transfer not supported | |
|  | | | | | | | | | |
| IP header compression for control plane CIoT 5GS optimization (5G-IPHC-CP CIoT) (octet 4, bit 7) | | | | | | | | | |
| This bit indicates the capability for IP header compression for control plane CIoT 5GS optimization. | | | | | | | | | |
| Bit | | | | | | | | | |
| **7** | | | | | | | | | |
| 0 | |  | |  | |  | | IP header compression for control plane CIoT 5GS optimization not supported | |
| 1 | |  | |  | |  | | IP header compression for control plane CIoT 5GS optimization supported | |
|  | | | | | | | | | |
| User plane CIoT 5GS optimization (5G-UP CIoT) (octet 4, bit 8) | | | | | | | | | |
| This bit indicates the capability for user plane CIoT 5GS optimization. | | | | | | | | | |
| Bit | | | | | | | | | |
| **8** | | | | | | | | | |
| 0 | |  | |  | |  | | User plane CIoT 5GS optimization not supported | |
| 1 | |  | |  | |  | | User plane CIoT 5GS optimization supported | |
|  | | | | | | | | | |
| Location Services indicator in 5GC (5G-LCS) (octet 5, bit 1) | | | | | | | | | |
| Bit | | | | | | | | | |
| **1** | | | | | | | | | |
| 0 | |  | |  | |  | | Location services via 5GC not supported | |
| 1 | |  | |  | |  | | Location services via 5GC supported | |
|  | | | | | | | | | |
| ATSSS support indicator (ATS-IND) (octet 5, bit 2) | | | | | | | | | |
| This bit indicates the network support for ATSSS. | | | | | | | | | |
| Bit | | | | | | | | | |
| **2** | | | | | | | | | |
| 0 | |  | |  | |  | | ATSSS not supported | |
| 1 | |  | |  | |  | | ATSSS supported | |
|  | | | | | | | | | |
|  | | | | | | | | | |
| Ethernet header compression for control plane CIoT 5GS optimization (5G-EHC-CP CIoT) (octet 5, bit 3) | | | | | | | | | |
| This bit indicates the capability for Ethernet header compression for control plane CIoT 5GS optimization | | | | | | | | | |
| Bit | | | | | | | | | |
| **3** | | | | | | | | | |
| 0 | |  | |  | |  | | Ethernet header compression for control plane CIoT 5GS optimization not supported | |
| 1 | |  | |  | |  | | Ethernet header compression for control plane CIoT 5GS optimization supported | |
|  | | | | | | | | | |
| N1 NAS signaling connection release (CR) (octet 5, bit 4) | | | | | | | | | |
| This bit indicates whether N1 NAS signaling connection release is supported. | | | | | | | | | |
| Bit | | | | | | | | | |
| **4** | | | | | | | | | |
| 0 | |  | |  | |  | | N1-NAS signaling connection release not supported | |
| 1 | |  | |  | |  | | N1-NAS signaling connection release supported | |
|  | | | | | | | | | |
| Paging indication for voice services (PIV) (octet 5, bit 5) | | | | | | | | | |
| This bit indicates whether paging indication for voice services is supported. | | | | | | | | | |
| Bit | | | | | | | | | |
| **5** | | | | | | | | | |
| 0 | |  | |  | |  | | paging indication for voice services not supported | |
| 1 | |  | |  | |  | | paging indication for voice services supported | |
|  | | | | | | | | | |
| Reject paging request (RPR) (octet 5, bit 6) | | | | | | | | | |
| This bit indicates whether reject paging request is supported. | | | | | | | | | |
| Bit | | | | | | | | | |
| **6** | | | | | | | | | |
| 0 | |  | |  | |  | | reject paging request not supported | |
| 1 | |  | |  | |  | | reject paging request supported | |
|  | | | | | | | | | |
| Paging restriction (PR) (octet 5, bit 7) | | | | | | | | | |
| This bit indicates whether paging restriction is supported. | | | | | | | | | |
| Bit | | | | | | | | | |
| **7** | | | | | | | | | |
| 0 | |  | |  | |  | | paging restriction not supported | |
| 1 | |  | |  | |  | | paging restriction supported | |
|  | | | | | | | | | |
|  | | | | | | | | | |
| Bit 8 in octet 5 is spare and shall be coded as zero. | | | | | | | | | |
|  | | | | | | | | | |
| NOTE 1: For a registration procedure over non-3GPP access, bit 1 of octet 3 and bits 3 to 6 of octet 3 are ignored.  NOTE 2: For a registration procedure over 3GPP access, bit 1 of octet 4 is ignored. | | | | | | | | | |

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