**3GPP TSG-CT WG1 Meeting #137-eC1-224812**

**E-Meeting, 18th – 26th August 2022**

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| *CR-Form-v12.2* |
| **CHANGE REQUEST** |
|  |
|  | **23.038** | **CR** | **0239** | **rev** | **-** | **Current version:** | **17.0.0** |  |
|  |
| *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 |  | Radio Access Network |  | Core Network | **X** |

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|  |
| ***Title:***  | Clarification of the codec of IEs in accordance to GSM 7 bit default alphabet included in NAS message |
|  |  |
| ***Source to WG:*** | ZTE |
| ***Source to TSG:*** | CT1 |
|  |  |
| ***Work item code:*** | TEI18 |  | ***Date:*** | 2022-08-07 |
|  |  |  |  |  |
| ***Category:*** | **F** |  | ***Release:*** | Rel-18 |
|  | *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-16 (Release 16)Rel-17 (Release 17)Rel-18 (Release 18)Rel-19 (Release 19)* |
|  |  |
| ***Reason for change:*** | In current TS 24.301, it requires that the characters of the sub-services of the associated emergency service URN shall be coded in accordance to GSM 7 bit default alphabet (see 3GPP TS 23.038 [3]).As analysized in C1-224810, it is proposed to add the appropriate padding characters and bit-fill to octet boundary as specified in clause 6.1.2.3.1 of TS 23.038.Thus it is proposed to extend the scope of TS 23.038 and indicate it can also be used for the codec of IEs in accordance to GSM 7 bit default alphabet included in NAS message. |
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| ***Summary of change:*** | It is clarified that packing of 7 bit characters defined in TS 23.038 can also be used for the codec of IEs in accordance to GSM 7 bit default alphabet included in NAS message. |
|  |  |
| ***Consequences if not approved:*** | It is unclear whether the IEs in accordance to GSM 7 bit default alphabet included in NAS message can use the packing mechanism defined in TS 23.038. |
|  |  |
| ***Clauses affected:*** | 1, 2, 6.2, 6.2.1 |
|  |  |
|  | **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 \* \* \* \*

# 2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non‑specific.

- For a specific reference, subsequent revisions do not apply.

- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

[1] void

[2] 3GPP TS 22.030: "Man-Machine Interface (MMI) of the User Equipment (UE)".

[3] 3GPP TS 23.090: "Unstructured Supplementary Service Data (USSD) - Stage 2".

[4] 3GPP TS 23.040: "Technical realization of the Short Message Service (SMS) ".

[5] 3GPP TS 23.041: "Technical realization of Cell Broadcast Service (CBS)".

[6] 3GPP TS 24.011: "Point-to-Point (PP) Short Message Service (SMS) support on mobile radio interface".

[7] Void.

[8] 3GPP TS 27.005: "Use of Data Terminal Equipment - Data Circuit terminating Equipment (DTE - DCE) interface for Short Message Service (SMS) and Cell Broadcast Service (CBS)".

[10] ISO/IEC 10646: "Information technology; Universal Multiple-Octet Coded Character Set (UCS)".

[11] 3GPP TS 24.090: "Unstructured Supplementary Service Data (USSD); Stage 3".

[12] ISO 639: "Code for the representation of names of languages".

[13] 3GPP TS 23.042: "Compression algorithm for text messaging services".

[14] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

[15] "Wireless Datagram Protocol Specification", Wireless Application Protocol Forum Ltd.

[16] ISO 1073-1 and ISO 1073-2 Alphanumeric character sets for optical recognition – Parts 1 and 2: Character sets OCR-A and OCR-B, respectively - Shapes and dimensions of the printed image.

[17] 3GPP TS 31.102: "Characteristics of the USIM application"

[18] 3GPP TS 51.011 Release 4 (version 4.x.x): “Specification of the Subscriber Identity Module - Mobile Equipment (SIM - ME) interface”

[19] 3GPP TS 24.294: "IMS Centralized Services (ICS) Protocol via I1 Interface".

[xx] 3GPP TS 24.008: "Mobile radio interface Layer 3 specification; Core network protocols; Stage 3".

[yy] 3GPP TS 24.301: " Non-Access-Stratum (NAS) protocol for Evolved Packet System (EPS); Stage 3".

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

## 6.2 Character sets and coding

This section provides list of character sets and codings to be supported by SMS, CBS, USSD and IEs included in NAS messages as specified in 3GPP TS  24.008 [xx] and 3GPP TS  24.301 [yy]. Implementation of the GSM 7 bit default alphabet is mandatory. Support of other character sets is optional.

It should be noted that support of Latin and non-Latin languages by GSM 7 bit default alphabet is limited. It is therefore essential to introduce UCS 2 character set in mobile stations, SCs and systems handling SMSs, CBSs, USSDs, and IEs included in NAS messages.

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

### 6.2.1 GSM 7 bit Default Alphabet

Bits per character: 7

CBS/USSD/IE of NAS message pad character: CR

Character table:

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  | b7  |  0  |  0  |  0  |  0  |  1  |  1  |  1  |  1  |
|  |  |  |  | b6  |  0  |  0  |  1  |  1  |  0  |  0  |  1  |  1  |
|  |  |  |  | b5  |  0  | 1  | 0  | 1  | 0  | 1  | 0  | 1  |
| b4  | b3  | b2  | b1  |   |  0  | 1  | 2  | 3  | 4  | 5  | 6  | 7  |
| 0  | 0  | 0  | 0  | 0  | @  |   | SP | 0  | ¡  | P  | ¿  | p  |
| 0  | 0  | 0  | 1  | 1  | £  | \_ | !  | 1  | A  | Q  | a  | q  |
| 0  | 0  | 1  | 0  | 2  | $  |   | "  | 2  | B  | R  | b  | r  |
| 0  | 0  | 1  | 1  | 3  | ¥  |   | #  | 3  | C  | S  | c  | s  |
| 0  | 1  | 0  | 0  | 4  | è  |   | ¤  | 4  | D  | T  | d  | t  |
| 0  | 1  | 0  | 1  | 5  | é  |  | %  | 5  | E  | U  | e  | u  |
| 0  | 1  | 1  | 0  | 6  | ù  |   | &  | 6  | F  | V  | f  | v  |
| 0  | 1  | 1  | 1  | 7  | ì  |   | '  | 7  | G  | W  | g  | w  |
| 1  | 0  | 0  | 0  | 8  | ò  |   | (  | 8  | H  | X  | h  | x  |
| 1  | 0  | 0  | 1  | 9  | Ç  |   | )  | 9  | I  | Y  | i  | y  |
| 1  | 0  | 1  | 0  | 10 | LF |   | \*  | :  | J  | Z  | j  | z  |
| 1  | 0  | 1  | 1  | 11 | Ø  | 1) | +  | ;  | K  | Ä  | k  | ä  |
| 1  | 1  | 0  | 0  | 12 | ø  | Æ  | ,  | <  | L  | Ö  | l  | ö  |
| 1  | 1  | 0  | 1  | 13 | CR | æ  | -  | =  | M  | Ñ  | m  | ñ  |
| 1  | 1  | 1  | 0  | 14 | Å  | ß  | .  | >  | N  | Ü  | n  | ü  |
| 1  | 1  | 1  | 1  | 15 | å  | É  | /  | ?  | O  | § | o  | à  |
| NOTE 1): This code is an escape to an extension of this table (either to the GSM 7 bit default alphabet extension table, see subclause 6.2.1.1, or a National Language Single Shift Table, see subclause 6.2.1.2.2). A receiving entity which does not understand the meaning of this escape mechanism shall display it as a space character. |

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