

ETSI TS 124 424 V18.0.0 (2024-05)



**LTE;
5G;
Management Object (MO)
for Extensible Markup Language (XML)
Configuration Access Protocol (XCAP)
over the Ut interface
for Manipulating Supplementary Services (SS)
(3GPP TS 24.424 version 18.0.0 Release 18)**



Reference

RTS/TSGC-0124424vi00

Keywords

5G,LTE

ETSI

650 Route des Lucioles
F-06921 Sophia Antipolis Cedex - FRANCE

Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16

Siret N° 348 623 562 00017 - APE 7112B
Association à but non lucratif enregistrée à la
Sous-Préfecture de Grasse (06) N° w061004871

Important notice

The present document can be downloaded from:

<https://www.etsi.org/standards-search>

The present document may be made available in electronic versions and/or in print. The content of any electronic and/or print versions of the present document shall not be modified without the prior written authorization of ETSI. In case of any existing or perceived difference in contents between such versions and/or in print, the prevailing version of an ETSI deliverable is the one made publicly available in PDF format at www.etsi.org/deliver.

Users of the present document should be aware that the document may be subject to revision or change of status.

Information on the current status of this and other ETSI documents is available at

<https://portal.etsi.org/TB/ETSIDeliverableStatus.aspx>

If you find errors in the present document, please send your comment to one of the following services:

<https://portal.etsi.org/People/CommitteeSupportStaff.aspx>

If you find a security vulnerability in the present document, please report it through our
Coordinated Vulnerability Disclosure Program:

<https://www.etsi.org/standards/coordinated-vulnerability-disclosure>

Notice of disclaimer & limitation of liability

The information provided in the present deliverable is directed solely to professionals who have the appropriate degree of experience to understand and interpret its content in accordance with generally accepted engineering or other professional standard and applicable regulations.

No recommendation as to products and services or vendors is made or should be implied.

No representation or warranty is made that this deliverable is technically accurate or sufficient or conforms to any law and/or governmental rule and/or regulation and further, no representation or warranty is made of merchantability or fitness for any particular purpose or against infringement of intellectual property rights.

In no event shall ETSI be held liable for loss of profits or any other incidental or consequential damages.

Any software contained in this deliverable is provided "AS IS" with no warranties, express or implied, including but not limited to, the warranties of merchantability, fitness for a particular purpose and non-infringement of intellectual property rights and ETSI shall not be held liable in any event for any damages whatsoever (including, without limitation, damages for loss of profits, business interruption, loss of information, or any other pecuniary loss) arising out of or related to the use of or inability to use the software.

Copyright Notification

No part may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm except as authorized by written permission of ETSI.

The content of the PDF version shall not be modified without the written authorization of ETSI.

The copyright and the foregoing restriction extend to reproduction in all media.

© ETSI 2024.
All rights reserved.

Intellectual Property Rights

Essential patents

IPRs essential or potentially essential to normative deliverables may have been declared to ETSI. The declarations pertaining to these essential IPRs, if any, are publicly available for **ETSI members and non-members**, and can be found in ETSI SR 000 314: "*Intellectual Property Rights (IPRs); Essential, or potentially Essential, IPRs notified to ETSI in respect of ETSI standards*", which is available from the ETSI Secretariat. Latest updates are available on the ETSI Web server (<https://ipr.etsi.org/>).

Pursuant to the ETSI Directives including the ETSI IPR Policy, no investigation regarding the essentiality of IPRs, including IPR searches, has been carried out by ETSI. No guarantee can be given as to the existence of other IPRs not referenced in ETSI SR 000 314 (or the updates on the ETSI Web server) which are, or may be, or may become, essential to the present document.

Trademarks

The present document may include trademarks and/or tradenames which are asserted and/or registered by their owners. ETSI claims no ownership of these except for any which are indicated as being the property of ETSI, and conveys no right to use or reproduce any trademark and/or tradename. Mention of those trademarks in the present document does not constitute an endorsement by ETSI of products, services or organizations associated with those trademarks.

DECT™, **PLUGTESTS™**, **UMTS™** and the ETSI logo are trademarks of ETSI registered for the benefit of its Members. **3GPP™** and **LTE™** are trademarks of ETSI registered for the benefit of its Members and of the 3GPP Organizational Partners. **oneM2M™** logo is a trademark of ETSI registered for the benefit of its Members and of the oneM2M Partners. **GSM®** and the GSM logo are trademarks registered and owned by the GSM Association.

Legal Notice

This Technical Specification (TS) has been produced by ETSI 3rd Generation Partnership Project (3GPP).

The present document may refer to technical specifications or reports using their 3GPP identities. These shall be interpreted as being references to the corresponding ETSI deliverables.

The cross reference between 3GPP and ETSI identities can be found under <https://webapp.etsi.org/key/queryform.asp>.

Modal verbs terminology

In the present document "**shall**", "**shall not**", "**should**", "**should not**", "**may**", "**need not**", "**will**", "**will not**", "**can**" and "**cannot**" are to be interpreted as described in clause 3.2 of the [ETSI Drafting Rules](#) (Verbal forms for the expression of provisions).

"**must**" and "**must not**" are **NOT** allowed in ETSI deliverables except when used in direct citation.

Contents

Intellectual Property Rights	2
Legal Notice	2
Modal verbs terminology.....	2
Foreword.....	4
1 Scope	5
2 References	5
3 Definitions, symbols and abbreviations	6
3.1 Definitions	6
3.2 Abbreviations	6
4 MO for XCAP over Ut interface for manipulating SS	7
5 MO configuration parameters	7
5.1 General	7
5.2 Node: /<X>	8
5.3 /<X>/Name	8
5.4 /<X>/Ext	8
5.5 /<X>/AccessForXCAP	8
5.5a /<X>/AuthenticationForXCAP	9
5.6 /<X>/XCAP_conn_params_policy	9
5.7 /<X>/XCAP_conn_params_policy/<X>	9
5.8 /<X>/XCAP_conn_params_policy/<X>/access	10
5.9 /<X>/XCAP_conn_params_policy/<X>/XDM_MO_ref	10
5.10 /<X>/3GPP_PS_data_off	10
5.11 /<X>/3GPP_PS_data_off/SS_XCAP_config_exempt	11
5.12 /<X>/3GPP_PS_data_off/ SS_XCAP_config_roaming_exempt.....	11
5.13 /<X>/SNPN_Configuration	11
5.13a /<X>/SNPN_Configuration/<X>	11
5.13b /<X>/SNPN_Configuration/<X>/SNPN_identifier	12
5.13c /<X>/SNPN_Configuration/<X>/AuthenticationForXCAP	13
5.13d /<X>/SNPN_Configuration/<X>/ XCAP_conn_params_policy	13
5.13e /<X>/SNPN_Configuration/<X>/ XCAP_conn_params_policy/<X>	13
5.13f /<X>/SNPN_Configuration/<X>/ XCAP_conn_params_policy/<X>/XDM_MO_ref	14
5.13g /<X>/SNPN_Configuration/<X>/3GPP_PS_data_off.....	14
5.13h /<X>/SNPN_Configuration/<X>/3GPP_PS_data_off/ SS_XCAP_config_exempt	14
5.13i /<X>/SNPN_Configuration/<X>/3GPP_PS_data_off/ SS_XCAP_config_non-subscribed_exempt.....	14
Annex A (informative): DDF of MO for XCAP over Ut interface for manipulating SS.....	16
Annex B (informative): Change history	23
History	24

Foreword

This Technical Specification has been produced by the 3rd Generation Partnership Project (3GPP).

The contents of the present document are subject to continuing work within the TSG and may change following formal TSG approval. Should the TSG modify the contents of the present document, it will be re-released by the TSG with an identifying change of release date and an increase in version number as follows:

Version x.y.z

where:

- x the first digit:
 - 1 presented to TSG for information;
 - 2 presented to TSG for approval;
 - 3 or greater indicates TSG approved document under change control.
- y the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.
- z the third digit is incremented when editorial only changes have been incorporated in the document.

1 Scope

The present document defines the management object (MO) for extensible markup language (XML) configuration access protocol (XCAP) over the Ut interface for manipulating supplementary services (SS).

The MO for XCAP over Ut interface for manipulating SS is compatible with OMA device management protocol specifications, version 1.2 and upwards, and is defined using the OMA DM device description framework as described in the enabler release definition OMA-ERELED_DM-V1_2 [2].

The MO for XCAP over Ut interface for manipulating SS consists of relevant configuration parameters that can be managed for a UE supporting the UE role specified in 3GPP TS 24.623 [3].

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] OMA OMA-ERELED-DM-V1_2-20070209-A: "Enabler Release Definition for OMA Device Management, Version 1.2".
- [3] 3GPP TS 24.623: "Extensible Markup Language (XML) Configuration Access Protocol (XCAP) over the Ut interface for Manipulating Supplementary Services".
- [4] OMA OMA-TS-XDM_MO-V1_1-20080627-A: "OMA Management Object for XML Document Management".
- [5] OMA OMA-TS-DM_Protocol-V1_2-20070209-A: "OMA Device Management Protocol".
- [6] 3GPP TS 22.011: "Service accessibility".
- [7] 3GPP TS 33.220: "Generic Authentication Architecture (GAA); Generic Bootstrapping Architecture (GBA)".
- [8] 3GPP TS 33.221: "Generic Authentication Architecture (GAA); Support for subscriber certificates".
- [9] Void.
- [10] IETF RFC 7616: "HTTP Digest Access Authentication".
- [11] 3GPP TS 23.003: "Numbering, addressing and identification".

3 Definitions, symbols and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in 3GPP TR 21.905 [1] and the following apply. A term defined in the present document takes precedence over the definition of the same term, if any, in 3GPP TR 21.905 [1].

For the purposes of the present document, the following terms and definitions given in 3GPP TS 22.011 [6] apply:

3GPP PS data off
3GPP PS data off exempt service

For the purposes of the present document, the following terms and definitions given in 3GPP TS 24.623 [3] apply:

SS configuration via XCAP

3.2 Abbreviations

For the purposes of the present document, the abbreviations given in 3GPP TR 21.905 [1] and the following apply. An abbreviation defined in the present document takes precedence over the definition of the same abbreviation, if any, in 3GPP TR 21.905 [1].

DDF	Device Description Framework
DM	Device Management
IP	Internet Protocol
IP-CAN	IP-Connectivity Access Network
MO	Management Object
OMA	Open Mobile Alliance
PS	Packet Switched
SNPN	Stand-alone Non-Public Network
SS	Supplementary Services
UE	User Equipment
XCAP	XML Configuration Access Protocol
XML	Extensible Markup Language

4 MO for XCAP over Ut interface for manipulating SS

The MO for XCAP over Ut interface for manipulating SS is used to manage settings of the UE for extensible markup language (XML) configuration access protocol (XCAP) over the Ut interface for manipulating supplementary services (SS). Figure 4-1 gives overview of the configuration parameters of the MO for XCAP over Ut interface for manipulating SS.

The MO for XCAP over Ut interface for manipulating SS covers configuration parameters for a UE supporting the UE role specified in 3GPP TS 24.623 [3].

The MO identifier is: urn:oma:mo:ext-3gpp-xcaputss:1.0.

Protocol compatibility: This MO is compatible with OMA DM 1.2.

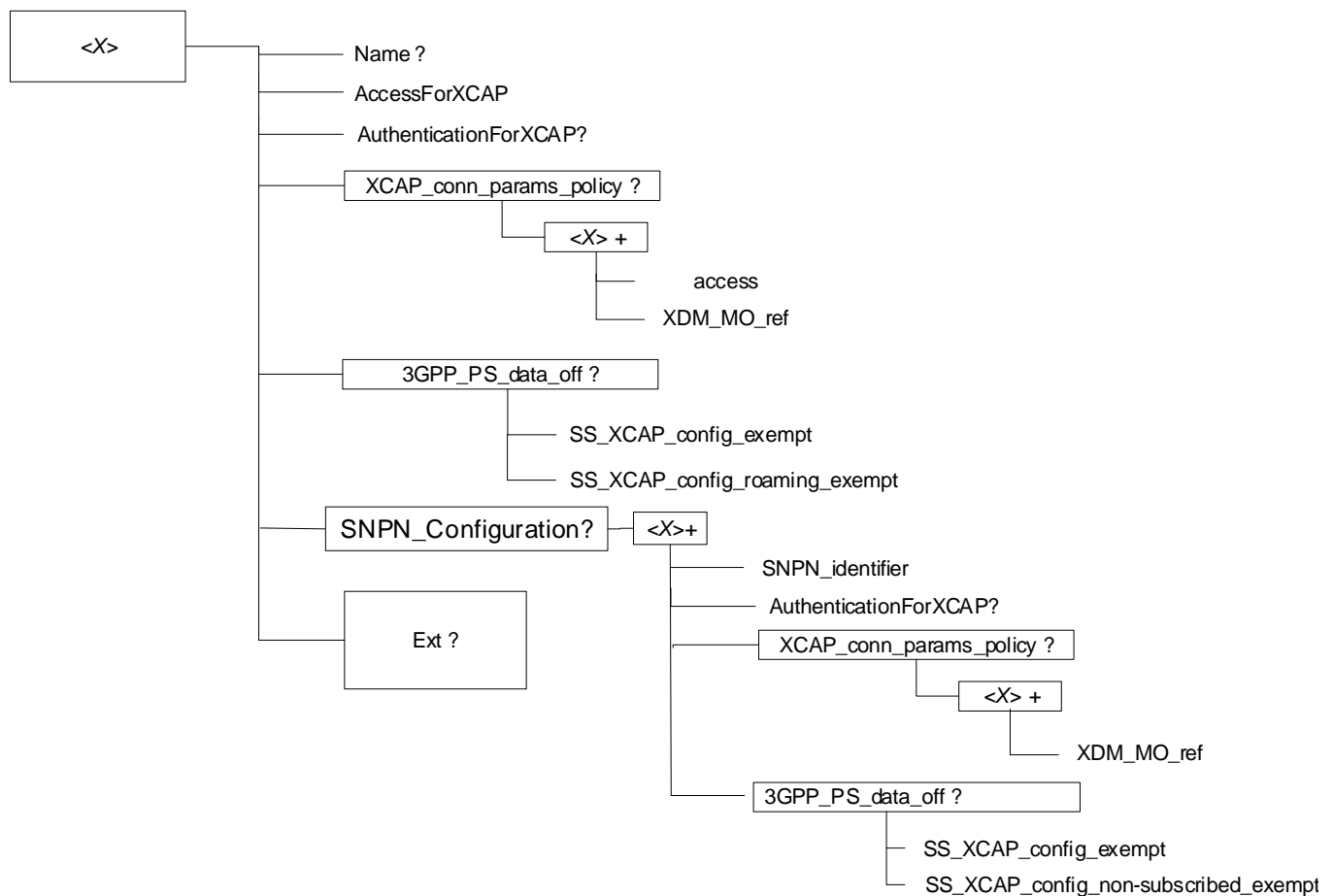


Figure 4-1: MO for XCAP over Ut interface for manipulating SS

5 MO configuration parameters

5.1 General

This clause describes the configuration parameters for the MO for XCAP over Ut interface for manipulating SS.

5.2 Node: /<X>

This interior node acts as a placeholder for one or more accounts for a fixed node.

- Occurrence: OneOrMore
- Format: node
- Access Types: Get, Replace
- Values: N/A

The interior node is mandatory for a UE supporting the UE role specified in 3GPP TS 24.623 [3].

NOTE: One node is normally used. More nodes are only used in case the terminal supports multiple UICCs.

Child nodes of this interior node which are not defined in this version of the present document are ignored.

5.3 /<X>/Name

This leaf is a name for the settings for the XCAP over the Ut interface for manipulating the SS.

- Occurrence: ZeroOrOne
- Format: chr
- Access Types: Get, Replace
- Values: <User displayable name>

5.4 /<X>/Ext

The Ext is an interior node for where the vendor specific information about the management of the XCAP over the Ut interface for manipulating the SS is being placed (vendor meaning application vendor, device vendor etc.). Usually the vendor extension is identified by vendor specific name under the ext node. The tree structure under the vendor identified is not defined and can therefore include one or more un-standardized sub-trees.

- Occurrence: ZeroOrOne
- Format: node
- Access Types: Get
- Values: N/A

5.5 /<X>/AccessForXCAP

This leaf is the policy on access type used for XCAP.

- Occurrence: One
- Format: int
- Access Types: Get, Replace
- Values: one of the values specified in table 5.5-1.

Table 5.5-1: Possible values for the AccessForXCAP leaf

Value	Description
0	any access type
1	3GPP accesses only
2	EPC or 5GCN via WLAN IP-CAN only
3	Non-seamless WLAN offload only
4	3GPP accesses preferred, non-seamless WLAN offload as secondary
5	3GPP accesses preferred, EPC or 5GCN via WLAN IP-CAN as secondary
6-255	not assigned

A "not assigned" value is interpreted as "any access type" value.

5.5a /<X>/AuthenticationForXCAP

The AuthenticationForXCAP leaf provides a means to define the authentication mechanism for Ut reference point.

- Occurrence: ZeroOrOne
 - Format: int
 - Access Types: Get, Replace
 - Values: 0, 1, 2, 3, 4
- 0 – Indicates that the authentication mechanism for Ut reference point is GBA_ME as defined in 3GPP TS 33.220 [7].
- 1 – Indicates that the authentication mechanism for Ut reference point is GBA_U as defined in 3GPP TS 33.220 [7].
- 2 – Indicates that the authentication mechanism for Ut reference point is GBA_Digest as defined in 3GPP TS 33.220 [7].
- 3 – Indicates that the authentication mechanism for Ut reference point is SSC (support for subscriber certificates) as defined in 3GPP TS 33.221 [8].
- 4 – Indicates that the authentication mechanism for Ut reference point is Digest Access Authentication as defined in IETF RFC 7616 [10].

5.6 /<X>/XCAP_conn_params_policy

This interior node contains the XCAP connection parameters policy.

- Occurrence: ZeroOrOne
- Format: node
- Access Types: Get, Replace
- Values: N/A

If this interior node contains a child node not defined in this version of the present document, the child node is ignored.

5.7 /<X>/XCAP_conn_params_policy/<X>

This interior node contains one XCAP connection parameters policy part.

- Occurrence: OneOrMore
- Format: node

- Access Types: Get, Replace
- Values: N/A

If this interior node contains a child node not defined in this version of the present document, this interior node is ignored.

If a descendant node of this interior node contains a value not defined in this version of the present document, this interior node is ignored.

5.8 /<X>/XCAP_conn_params_policy/<X>/access

This leaf contains an access identifier, with values shown in table 5.8-1

- Occurrence: One
- Format: int
- Access Types: Get, Replace
- Values: N/A

Table 5.8-1: Possible values for the access leaf

Value	Description
1	3GPP accesses
2	Evolved Packet Core (EPC) via Wireless Local Access Network (WLAN) IP-CAN (see NOTE 1)
3	Evolved Packet Core (EPC) via trusted Wireless Local Access Network (WLAN) IP-CAN
4	Evolved Packet Core (EPC) via untrusted Wireless Local Access Network (WLAN) IP-CAN
5	5G Core Network (5GCN) via Wireless Local Access Network (WLAN) IP-CAN (see NOTE 2)
6	5G Core Network (5GCN) via untrusted Wireless Local Access Network (WLAN) IP-CAN
7	5G Core Network (5GCN) via trusted Wireless Local Access Network (WLAN) IP-CAN
8	Non-seamless WLAN offload only
0, 9-255	Not assigned
NOTE 1: Evolved Packet Core (EPC) via Wireless Local Access Network (WLAN) IP-CAN encompasses both the Evolved Packet Core (EPC) via trusted Wireless Local Access Network (WLAN) IP-CAN and the Evolved Packet Core (EPC) via untrusted Wireless Local Access Network (WLAN) IP-CAN.	
NOTE 2: 5G Core Network (5GCN) via Wireless Local Access Network (WLAN) IP-CAN encompasses both the 5G Core Network (5GCN) via trusted Wireless Local Access Network (WLAN) IP-CAN and the 5G Core Network (5GCN) via untrusted Wireless Local Access Network (WLAN) IP-CAN.	

5.9 /<X>/XCAP_conn_params_policy/<X>/XDM_MO_ref

This leaf contains an XCAP connection parameters reference.

The value of this leaf is a full device URI as specified in OMA-TS-DM_Protocol-V1_2 [5], identifying the <X> interior node specified in OMA-TS-XDM_MO-V1_1 [4] in the UE management tree.

- Occurrence: One
- Format: chr
- Access Types: Get, Replace
- Values: N/A

5.10 /<X>/3GPP_PS_data_off

The interior node contains configuration parameters for 3GPP PS data off.

- Occurrence: ZeroOrOne

- Format: node
- Access Types: Get, Replace
- Values: N/A

5.11 /<X>/3GPP_PS_data_off/SS_XCAP_config_exempt

The leaf indicates whether the manipulation of supplementary services (SS) settings using XCAP over Ut interface is a 3GPP PS data off exempt service.

- Occurrence: One
 - Format: bool
 - Access Types: Get, Replace
 - Values: 0, 1
- 0 - Indicates that the SS configuration via XCAP is not a 3GPP PS data off exempt service.
- 1 - Indicates that the SS configuration via XCAP is a 3GPP PS data off exempt service.

5.12 /<X>/3GPP_PS_data_off/ SS_XCAP_config_roaming_exempt

The leaf indicates whether the manipulation of supplementary services (SS) settings using XCAP over Ut interface is a 3GPP PS data off roaming exempt service.

- Occurrence: One
 - Format: bool
 - Access Types: Get, Replace
 - Values: 0, 1
- 0 - Indicates that the SS configuration via XCAP is not a 3GPP PS data off roaming exempt service.
- 1 - Indicates that the SS configuration via XCAP is a 3GPP PS data off roaming exempt service.

5.13 /<X>/SNPN_Configuration

This interior node contains configuration parameters regarding a UE operating in SNPN access operation mode.

- Occurrence: ZeroOrOne
- Format: node
- Access Types: Get, Replace
- Values: N/A

5.13a /<X>/SNPN_Configuration/<X>

This interior node acts as a placeholder for a list of:

- SNPN identity; and
- configuration parameters.

NOTE: For each of the elements in the list, a) must be present and at least one parameter of b) needs to appear.

A configuration parameter in an /<X>/SNPN_Configuration/<X> node other than the SNPN_identifier, is applicable when the UE selects an entry of "list of subscriber data" with the SNPN identity of the subscribed SNPN which is the same as the SNPN identity in the SNPN_identifier leaf.

- Occurrence: OneOrMore
- Format: node
- Access Types: Get, Replace
- Values: N/A

5.13b /<X>/SNPN_Configuration/<X>/SNPN_identifier

This leaf indicates the SNPN identity of the subscribed SNPN for which the list of configuration parameters are applicable.

- Occurrence: One
- Format: chr
- Access Types: Get, Replace
- Values: <PLMN><NID>

The PLMN and NID are in the format defined by 3GPP TS 23.003 [11], with each digit of the MCC and MNC of the PLMN and each digit of the assignment mode and NID value of the NID encoded as an ASCII character.

5.13c /<X>/SNPN_Configuration/<X>/AuthenticationForXCAP

The AuthenticationForXCAP leaf provides a means to define the authentication mechanism for Ut reference point.

- Occurrence: ZeroOrOne
 - Format: int
 - Access Types: Get, Replace
 - Values: 0, 1, 2, 3, 4
- 0 – Indicates that the authentication mechanism for Ut reference point is GBA_ME as defined in 3GPP TS 33.220 [7].
- 1 – Indicates that the authentication mechanism for Ut reference point is GBA_U as defined in 3GPP TS 33.220 [7].
- 2 – Indicates that the authentication mechanism for Ut reference point is GBA_Digest as defined in 3GPP TS 33.220 [7].
- 3 – Indicates that the authentication mechanism for Ut reference point is SSC (support for subscriber certificates) as defined in 3GPP TS 33.221 [8].
- 4 – Indicates that the authentication mechanism for Ut reference point is Digest Access Authentication as defined in IETF RFC 7616 [10].

5.13d /<X>/SNPN_Configuration/<X>/ XCAP_conn_params_policy

This interior node contains the XCAP connection parameters policy.

- Occurrence: ZeroOrOne
- Format: node
- Access Types: Get, Replace
- Values: N/A

If this interior node contains a child node not defined in this version of the present document, the child node is ignored.

5.13e /<X>/SNPN_Configuration/<X>/ XCAP_conn_params_policy/<X>

This interior node contains one XCAP connection parameters policy part.

- Occurrence: OneOrMore
- Format: node
- Access Types: Get, Replace
- Values: N/A

If this interior node contains a child node not defined in this version of the present document, this interior node is ignored.

If a descendant node of this interior node contains a value not defined in this version of the present document, this interior node is ignored.

5.13f /<X>/SNPN_Configuration/<X>/ XCAP_conn_params_policy/<X>/XDM_MO_ref

This leaf contains an XCAP connection parameters reference.

The value of this leaf is a full device URI as specified in OMA-TS-DM_Protocol-V1_2 [5], identifying the <X> interior node specified in OMA-TS-XDM_MO-V1_1 [4] in the UE management tree.

- Occurrence: One
- Format: chr
- Access Types: Get, Replace
- Values: N/A

5.13g /<X>/SNPN_Configuration/<X>/3GPP_PS_data_off

The interior node contains configuration parameters for 3GPP PS data off.

- Occurrence: ZeroOrOne
- Format: node
- Access Types: Get, Replace
- Values: N/A

5.13h /<X>/SNPN_Configuration/<X>/3GPP_PS_data_off/ SS_XCAP_config_exempt

The leaf indicates whether the manipulation of supplementary services (SS) settings using XCAP over Ut interface is a 3GPP PS data off exempt service.

- Occurrence: One
- Format: bool
- Access Types: Get, Replace
- Values: 0, 1

0 - Indicates that the SS configuration via XCAP is not a 3GPP PS data off exempt service.

1 - Indicates that the SS configuration via XCAP is a 3GPP PS data off exempt service.

5.13i /<X>/SNPN_Configuration/<X>/3GPP_PS_data_off/ SS_XCAP_config_non-subscribed_exempt

The leaf indicates whether the manipulation of supplementary services (SS) settings using XCAP over Ut interface is a 3GPP PS data off non-subscribed exempt service.

- Occurrence: One
- Format: bool
- Access Types: Get, Replace
- Values: 0, 1

0 - Indicates that the SS configuration via XCAP is not a 3GPP PS data off non-subscribed exempt service.

1 - Indicates that the SS configuration via XCAP is a 3GPP PS data off non-subscribed exempt service.

Annex A (informative): DDF of MO for XCAP over Ut interface for manipulating SS

This DDF is the standardized minimal set. A vendor can define its own DDF for the complete device. This DDF can include more features than this minimal standardized version.

```

<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE MgmtTree PUBLIC "-//OMA//DTD-DM-DDF 1.2//EN"
"http://www.openmobilealliance.org/tech/DTD/DM_DDF-V1_2.dtd">
<MgmtTree>
  <VerDTD>1.2</VerDTD>
  <Man>--The device manufacturer--</Man>
  <Mod>--The device model--</Mod>
  <Node>
    <NodeName/>
    <DFProperties>
      <AccessType>
        <Get/>
        <Replace/>
      </AccessType>
      <Description>Configuration parameters for the XCAP over the Ut interface for
manipulating the SS</Description>
      <DFFormat>
        <node/>
      </DFFormat>
      <Occurrence>
        <OneOrMore/>
      </Occurrence>
      <Scope>
        <Permanent/>
      </Scope>
      <DFTitle>The Management Object (MO) for Extensible Markup Language (XML) Configuration
Access Protocol (XCAP) over the Ut interface for Manipulating Supplementary Services (SS).</DFTitle>
      <DFType>
        <DDFName>urn:oma:mo:ext-3gpp-xcaputss:1.0</DDFName>
      </DFType>
    </DFProperties>

    <Node>
      <NodeName>Name</NodeName>
      <DFProperties>
        <AccessType>
          <Get/>
          <Replace/>
        </AccessType>
        <DFFormat>
          <chr/>
        </DFFormat>
        <Occurrence>
          <ZeroOrOne/>
        </Occurrence>
        <Scope>
          <Dynamic/>
        </Scope>
        <DFTitle>The name for the settings for the XCAP over the Ut interface for
manipulating the SS.</DFTitle>
        <DFType>
          <MIME>text/plain</MIME>
        </DFType>
      </DFProperties>
    </Node>

    <Node>
      <NodeName>AccessForXCAP</NodeName>
      <DFProperties>
        <AccessType>
          <Get/>
          <Replace/>
        </AccessType>
        <DFFormat>
          <int/>
        </DFFormat>
        <Occurrence>
          <One/>
        </Occurrence>

```

```

    <Scope>
      <Permanent/>
    </Scope>
    <DFTitle>The policy on access type used for XCAP</DFTitle>
    <DFType>
      <MIME>text/plain</MIME>
    </DFType>
  </DFProperties>
</Node>

<Node>
  <NodeName>AuthenticationForXCAP</NodeName>
  <DFProperties>
    <AccessType>
      <Get/>
      <Replace/>
    </AccessType>
    <DFFormat>
      <int/>
    </DFFormat>
    <Occurrence>
      <ZeroOrOne/>
    </Occurrence>
    <Scope>
      <Permanent/>
    </Scope>
    <DFTitle>Mechanism used for performing authentication for Ut reference
point</DFTitle>
    <DFType>
      <MIME>text/plain</MIME>
    </DFType>
  </DFProperties>
</Node>

<Node>
  <NodeName>XCAP_conn_params_policy</NodeName>
  <DFProperties>
    <AccessType>
      <Get/>
      <Replace/>
    </AccessType>
    <DFFormat>
      <node/>
    </DFFormat>
    <Occurrence>
      <ZeroOrOne/>
    </Occurrence>
    <Scope>
      <Dynamic/>
    </Scope>
    <DFTitle>XCAP connection parameters policy.</DFTitle>
    <DFType>
      <DDFName/>
    </DFType>
  </DFProperties>
  <Node>
    <NodeName/>
    <DFProperties>
      <AccessType>
        <Get/>
        <Replace/>
      </AccessType>
      <DFFormat>
        <node/>
      </DFFormat>
      <Occurrence>
        <OneOrMore/>
      </Occurrence>
      <Scope>
        <Dynamic/>
      </Scope>
      <DFTitle>XCAP connection parameters policy part</DFTitle>
      <DFType>
        <DDFName/>
      </DFType>
    </DFProperties>
  </Node>
  <NodeName>access</NodeName>

```

```

    <DFProperties>
      <AccessType>
        <Get />
        <Replace />
      </AccessType>
      <DFFormat>
        <int />
      </DFFormat>
      <Occurrence>
        <One />
      </Occurrence>
      <Scope>
        <Dynamic />
      </Scope>
      <DFTitle>An access identifier.</DFTitle>
      <DFType>
        <MIME>text/plain</MIME>
      </DFType>
    </DFProperties>
  </Node>
</Node>
<Node>
  <NodeName>XDM_MO_ref</NodeName>
  <DFProperties>
    <AccessType>
      <Get />
      <Replace />
    </AccessType>
    <DFFormat>
      <chr />
    </DFFormat>
    <Occurrence>
      <One />
    </Occurrence>
    <Scope>
      <Dynamic />
    </Scope>
    <DFTitle>An XCAP connection parameters reference.</DFTitle>
    <DFType>
      <MIME>text/plain</MIME>
    </DFType>
  </DFProperties>
</Node>
</Node>
<Node>
  <NodeName>3GPP_PS_data_off</NodeName>
  <DFProperties>
    <AccessType>
      <Get />
      <Replace />
    </AccessType>
    <DFFormat>
      <node />
    </DFFormat>
    <Occurrence>
      <ZeroOrOne />
    </Occurrence>
    <Scope>
      <Dynamic />
    </Scope>
    <DFTitle>Configuration parameters for 3GPP PS data off.</DFTitle>
    <DFType>
      <DDFName />
    </DFType>
  </DFProperties>
</Node>
  <NodeName>SS_XCAP_config_exempt</NodeName>
  <DFProperties>
    <AccessType>
      <Get />
      <Replace />
    </AccessType>
    <DFFormat>
      <bool />
    </DFFormat>
    <Occurrence>
      <One />
    </Occurrence>
  </DFProperties>
</Node>

```

```

        </Occurrence>
        <Scope>
            <Dynamic/>
        </Scope>
        <DFTitle>Whether the SS configuration via XCAP is a 3GPP PS data off exempt
service.</DFTitle>
        <DFType>
            <MIME>text/plain</MIME>
        </DFType>
    </DFProperties>
</Node>
<Node>
    <NodeName>SS_XCAP_config_roaming_exempt</NodeName>
    <DFProperties>
        <AccessType>
            <Get/>
            <Replace/>
        </AccessType>
        <DFFormat>
            <bool/>
        </DFFormat>
        <Occurrence>
            <One/>
        </Occurrence>
        <Scope>
            <Dynamic/>
        </Scope>
        <DFTitle>Whether the SS configuration via XCAP is a 3GPP PS data off exempt
service for roaming.</DFTitle>
        <DFType>
            <MIME>text/plain</MIME>
        </DFType>
    </DFProperties>
</Node>
</Node>
<Node>
    <NodeName>SNPN_Configuration</NodeName>
    <DFProperties>
        <AccessType>
            <Get/>
            <Replace/>
        </AccessType>
        <DFFormat>
            <node/>
        </DFFormat>
        <Occurrence>
            <ZeroOrOne/>
        </Occurrence>
        <Scope>
            <Permanent/>
        </Scope>
        <DFTitle>SNPN Configuration.</DFTitle>
        <DFType>
            <MIME>text/plain</MIME>
        </DFType>
    </DFProperties>
</Node>
    <NodeName/>
    <DFProperties>
        <AccessType>
            <Get/>
        </AccessType>
        <DFFormat>
            <node/>
        </DFFormat>
        <Occurrence>
            <OneOrMore/>
        </Occurrence>
        <Scope>
            <Dynamic/>
        </Scope>
        <DFTitle>SNPN fonfiguration parameters.</DFTitle>
        <DFType>
            <MIME>text/plain</MIME>
        </DFType>
    </DFProperties>
</Node>
    <NodeName>SNPN_identifier</NodeName>

```

```

    <DFProperties>
      <AccessType>
        <Get />
        <Replace />
      </AccessType>
      <DFFormat>
        <chr />
      </DFFormat>
      <Occurrence>
        <One />
      </Occurrence>
      <Scope>
        <Permanent />
      </Scope>
      <DFTitle>Identifier of the SNPN.</DFTitle>
      <DFType>
        <MIME>text/plain</MIME>
      </DFType>
    </DFProperties>
  </Node>
<Node>
  <NodeName>AuthenticationForXCAP</NodeName>
  <DFProperties>
    <AccessType>
      <Get />
      <Replace />
    </AccessType>
    <DFFormat>
      <int />
    </DFFormat>
    <Occurrence>
      <ZeroOrOne />
    </Occurrence>
    <Scope>
      <Permanent />
    </Scope>
    <DFTitle>Mechanism used for performing authentication for Ut reference
point</DFTitle>
    <DFType>
      <MIME>text/plain</MIME>
    </DFType>
  </DFProperties>
</Node>
<Node>
  <NodeName>XCAP_conn_params_policy</NodeName>
  <DFProperties>
    <AccessType>
      <Get />
      <Replace />
    </AccessType>
    <DFFormat>
      <node />
    </DFFormat>
    <Occurrence>
      <ZeroOrOne />
    </Occurrence>
    <Scope>
      <Dynamic />
    </Scope>
    <DFTitle>XCAP connection parameters policy.</DFTitle>
    <DFType>
      <DDFName />
    </DFType>
  </DFProperties>
<Node>
  <NodeName />
  <DFProperties>
    <AccessType>
      <Get />
      <Replace />
    </AccessType>
    <DFFormat>
      <node />
    </DFFormat>
    <Occurrence>
      <OneOrMore />
    </Occurrence>
    <Scope>

```

```

        <Dynamic/>
      </Scope>
      <DFTitle>XCAP connection parameters policy part</DFTitle>
      <DFType>
        <DDFName/>
      </DFType>
    </DFProperties>
  </Node>
  <Node>
    <NodeName>XDM_MO_ref</NodeName>
    <DFProperties>
      <AccessType>
        <Get/>
        <Replace/>
      </AccessType>
      <DFFormat>
        <chr/>
      </DFFormat>
      <Occurrence>
        <One/>
      </Occurrence>
      <Scope>
        <Dynamic/>
      </Scope>
      <DFTitle>An XCAP connection parameters reference.</DFTitle>
      <DFType>
        <MIME>text/plain</MIME>
      </DFType>
    </DFProperties>
  </Node>
</Node>
<Node>
  <NodeName>3GPP_PS_data_off</NodeName>
  <DFProperties>
    <AccessType>
      <Get/>
      <Replace/>
    </AccessType>
    <DFFormat>
      <node/>
    </DFFormat>
    <Occurrence>
      <ZeroOrOne/>
    </Occurrence>
    <Scope>
      <Dynamic/>
    </Scope>
    <DFTitle>Configuration parameters for 3GPP PS data off.</DFTitle>
    <DFType>
      <DDFName/>
    </DFType>
  </DFProperties>
  <Node>
    <NodeName>SS_XCAP_config_exempt</NodeName>
    <DFProperties>
      <AccessType>
        <Get/>
        <Replace/>
      </AccessType>
      <DFFormat>
        <bool/>
      </DFFormat>
      <Occurrence>
        <One/>
      </Occurrence>
      <Scope>
        <Dynamic/>
      </Scope>
      <DFTitle>Whether the SS configuration via XCAP is a 3GPP PS data off
exempt service.</DFTitle>
      <DFType>
        <MIME>text/plain</MIME>
      </DFType>
    </DFProperties>
  </Node>
  <Node>
    <NodeName>SS_XCAP_config_non-subscribed_exempt</NodeName>
    <DFProperties>

```

```

        <AccessType>
          <Get/>
          <Replace/>
        </AccessType>
        <DFFormat>
          <bool/>
        </DFFormat>
        <Occurrence>
          <One/>
        </Occurrence>
        <Scope>
          <Dynamic/>
        </Scope>
        <DFTitle>Whether the SS configuration via XCAP is a 3GPP PS data off
non-subscribed exempt service.</DFTitle>
        <DFType>
          <MIME>text/plain</MIME>
        </DFType>
      </DFProperties>
    </Node>
  </Node>
</Node>
<Node>
  <NodeName>Ext</NodeName>
  <!-- The Extension node starts here. -->
  <DFProperties>
    <AccessType>
      <Get/>
    </AccessType>
    <DFFormat>
      <node/>
    </DFFormat>
    <Occurrence>
      <ZeroOrOne/>
    </Occurrence>
    <Scope>
      <Dynamic/>
    </Scope>
    <DFTitle>A collection of all Extension objects.</DFTitle>
    <DFType>
      <DDFName/>
    </DFType>
  </DFProperties>
</Node>
</MgmtTree>

```

Annex B (informative): Change history

Change history							
Date	Meeting	TDoc	CR	Rev	Cat	Subject/Comment	New version
2016-08						Incorporating C1-163574, C1-163575, C1-163576. "inteface" corrected to "interface".	0.1.0
2016-10						Incorporating C1-164693, C1-164697. Editorial changes. OMA-TS-DM_Protocol-V1_2 made version specific.	0.2.0
2016-10						Editorial changes.	0.2.1
2016-11	CT-74	CP-160707				Version 1.0.0 created for presentation for information to CT plenary	1.0.0
2017-01						Incorporating C1-170001, C1-170002, C1-170005. Correcting title of OMA OMA-TS-XDM_MO-V1_1-20080627-A.	1.1.0
2017-02						Incorporating C1-170571.	1.2.0
2017-02	CT-75	CP-170163				Version 2.0.0 created for presentation for approval to CT plenary	2.0.0
2017-03	CT-75					Version 14.0.0 created after approval	14.0.0
2017-06	CT-76	CP-171085	0001	1	B	3GPP PS Data Off and Ut/XCAP services configuration MO	14.1.0
2017-12	CT-78	CP-173062	0002		F	Correction of a data format	14.2.0
2018-06	SA-80	-	-	-	-	Update to Rel-15 version (MCC)	15.0.0
2018-09	CT-81	CP-182156	0003	3	F	3GPP data off in roaming and Ut/XCAP services configuration MO	15.1.0
2018-12	CT-82	CP-183077	0004		F	Addition of the object identifier in the DDF of the 3GPP Management Object	16.0.0
2018-12	CT-82	CP-183077	0005	1	B	Authentication mechanisms for Ut reference point	16.0.0
2019-06	CT-84	CP-191126	0007	1	A	Correct policy for XCAP when access type involves 5G	16.1.0
2019-06	CT-84	CP-191126	0009	1	A	Correct enforcement of access specific configuration for XCAP when using 5Gx	16.1.0
2021-03	CT-91e	CP-210134	0010		F	Adding non-seamless wifi access type to XCAP_conn_params_policy	17.0.0
2021-03	CT-91e	CP-210170	0011	1	F	Adding Digest Access authentication mechanism in AuthenticationForXCAP leaf node	17.0.0
2021-12	CT#94e	CP-213031	0012		B	Update of HTTP Digest Access Authentication	17.1.0
2022-03	CT#95e	CP-220238	0013	1	B	SNPN configuration in XCAP MO	17.2.0
2024-04	-	-	-	-	-	Update to Rel-18 version (MCC)	18.0.0

History

Document history		
V18.0.0	May 2024	Publication