

Prepared (also subject responsible if other) ERATLIM		No. 1/190 01-AVA 901 18 Uen		
Approved EAB/FLA/MA/D [Lulsegged Zerfu]	Checked	Date 2014-05-19	Rev C	Reference

MTAS Ut Structure

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1 General Information

1.1 Revision history

REVISION	RELEASE DATE	REVISED BY	REASON FOR REVISION
B	2013-09-03	EVIBSAL	The following have been updated: <ul style="list-style-type: none">• mmt-serv:served-identity added.• Distinctive Ring Feature update.
C	2014-05-19	ERATLIM	Summary of changes: <ul style="list-style-type: none">• Added in-sip-request• Added auto-answer-avoidance• removed NoReplyTimer• Changed title and removed zip file.

1.2 Purpose

This document presents the XML schemas used in MTAS over the Ut interface and explains their structure. They are based on the 3GPP specifications.

1.3 Scope

This document captures or refers to the XML schema that defines the format of the user service data that is carried over the Ut interface.

For details of how this data is manipulated over the Ut interface by the XML Configuration Access Protocol (XCAP), the reader is referred to [2] .

For a definition of XML schema, see ref [1].

For common type definitions shared with other XML interfaces see ref [8].

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2 Schema Overview

The XML schemas presented in this document are used to validate incoming XCAP requests over the Ut interface for the XCAP application usage `simservs.ngn.etsi.org`, as defined in 3GPP TS 24.623 [2].

The schema specified in [2] defines the intended root element of XML elements manipulated over the Ut interface. It contains extension points to extend it with the schema definition for specific services. Other 3GPP technical specifications for simulation services specify the schema to be used for the service user data.

In order to build a complete schema to validate the data for MTAS services various schemas must be imported or included.

2.1 Namespace Prefix

In order to guarantee its uniqueness, a namespace can often be a long unwieldy string. XML allows a namespace to be mapped to a short string (a prefix) which makes XML documents more readable. Table 1 shows the mapping between each namespace and its assigned prefix as used in this document.

Prefix	Namespace	Purpose
cp	urn:ietf:params:xml:ns:common-policy	Common Policies for privacy preferences as defined by the IETF
mct	http://schemas.ericsson.com/mtas/mmtel/common-types	MTAS Common types
mmt-serv	http://schemas.ericsson.com/mmtel/services	Ericsson defined services for inclusion in the MMTel user-data part
ocp	urn:oma:xml:xm:common-policy	Common Policies for mobile as defined by OMA
ss	http://uri.etsi.org/ngn/params/xml/simservs/xcap	'User Part' of the MMTel document as defined by 3GPP
xs	http://www.w3.org/2001/XMLSchema	Standard XML definition
xsi	http://www.w3.org/2001/XMLSchema-instance	Schema structures for direct use in XML instance documents.

Table 1 – Namespace Prefix mapping

2.2 Namespace Relationships

There are dependency relationships between some of the namespaces where one namespace imports another and refers to types or elements in the other namespace.

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The namespace dependencies for the MMTel user service data are shown in Figure 1.

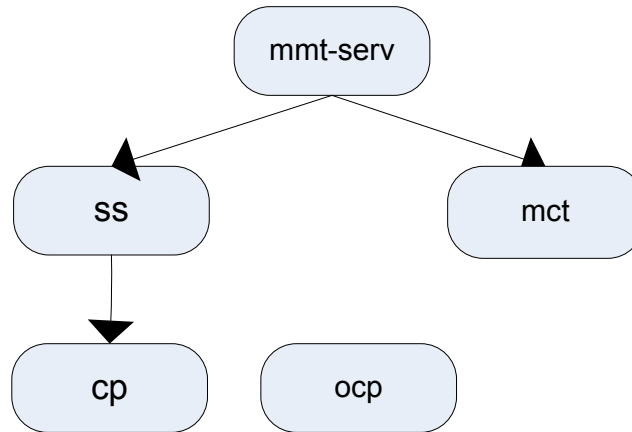


Figure 1 – Namespace dependencies

2.3 Schema files within namespace ‘ss’

Figure2 below presents the hierarchy of ‘includes’ within the ‘ss’ namespace. Schema files that are imported from other namespaces are not shown in this diagram.

Note: The relationships in the diagram are drawn as dependencies with the arrow pointing to the file being included.

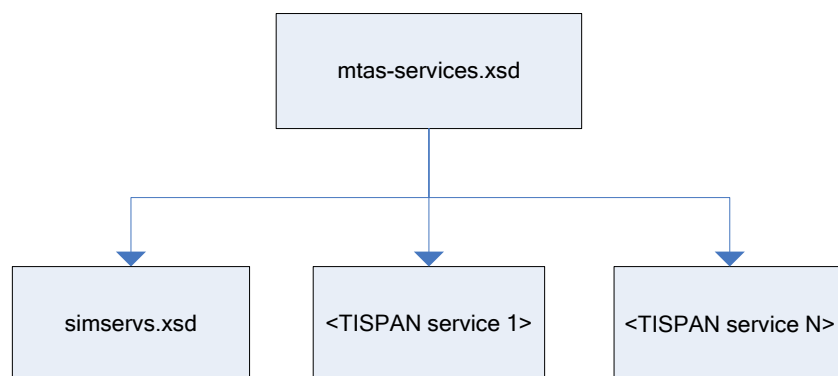


Figure 2 XML schema hierarchy within simservs namespace

2.4 Schema files within namespace ‘mmt-serv’

The ‘mmt-serv’ namespace covers the Ericsson-specific services. The top level file `mtas-ericsson-services.xsd` includes the files defining the individual services:

- `outgoing-barring-programs.xsd`

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- cdiv-no-answer-timer-ut.xsd
- calling-name-identity-presentation.xsd
- abbreviated-dialing.xsd
- communication-distribution.xsd
- rule-extensions.xsd
- user-common-data.xsd
- do-not-disturb.xsd
- generic-announcement.xsd
- session-transfer-to-own-device.xsd
- flexible-identity-presentation.xsd
- hotline.xsd
- distinctive-ring.xsd

2.5 Other Schema files.

Other namespaces contain one schema file and are not explained further

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3 XML Schemas

3.1 Top level schemas

3.1.1 MTAS Simulation Services

Description: Used to validate the XCAP requests received over the Ut interface. Imports/includes the schemas needed for all of the user services supported in MTAS. The top level element simservs is defined in simservs.xsd.

File: mtas-services.xsd

Namespace: <http://uri.etsi.org/ngn/params/xml/simservs/xcap>

Includes:

- simservs.xsd
- communication-diversion.xsd
- communication-barring.xsd
- originating-identity-presentation-restriction.xsd
- terminating-identity-presentation-restriction.xsd
- communication-waiting.xsd

Imports:

- mtas-ericsson-services.xsd

A summary of the user services and the release in which they were introduced is given in Table 2.

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Service Name	2.0	3.0	3.1	11A	11B	12A	13 A	14A	14B
mmt-serv:abbreviated-dialing	-	-	X	X	X	X	X	X	X
mmt-serv:calling-name-identity-presentation	-	X	X	X	X	X	X	X	X
mmt-serv:communication-distribution	-	-	X	X	X ⁴	X	X ⁷	X ⁸	X ¹⁰
ss:communication-diversion	X	X	X	X ¹	X ⁴	X	X		X
mmt-serv:communication-diversion-no-answer-timer	-	X	X	X	X	X	X	X	X
ss:communication-waiting	-	X	X	X	X	X	X	X	X
ss:incoming-communication-barring	X	X	X	X ²	X ^{4,6}	X	X		X
ss:originating-identity-presentation	X	X	X	X	X	X	X	X	X
ss:originating-identity-presentation-restriction	X	X	X	X	X	X	X	X	X
mmt-serv:outgoing-barring-programs	X	X	X	X	X	X	X	X	X
ss:outgoing-communication-barring	X	X	X	X ²	X ^{4,6}	X	X		X
ss:terminating-identity-presentation	X	X	X	X	X	X	X	X	X
ss:terminating-identity-presentation-restriction	X	X	X	X	X	X	X	X	X
mmt-serv:user-common-data	-	-	-	X ³	X ⁵	X	X	X	X ⁹
mmt-serv:session-transfer-to-own-device	-	-	-	-	-	X	X	X	X
mmt-serv:flexible-identity-presentation						X	X	X	X
mmt-serv:hotline	-	-	-	-	-	-	X	X	X
mmt-serv:distinctive-ring	-	-	-	-	-	-	-	X	X

Table 2 - User services and the release of introduction

- Note 1: In MTAS 11A the communication-diversion service is extended to support the mmt-serv:number-match condition and to include the ss:NoReplyTimer at service and rule granularity.
- Note 2: In MTAS 11A incoming-communication-barring and outgoing-communication-barring services are extended to support the mmt-serv:number-match condition

Note 3: user-common-data is added in MTAS 11A FD1

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Note 4: In MTAS 11B incoming-communication-barring, outgoing-communication-barring, and communication-diversion are extended to support the mmt-serv:play-announcement action. Furthermore, incoming-communication-barring and communication diversion are also extended to support the mmt-serv:do-not-disturb action.
Incoming-communication-barring, outgoing-communication-barring, and communication-diversion are extended to support the mmt-serv:valid-periods condition.
Furthermore, incoming-communication-barring, outgoing-communication-barring, communication-diversion, and communication-distribution are extended to support the mmt-serv:invalidity condition.
Outgoing-communication-barring is also extended to support the mmt-serv:carrier condition.

Note 5: In MTAS 11B user-common-data is extended to support utc-offset, start-day-of-week, non-workday-list, and holiday-list elements.

Note 6: In MTAS 11B CP1 incoming-communication-barring and outgoing-communication-barring are extended to support the mmt-serv:play-segmented-announcement action

Note 7: In MTAS 13A the communication-distribution service is extended to include the ss:no-reply-timer at service and rule granularity. Furthermore new conditions were introduced: ss:anonymous, ss:busy, cp:identity, ss:media, ss:not-registered, ss:no-answer, ss:presence-status, ss:not-reachable. Furthermore new actions were introduced: mmt-serv:flexible-distribution and mmt-serv:play-announcement.

Note 8: In MTAS 14A incoming-communication-barring, outgoing-communication-barring, communication-diversion, and communication-distribution are extended to support mmt-serv:served-identity condition.

Note 9: In MTAS 14B mmt-serv:user-common-data is extended to support attribute auto-answer-avoidance for mmt-serv:target element.

Note 10: In MTAS 14B the communication-distribution service is extended to support mmt-serv:in-sip-request condition with mmt-serv:flexcondition sub-element.

3.2 Standard schemas

3.2.1 Simulation Services

Description: This schema contains the definition of the root element for the "simservs.xml" document manipulated over the Ut interface with application usage "simservs.ngn.etsi.org"

Source: Reference [2]

File: simservs.xsd

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Namespace: <http://uri.etsi.org/ngn/params/xml/simservs/xcap>

3.2.2 Communication Diversion User Data

Description: Subscription-level, user-configurable service data for communication diversion, as standardized by 3GPP. This is modified to include `simservs.xsd` to provide the base types necessary for the file to validate individually. It is adjusted to removed the following unsupported options:

- not-reveal-GRUU
- reveal-served-user-identity-to-caller

Source: Reference [3]

File: `communication-diversion.xsd`

Namespace: <http://uri.etsi.org/ngn/params/xml/simservs/xcap>

-

- Imports:
 - `xdm-common-Policy-V1_0_2.xsd`
 - `common-policy.xsd`

3.2.3 Communication Barring User Data

Description: Subscription-level, user-configurable service data for communication barring, as standardized by 3GPP. This is modified to include `simservs.xsd` to provide the base types necessary for the file to validate individually.

Source: Reference [6]

File: `communication-barring.xsd`

Namespace: <http://uri.etsi.org/ngn/params/xml/simservs/xcap>

-

- Imports:
 - `xdm-common-Policy-V1_0_2..xsd`
 - `common-policy.xsd`

3.2.4 Originating Identity Presentation User Data

Description: Subscription-level, user-configurable service data for originating identity presentation and restriction, as standardized by 3GPP. This is modified to include `simservs.xsd` to provide the base types necessary for the file to validate individually.

Source: Reference [4]

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File: originating-identity-presentation xsd

Namespace: http://uri.etsi.org/ngn/params/xml/simservs/xcap

3.2.5 Terminating Identity Presentation User Data

Description: Subscription-level, user-configurable service data for terminating identity presentation and restriction, as standardized by 3GPP. This is modified to include simservs.xsd to provide the base types necessary for the file to validate individually

Source: Reference [5].

File: terminating-identity-presentation.xsd

-
- Namespace: http://uri.etsi.org/ngn/params/xml/simservs/xcap
-

3.2.6 Communication Waiting User Data

Description: Subscription-level, user-configurable service data for communication waiting, as standardized by 3GPP. This is modified to include simservs.xsd to provide the base types necessary for the file to validate individually

Source: Reference [7]

File: communication-waiting.xsd

Namespace: http://uri.etsi.org/ngn/params/xml/simservs/xcap

3.2.7 OMA common policies

Description: OMA extensions to IETF common policies.

Source:

http://www.openmobilealliance.org/ftp/Public_documents/PAG/Permanent_documents/OMA-SUP-XSD_xdm_commonPolicy-V1_0_2-20070830-A.zip

File: xdm-commonPolicy-V1_0_2.xsd

Namespace: urn:oma:xml:xdm:common-policy

3.2.8 IETF common policies

Description: A framework for creating authorization policies for access application-specific data.

Source: RFC 4745

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File: common-policy.xsd

Namespace: urn:ietf:params:xml:ns:common-policy

3.3 Ericsson specific schemas

3.3.1 MTAS Ericsson Services

Description: Schema that includes all the Ericsson defined services that are substituted under the simservs element.

Source: Ericsson Internal

File: mtas-ericsson-services.xsd

Includes:

- outgoing-barring-programs.xsd
- cdiv-no-answer-timer-ut.xsd
- calling-name-identity-presentation.xsd
- abbreviated-dialing.xsd
- communication-distribution.xsd
- rule-extensions.xsd
- user-common-data.xsd
- do-not-disturb.xsd
- generic-announcement.xsd
- session-transfer-to-own-device.xsd
- flexible-identity-presentation.xsd
- hotline.xsd

Namespace: <http://schemas.ericsson.com/mmtel/services>

3.3.2 Barring Programs

Description: Subscription-level, user-configurable service data for barring programs, as defined by Ericsson.

Source: Ericsson Internal

File: outgoing-barring-programs.xsd

Imports:

- simservs.xsd

Namespace: <http://schemas.ericsson.com/mmtel/services>

3.3.3 Communication Diversion No Answer Timer

Description: Subscription-level, user-configurable service data for communication diversion no answer timer, as defined by Ericsson.

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Source: Ericsson Internal

File: cdiv-no-answer-timer-ut.xsd

Imports:

- simsrvs.xsd
- mtas-common-types.xsd

Namespace: <http://schemas.ericsson.com/mmtel/services>

3.3.4 Calling Name Identity Presentation

Description: Subscription-level, user-configurable service data for calling name identity presentation, as defined by Ericsson.

Source: Ericsson Internal

File: calling-name-identity-presentation.xsd

Imports:

- simsrvs.xsd

Namespace: <http://schemas.ericsson.com/mmtel/services>

3.3.5 Abbreviated Dialing

Description: Subscription-level, user-configurable service data for abbreviated dialing, as defined by Ericsson.

Source: Ericsson Internal

File: abbreviated-dialing.xsd

Imports:

- simsrvs.xsd
- mtas-common-types.xsd

Namespace: <http://schemas.ericsson.com/mmtel/services>

3.3.6 Flexible Communication Distribution

Description: Subscription-level, user-configurable service data for flexible communication distribution, as defined by Ericsson.

Source: Ericsson Internal

File: communication-distribution.xsd

Imports:

- communication-diversion.xsd
- mtas-common-types.xsd

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➤ common-policy.xsd

Namespace: http://schemas.ericsson.com/mmtel/services

3.3.7 Rule Extensions

Description: MTAS extensions to the condition and action components of rules, used in various services.

Source: Ericsson Internal

File: rule-extensions.xsd

Imports:

➤ mtas-common-types.xsd

Namespace: http://schemas.ericsson.com/mmtel/services

3.3.8 User Common Data

Description: Subscription-level, user-configurable service data for user common data, as defined by Ericsson.

Source: Ericsson Internal

File: user-common-data.xsd

Imports:

- simservs.xsd
- mtas-common-types.xsd
- common-policy.xsd

Namespace: http://schemas.ericsson.com/mmtel/services

3.3.9 Do Not Disturb

Description: MTAS extensions to the action components of rules in Communication Diversion and Incoming Communication Barring services.

Source: Ericsson Internal

File: do-not-disturb.xsd

Imports:

➤ mtas-common-types.xsd

Namespace: http://schemas.ericsson.com/mmtel/services

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3.3.10 Generic Announcement

Description: MTAS extensions to the action components of rules in Communication Diversion and Communication Barring (both Incoming Communication Barring and Outgoing Communication Barring) services.

Source: Ericsson Internal

File: generic-announcement.xsd

Imports:

- mtas-common-types.xsd

Namespace: <http://schemas.ericsson.com/mmtel/services>

3.3.11 Session Transfer To Own Device

Description: Subscription-level, user-configurable service data for session transfer to own device, as defined by Ericsson.

Source: Ericsson Internal

File: session-transfer-to-own-device.xsd

Imports:

- mtas-common-types.xsd
- simservs.xsd
- common-policy.xsd

Namespace: <http://schemas.ericsson.com/mmtel/services>

3.3.12 Flexible Identity Presentation

Description: Subscription-level, user-configurable service data for session transfer to own device, as defined by Ericsson.

Source: Ericsson Internal

File: flexible-identity-presentation..xsd

Imports:

- mtas-common-types.xsd
- simservs.xsd

Namespace: <http://schemas.ericsson.com/mmtel/services>

3.3.13 Hotline

Description: Subscription-level, user-configurable service data for hotline, as defined by Ericsson.

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Source: Ericsson Internal

File: hotline.xsd

Imports:

- mtas-common-types.xsd
- simservs.xsd

Namespace: <http://schemas.ericsson.com/mmtel/services>

3.3.14

Distinctive Ring

Description: Subscription-level, user-configurable service data for distinctive ring service, as defined by Ericsson.

Source: Ericsson Internal

File: distinctive-ring.xsd

Imports:

- simservs.xsd
- common-policy.xsd
- mtas-common-types.xsd

Namespace: <http://schemas.ericsson.com/mmtel/services>

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4 Attached files

4.1 XML Schema files

The diagram below shows the schemas that together comprise the Ut interface. Whether locally defined or downloaded from a public site the schema files used on this interface are zipped and are available in ref [9]

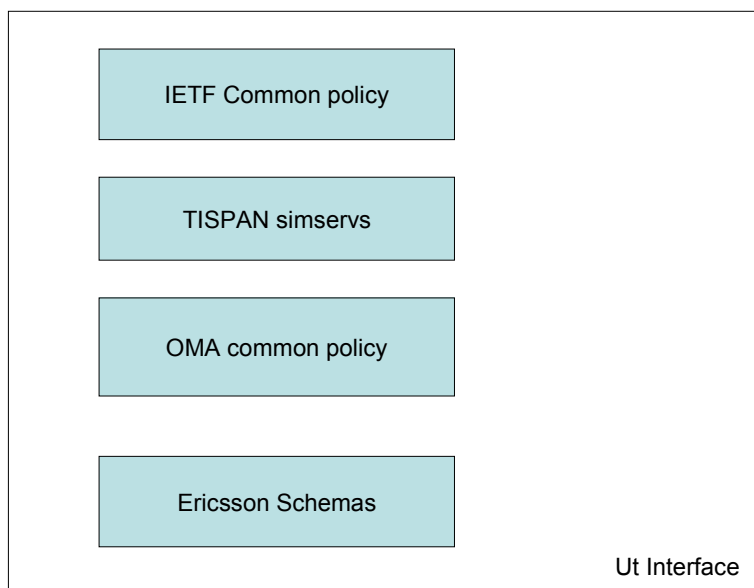


Figure 3 - Components of Ut Interface

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5 Glossary

5.1 Terms

<u>Term</u>	<u>Explanation</u>
Ut Interface	Interface between the XCAP client and XCAP server (XDMS) within an IMS, as defined by 3GPP

5.2 Abbreviations

3GPP	3 rd Generation Partnership Project
CR	Change Request
IETF	Internet Engineering Task Force
IMS	IP Multi-Media Subsystem
IP	Internet Protocol
OMA	Open Mobile Alliance
TS	Technical Specification
XCAP	XML Configuration Access Protocol
XDMS	XML Document Management Server
XML	Extensible Markup Language

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6 References

- [1] <http://www.w3.org/TR/xmlschema-1/>, XML Schema Part 1: Structures Second Edition.
- [2] 3GPP TS 24.623 V8.1.0, Extensible Markup Language (XML) Configuration Access Protocol (XCAP) over the Ut interface for Manipulating NGN PSTN/ISDN Simulation Services.
- [3] 3GPP TS,24.604 V8.4.0, Communication Diversion (CDIV) Protocol specification.
- [4] 3GPP TS 24.607 V8.2.0, Originating Identification Presentation (OIP) and Originating Identification Restriction (OIR); Protocol specification.
- [5] 3GPP TS 24.608 V8.2.0, Identification Presentation (TIP) and Terminating Identification Restriction (TIR); Protocol specification.
- [6] 3GPP TS 24.611 V8.2.0, Anonymous Communication Rejection (ACR) and Communication Barring (CB) Protocol specification.
- [7] 3GPP TS 24.615 V8.2.0, Communication Waiting (CW) using IP Multimedia (IM) Core Network (CN) subsystem; Protocol specification
- [8] 5/190 01-AVA 901 18, XML Common Types
- [9] 2/190 09-AVA 901 18, MTAS Ut Schemas