**3GPP TSG-CT WG4 Meeting #98eC4-203xxx**

**E-Meeting, 02nd – 12th June 2020** *Revisions of 3006, 3114*

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| *CR-Form-v12.0* |
| **CHANGE REQUEST** |
|  |
|  | **29.500** | **CR** | **0123** | **rev** | **2** | **Current version:** | **16.3.0** |  |
|  |
| *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:***  | Delimiters - ABNF specific |
|  |  |
| ***Source to WG:*** | Huawei |
| ***Source to TSG:*** | CT4 |
|  |  |
| ***Work item code:*** | SBIProtoc16 |  | ***Date:*** | 2020-05-01 |
|  |  |  |  |  |
| ***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)* |
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| ***Reason for change:*** | Certain characters are used as delimiters in ABNF and in URI syntaxes. The caveat is, that the same character may have different purpose and meaning in ABNF, compared to the URI syntax. |
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| ***Summary of change:*** | RFC 5234 is added to the references. New clause “Special characters, operators and delimiters” is added to clause 3.3. In the new clause selected set of ABNF operators are defined, while a reference to TS 29.501 is added for URI and SBI specific usage of special characters. |
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| ***Consequences if not approved:*** | Unclear specification. |
|  |  |
| ***Clauses affected:*** | 2, 3.x (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:*** | Rev1: editorials.Rev2: editorials. |

\* \* \* 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] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

[2] 3GPP TS 22.261: "Service requirements for the 5G system; Stage 1".

[3] 3GPP TS 23.501: "System Architecture for the 5G System; Stage 2".

[4] 3GPP TS 23.502: "Procedures for the 5G System; Stage 2".

[5] 3GPP TS 29.501: "5G System; Principles and Guidelines for Services Definition; Stage 3".

[6] IETF RFC 793: "Transmission Control Protocol".

[7] IETF RFC 7540: "Hypertext Transfer Protocol Version 2 (HTTP/2)".

[8] 3GPP TS 29.510: "5G System; Network Function Repository Services; Stage 3".

[9] OpenAPI: "OpenAPI 3.0.0 Specification", <https://github.com/OAI/OpenAPI-Specification/blob/master/versions/3.0.0.md>.

[10] IETF RFC 8259: "The JavaScript Object Notation (JSON) Data Interchange Format".

[11] IETF RFC 7231: "Hypertext Transfer Protocol (HTTP/1.1): Semantics and Content".

[12] IETF RFC 7230: "Hypertext Transfer Protocol (HTTP/1.1): Message Syntax and Routing".

[13] 3GPP TS 29.571: "5G System; Common Data Types for Service Based Interfaces Stage 3".

[14] IETF RFC 3986: "Uniform Resource Identifier (URI): Generic Syntax".

[15] 3GPP TS 23.003: "Numbering, addressing and identification".

[16] IETF RFC 5681: "TCP Congestion Control".

[17] 3GPP TS 33.501: "Security Architecture and Procedures for 5G System".

[18] IANA: "SMI Network Management Private Enterprise Codes", <http://www.iana.org/assignments/enterprise-numbers>.

[19] IETF RFC 7944: "Diameter Routing Message Priority".

[20] IETF RFC 7234: "Hypertext Transfer Protocol (HTTP/1.1): Caching".

[21] IETF RFC 7235: " Hypertext Transfer Protocol (HTTP/1.1): Authentication".

[22] IETF RFC 6749: "The OAuth 2.0 Authorization Framework".

[23] IETF RFC 6750: "The OAuth 2.0 Authorization Framework: Bearer Token Usage".

[24] IETF RFC 7232: "Hypertext Transfer Protocol (HTTP/1.1): Conditional Requests".

[25] IETF RFC 7516: "JSON Web Encryption (JWE)".

[26] IETF RFC 7515: "JSON Web Signature (JWS)".

[27] 3GPP TS 29.573: "5G System: Public Land Mobile Network (PLMN) Interconnection; Stage 3".

[28] 3GPP TS 29.502: "5G System; Session Management Services; Stage 3".

[29] 3GPP TS 29.503: "5G System; Unified Data Management Services; Stage 3".

[30] Void.

[31] 3GPP TS 29.518: "5G System; Access and Mobility Management Services; Stage 3".

[32] 3GPP TS 29.531: "5G System; Network Slice Selection Services; Stage 3".

[33] IETF RFC 7694: "Hypertext Transfer Protocol (HTTP) Client-Initiated Content-Encoding".

[34] IETF RFC 1952: "GZIP file format specification version 4.3".

[35] 3GPP TS 29.525: "5G System; UE Policy Control Service; Stage 3".

[36] IETF RFC 3040: "Internet Web Replication and Caching Taxonomy".

[37] IETF RFC 5322: "Internet Message Format".

[38] 3GPP TS 23.527: "5G System; Restoration Procedures".

[39] 3GPP TS 29.303: "Domain Name System Procedures; Stage 3".

[40] 3GPP TS 29.515: "5G System; GMLC Services; Stage 3".

[xx] IETF RFC 5234: "Augmented BNF for Syntax Specifications: ABNF".

\* \* \* 2nd Change \* \* \* \*

## 3.x Special characters, operators and delimiters

### 3.x.1 General

A number of characters have special meaning and are used as delimiters in this document and also in other stage 3 SBI specifications. Below clauses specify the usage of a selected set of the special characters. Full set of these special characters are specified in the respective IETF specifications.

### 3.x.2 ABNF operators

/ Operator. The forward slash character separates alternatives. See clause 3.2 in IETF RFC 5234 [xx].

# Operator. The number sign character allows for compact definition of comma-separated lists, similar to the "\*" operator. See clause 1.2 in IETF RFC 7230 [12].

= Special character. The equal sign character separates an ABNF rule name from the rule elements. See clause 2.2 in IETF RFC 5234 [xx].

[ ] Operator. The square bracket characters enclose an optional element sequence. See clause 3.8 in IETF RFC 5234 [xx].

< > Special characters. The angle bracket characters typically enclose an ABNF rule element (they are optional). See clause 2.1 in IETF RFC 5234 [xx].

\* Operator. The star character precedes an element and indicates the elements repetition. See clause 3.6 in IETF RFC 5234 [xx].

; Operator. Semicolon character indicates the start of a comment that continues to the end of line. See clause 3.9 in IETF RFC 5234 [xx].

NOTE: The same characters, like "/", "#", etc. lead to different processing in ABNF and URI grammars. For instance, in URI syntax, ";" character separates parameter and its value, while in ABNF ";" starts a comment. Besides, unlike URI syntax, neither "?", nor ":" operators are specified for ABNF.

### 3.x.3 URI – reserved and special characters

Special characters that are used as delimiters in URI syntax have somewhat different purpose from the same characters when used by ABNF syntax. See clause 3.x.2 in 3GPP TS 29.501 [5].

### 3.x.4 SBI specific usage of delimiters

See clause 3.x.3 in 3GPP TS 29.501 [5].

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