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TECHNICAL SPECIFICATION

Universal Mobile Telecommunications System (UMTS);
LTE;
Unstructured Supplementary Service Data (USSD) using
IP Multimedia (IM) Core Network (CN) subsystem (IMS)
Management Object (MO)
(3GPP TS 24.391 version 16.0.0 Release 16)

Reference
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Contents

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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 unstructured supplementary service data (USSD) using IP Multimedia (IM) Core Network (CN) subsystem (IMS) management object (MO). The MO 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 USSD using IMS (USSI) MO consists of relevant configuration parameters that can be managed for the UE's USSI capabilities specified in 3GPP TS 24.390 [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-ERELD-DM-V1_2-20070209-A: "Enabler Release Definition for OMA Device Management, Version 1.2".

[3]   3GPP TS 24.390: "Unstructured Supplementary Service Data (USSD) using IP Multimedia (IM) Core Network (CN) subsystem IMS; Stage 3".

[4]   3GPP TS 23.221: "Architectural requirements".

[5]   3GPP TS 24.090: "Unstructured Supplementary Service Data (USSD); Stage 3".

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].

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].

CN	Core Network
DDF	Device Description Framework
DM	Device Management
EHPLMN	Equivalent Home Public Land Mobile Network
HPLMN	Home Public Land Mobile Network
IM	IP Multimedia
IMS	IP Multimedia core network Subsystem

IP	Internet Protocol
MO	Management Object
OMA	Open Mobile Alliance
SIP	Session Initiation Protocol
UE	User Equipment
USSD	Unstructured Supplementary Service Data
USSI	USSD using IMS

4 USSI MO

The USSI MO is used to manage settings of the UE for USSI. The USSI MO covers configuration parameters for a UE that supports the USSI capabilities specified in 3GPP TS 24.390 [3].

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

Protocol compatibility: This MO is compatible with OMA DM 1.2.
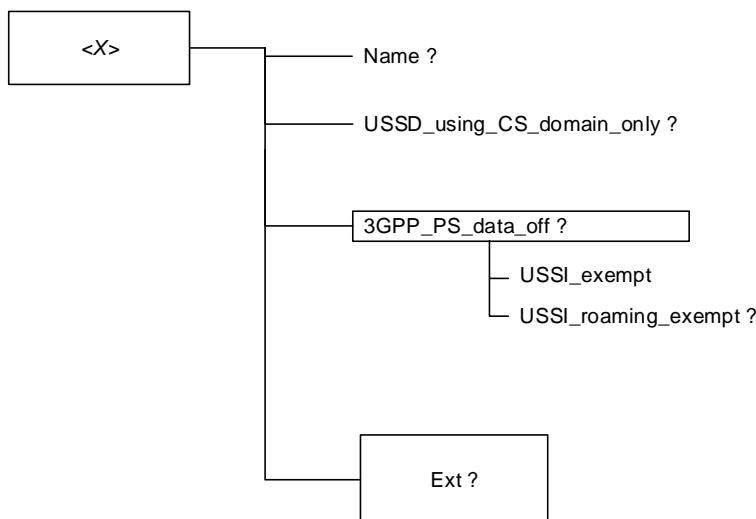
Figure 4.1: USSI MO

5 MO configuration parameters

5.1 General

This clause describes the configuration parameters for the USSI MO.

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

- Values: N/A

The interior node is mandatory if the UE supports USSI capabilities specified in 3GPP TS 24.390 [3]. Support for a UE is defined by the UE role as specified in 3GPP TS 24.390 [3].

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

5.3 /<*X*>/Name

The Name leaf is a name for the USSI settings.

- Occurrence: ZeroOrOne

- Format: chr

- Access Types: Get

- Values: <User displayable name>

5.4 /<*X*>/USSD_using_CS_domain_only

The USSD_using_CS_domain_only leaf indicates HPLMN operator preference for invocation of originating USSD requests using the mechanism specified in 3GPP TS 24.090 [5]. This equates to "USSD requests are to be invoked via the CS domain" as described in 3GPP TS 23.221 [4].

NOTE: In absence of this configuration parameter, originating USSD request are invoked in domain used for originating voice sessions as described in 3GPP TS 23.221 [4].

- Occurrence: ZeroOrOne

- Format: null

- Access Types: Get, Replace

- Values: null

5.4A /<*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

5.4B /<*X*>/3GPP_PS_data_off/USSI_exempt

The leaf indicates whether the USSI is a 3GPP PS data off exempt service.

- Occurrence: One

- Format: bool

- Access Types: Get, Replace

- Values: 0, 1

    0 - Indicates that the USSI is not a 3GPP PS data off exempt service.

    1 - Indicates that the USSI is a 3GPP PS data off exempt service.

NOTE: This MO is used when the UE is in the HPLMN or the EHPLMN, or the UE is in the VPLMN and the USSI_roaming_exempt node is not configured.

5.4C   /<*X*>/3GPP_PS_data_off/USSI_roaming_exempt

The leaf indicates whether the USSI is a 3GPP PS data off exempt service when the UE is in the VPLMN.

- Occurrence: ZeroOrOne

- Format: bool

- Access Types: Get, Replace

- Values: 0, 1

    0 - Indicates that the USSI is not a 3GPP PS data off roaming exempt service.

    1 - Indicates that the USSI is a 3GPP PS data off roaming exempt service.

5.5   /<*X*>/Ext

The Ext is an interior node for where the vendor specific information about the USSI management 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

Annex A (informative): USSI MO DDF

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/>
            </AccessType>
            <Description>USSI configuration parameters</Description>
            <DFFormat>
                <node/>
            </DFFormat>
            <Occurrence>
                <OneOrMore/>
            </Occurrence>
            <Scope>
                <Permanent/>
            </Scope>
            <DFTitle>The Unstructured Supplementary Service Data (USSD) using IP Multimedia (IM)
Core Network (CN) subsystem (IMS) Management Object (MO).</DFTitle>
            <DFType>
                <DDFName>urn:oma:mo:ext-3gpp-ussi:1.0</DDFName>
            </DFType>
        </DFProperties>
        <Node>
            <NodeName>Name</NodeName>
            <DFProperties>
                <AccessType>
                    <Get/>
                </AccessType>
                <DFFormat>
                    <chr/>
                </DFFormat>
                <Occurrence>
                    <ZeroOrOne/>
                </Occurrence>
                <Scope>
                    <Dynamic/>
                </Scope>
                <DFTitle>The name for the USSI setting.</DFTitle>
                <DFType>
                    <MIME>text/plain</MIME>
                </DFType>
            </DFProperties>
        </Node>
        <Node>
            <NodeName>USSD_using_CS_domain_only</NodeName>
            <DFProperties>
                <AccessType>
                    <Get/>
                    <Replace/>
                </AccessType>
                <DFFormat>
                    <null/>
                </DFFormat>
                <Occurrence>
                    <ZeroOrOne/>
                </Occurrence>
                <Scope>
                    <Dynamic/>
                </Scope>
                <DFTitle>The HPLMN operator preference for invocation of originating USSD
requests.</DFTitle>
                <DFType>
```

```
                    <MIME>text/plain</MIME>
                </DFType>
            </DFProperties>
        </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>USSI_exempt</NodeName>
                <DFProperties>
                    <AccessType>
                        <Get/>
                        <Replace/>
                    </AccessType>
                    <DFFormat>
                        <bool/>
                    </DFFormat>
                    <Occurrence>
                        <One/>
                    </Occurrence>
                    <Scope>
                        <Dynamic/>
                    </Scope>
                    <DFTitle>Whether the USSI is a 3GPP PS data off exempt service.</DFTitle>
                    <DFType>
                        <MIME>text/plain</MIME>
                    </DFType>
                </DFProperties>
            </Node>
            <Node>
                <NodeName>USSI_roaming_exempt</NodeName>
                <DFProperties>
                    <AccessType>
                        <Get/>
                        <Replace/>
                    </AccessType>
                    <DFFormat>
                        <bool/>
                    </DFFormat>
                    <Occurrence>
                        <ZeroOrOne/>
                    </Occurrence>
                    <Scope>
                        <Dynamic/>
                    </Scope>
                    <DFTitle>Whether the USSI is a 3GPP PS data off roaming 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	**TSG #**	**TSG Doc.**	**CR**	**Rev**	**Subject/Comment**		**Old**	**New**
2014-05					Version 0.1.0: based on C1-141702, C1-141703, C1-141704			0.1.0
2014-06	CT-64	CP-140281			Version 1.0.0 created for presentation for information and approval		0.1.0	1.0.0
2014-06	CT-64	CP-140455					1.0.0	2.0.0
2014-06	Post CT-64				Version 12.0.0 created after approval at CT-64		2.0.0	12.0.0
2014-09	CT-65	CP-140668	0001		Fixing access types not aligned in clause 5 and annex A		12.0.0	12.1.0
2014-12	CT-66	CP-140853	0002		Resolving editor's note on registration of MOID with OMA		12.1.0	12.2.0
2015-12	CT-70				Upgrade to Rel-13		12.2.0	13.0.0

Change history							
Date	**Meeting**	**TDoc**	**CR**	**Rev**	**Cat**	**Subject/Comment**	**New version**
2017-03	CT-75	CP-170130	0003		B	USSI configuration for 3GPP PS Data Off	14.0.0
2018-06	CT-80	CP-181074	0004	2	B	USSI configuration for 3GPP PS Data Off2	15.0.0
2018-12	CT-82	CP-183077	0005		F	Addition of the object identifier in the DDF of the 3GPP Management Object	16.0.0

History

Document history		
V16.0.0	November 2020	Publication