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TECHNICAL SPECIFICATION

LTE;
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 14.1.0 Release 14)

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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-ERELD_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-ERELD-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".

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
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.

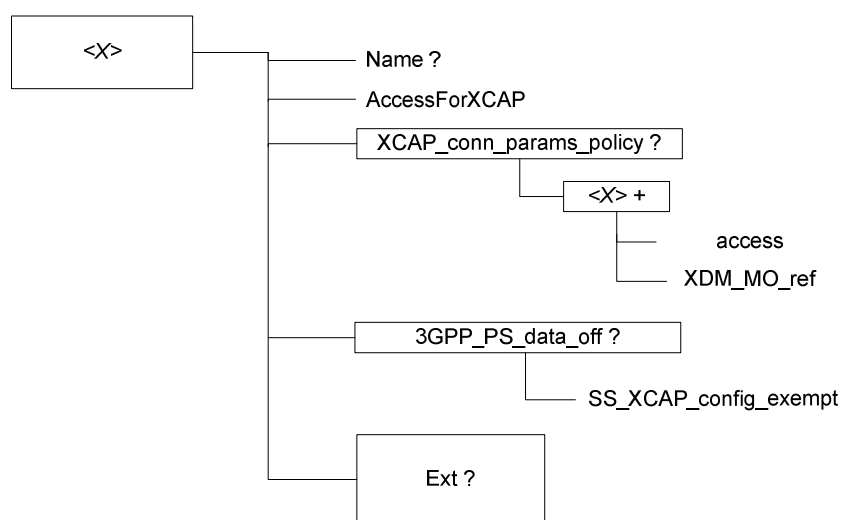Protocol compatibility: This MO is compatible with OMA DM 1.2.

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 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 via WLAN IP-CAN as secondary
6-255	not assigned

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

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 (NOTE)
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
0, 5-255	Not assigned
NOTE:	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.

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: str

- 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.

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
<?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/>
            </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>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>
                <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>


<Node>
    <NodeName>3GPP_PS_data_off</NodeName>
    <DFProperties>
        <AccessType>
            <Replace/>
            <Get/>
        </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>


<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>
        </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

History

Document history		
V14.0.0	May 2017	Publication
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