**3GPP TSG-CT WG1 Meeting #133-eC1-21abcd**

**E-meeting, 11-19 November 2021 (was C1-217060)**

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| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **24.546** | **CR** | **0008** | **rev** | **1** | **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 | **x** | Radio Access Network |  | Core Network | **X** |

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|  | | | | | | | | | | |
| ***Title:*** | Addition of functional entity requirements for CoAP support | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Ericsson | | | | | | | | | |
| ***Source to TSG:*** | C1 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | eSEAL | | | | |  | ***Date:*** | | | 2021-11-04 |
|  |  | | | |  | |  | | |  |
| ***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:*** | | To introduce support for CoAP for SEAL Configuration Management, it is proposed to specify the applicable requirements for SCM-C and SCM-S. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Requirements on CM functional entites to support CoAP are added.  Applicable references are added. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | SEAL CM does not support CoAP as required by stage 2. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 2, 5.1, 5.2 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

[2] 3GPP TS 23.434: "Service Enabler Architecture Layer for Verticals (SEAL); Functional architecture and information flows;".

[3] IETF RFC 4825: "The Extensible Markup Language (XML) Configuration Access Protocol (XCAP)".

[4] OMA OMA-TS-XDM\_Core-V2\_1-20120403-A: "XML Document Management (XDM) Specification".

[5] 3GPP TS 24.547: "Identity management - Service Enabler Architecture Layer for Verticals (SEAL); Protocol specification;".

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

[7] IETF RFC 7159: "The JavaScript Object Notation (JSON) Data Interchange Format".

[8] 3GPP TS 24.229: "IP multimedia call control protocol based on Session Initiation Protocol (SIP) and Session Description Protocol (SDP); Stage 3".

[9] IETF RFC 5875: "An Extensible Markup Language (XML) Configuration Access Protocol (XCAP) Diff Event Package".

[10] IETF RFC 6050 (November 2010): "A Session Initiation Protocol (SIP) Extension for the Identification of Services".

[11] IETF RFC 6665 (July 2012): "SIP-Specific Event Notification".

[rfc7252] IETF RFC 7252: "The Constrained Application Protocol (CoAP)".

[rfc7959] IETF RFC 7959: "Block-Wise Transfers in the Constrained Application Protocol (CoAP) ".

[rfc7641] IETF RFC 7641: "Observing Resources in the Constrained Application Protocol (CoAP)".

[rfc8332] IETF RFC 8323: "CoAP (Constrained Application Protocol) over TCP, TLS, and WebSockets".

[rfc8516] IETF RFC 8516: ""Too Many Requests" Response Code for the Constrained Application Protocol".

[rfc8949] IETF RFC 8949: “Concise Binary Object Representation (CBOR)”.

[rfc8610] IETF RFC 8610: "Concise Data Definition Language (CDDL): A Notational Convention to Express Concise Binary Object Representation (CBOR) and JSON Data Structures".

[ianacoap] Constrained RESTful Environments (CoRE) Parameters at IANA, <https://www.iana.org/assignments/core-parameters/core-parameters.xhtml>

[coap-details] Internet draft draft-ietf-core-problem-details-01: "Problem Details For CoAP APIs".

[new-block] Internet draft draft-ietf-core-new-block-14: "Constrained Application Protocol (CoAP) Block-Wise Transfer Options Supporting Robust Transmission".

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

## 5.1 SEAL configuration management client (SCM-C)

The SCM-C functional entity acts as the application client for configuration related transactions.

To be compliant with the HTTP procedures in the present document the SCM-C:

- shall support the role of XCAP client as specified in IETF RFC 4825 [3];

- shall support the role of XDMC as specified in OMA OMA-TS-XDM\_Core-V2\_1 [4];

- shall support the procedures in clause 6.2.2;

- shall support the procedures in clause 6.2.3; and

- shall support the procedures in clause 6.2.4.

To be compliant with the CoAP procedures in the present document the SCM-C:

- shall support the role of CoAP client as specified in IETF RFC 7252 [rfc7252];

- shall support the capability to observe resources as specified in IETF RFC 7641 [rfc7641];

- shall support the block-wise transfer as specified in IETF RFC 7959 [rfc7959];

- may support the robust block transfer as specified in IETF draft draft-ietf-core-new-block-14 [new-block];

- should support CoAP over TCP and Websocket as specified in IETF RFC 8323 [rfc8323];

- shall support CBOR encoding as specified in IETF RFC 8949 [rfc8949];

- shall support the procedures in clause 6.2.2;

- shall support the procedures in clause 6.2.3; and

- shall support the procedures in clause 6.2.4.

NOTE 1: The security mechanism to be supported for the CoAP procedures is described in 3GPP TS 24.547 [5].

NOTE 2: Support for TCP for the CoAP procedures is required if the client connects over the network which blocks or impedes the use of UDP, e.g. when NATs are present in the communication path.

NOTE 3: The CoAP protocol supports mechanism for reliable message exchange over UDP. Use of TCP can also be beneficial if reliable transport is required for other reasons, e.g. better observability of resources. Usage of CoAP over TCP is an implementation choice.

NOTE 4: Support for the robust block transfer mechanism for the CoAP procedures is beneficial in environments where packet loss is highly asymmetrical and where performance optimization of block transfers is required.

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

## 5.2 SEAL configuration management server (SCM-S)

The SCM-S is a functional entity used to configure one or more vertical applications with 3GPP system related vertical applications provisioning information and configure data on the SEAL configuration management client.

To be compliant with the HTTP procedures in the present document the SCM-S:

- shall support the role of XCAP server as specified in IETF RFC 4825 [3];

- shall support the role of XDMS as specified in OMA OMA-TS-XDM\_Core-V2\_1 [4];

- shall support the procedures in clause 6.2.2;

- shall support the procedures in clause 6.2.3; and

- shall support the procedures in clause 6.2.4.

To be compliant with the CoAP procedures in the present document the SCM-C:

- shall support the role of CoAP server as specified in IETF RFC 7252 [rfc7252];

- shall support the capability to observer resources as specified in IETF RFC 7641 [rfc7641];

- shall support the block-wise transfer as specified in IETF RFC 7959 [rfc7959];

- shall support the robust block transfer as specified in IETF draft draft-ietf-core-new-block-14 [new-block];

- shall support CoAP over TCP and Websocket as specified in IETF RFC 8323 [rfc8323];

- shall support CBOR encoding as specified in IETF RFC 8949 [rfc8949];

- shall support the procedures in clause 6.2.2;

- shall support the procedures in clause 6.2.3; and

- shall support the procedures in clause 6.2.4.

NOTE: The security mechanism to be supported for the CoAP procedures is described in 3GPP TS 24.547 [5]

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