**3GPP TSG-CT WG1 Meeting #129-eC1-21zzzz-r02**

**Electronic meeting, 19-23 April 2021 was C1-212081**

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| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **24.501** | **CR** | **3103** | **rev** | **1** | **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)*.* | | | | | | | | |
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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME | **X** | Radio Access Network |  | Core Network | **X** |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | | | | |
| ***Title:*** | Information element for UAV payload and CAA-level UAV ID in 5GS | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | OPPO, Samsung | | | | | | | | | |
| ***Source to TSG:*** | C1 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | ID\_UAS | | | | |  | ***Date:*** | | | 2021-04-22 |
|  |  | | | |  | |  | | |  |
| ***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:*** | | SA2 has specified in TS 23.256 (v0.1.0), that the UAV can provide to the CAA-Level UAV ID to the AMF when the UAV makes a registration attempt. In that TS it is also specified that the USS can provide to the UAV a CAA-level UAV ID via the AMF.  In TS 23.256, it is also specified that the USS can provide to the UAV, via the AMF, an avaiation information payload. This avaiation information payload contains UAV related information is "transparent" to the AMF, and contains UAV related information. See DP C1-212080 which provides a discussion on handling of CAA-level UAV ID and on this payload information.  For CT1, for the protocol aspects, CT1 has to now define a method in appropriate 5GS NAS signalling messages to allow such information to be carried between UAV and USS and vice-versa. As some of this information is transparent to the AMF, while at least the CAA-level UAV ID is not transparent, CT1 cannot just provide a single transparaent container to transfer such information between these two end-point entities, thus as argued in C1-212080, a new new information element is proposed where one part is a transparent payload container while anothr part is the CAA-level UAV ID that holds contents that the AMF has to use.  As for the NAS signalling messages in which this new IE will be carried, for now it is proposed to have that new IE in REGISTRATION REQUEST and Configuration update command. This new IE will be added to other NAS signalling messages when it becomes clear from SA2 work what other 5GMM and 5GSM procedures will be involved in use or transfer of these UAV attributes. Similiarly, when in their system work SA2 considers that other UAV attributes need to be looked at by AMF or other 5GCN entities, such attributes then being non-transparent to 5GS will have to be added to this new IE. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | A new IE named UAV attributes list IE is introduced. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | A means to transport the CAA-level UAV ID and avaiation payload between UAV and USS will not be possible. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 8.2.6.1, 9.11.3.xx (new) | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | |  | | | | | | | | |

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

### 8.2.6 Registration request

#### 8.2.6.1 Message definition

The REGISTRATION REQUEST message is sent by the UE to the AMF. See table 8.2.6.1.1.

Message type: REGISTRATION REQUEST

Significance: dual

Direction: UE to network

Table 8.2.6.1.1: REGISTRATION REQUEST message content

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| IEI | Information Element | Type/Reference | Presence | Format | Length |
|  | Extended protocol discriminator | Extended Protocol discriminator  9.2 | M | V | 1 |
|  | Security header type | Security header type  9.3 | M | V | 1/2 |
|  | Spare half octet | Spare half octet  9.5 | M | V | 1/2 |
|  | Registration request message identity | Message type  9.7 | M | V | 1 |
|  | 5GS registration type | 5GS registration type  9.11.3.7 | M | V | 1/2 |
|  | ngKSI | NAS key set identifier  9.11.3.32 | M | V | 1/2 |
|  | 5GS mobile identity | 5GS mobile identity  9.11.3.4 | M | LV-E | 6-n |
| C- | Non-current native NAS key set identifier | NAS key set identifier  9.11.3.32 | O | TV | 1 |
| 10 | 5GMM capability | 5GMM capability  9.11.3.1 | O | TLV | 3-15 |
| 2E | UE security capability | UE security capability  9.11.3.54 | O | TLV | 4-10 |
| 2F | Requested NSSAI | NSSAI  9.11.3.37 | O | TLV | 4-74 |
| 52 | Last visited registered TAI | 5GS tracking area identity  9.11.3.8 | O | TV | 7 |
| 17 | S1 UE network capability | S1 UE network capability  9.11.3.48 | O | TLV | 4-15 |
| 40 | Uplink data status | Uplink data status  9.11.3.57 | O | TLV | 4-34 |
| 50 | PDU session status | PDU session status  9.11.3.44 | O | TLV | 4-34 |
| B- | MICO indication | MICO indication  9.11.3.31 | O | TV | 1 |
| 2B | UE status | UE status  9.11.3.56 | O | TLV | 3 |
| 77 | Additional GUTI | 5GS mobile identity  9.11.3.4 | O | TLV-E | 14 |
| 25 | Allowed PDU session status | Allowed PDU session status  9.11.3.13 | O | TLV | 4-34 |
| 18 | UE's usage setting | UE's usage setting  9.11.3.55 | O | TLV | 3 |
| 51 | Requested DRX parameters | 5GS DRX parameters  9.11.3.2A | O | TLV | 3 |
| 70 | EPS NAS message container | EPS NAS message container  9.11.3.24 | O | TLV-E | 4-n |
| 74 | LADN indication | LADN indication  9.11.3.29 | O | TLV-E | 3-811 |
| 8- | Payload container type | Payload container type  9.11.3.40 | O | TV | 1 |
| 7B | Payload container | Payload container  9.11.3.39 | O | TLV-E | 4-65538 |
| 9- | Network slicing indication | Network slicing indication  9.11.3.36 | O | TV | 1 |
| 53 | 5GS update type | 5GS update type  9.11.3.9A | O | TLV | 3 |
| 41 | Mobile station classmark 2 | Mobile station classmark 2  9.11.3.31C | O | TLV | 5 |
| 42 | Supported codecs | Supported codec list  9.11.3.51A | O | TLV | 5-n |
| 71 | NAS message container | NAS message container  9.11.3.33 | O | TLV-E | 4-n |
| 60 | EPS bearer context status | EPS bearer context status  9.11.3.23A | O | TLV | 4 |
| 6E | Requested extended DRX parameters | Extended DRX parameters  9.11.3.26A | O | TLV | 3 |
| 6A | T3324 value | GPRS timer 3  9.11.2.5 | O | TLV | 3 |
| 67 | UE radio capability ID | UE radio capability ID  9.11.3.68 | O | TLV | 3-n |
| 35 | Requested mapped NSSAI | Mapped NSSAI  9.11.3.31B | O | TLV | 3-42 |
| 48 | Additional information requested | Additional information requested  9.11.3.12A | O | TLV | 3 |
| 1A | Requested WUS assistance information | WUS assistance information  9.11.3.71 | O | TLV | 3-n |
| A- | N5GC indication | N5GC indication  9.11.3.72 | O | T | 1 |
| 30 | Requested NB-N1 mode DRX parameters | NB-N1 mode DRX parameters  9.11.3.73 | O | TLV | 3 |
| tbd | UAV attributes list | UAV attributes list  9.11.2.uu | O | TLV-E | 3-n |

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

#### 9.11.2.uu UAV attributes list

The purpose of the UAV attributes list is to transfer between the UAV and network (and vice versa) the attributes and characteristics of a UAV and information related to the UAV.

The UAV attributes list information element is coded as shown in figure 9.11.3.uu.1 and table 9.11.3.uu.1.

The UAV attributes list a type 6 information element with a minimum length of 3 octets.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| UAV attributes list IEI | | | | | | | | octet 1 |
| Length of UAV attributes list contents | | | | | | | | octet 2  octet 3 |
| UAV container ID 1 | | | | | | | | octet 4 |
| Length of UAV container ID 1 contents | | | | | | | | octet 5 |
| UAV container ID 1 contents | | | | | | | | octet 6  octet v |
| ……. | | | | | | | | octet v+1  octet v+2  octet y |
| UAV container ID n | | | | | | | | octet y+1 |
| Length of UAV container ID n contents | | | | | | | | octet y+2 |
| UAV container ID n contents | | | | | | | | octet y+3  octet z |

Figure 9.11.3.uu.1: UAV attributes list information element

Table 9.11.3.uu.1: UAV attributes list information element

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| UAV container (octet 4 to octet z)  UAV container ID (octet 4, octet v+1, octet y+1)  This field is coded as   |  |  |  | | --- | --- | --- | | IEI | IE name | IE reference | | tbd | CAA-level UAV ID | CAA-level UAV ID (see subclause 9.11.3.vv) | | tbd | USS address | USS address (see subclause 9.11.3.xx) | | tbd | Aviation payload information | Aviation payload information (see subclause 9.11.3.yy) | |  |  |  |   Length of UAV container ID IE (octet 5, octet v+2, octet y+2)  This field indicates binary coded length of the UAV container contents |

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

#### 9.11.2.vv CAA-level UAV ID

The purpose the CAA-level UAV ID information element is to transfer the UAV's CAA-level UAV ID between the UAV and the USS.

The CAA-level UAV ID is coded as shown in figure 9.11.3yyx.1 and table 9.11.3.vv.1

The CAA-level UAV ID is a type 4 information element with a minimum lnegth of 1.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of CAA-level UAV ID | | | | | | | | octet 1 |
| CAA-level UAV ID | | | | | | | | octet 2  octet n |

Figure 9.11.3.vv.1: CAA-level UAV ID

Table 9.11.3.vv.1: CAA-level UAV ID information element

|  |
| --- |
| CAA-level UAV ID (octet 2 to octet a)  The CAA-level UAV ID field contains the CAA-level UAV ID whose coding is given in 3GPP TS 23.003 [4]. |
|  |

Editor's note: (ID\_UAS, CR#3103). It is FFS what formats of CAA-level UAV ID need to be support, and if it is to be defined in 3GPP TS 23.003 [4] under the responsibility of CT4.

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

#### 9.11.2.xx USS address

The purpose the USS aAddress information element is for the UAV to provide to the network the address of the USS that the UAV belongs to for the purpose of the network discovering that associated USS.

The USS Address information element is coded as shown in figure 9.11.3.xx.1 and table 9.11.3.xx.1

The USS Address information element is a type 4 information element with a minimum lnegth of 1.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of USS address | | | | | | | | octet 1 |
| USS address | | | | | | | | octet 2  octet n |

Figure 9.11.3.zz.1: USS address

Table 9.11.3.zz.1: USS address information element

|  |
| --- |
| USS address (octet 2 to octet n)  The USS address coding is given in 3GPP TS 23.003 [4]. |
|  |

Editor's note: (ID\_UAS, CR#3103). The coding of USS address is FFS and is the responsibility of CT4 and eventually to be given in 3GPP TS 23.003 [4].

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

#### 9.11.2.yy Aviation payload information

Editor's note: (ID\_UAS, CR#3103). The coding of the Aviation payload information information element is FFS.

Editor's note: (ID\_UAS, CR#3103). It is FFS if there should be separately containers for different payload information such as for UUAA, for security parameters, for flight information or that one avaiation payload container IE with different identified information.

\* \* \* End of Changes \* \* \* \*