

Prepared (also subject responsible if other) EDONFAR Doniz Farkas		No. 22/155 19-AVA 901 18 Uen		
Approved BICPAAIAD [Helena Järfvert]	Checked	Date 2016-09-13	Rev T	Reference

MTAS CAI3G Interface

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1 General Information

1.1 Revision history

REV	RELEASE DATE	REVISED BY	REASON FOR REVISION
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A	2013-04-18	ERATLIM	<p>The following have been updated:</p> <ul style="list-style-type: none"> • Closed User Group (CUG) • Communication Completion on Not Logged-in (CCNL) <ul style="list-style-type: none"> - Introduced CCNL and monitor opt out ccnl services - introduced possibility to provision max number of B-queue CCNL requests - updated table 89 as there is a change in error response at provisioning of individual max nbr of ccnl requests in b-queue • In User Common Data <ul style="list-style-type: none"> - time-zone-area in • Multi Subscriber Number (MSN) <ul style="list-style-type: none"> - msn-fip-identity added • Service Profiles • Schemas updated • Correction and editorial update
B	2013-09-23	ERATLIM	<p>Added features:</p> <ul style="list-style-type: none"> • Number Portability Announcement • Distinctive Ring <p>Updated with changes</p> <ul style="list-style-type: none"> • Multi Subscriber Number (MSN) support for CDIV, CB and FCD services • to add mmtel charging profile in user common data • to add support of values ad-hoc-temporary-presentation-restricted" and "ad-hoc-temporary-presentation-not-restricted" in features the Originating Identity Presentation Rejection <p>Updated schema zip file</p>
C	2013-11-24	ERATLIM	<ul style="list-style-type: none"> • mtasShDataVersion attribute changed to mtasShIfDataVersion • Added support for validate of CAI3G Create and Set requests of user and Service Profiles documents without performing the provisioning of the document. • Remove reject messages for the licenses that are not checked during provisioning • Updated schema zip file

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D	2014-05-19	ERATLIM	<p>Updates:</p> <ul style="list-style-type: none">• Added support for auto-answer-avoidance in UCD, FCD and STOD• Added support for activating-attendant-assistance in the Service Number service• Added support for mcid-orig-mode in MCID• Added support for SIP regexp condition in FCD and UCD• In chapter 5 added a limitation list because the IRS is not fetched in CAI3G Create• In chapter 7.3.2 in table 90 added NUM 51-52 for OCOBP• References updated and TSP specific removed to be platform agnostic• Document renamed• The zipped schema files moved to a new document which is referenced
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E	2014-12-02	ETXLUZE	Updates: <ul style="list-style-type: none"> • Originating Calling Name Identity Presentation Service (OCNIP) provisioning is enhanced with element external-query-type. • Added chapters 7.4 Http response and 7.4.1 204 No Content. • In chapter 6.57 corrected the element “starts-with” description. • Added optional element fixed-active-limit in operator-user-call-admission-control, application rules updated. • Updated for multi device support in service Flexible Communication Distribution • Added new service Media Policy • Updated for service Conference to support element answer-confirmation • Service Communication Diversion is updated to support pre- and post-evaluation of ruleset in the operator configuration. • Added support for unconditional-condition element in Incoming Communication Barring and Outgoing Communication Barring services. • Updated description of element rule-deactivated in chapters 6.20, 22, 34, 43 and 48. • Added new reason phrases for barring by vtasCDivBlackList • In chapter 6.19 for service Common Data added a note for the language-tag.
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F	2015-02-08	ERATLIM	Updated <ul style="list-style-type: none">• Correct the order of the elements in the operator configuration of CDIV• In chapters 6.60, 6.62-6.63 added a note for elements that set dates Note: To set date later than year 2036 is not supported on TSP and the value will not be correctly handled• Added checks and missing checks to the tables Others services, Common Data and Service Profiles
G	2015-04-24	EBIJNAI	Updates: <ul style="list-style-type: none">• Added support for optional element voice-mail-retrieval-address in the Voice Mail service.• Added support for imsi element in the Northbound Call Control service.• Added notes in the descriptions of the reason texts that the check of BAOC for services CDIV, FCD and STOD is not done by default.• For the ICB and OCB services, 4 subelements are added to the play-segmented-announcement element.• Added a note in Table 99 that the Service Number must be provisioned in HSS.

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H	2015-07-06	ERATLIM	<p>Updated description of element language-tag in service common-data.</p> <p>Removed information about allowed characters in the description for element terminal-selector in service user-common-data</p> <p>In chapter 7.3.2</p> <p>Removed application rules:</p> <ul style="list-style-type: none">Failed to meet an application constraint: Communication Distribution Failure: Rule id="<rule-id>", conflict with active Communication DiversionFailed to meet an application constraint: Terminating Identity Restriction Failure: Element mode cannot have values "ad-hoc-temporary-presentation-restricted" or "ad-hoc-temporary-presentation-not-restricted"Failed to meet an application constraint: Media policy: Rule id="<rule-id>", multiple condition elementsFailed to meet an application constraint: Media policy: Rule id="<rule-id>", multiple action elements <p>Added missing application rule for Advice of Charge.</p> <p>Added note about area-code to application rules for Carrier Select Rn/ Carrier Pre-Select Rn.</p> <p>Added two application rules for operator-dynamic-black-list.</p> <p>In chapter 11 removed (fault) version of Generic CAI3G Interface 1.2</p>
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J	2015-11-02	ERATLIM	<p>Updates:</p> <p>Stated in chapter 2.7 that from MTAS 4.0 only release 3.1 of service data version is supported.</p> <p>Added services Multi Device Conference Policy and Multi Device User Call Admission Control in table 2 and that services Conference is extended to support element block-dialout-invitations and Communication Diversion is extended to support element unconditional-condition.</p> <p>In chapter 6.20, service Communication Diversion is extended to support to set condition unconditional-condition in operator part.</p> <p>Updated chapter 6.24, added element block-dialout-invitations.</p> <p>Added chapter 6.37 with service Multi Device Conference Policy.</p> <p>Added chapter 6.38 with service Multi Device User Call Admission Control.</p> <p>Added support of services Multi Device Conference Policy and Multi Device User Call Admission Control in Create, Set and Get Response for MMTel and Service Profile.</p> <p>Table 88 for Communication Diversion is updated with check if the operator has deactivated the unconditional-condition and corrected Num 41, Removed dot “.”.</p> <p>Added application rules in table 94 for Multi Device User Call Admission Control.</p> <p>Added application constraint for Northbound Call Control in table 96 and corrected application constraints Num. 32-33 and 59.</p>
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K	2016-01-28	ERATLIM	<p>In table 2 service User Common Data is extended to support elements feature-tag-preferences and feature-tags in MTAS 4.1.</p> <p>In services Originating and Terminating Identity Presentation Restriction the description of element mode is improved.</p> <p>In chapter 6.32 Incoming Communication Barring and chapter 6.43 Outgoing Communication Barring the description for unconditional condition is updated, because if it is absent it will be handled in the same way as if it is set to "activated".</p> <p>In chapter 6.55 service User Common Data the two elements "feature-tag-preferences" and "feature-tags" are added.</p> <p>In table 87, application constraints 4 and 5, notes are added.</p> <p>In table 90 for Incoming and Outgoing Communication Barring the checks, if unconditional is absent, are removed.</p> <p>In table Other Services application constraint "Failed to meet an application constraint: Hotline Failure: modification in user part not allowed if delayed hotline is not activated by operator" is removed.</p> <p>Removed table 93 application constraint for Service Originating Calling Name Identity Presentation.</p>
L	2016-03-09	XMILMAT	MTASv 1.0 Updated References: CBA link to MOM
M	2016-04-06	XSOFSSTE	Header repair, track changes accepted from changes in rev. L.
N	2016-04-11	XSOFSSTE	History cleared properly.

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S	2016-06-30	ERATLIM	<p>Added new service Dialog Event Notifier in</p> <ul style="list-style-type: none"> table 2 create, set and getResponse for MMTel (chapters 6.2-6.4) and Service Profile (chapters 6.66-6.68) new chapter 6.27 <p>In chapter 6.46 in service Originating Calling Name Identity Presentation is the element "external-query-type" removed because it is not part of this general IWD and removed Note 28: in table 2.</p> <p>In chapter 6.38 corrected the allowed value for element name of device group for Multi Device Conference Policy.</p> <p>In chapter 7.3.2 added information that the order of the errors are not predictable.</p> <p>Corrected application constraint description for "Invalid targets in Document, failure against Outgoing Communication Barring rules containing carrier condition, failed targets are : <invalid-targets> in <service>.</p> <p>Added missing application constraint: Failed to meet an application constraint: Communication Diversion forwarding identity, "<target>", is barred by the barring category, "<category-name>"</p>
T	2016-09-08	EDONFAR	<p>Updates:</p> <ul style="list-style-type: none"> Added note 32 in Table 2 and in chapter 6.27 Dialog Event Notifier added element <block-device-group-usage> Added note 33 in Table 2 and in chapter 6.56 User Common Data added elements <subscription>, <id> and <imsi> In table 96 – Error 3013 Reason Text – Other Services, updated the description of application constraint in row 56: Failed to meet an application constraint: Northbound Call Control Failure: The elements imsi is missing Updated chapter 6.1 due to the removal of Scheduled Conference AS on virtualized MTAS

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1.2 Introduction

The interface between the CAI3G manager and MTAS is required in order to provision MMTel services for users, service profiles and service number.

The details of these services are stored in the MMTel documents for the user, the service profile or service number. These documents are managed by MTAS and are held in the Service Data of the HSS node.

1.3 Purpose

This document defines the behavior of the CAI3G protocol (version 1.2) as used by MTAS. Any interface partner using this interface is expected to abide by the behavior described in this document.

The most common user of this interface is the EMA node in its function as a CAI3G Manager. Other systems e.g. customer's business systems will normally access MTAS through EMA.

1.4 Scope

This document defines

- (a) how the generic CAI3G interface spec (ref [1]) has been interpreted and implemented by MTAS
- (b) how the generic CAI3G protocol has been extended to support MMTel user, service profile and service number

For details of which services are introduced in each release see Table 2

For common type definitions shared with other XML interfaces see ref [4].

1.5 XML Namespaces

This specification uses a number of namespace prefixes throughout that are listed in Table 1. Note that the choice of any namespace prefix is arbitrary and not semantically significant, unlike the namespace itself.

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Prefix	Namespace	Purpose
cai3g	http://schemas.ericsson.com/cai3g1.2/	Generic CAI3G
mc	http://schemas.ericsson.com/mtas/mmtel/cai3g	MMTel CAI3G
mct	http://schemas.ericsson.com/mtas/mmtel/common-types	MTAS Common types
msc	http://schemas.ericsson.com/mtas/mmtel-service-no/cai3g	MMTel Service Number CAI3G
default namespace binding	http://schemas.ericsson.com/mtas/mmtel/cai3g	MTAS specific CAI3G elements for MMTel
soap-env	http://schemas.xmlsoap.org/soap/envelope/	Envelope of a SOAP message
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 Prefixes and namespaces used in this specification

2 Architecture

2.1 Overview

Figure 1 shows the active provisioning components. This document applies to the connection between EMA and MTAS.

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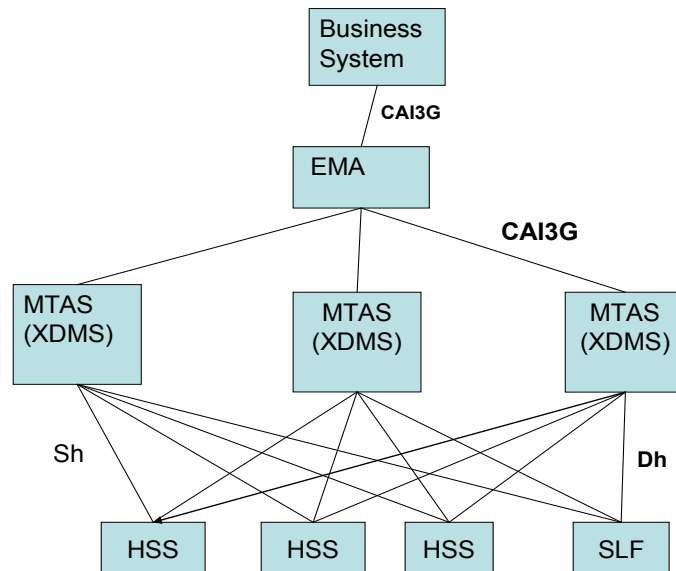


Figure 1- EMA-MTAS (XDMS) within an End-to-End Provisioning View

2.2 MTAS Topology

The CAI3G Manager will typically have access to a cluster of MTAS nodes as shown below.

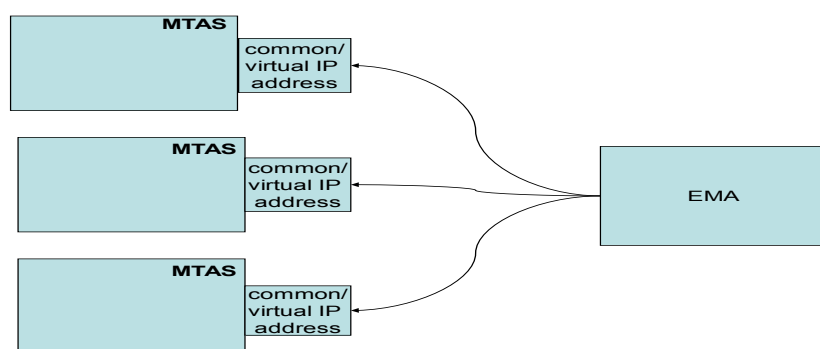


Figure 2- CAI3G Manager accessing a cluster of MTAS

The CAI3G Manager is only aware of the common/virtual IP address of each MTAS node and will use the O&M common/virtual IP address. Distribution of requests to XDMS instances within the MTAS node is hidden from the CAI3G Manager.

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CAI3G Manager will be exposed to a cluster of MTAS nodes and needs to select one node from the cluster. Each node in the cluster is functionally identical.

2.3 Transport Mechanism

2.3.1 TCP Connections

The CAI3G Manager will establish a persisted TCP connection to MTAS. The CAI3G Manager remains in control of the connection and barring an abnormal event, this connection will remain persisted until the CAI3G Manager takes it down.

Each connection can support one session simultaneously. If a connection fails or is taken down then the same session can continue over a new connection.

The CAI3G Manager will not set-up more than one simultaneous session per connection. The same session shall not use more than one connection unless the first connection becomes unavailable.

The MTAS will take down a TCP connection following error and following a number of requests. This does not affect the CAI3G sessions which can continue on another TCP connection established by the CAI3G manager. This allows load balancing within MTAS.

2.3.2 Transport Address

The transport address is considered to be the IP address of the Node + Port Number. The IP address of the MTAS node is the O&M common/virtual IP address of the node.

The port number of **8095** is reserved for CAI3G request/responses over HTTP and the port number of **8443** is reserved for CAI3G request/responses over HTTPS, see [7]. These values are fixed.

2.3.3 Message Size

The MTAS application does not impose any limit on the size of a CAI3G message (request or response).

Notes:

- a) Any limits imposed by the underlying transport layers or the 3PP that we use to decode and encode requests are not known.
- b) HSS can reject a request if it was considered to be too large.

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2.4 CAI3G Session

All provisioning transactions on this interface must be part of a session.

A CAI3G session is tied to a node. In other words, all requests that are associated with a session must be sent to the same node.

2.4.1 Session Set-Up

Having selected a node, the CAI3G manager establishes a session with a successful login request.

2.4.2 Session Clear-Down

The session is cleared down by either a successful logout request or the expiration of the inactivity time-out.

2.4.3 Inactivity Time-Out

The duration of the inactivity time-out can be amended by configuring the **mtasXdmsCai3gInactivityTimeout** attribute [3]. The inactivity time-out may be disabled by configuring the managed object to a value of 0 (zero).

2.4.4 Number of Sessions

The maximum number of sessions that can be connected to an individual MTAS node simultaneously is set to a default of 32. It can be amended by configuring the **mtasXdmsCai3gMaximumSessions** attribute [3].

2.4.5 SessionId

The SessionId is implemented in accordance with ref [1] which gives full details.

2.4.6 SequenceId

The SequenceId is implemented in accordance with ref [1] which gives full details.

2.4.7 TransactionId

The TransactionId field as defined in ref [1] has no practical use on this interface and will be returned unaltered to the CAI3G manager.

2.5 CAI3G Transaction

A CAI3G transaction on this interface is a request from the CAI3G Manager and a matching response from MTAS.

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It is mandatory that

- The request and the response must be on the same connection.
- Every request (except Login) must include a SessionId.
- CAI3G Manager must initiate the transaction.

2.6 Managed Object Type

The managed object (MO) type represents the type that is managed over this interface. This interface supports three MOTypes. The MOType value for MMTel user service data is:

[MMTel@http://schemas.ericsson.com/mtas/mmtel/cai3g](http://schemas.ericsson.com/mtas/mmtel/cai3g)

This is used in association with MOAttributes that satisfy the MMTel schema set and that are in the MMTel namespace:

<http://schemas.ericsson.com/mtas/mmtel/cai3g>

The MOType value for MMTel service profile data is:

[MMTelProfile@http://schemas.ericsson.com/mtas/mmtel/cai3g](http://schemas.ericsson.com/mtas/mmtel/cai3g)

This is used in association with MOAttributes that satisfy the MMTel profile schema set and that are in the MMTel namespace:

<http://schemas.ericsson.com/mtas/mmtel/cai3g>

The MOType value for MMTel ServiceNo data is:

[MMTelServiceNo@http://schemas.ericsson.com/mtas/mmtel-serviceno/cai3g](http://schemas.ericsson.com/mtas/mmtel-serviceno/cai3g)

This is used in association with MOAttributes that satisfy the MMTel ServiceNo schema set and that are in the MMTel ServiceNo namespace:

<http://schemas.ericsson.com/mtas/mmtel-serviceno/cai3g>

The MOType value for MMTel scheduled conference data is:

[MMTelSchedConf@http://schemas.ericsson.com/mtas/mmtel/cai3g](http://schemas.ericsson.com/mtas/mmtel/cai3g)

This is used in association with MOAttributes that satisfy the MMTel Scheduled Conference schema set and that are in the MMTel namespace:

<http://schemas.ericsson.com/mtas/mmtel/cai3g>

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2.7 Service data version

From MTAS 4.0 only release 3.1 of service data version is supported.

It is very important that all MTAS nodes are upgraded to the release 3.1 of service data version. The consequence of not following this recommendation may be experienced as failures when performing service update requests in the CAI3G and Ut interfaces.

Note: The CM attribute **mtasShlfDataVersion** [3], that controls what format to use by MTAS when updating the subscriber data on HSS, is not considered from MTAS 4.0.

Table 2 lists the user services that are supported according to the release of MTAS they are included in.

Note: It is the same functional contents in MTAS 4.0 and MTASv 1.0 and in MTAS 4.3 and MTASv 1.4.

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Service Name	MTAS release												
	3.0	3.1	11A	11B	12	13	14A	14B	15A	4.0	4.1	4.3	4.4
abbreviated-dialing	-	X	X	X	X	X	X	X	X	X	X	X	X
advice-of-charge	-	X	X	X	X	X	X	X	X	X	X	X	X
call-completion	-	X	X	X	X	X	X	X	X	X	X	X	X
call-completion-monitor-opt-out	-	X	X	X	X	X	X	X	X	X	X	X	X
call-return	-	-	-	-	-	X	X	X	X	X	X	X	X
calling-name-identity-presentation	X	X	X	X	X	X	X	X	X	X	X	X	X
calling-party-category	-	-	-	X	X	X	X	X	X	X	X	X	X
carrier-pre-select	X	X	X	X	X	X	X	X	X	X	X	X	X
carrier-pre-select-rn	-	X	X	X	X	X	X	X	X	X	X	X	X
carrier-select	X	X	X	X	X	X	X	X	X	X	X	X	X
carrier-select-rn	-	X	X	X	X	X	X	X	X	X	X	X	X
closed-user-group	-	-	-	-	-	X	X	X	X	X	X	X	X
common-data	-	X	X	X ¹²	X	X	X	X	X	X	X	X	X
communication-distribution	-	X	X	X ^{11,14,15}	X	X ¹⁸	X ¹⁹	X ²³	X	X	X	X	X
communication-diversion	X	X ¹	X ³	X ^{9,11,14}	X	X	X ¹⁹	X	X ²⁷	X ³⁰	X	X	X
communication-diversion-no-answer-timer	X	X	X ⁴	X									
communication-waiting	X	X	X	X	X	X	X	X	X	X	X	X	X
conference	X	X	X	X	X	X	X	X	X ²⁶	X ²⁹	X	X	X
customized-alerting-tone	-	-	-	-	X	X	X	X	X	X	X	X	X
dial-tone-management	X	X	X	X	X	X	X	X	X	X	X	X	X
dialog-event-notifier	-	-	-	-	-	-	-	-	-	-	-	X	X ³²
distinctive-ring	-	-	-	-	-	-	X	X	X	X	X	X	X
dynamic-black-list	-	X	X	X	X	X	X	X	X	X	X	X	X
explicit-communication-transfer	-	-	-	X	X	X	X	X	X	X	X	X	X
flexible-identity-presentation					X	X	X	X	X	X	X	X	X
incoming-communication-barring	X	X ²	X ⁵	X ^{9,11,14,16}	X	X	X ¹⁹	X	X ²⁷	X	X	X	X
hotline	-	-	-	-	-	X	X	X	X	X	X	X	X
malicious-communication-identification	-	X	X	X	X	X	X	X ²²	X	X	X	X	X
malicious-communication-rejection	-	-	X	X	X	X	X	X	X	X	X	X	X
media-policy	-	-	-	-	-	-	-	-	X	X	X	X	X
multi-device-conference-policy	-	-	-	-	-	-	-	-	-	X	X	X	X
multi-device-user-call-admission-control	-	-	-	-	-	-	-	-	-	X	X	X	X
northbound-call-control	-	-	-	-	X	X ¹⁷	X	X	X	X	X	X	X

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number-portability-announcement	-	-	-	-	-	X	X	X	X	X	X	X	X	X
operator-controlled-outgoing-barring-programs	X	X	X ⁷	X	X	X	X	X	X	X	X	X	X	X
originating-calling-name-identity-presentation						X	X	X	X	X	X	X	X	X
originating-identity-presentation	X	X	X	X	X	X	X	X	X	X	X	X	X	X
originating-identity-presentation-restriction	X	X	X	X	X	X	X ²¹	X	X	X	X	X	X	X
outgoing-barring-programs	X	X	X	X	X	X	X	X	X	X	X	X	X	X
outgoing-communication-barring	X	X	X ⁵	X ^{10,11,14,16}	X	X	X ¹⁹	X	X ²⁷	X	X	X	X	X
priority-call	-	X	X	X	X	X	X	X	X	X	X	X	X	X
session-transfer-to-own-device	-	-	-	-	X	X	X	X	X	X	X	X	X	X
scheduled-conference	-	-	-	-	X	X	X	X	X	X	X	X	X	X
supplementary-service-codes	X	X	X ⁶	X	X	X	X	X	X	X	X	X	X	X
terminating-identity-presentation	X	X	X	X	X	X	X	X	X	X	X	X	X	X
terminating-identity-presentation-restriction	X	X	X	X	X	X	X	X	X	X	X	X	X	X
three-pty	-	X	X	X	X	X	X	X	X	X	X	X	X	X
user-call-admission-control	-	X	X	X	X	X	X	X	X ²⁵	X	X	X	X	X
user-common-data	-	-	X ⁸	X ¹³	X	X	X ²⁰	X ²⁴	X	X	X ³¹	X	X ³³	X
voice-mail	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Table 2 MMTel User Services included by MTAS release

Note 1: In MTAS 3.1 the communication-diversion service is extended to include the <not-reachable-condition> element and the value not-reachable in the <cdiv-call-state> element.

Note 2: In MTAS 3.1 the incoming-communication-barring service is extended to include hidden: URIs in identity conditions of user rules.

Note 3: In MTAS 11A the communication-diversion service is extended to support <number-match> elements for matching partial numbers. It is also extended to support <NoReplyTimer> at service and rule granularity, controlled by <user-no-reply-timer> and <rule-no-reply-timer>.

Note 4: communication-diversion-no-answer-timeout is deprecated from MTAS 11A in favour of the NoReplyTimer added to communication-diversion.

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Note 5: In MTAS 11A the incoming-communication-barring and outgoing-communication-barring services are extended to support <number-match> elements for matching partial numbers.

Note 6: In MTAS 11A supplementary-service-codes is extended to include pin-failures.

Note 7: In MTAS 11A FD1 operator-controlled-outgoing-barring-programs is extended to include operator-permitted-program and to allow more categories for each program.

Note 8: user-common-data is added in MTAS 11A FD1.

Note 9: In MTAS 11B the communication-diversion and incoming-communication-barring services are extended to support <do-not-disturb> and <play-announcement> elements in rules.

Note 10: In MTAS 11B the outgoing-communication-barring service is extended to support <play-announcement> element in rules.

Note 11: In MTAS 11B incoming-communication-barring, outgoing-communication-barring, and communication-diversion are extended to support the <valid-periods> condition.
Furthermore, incoming-communication-barring, outgoing-communication-barring, communication-diversion, and communication-distribution are extended to support the <invalidity> condition.
In MTAS 11B outgoing-communication-barring is also extended to the support <carrier> condition.

Note 12: In MTAS 11B common-data is extended to support <rule-global-limit> and <service-profile-identity> elements.

Note 13: In MTAS 11B user-common-data is extended to support <holiday-list> element.

Note 14: In MTAS 11B communication-diversion, outgoing-communication-barring, incoming-communication-barring, and communication-distribution is extended to support <rule-limit> element.

Note 15: In MTAS 11B communication-distribution is extended to support <divert-primary> element within the user configuration.

Note 16: In MTAS 11B CP1 the incoming- and outgoing-communication-barring services are extended to support the <play-segmented-announcement> element in rules.

Note 17: In MTAS 13, northbound-call-control is extended to support Parlay X data.

Note 18: In MTAS 13, the communication-distribution service is extended to support <NoReplyTimer> at service and rule granularity, controlled by <user-no-reply-timer> and <rule-no-reply-timer>.

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Note 19: In MTAS 14A incoming-communication-barring, outgoing-communication-barring, communication-diversion, and communication-distribution services are extended to support <served-identity> condition in service rules.

Note 20: In MTAS 14A, user-common-data is extended to support <mmtel-charging-profile> element.

Note 21: in MTAS 14A, the originating-identity-presentation-restriction service is extended to support values "ad-hoc-temporary-presentation-restricted" and "ad-hoc-temporary-presentation-not-restricted" in element mode.

Note 22: in MTAS 14B, the Malicious Communication Identification service is extended to support value "inactive" for element mcid-mode and the element mcid-orig-mode is added.

Note 23: In MTAS 14B the communication-distribution service is extended to support the elements in-sip-request and flexcondition.

Note 24: In MTAS 14B user-common-data is extended to support elements in-sip-request-condition, in-sip-request-condition-list and flexcondition-definition.

Note 25: In MTAS 15A, user-call-admission-control is extended to support <fixed-active-limit> element.

Note 26: In MTAS 15A, conference is extended to support <answer-confirmation>

Note 27: In MTAS 15A, service communication-diversion is extended to support <cdiv-ruleset> and <cdiv-ruleset-for-post-evaluation> elements for pre- and post-evaluation of ruleset in the operator configuration. The services incoming-communication-barring and outgoing-communication-barring are extended to support <unconditional-condition> element in operator part.

Note 29: In MTAS 4.0, service Conference is extended with element <block-dialout-invitations>.

Note 30: In MTAS 4.0, service communication-diversion is extended to support <unconditional-condition> element in operator part.

Note 31: In MTAS 4.1, service user-common-data is extended to support <feature-tag-preferences> and <feature-tags> elements.

Note 32: In MTAS 4.4, service dialog event notifier service is extended to support <block-device-group-usage> element.

Note 33: In MTAS 4.4, service user-common-data is extended to support <subscription>, <id> and <imsi> elements.

Table 3 lists the service number services that is supported according to the release of MTAS.

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Service Name	MTAS release								
	3.0	3.1	11A	11B	12	13	14A	14B	15A
service-number	-	-	-	-	X	X	X	X ¹	X

Table 3 – MMTel Service Number included by MTAS release

Note 1: In MTAS 14B the service-number service is extended to support elements activating-attendant-assistance, announcement-attendant-assistance-id and attendant-uri.

2.8 Managed Object Instance

Identification of the MMTel document for a particular user instance is achieved by the value of the publicId tag within the MOId. An example is shown in the fragment below.

```
<cai3g:MOId>  
  <mc:publicId>sip:user@ericsson.com</mc:publicId>  
</cai3g:MOId>
```

In addition to the format for MOId that is defined in ref [1]; this interface restricts the MOId to be of the format 'sip:...'

No limit is imposed on the number of Managed Object instances that can be supported over this interface.

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3 Message Protocol

3.1 CAI3G Extensions

3.1.1 Supported CAI3G Messages

The following table lists all the CAI3G messages that are defined in the generic CAI3G spec and indicates which of those messages are supported on this interface.

Name	Supported	Definition
Login Request	Yes	Generic CAI3G
Login Response	Yes	Generic CAI3G
Logout Request	Yes	Generic CAI3G
Logout Response	Yes	Generic CAI3G
Create Request	Yes	Generic CAI3G + MTAS extension
Create Response	Yes	Generic CAI3G
Get Request	Yes	Generic CAI3G
Get Response	Yes	Generic CAI3G + MTAS extension
Set Request	Yes	Generic CAI3G + MTAS extension
Set Response	Yes	Generic CAI3G
Delete Request	Yes	Generic CAI3G
Delete Response	Yes	Generic CAI3G
Search Request	No	Generic CAI3G
Search Response	No	Generic CAI3G
Subscribe Request	No	Generic CAI3G
Subscribe Response	No	Generic CAI3G
Unsubscribe Request	No	Generic CAI3G

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Name	Supported	Definition
Unsubscribe Response	No	Generic CAI3G
Notify Request	No	Generic CAI3G
Notify Response	No	Generic CAI3G

Table 4 – Supported CAI3G Messages

3.1.2 MMTel Schema to extend CAI3G

The table below maps the CAI3G messages which have MMTel extensions to the actual XML elements that define the extension.

Extended CAI3G Message	Matching XML Element
Create Request	mc:createMMTel mc:createMMTelProfile mc:createMMTelSchedConf msc:createMMTelServiceNo
Get Response	mc:getResponseMMTel mc:getResponseMMTelProfile mc:getResponseMMTelSchedConf msc:getResponseMMTelServiceNo
Set Request	mc:setMMTel mc:setMMTelProfile mc:setMMTelSchedConf msc:setMMTelServiceNo

Table 5 – Mapping CAI3G Message to XML Element

All these elements are found in the schemas called mmtel_aggregated_service.xsd and mmtel_aggregated_profile.xsd and service_number.xsd. These schemas import or include all the other schemas that are required to define these XML elements and integrate them into the generic CAI3G schema. The schema files that are used on this interface are found in ref [9] in zipped form.

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3.2 Managed Objects

CAI3G requires that each of three extension elements (listed in Table 5) is tightly linked to the managed object instance. The rules governing this linkage and the management of keys for each element are explained in the following sections.

3.2.1 Managed Object Identification for Create and GetResponse Messages

The key attribute and the key element of Create and GetResponse messages must have the same value. These key values must match the value of the 'publicId' in MOId.

This fragment of an XML example shows

- 'createMMTel' has an attribute 'publicId'. This is a key.
- Element 'publicId' is contained in 'createMMTel'. This is also a key.
- The values of a) and b) must match each other
- The values of a) and b) must match the 'publicId' contained in 'MOId'

An example is shown in the fragment below

```
<cai3g:Create>
:
<cai3g:MOId>
  <mc:publicId>sip:user@telco.com</mc:publicId>
</cai3g:MOId>
<cai3g:MOAttributes>
  <mc:createMMTel publicId="sip:user@telco.com">
    <mc:publicId>sip:user@telco.com</mc:publicId>
    :
  </mc:createMMTel>
</cai3g:MOAttributes>
</cai3g:Create>
```

The same pattern applies to createMMTelProfile within a Create message and to getResponseMMTel and getResponseMMTelProfile within GetResponse messages.

3.2.2 Managed Object Identification for Set Messages

The fragment of an XML example (provided below) shows that 'setMMTel' has an attribute 'publicId'. This is a key. The value of this key must match the value of 'publicId' that is contained in 'MOId'

An example is shown in the fragment below:

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```

<cai3g:Set>
:
  <cai3g:MOId>
    <mc:publicId>sip:user@telco.com</mc:publicId>
  </cai3g:MOId>
  <cai3g:MOAttributes>
    <mc:setMMTel publicId= »sip:user@telco.com »>
    :
    </mc:setMMTel>
  </cai3g:MOAttributes>
</cai3g:Set>

```

The same pattern applies to setMMTelProfile.

3.3 Concurrency Control

The Set Request contains an optional element called concurrency-control. If this element is populated with the most recent version of the MMTel document that is known to the CAI3G manager and if the document version number has been updated with a later version number due to a more recent update then the Set request will be refused.

```

<cai3g:Set>
  <cai3g:MOType>MMTel@http://schemas.ericsson.com/mtas/mmtel/cai3g</cai3g:MOType>
  <cai3g:MOId>
    <mc:publicId>sip:user@telco.com</mc:publicId>
  </cai3g:MOId>
  <cai3g:MOAttributes>
    <mc:setMMTel publicId= »sip:user@telco.com »>
    <!--The next element is optional on a Set Request-->
    <mc:concurrency-control>788</mc:concurrency-control>
    :
    </mc:setMMTel>
  </cai3g:MOAttributes>
</cai3g:Set>

```

The most recently updated copy of the user's MMTel document can be obtained from the Get Response.

```

<cai3g:Get Response>
  <cai3g:MOType>MMTel@http://schemas.ericsson.com/mtas/mmtel/cai3g</cai3g:MOType>
  <cai3g:MOId>
    <mc:publicId>sip:user@telco.com</mc:publicId>
  </cai3g:MOId>
  <cai3g:MOAttributes>
    <mc:setMMTel publicId= »sip:user@telco.com »>
    <!--The next element will always be present-->
    <mc:concurrency-control>788</mc:concurrency-control>
    :
    </mc:setMMTel>
  </cai3g:MOAttributes>
</cai3g:GetResponse>

```

3.4 Extension by the XML wildcard

It is a point of principle that the schemas defining this interface will not contain the XML wildcard particle (i.e. xs:any).

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3.5 Whitespace and Comments

Examples in this document include whitespace and comments for human readability. These are not formally part of the managed object model so they will not be stored. For example if the following fragment is included in a Set request:

```
<mc:many domain="a.com">
  <!--creation -->
  <mc:domain>a.com</mc:domain>
</mc:many>
```

then this would appear in a subsequent GetResponse without comments or whitespace as follows:

```
<mc:many domain="a.com"><mc:domain>a.com</mc:domain></mc:many>
```

4 Document Updates

4.1 Create Request

A CAI3G create can

1. Create an empty MMTel document
2. Create an MMTel document and the request also includes document contents to be created. This scenario is referred to as 'create with contents'
3. If an existing document is updated with a create command, then the contents is replaced with the new create settings.

If no document exists there will be no contents before a Create Request , the complications of a Set Request do not apply.

Note: If the sign "#" is going to be used it must be escaped (%23).

4.2 Delete Request

A CAI3G Delete request will delete the document and the contents (if any). Deletion of an element within a document is achieved by a Set Request.

4.3 Set Request

The CAI3G protocol classifies every XML element as either

- Single-Value Parameter
- Multi-Value Parameter
- Structured Parameter
- Sub-Managed Object (MO)

Reference [1] gives further details of these classifications.

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Special rules apply to the update of these types which are explained in the following sub-sections

In general, the CAI3G protocol allows for updates of individual elements at the finest level. The consequence of this approach is that optional elements can be created within a Set request.

A Set request also permits the update of existing elements. Additionally, elements that are categorized as sub-Managed Objects can be renamed by a Set Request.

Note: If the sign "#" is going to be used it must be escaped (%23).

4.3.1 Multi-Value Parameter

Instances of a multi-value parameter cannot be updated individually and the smallest granularity of update is all instances.

The fragment below gives an example of an element 'media' which is a multi-value parameter. By definition, the contents of 'media' must be simple and the instance of 'media' can occur more than once.

```
<mc:cdiv-conditions>
  <mc:media>audio</mc:media>
  <mc:media>image</mc:media>
  <mc:media>message</mc:media>
  <mc:media>model</mc:media>
  <mc:media>multipart</mc:media>
  <mc:media>text</mc:media>
  <mc:media>video</mc:media>
</mc:cdiv-conditions>
```

This means that receipt of this fragment in a Set request

```
<mc:cdiv-conditions>
  <mc:media>audio</mc:media>
  <mc:media>video</mc:media>
</mc:cdiv-conditions>
```

will result in the following in a subsequent GetResponse:

```
<mc:cdiv-conditions>
  <mc:media>audio</mc:media>
  <mc:media>video</mc:media>
</mc:cdiv-conditions>
```

Note: All the other 'media' elements that existed before the request was processed are deleted

4.3.2 Sub-Managed Object

The following sections show how CAI3G uses a combination of element keys and attribute keys to indicate which request type (i.e. create. Update or rename) is indicated.

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4.3.2.1 Create

If the attribute key and the element key of the contained MO are both present and if they match each other then the request is considered to be a 'create'.

This is shown in this fragment where the id 'new-sub-MO' appears as a key element and also as an attribute element of the cdiv-rule sub-MO.

```
<mc:cdiv-rule id="new-sub-MO">
  <mc:id>new-sub-MO</mc:id>
  <mc :cdiv-conditions/>
  <mc :cdiv-actions>
    <mc:forward-to>
      <mc:target>sip:secretary@telco.com</mc:target>
    </mc:forward-to>
  </mc:cdiv-actions>
</mc:cdiv-rule>
```

4.3.2.2 Update

If the attribute key is present and the element key is absent then the request is considered to be update to an existing element.

This is shown in this fragment where the id 'existing-sub-MO' only appears as an attribute key.

```
<mc:cdiv-rule id="existing-sub-MO">
  <mc :cdiv-conditions/>
  <mc :cdiv-actions>
    <mc:forward-to>
      <mc:target>sip:secretary@telco.com</mc:target>
    </mc:forward-to>
  </mc:cdiv-actions>
</mc:cdiv-rule>
```

4.3.2.3 Rename

If the attribute key and the element key of the contained MO are both present and if, the key values do not match each other and if the attribute key matches an existing instance then the request is considered to be a rename.

This is shown in this fragment where the id 'existing-sub-MO' appears as an attribute key. The id 'new-sub-MO' is an element key.

```
<mc:cdiv-rule id="existing-sub-MO">
  <mc:id>new-sub-MO</mc:id>
</mc:cdiv-rule>
```

The result is that existing rule whose id is 'existing-sub-MO' is renamed with new rule with an id 'new-sub-MO'.

It is possible to rename and update the contents of a sub-MO at the same time, as follows:

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```
<mc:cdiv-rule id="existing-sub-MO">
  <mc:id>new-sub-MO</mc:id>
  <mc:cdiv-actions>
    <mc:forward-to>
      <mc:target>sip:secretary@telco.com</mc:target>
    </mc:forward-to>
  </mc:cdiv-actions>
</mc:cdiv-rule>
```

4.3.2.4 Possible key combinations

In addition to the three combinations shown above, the other possible combinations of

- (a) attribute-key in request
- (b) element-key in request
- (c) existing attribute key

are shown in the following table

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Attribute Key	Element Key	Existing Attribute Key	Outcome
id = X	id = X	id <> X	Create new-id instance (Described in section 4.3.2.1)
id = X	id = X	id = X	Error. Request to create but instance exists
id = X	id = Y	id = X	Rename instance with id = X to id = Y. (Described in section 4.3.2.3)
id = X	id = Y	id <> X or Y	Error. Cannot rename a non existent instance
id = X	id = Y	id = Y	Error. Request to rename an instance to a id that already exists
id = X	Not present	id = X	Update instance whose id=X (Described in section 4.3.2.2)
id = X	Not present	id <> X	Error. Request to update non-existent instance
Not present	n/a	n/a	Key Attribute is mandatory → validation error

Table 6 – Possible key combinations

4.3.3 Positioning of sub-Managed Objects

The order of the rules in a Service Element such as Communication Diversion is important. This section shows how the ordering of the 'rule' sub-MO can be controlled within a ruleset. The sequence of sub-Mos of a given type in a Set request will appear as contiguous elements in resulting configuration. This is shown in more detail through a series of examples.

For example purposes, the user already has the CDIV service with these rules:

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```
<mc:cdiv-ruleset>
  <mc:cdiv-rule id="cfb">
    <mc:cdiv-conditions>
      <mc:cdiv-call-state>busy</mc:cdiv-call-state>
    </mc :cdiv-conditions>
    <mc :cdiv-actions>
      <mc:forward-to>
        <mc:target>sip:secretary@telco.com</mc:target>
      </mc:forward-to>
    </mc:cdiv-actions>
  </mc:cdiv-rule>
  <mc:cdiv-rule id="cfnr">
    <mc:cdiv-conditions>
      <mc:cdiv-call-state>no-answer</mc:cdiv-call-state>
    </mc :cdiv-conditions>
    <mc :cdiv-actions>
      <mc:forward-to>
        <mc:target>sip:answering-service@telco.com</mc:target>
      </mc:forward-to>
    </mc:cdiv-actions>
  </mc:cdiv-rule>
  <mc:cdiv-rule id="anon">
    <mc:cdiv-conditions>
      <mc:cdiv-caller-identity>
        <mc:anonymous/>
      </mc:cdiv-caller-identity>
    </mc:cdiv-conditions>
    <mc:cdiv-actions>
      <mc:forward-to>
        <mc:target>sip:recorded-message@telco.com</mc:target>
      </mc:forward-to>
    </mc:cdiv-actions>
  </mc:cdiv-rule>
</mc:cdiv-ruleset>
```

This is the starting state for each of the following examples.

The parts of the request that affect sub-MO positioning will be processed in the following order

1. Insertion
2. Re-ordering
3. Deletion

4.3.3.1 Insert a rule without constraint

Set using this fragment

```
<mc:cdiv-ruleset>
  <mc:cdiv-rule id="cfu">
    <mc:id>cfu</mc:id>
    :
  </mc:cdiv-rule>
</mc:cdiv-ruleset>
```

The new rule will be appended after the last current rule which will result in the following outcome as seen in a subsequent GetResponse:

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```
<mc:cdiv-ruleset>
  <mc:cdiv-rule id="cfb">
    :
  </mc:cdiv-rule>
  <mc:cdiv-rule id="cfnr">
    :
  </mc:cdiv-rule>
  <mc:cdiv-rule id="anon">
    :
  </mc:cdiv-rule>
  <mc:cdiv-rule id="cfu">
    :
  </mc:cdiv-rule>
</mc:cdiv-ruleset>
```

4.3.3.2 Insert a rule after an existing rule

This fragment requests that a new rule ("cfu") is inserted after an existing rule (i.e. "cfnr"). This is indicated by including the identity of "cfnr" before the new rule.

```
<mc:cdiv-ruleset>
  <mc:cdiv-rule id="cfnr"/>
  <mc:cdiv-rule id="cfu">
    <mc:id>cfu</ mc:id>
    :
  </mc:cdiv-rule>
</mc:cdiv-ruleset>
```

This results in the following outcome as seen in a subsequent GetResponse:

```
<mc:cdiv-ruleset>
  <mc:cdiv-rule id="cfb">
    :
  </mc:cdiv-rule>
  <mc:cdiv-rule id="cfnr">
    :
  </mc:cdiv-rule>
  <mc:cdiv-rule id="cfu">
    :
  </mc:cdiv-rule>
  <mc:cdiv-rule id="anon">
    :
  </mc:cdiv-rule>
</mc:cdiv-ruleset>
```

4.3.3.3 Insert a rule before an existing rule

This fragment requests that a new rule ("cfu") is inserted before an existing rule (i.e. "cfnr"). This is indicated by including the identity of "cfnr" after the new rule.

```
<mc:cdiv-ruleset>
  <mc:cdiv-rule id="cfu">
    <mc:id>cfu</mc:id>
    :
  </mc:cdiv-rule>
  <mc:cdiv-rule id="cfnr"/>
</mc:cdiv-ruleset>
```

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This results in the following outcome as seen in a subsequent GetResponse:

```
<mc:cdiv-ruleset>
  <mc:cdiv-rule id="cfb">
    :
  </mc:cdiv-rule>
  <mc:cdiv-rule id="cfu">
    :
  </mc:cdiv-rule>
  <mc:cdiv-rule id="cfnr">
    :
  </mc:cdiv-rule>
  <mc:cdiv-rule id="anon">
    :
  </mc:cdiv-rule>
</mc:cdiv-ruleset>
```

4.3.3.4 Insert a rule between two adjacent rules (tight constraint)

This fragment requests that a new rule ("cfu") is inserted before an existing rule (i.e. "cfnr") and after an existing rule (i.e. "cfb"). This is indicated by including the identity of "cfb" before the new rule and including the identity of "cfnr" after the new rule.

```
<mc:cdiv-ruleset>
  <mc:cdiv-rule id="cfb"/>
  <mc:cdiv-rule id="cfu">
    <mc:id>cfu</mc:id>
    :
  </mc:cdiv-rule>
  <mc:cdiv-rule id="cfnr"/>
</mc:cdiv-ruleset>
```

This results in the following outcome as seen in a subsequent GetResponse:

```
<mc:cdiv-ruleset>
  <mc:cdiv-rule id="cfb">
    :
  </mc:cdiv-rule>
  <mc:cdiv-rule id="cfu">
    :
  </mc:cdiv-rule>
  <mc:cdiv-rule id="cfnr">
    :
  </mc:cdiv-rule>
  <mc:cdiv-rule id="anon">
    :
  </mc:cdiv-rule>
</mc:cdiv-ruleset>
```

4.3.3.5 Insert a rule between two existing non-adjacent rules.

This fragment requests that a new rule ("cfu") is inserted before an existing rule (i.e. "anon") and after an existing rule (i.e. "cfb"). This is indicated by including the identity of "cfb" before the new rule and including the identity of "anon" after the new rule.

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```
<mc:cdiv-ruleset>
  <mc:cdiv-rule id="cfb"/>
  <mc:cdiv-rule id="cfu">
    <mc:id>cfu</mc:id>
    :
  </mc:cdiv-rule>
  <mc:cdiv-rule id="anon"/>
</mc:cdiv-ruleset>
```

This results in the following outcome as seen in a subsequent GetResponse:

```
<mc:cdiv-ruleset>
  <mc:cdiv-rule id="cfb">
    :
  </mc:cdiv-rule>
  <mc:cdiv-rule id="cfu">
    :
  </mc:cdiv-rule>
  <mc:cdiv-rule id="anon">
    :
  </mc:cdiv-rule>
  <mc:cdiv-rule id="cfnr">
    :
  </mc:cdiv-rule>
</mc:cdiv-ruleset>
```

Note that the elements which are contiguous in the request end up contiguous in the result which in this case means reordering the rules "anon" and "cfnr".

4.3.3.6 Re-ordering of existing rules (Partial Definition)

This fragment specifies a reordering of some of the rules that currently exist

```
< mc:cdiv-ruleset>
  < mc:cdiv-rule id="anon"/>
  < mc:cdiv-rule id="cfnr"/>
</ mc:cdiv-ruleset>
```

This results in the following outcome as seen in a subsequent GetResponse:

```
<mc:cdiv-ruleset>
  <mc:cdiv-rule id="cfb">
    :
  </mc:cdiv-rule>
  <mc:cdiv-rule id="anon">
    :
  </mc:cdiv-rule>
  <mc:cdiv-rule id="cfnr">
    :
  </mc:cdiv-rule>
</mc:cdiv-ruleset>
```

4.3.3.7 Re-ordering of existing rules (Full Definition)

This fragment specifies all three rules that currently exist but in a different order

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```
<mc:cdiv-ruleset>
  <mc:cdiv-rule id="anon"/>
  <mc:cdiv-rule id="cfnr"/>
  <mc:cdiv-rule id="cfb"/>
</mc:cdiv-ruleset>
```

The order of the rules after the request is processed is the same as the order of the request.

4.3.3.8 Insertion between reordered sub-Mos

This fragment requests that a new rule ("cfu") is inserted between existing rules, "anon" and "cfb" while simultaneously reordering these two existing rules.

```
<mc:cdiv-ruleset>
  <mc:cdiv-rule id="anon"/>
  <mc:cdiv-rule id="cfu">
    <mc:id>cfu</mc:id>
    :
  </mc:cdiv-rule>
  <mc:cdiv-rule id="cfb"/>
</mc:cdiv-ruleset>
```

This results in the following outcome as seen in a subsequent GetResponse:

```
<mc:cdiv-ruleset>
  <mc:cdiv-rule id="anon">
    :
  </mc:cdiv-rule>
  <mc:cdiv-rule id="cfu">
    :
  </mc:cdiv-rule>
  <mc:cdiv-rule id="cfb">
    :
  </mc:cdiv-rule>
  <mc:cdiv-rule id="cfnr">
    :
  </mc:cdiv-rule>
</mc:cdiv-ruleset>
```

4.3.3.9 Re-ordering Overview

Table 7 gives an overview of sub-MO ordering. All cases assume an existing document with sub-MO's with keys 1, 2 and 3 in that order. In the Set Contents column, values 1, 2 and 3 are references to these existing elements. The value A represents the key of a new sub-MO instance being inserted.

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Case	Set Contents	Outcome
insert, unconstrained (4.3.3.1)	A	1 2 3 A
insert after sub-MO (4.3.3.2)	2 A	1 2 A 3
insert before sub-MO (4.3.3.3)	A 2	1 A 2 3
insert between adjacent sub-Mos (tight constraint) (4.3.3.4)	1 A 2	1 A 2 3
insert between non-adjacent sub-Mos (4.3.3.5)	1 A 3	1 A 3 2
reorder, partial (4.3.3.6)	3 2	1 3 2
reorder, full (4.3.3.7)	3 2 1	3 2 1
insert between reordered sub-Mos (4.3.3.8)	3 A 1	3 A 1 2

Table 7 Sub-MO re-ordering overview

In the case of sub-Mos being deleted the outcome is as if the sub-Mos are reordered first, if necessary, before deletion. This means that sub-Mos being deleted can still provide position reference for other objects being inserted or moved.

This table specifies the MTAS behavior for a variety of possible requests. It is not necessary for a client of the interface to make use of all possible combinations.

4.3.4 Removing element instances

CAI3G imposes constraints on the use of XML attribute of “xsi:nil” on certain types of construct.

4.3.4.1 Single-Value Parameter

A single-value parameter cannot be “nilled”

4.3.4.2 Multi-Value Parameter

A multi-value parameter can be “nilled”.

4.3.4.3 Structured Parameter

A structured parameter can be “nilled”.

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4.3.4.4 Sub-MO

A sub-MO can be “nilled”.

4.3.5 Combinations

The various types of modifications that have been shown in this section can all occur in the same Set Request.

5 Document Validate

MMTel user and Service Profiles documents can be validated without performing the provisioning of the document. All checks and validations are done, but the document is not stored only responded.

These are the supported requests:

- CAI3G Create
- CAI3G Set

An element is added in the request to indicate validate.

The CAI3G Create for validate is not pulling the Implicit Registration Set (IRS) from HSS, because the user should not need to exist in HSS. Instead a faked IRS is created in MTAS to be able to do validate, but some checks will not work.

This is a list of the limitations:

The served-identity condition must not be used. If the served-identity is set, checks will fail in validation (CDIV, FCD, DR, ICB and OCB).

The checks related to the user's alias will not fail in the validation, but may fail when provisioning the user.

This means no check, if the user has

- diverted to an alias (CDIV)
- distributed to an alias (FCD, STOD)
- set Hotline number to an alias (HL)

5.1 Examples of CAI3G request

Example of CAI3G Create for user document:

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```
...
<cai3g:Create>
<cai3g:MOType>MMTel@http://schemas.ericsson.com/mtas/mmtel/cai3g</cai3
g:MOType>
<cai3g:MOId>
  <mc:publicId>sip:user@telco.com</mc:publicId>
</cai3g:MOId>
<cai3g:MOAttributes>
  <mc:createMMTel publicId="sip:user@telco.com">
    <mc:publicId>sip:user@telco.com</mc:publicId>
    <mc:validate/>
  </mc:createMMTel>
</cai3g:MOAttributes>
...

```

Example of CAI3G Set for user document:

```
...
<cai3g:Set>
<cai3g:MOType>MMTel@http://schemas.ericsson.com/mtas/mmtel/cai3g</cai3
g:MOType>
<cai3g:MOId>
  <mc:publicId>sip:user@telco.com</mc:publicId>
</cai3g:MOId>
<cai3g:MOAttributes>
  <mc:setMMTel publicId="sip:user@telco.com">
    <mc:validate/>
  </mc:setMMTel>
</cai3g:MOAttributes>
...

```

Example of CAI3G Create for Service Profiles document:

```
...
<cai3g:Create>
<cai3g:MOType>MMTelProfile@http://schemas.ericsson.com/mtas/mmtel/cai3
g</cai3g:MOType>
<cai3g:MOId>
  <mc:publicId>sip:user@telco.com</mc:publicId>
</cai3g:MOId>
<cai3g:MOAttributes>
  <mc:createMMTelProfile publicId="sip:bronze@telco.com">
    <mc:publicId>sip:user@telco.com</mc:publicId>
    <mc:validate/>
  </mc:createMMTelProfile>
</cai3g:MOAttributes>
...

```

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Example of CAI3G Set for Service Profiles document:

```
...
<cai3g:Set>
<cai3g:MOType>MMTelProfile@http://schemas.ericsson.com/mtas/mmtel/cai3
g</cai3g:MOType>
  <cai3g:MOId>
    <mc:publicId>sip:user@telco.com</mc:publicId>
  </cai3g:MOId>
  <cai3g:MOAttributes>
    <mc:setMMTelProfile publicId="sip:bronze@telco.com">
      <mc:validate/>
    </mc:setMMTelProfile>
  </cai3g:MOAttributes>
</cai3g:Set>
...
```

6 Information Model

6.1 General

Each of the MTAS-specific XML elements on the interface is described in the following sections. Indentation in the tables is used to indicate nesting in the corresponding XML structure.

The syntax is formally defined by the XML schema files available in ref [9].

Note: The Scheduled Conference and the Service Number related descriptions are not available in virtualized MTAS.

6.2 Create MMTel

The top level MTAS-specific XML element in a Create request to create MMTel user service data is <createMMTel>. Details are given in Table 8.

XML element	Description
<createMMTel>	Used to create MMTel user service data.
<publicId>	The default public user identity for the subscriber. This identity must already be configured on the HSS.
<validate>	The validate feature – see section 6.5 for details.
<abbreviated-dialing>	The abbreviated dialing service – see section 6.6 for details.
<advice-of-charge>	The advice of charge service – see section 6.7 for details.
<call-completion>	The communication completion service – see section 6.8 for details.
<call-completion-monitor-opt-out>	The communication completion monitor opt out service – see section 6.9 for details.
<call-return>	The call return service – see section 6.10 for details

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XML element	Description
<calling-name-identity-presentation>	The calling name identity presentation service – see section 6.11 for details.
<calling-party-category>	The calling party category service – see section 6.12 for details.
<carrier-pre-select>	The carrier pre-select service – see section 6.13 for details.
<carrier-pre-select-rn>	The carrier pre-select rn service – see section 6.14 for details.
<carrier-select>	The carrier select service – see section 6.15 for details.
<carrier-select-rn>	The carrier select rn service – see section 6.16 for details.
<closed-user-group>	The closed user group service – see section 6.17 for details.
<common-data>	The common data shared across services – see section 6.18 for details
<communication-distribution>	The communication distribution service – see section 6.19 for details.
<communication-diversion>	The communication diversion service – see section 6.20 for details.
<communication-diversion-no-answer-timer>	The communication diversion no answer timer service – see section 6.21 for details.
<communication-waiting>	The communication waiting service – see section 6.23 for details.
<conference>	The conference service – see section 6.24 for details.
<customized-alerting-tone>	The customized alerting tones service – see section 6.25 for details.
<dial-tone-management>	The dial tone management service – see section 6.26 for details.
<dialog-event-notifier>	The dialog event notifier service - see section 6.27 for details.
<distinctive-ring>	The distinctive ring service - see section 6.28 for details.
<dynamic-black-list>	The dynamic black list service – see section 6.29 for details.
<explicit-communication-transfer>	The explicit communication transfer service – see section 6.30 for details.
<flexible-identity-presentation>	The flexible identity presentation service – see section 6.31 for details.
<hotline>	The hotline service – see section 6.32 for details.
<incoming-communication-barring>	The incoming communication barring service – see section 6.33 for details.
<malicious-communication-identification>	The malicious communication identification service – see section 6.35 for details.
<malicious-communication-rejection>	The malicious communication rejection service – see section 6.36 for details.
<media-policy>	The media policy service – see section 6.37 for details.

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XML element	Description
<multi-device-conference-policy>	The multi device conference policy service – see section 6.38 for details.
<multi-device-user-call-admission-control>	The multi device user call admission control service – see section 6.39 for details.
<northbound-call-control>	The northbound call control service – see section 6.40 for details.
<number-portability-announcement>	The number portability announcement service – see section 6.41 for details.
<operator-controlled-outgoing-barring-programs>	The operator controlled outgoing barring programs service – see section 6.42 for details.
<outgoing-barring-programs>	The outgoing barring programs service – see section 6.43 for details.
<outgoing-communication-barring>	The outgoing communication barring service – see section 6.44 for details.
<originating-calling-name-identity-presentation>	The originating calling name identity presentation service – see section 6.46 for details.
<originating-identity-presentation>	The originating identity presentation service – see section 6.47 for details.
<originating-identity-presentation-restriction>	The originating identity presentation restriction service – see section 6.48 for details.
<priority-call>	The priority call service – see section 6.49 for details.
<session-transfer-to-own-device>	The session transfer to own device service – see section 6.50 for details.
<supplementary-service-codes>	The supplementary service codes service – see section 6.51 for details.
<terminating-identity-presentation>	The terminating identity presentation service – see section 6.52 for details.
<terminating-identity-presentation-restriction>	The terminating identity presentation restriction service – see section 6.53 for details.
<three-pty>	The three party service – see section 6.54 for details.
<user-call-admission-control>	The user call admission control service – see section 6.55 for details
<user-common-data>	Common user data available to multiple services – see section 6.56 for details.
<voice-mail>	The voice mail service – see section 6.57 for details.

Table 8 – Create MMTel Top Level XML Elements

The order of services is significant. Where more than one service is included in a request they must appear in the order shown.

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6.3 Set MMTel

The top level MTAS-specific XML element in a Set request to modify MMTel user service data is <setMMTel>. Details are given in Table 9.

XML element	Description
<setMMTel>	Used to modify MMTel user service data.
<validate>	The validate feature – see section 6.5 for details
<concurrency-control>	The <concurrency-control> element is an optional element to control concurrent updates. If present then the set request will be accepted only if the service data version is still at the value given in this element i.e. no other updates have been performed. It is of type integer.
<abbreviated-dialing>	The abbreviated dialing service – see section 6.6 for details.
<advice-of-charge>	The advice of charge service – see section 6.7 for details.
<call-completion>	The communication completion service – see section 6.8 for details.
<call-completion-monitor-opt-out>	The communication completion monitor opt out service – see section 6.9 for details.
<call-return>	The call return service – see section 6.10 for details
<calling-name-identity-presentation>	The calling name identity presentation service – see section 6.11 for details.
<calling-party-category>	The calling party category service – see section 6.12 for details.
<carrier-preselect>	The carrier pre-select service – see section 6.13 for details.
<carrier-pre-select-rn>	The carrier pre-select rn service – see section 6.14 for details.
<carrier-select>	The carrier select service – see section 6.15 for details.
<carrier-select-rn>	The carrier select rn service – see section 6.16 for details.
<closed-user-group>	The closed user group service – see section 6.17 for details.
<common-data>	The common data shared across services – see section 6.18 for details
<communication-distribution>	The communication distribution service – see section 6.19 for details.
<communication-diversion>	The communication diversion service – see section 6.20 for details.
<communication-diversion-no-answer-timer>	The communication diversion no answer timer service – see section 6.21 for details.
<communication-waiting>	The communication waiting service – see section 6.23 for details.

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XML element	Description
<conference>	The conference service – see section 6.24 for details.
<customized-alerting-tone>	The customized alerting tones service – see section 6.25 for details.
<dial-tone-management>	The dial tone management service – see section 6.26 for details.
<dialog-event-notifier>	The dialog event notifier service - see section 6.27 for details.
<distinctive-ring>	The distinctive ring service - see section 6.28 for details.
<dynamic-black-list>	The dynamic black list service – see section 6.29 for details.
<explicit-communication-transfer>	The explicit communication transfer service – see section 6.30 for details.
<flexible-identity-presentation>	The flexible identity presentation service – see section 6.31 for details.
<hotline>	The hotline service – see section 6.32 for details.
<incoming-communication-barring>	The incoming communication barring service – see section 6.33 for details.
<malicious-communication-identification>	The malicious communication identification service – see section 6.35 for details.
<malicious-communication-rejection>	The malicious communication rejection service – see section 6.36 for details.
<media-policy>	The media policy service – see section 6.37 for details.
<multi-device-conference-policy>	The multi device conference policy service – see section 6.38 for details.
<multi-device-user-call-admission-control>	The multi device user call admission control service – see section 6.39 for details.
<northbound-call-control>	The northbound call control service – see section 6.40 for details.
<number-portability-announcement>	The number portability announcement service – see section 6.41 for details.
<operator-controlled-outgoing-barring-programs>	The operator controlled outgoing barring programs service – see section 6.42 for details.
<outgoing-barring-programs>	The outgoing barring programs service – see section 6.43 for details.
<outgoing-communication-barring>	The outgoing communication barring service – see section 6.44 for details.
<originating-calling-name-identity-presentation>	The originating calling name identity presentation service – see section 6.46 for details.
<originating-identity-presentation>	The originating identity presentation service – see section 6.47 for details.
<originating-identity-presentation-restriction>	The originating identity presentation restriction service – see section 6.48 for details.
<priority-call>	The priority call service – see section 6.49 for details.

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XML element	Description
<session-transfer-to-own-device>	The session transfer to own device service – see section 6.50 for details.
<supplementary-service-codes>	The supplementary service codes service – see section 6.51 for details.
<terminating-identity-presentation>	The terminating identity presentation service – see section 6.52 for details.
<terminating-identity-presentation-restriction>	The terminating identity presentation restriction service – see section 6.53 for details
<three-pty>	The three party service – see section 6.54 for details.
<user-call-admission-control>	The user call admission control service – see section 6.55 for details
<user-common-data>	Common user data available to multiple services – see section 6.56 for details.
<voice-mail>	The voice mail service – see section 6.57 for details.

Table 9 – Set MMTel Top Level XML Elements

The order of services is significant. Where more than one service is included in a request they must appear in the order shown.

6.4 Get Response MMTel

The top level MTAS-specific XML element in a Get Response with the current MMTel user service data is <getResponseMMTel>. Details are given in Table 10.

XML element	Description
<getResponseMMTel>	Contains the currently configured MMTel user service data.
<publicId>	The default public user identity for the subscriber.
<concurrency-control>	The <concurrency-control> element is an integer value indicating the current version of the MMTel service data. This value can be used in a subsequent <setMMTel> request to make sure that no changes have been made to the service data since the version that was read.
<abbreviated-dialing>	The abbreviated dialing service – see section 6.6 for details.
<advice-of-charge>	The advice of charge service – see section 6.7 for details.
<call-completion>	The communication completion service – see section 6.8 for details.
<call-completion-monitor-opt-out>	The communication completion monitor opt out service – see section 6.9 for details.

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XML element	Description
<call-return>	The call return service – see section 6.10 for details
<calling-name-identity-presentation>	The calling name identity presentation service – see section 6.11 for details
<calling-party-category>	The calling party category service – see section 6.12 for details.
<carrier-preselect>	The carrier pre-select service – see section 6.13 for details.
<carrier-pre-select-rn>	The carrier pre-select rn service – see section 6.14 for details.
<carrier-select>	The carrier select service – see section 6.15 for details.
<carrier-select-rn>	The carrier select rn service – see section 6.16 for details.
<closed-user-group>	The closed user group service – see section 6.17 for details.
<common-data>	The common data shared across services – see section 6.18 for details
<communication-distribution>	The communication distribution service – see section 6.19 for details.
<communication-diversion>	The communication diversion service – see section 6.20 for details.
<communication-diversion-no-answer-timer>	The communication diversion no answer timer service – see section 6.21 for details.
<communication-waiting>	The communication waiting service – see section 6.23 for details.
<conference>	The conference service – see section 6.24 for details.
<customized-alerting-tone>	The customized alerting tones service – see section 6.25 for details.
<dial-tone-management>	The dial tone management service – see section 6.26 for details.
<dialog-event-notifier>	The dialog event notifier service - see section 6.27 for details.
<distinctive-ring>	The distinctive ring service - see section 6.28 for details.
<dynamic-black-list>	The dynamic black list service – see section 6.29 for details.
<explicit-communication-transfer>	The explicit communication transfer service – see section 6.30 for details.
<flexible-identity-presentation>	The flexible identity presentation service – see section 6.31 for details.
<hotline>	The hotline service – see section 6.32 for details.
<incoming-communication-barring>	The incoming communication barring service – see section 6.33 for details.
<malicious-communication-identification>	The malicious communication identification service – see section 6.35 for details.
<malicious-communication-rejection>	The malicious communication rejection service – see section 6.36 for details.

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XML element	Description
<media-policy>	The media policy service – see section 6.37 for details.
<multi-device-conference-policy>	The multi device user conference policy service – see section 6.38 for details.
<multi-device-user-call-admission-control>	The multi device user call admission control service – see section 6.39 for details.
<northbound-call-control>	The northbound call control service – see section 6.40 for details.
<number-portability-announcement>	The number portability announcement service – see section 6.41 for details.
<operator-controlled-outgoing-barring-programs>	The operator controlled outgoing barring programs service – see section 6.42 for details.
<outgoing-barring-programs>	The outgoing barring programs service – see section 6.43 for details.
<outgoing-communication-barring>	The outgoing communication barring service – see section 6.44 for details.
<originating-calling-name-identity-presentation>	The originating calling name identity presentation service – see section 6.46 for details.
<originating-identity-presentation>	The originating identity presentation service – see section 6.47 for details.
<originating-identity-presentation-restriction>	The originating identity presentation restriction service – see section 6.48 for details.
<priority-call>	The priority call service – see section 6.49 for details.
<session-transfer-to-own-device>	The session transfer to own device service – see section 6.50 for details.
<supplementary-service-codes>	The supplementary service codes service – see section 6.51 for details.
<terminating-identity-presentation>	The terminating identity presentation service – see section 6.52 for details.
<terminating-identity-presentation-restriction>	The terminating identity presentation restriction service – see section 6.53 for details.
<three-pty>	The three party service – see section 6.54 for details.
<user-call-admission-control>	The user call admission control service – see section 6.55 for details.
<user-common-data>	Common user data available to multiple services – see section 6.56 for details.
<voice-mail>	The voice mail service – see section 6.57 for details.

Table 10 – Get Response MMTel Top Level XML Elements

6.5 Validate

The XML element for the validate is detailed in Table 11

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XML element	Description
<validate>	The validate feature is used when the request must be validated but not stored in the HSS.

Table 11 – Validate XML Elements

6.6 Abbreviated Dialing

The XML elements for the abbreviated dialing service are detailed in Table 12.

XML element	Description
<abbreviated-dialing>	The abbreviated dialing service. Use xsi:nil="true" to withdraw the entire service.
<abbreviated-dialing-operator-configuration>	The configuration parameters for the abbreviated dialing service that are available to the operator rather than the user. This must be present on the creation of the <abbreviated-dialing> service.
<activated>	The activated element has values "true", "false". When set to "true" the user is provisioned with the abbreviated dialing service. If set to "false" this will withdraw the user service, but the abbreviated-dialing-user-configuration element must be preserved. This must be present on the creation of the abbreviated-dialing service.
<abbreviated-dialing-user-configuration>	The configuration parameters for the abbreviated dialing service that are available for the user to set directly. These can also be set on the user's behalf by the operator. This shall only be present if the service is provisioned i.e. <abbreviated-dialing-operator-configuration> is present and activated is "true".
<active>	The <active> element has values "true" or "false". It controls whether the abbreviated dialing service is active or not for this subscriber.
<number-mapping>	The <number-mapping> element specifies the mapping between an abbreviated number and the full stored number to be substituted when the abbreviated number is dialed. The <number-mapping> element is a sub-MO allowing multiple instances with "abbreviated-number" as the unique key.
<abbreviated-number>	The abbreviated form of a number between 0 and 99. This must be present on the creation of a <number-mapping> element.
<stored-number>	The stored number in its full form, which is substituted when the user dials the corresponding abbreviated number. The <stored-number> is a sip: or tel: URI. Each tel: URI and sip: URI that was converted from a tel: URI according to section 19.1.6 of RFC 3261 [5] contains a normalized number, or a number that can be normalized after removing a dynamic ad-hoc presentation SSC and/or a CSC. This must be present on the creation of a <number-mapping> element.

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Table 12 – Abbreviated Dialing XML Elements

6.7 Advice of Charge

The XML elements for the advice of charge service are detailed in Table 13.

XML element				Description
<advice-of-charge>				The <advice-of-charge> service. Use xsi:nil="true" to withdraw the entire service.
	<aoc-operator-configuration>			The configuration parameters for the <advice-of-charge> service that are available to the operator rather than the user. This must be present on the creation of the <advice-of-charge> service.
		<activated>		The activated element has values "true" or "false". When set to "true" the user is provisioned with the advice of charge service. If set to "false" this will withdraw the service from the user. This must be present on the creation of the advice-of-charge service.
		<service-type>		The <service-type> element contains the advice of charge service types. This must be present on the creation of the <advice of charge> service.
		<operator-aoc-s>		The presence of the <operator-aoc-s> element indicates that the user is provisioned with the AOC-S(tart) service type.
			<activated>	The <activated> element has values "true" or "false". When set to "true" the service type is activated. This must be present on the creation of the parent service type.
			<aoc-service-obligatory>	The <aoc-service-obligatory> indicates that the user is provisioned with the obligatory type of AOCl(information) for this service type. This must be present on the creation of the parent service type.
		<operator-aoc-d>		The presence of the <operator-aoc-d> element indicates that the user is provisioned with the AOC-D(uring) service type.
			<activated>	The <activated> element has values "true" or "false". When set to "true" the service type is activated. This must be present on the creation of the parent service type.
			<aoc-service-obligatory>	The <aoc-service-obligatory> indicates that the user is provisioned with the obligatory type of AOCl(information) for this service type. This must be present on the creation of the parent service type.
		<operator-aoc-e>		The presence of the <operator-aoc-e> element indicates that the user is provisioned with the AOC-E(nd) service type.
			<activated>	The <activated> element has values "true" or "false". When set to "true" the service type is activated. This must be present on the creation of the parent service type.
			<aoc-service-obligatory>	The <aoc-service-obligatory> indicates that the user is provisioned with the obligatory type of AOCl(information) for this service type. This must be present on the creation of the parent service type.

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XML element			Description
		<currency-or-units>	The <currency-or-units> element contains the user's choice of how advice of charge data should be presented. This element must be present on the creation of the <advice-of-charge> service.
		<currency-as-ISO-4217-numeric>	The presence of the <currency-as-ISO-4217-numeric> element indicates that the user prefers to receive his advice of charge data in currency. The element content is a numeric value that indicates the actual currency as defined by ISO 4217. The elements <currency-as-ISO-4217-numeric> and <units> are mutually exclusive.
		<units>	The presence of the <units> element indicates that the user prefers to receive his advice of charge data in units. The elements <currency-as-ISO-4217-numeric> and <units> are mutually exclusive.

Table 13 – Advice of Charge XML Elements

6.8 Communication Completion

The XML elements for the communication completion service are detailed in Table 14.

XML element			Description
		<call-completion>	The communication completion service. Use xsi:nil="true" to withdraw the entire service.
		<cc-operator-configuration>	The configuration parameters for the communication completion service that are available to the operator rather than the user. This must be present on the creation of the <call-completion> service.
		<activated>	The activated element has values "true" or "false". When set to "true" the user is provisioned with the communication completion service. If set to "false" this withdraws the service from the user. This must be present on the creation of the call-completion service.
		<ccbs>	The <ccbs> element has values "activated" or "deactivated". When set to "activated" it provisions the user with the communication completion on busy service.
		<ccnr>	The <ccnr> element has values "activated" or "deactivated". When set to "activated" it provisions the user with the communication completion by no reply service.
		<ccnl>	The <ccnl> element has values "activated" or "deactivated". When set to "activated" it provisions the user with the communication completion on not logged-in service.

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XML element		Description
	<ccivr>	The <ccivr> element has values “activated” or “deactivated”. When set to “activated” it provisions the user with the communication completion Interactive Voice Recognition (IVR) feature for all the types of communication completion that the user has activated.
	<cc-monitor-queue-size>	The <cc-monitor-queue-size> element is an optional element to set the size of the monitor queue on the terminating MTAS. If present, it provisions the subscriber with an alternative queue size which overrides the CM attribute mtasCcMonitorQueueSize. It is of type integer.
	<max-number-of-ccbs-requests-in-monitor-queue>	The <max-number-of-ccbs-requests-in-monitor-queue> element is an optional element to set the limit on the number of CCBS service requests in the monitor queue on the terminating MTAS. This element is mandatory in case <cc-monitor-queue-size> has been provisioned and not allowed in case <cc-monitor-queue-size> has not been provisioned. It is of type integer.
	<max-number-of-ccnr-requests-in-monitor-queue>	The <max-number-of-ccnr-requests-in-monitor-queue> element is an optional element to set the limit on the number of CCNR service requests in the monitor queue on the terminating MTAS. This element is mandatory in case <cc-monitor-queue-size> has been provisioned and not allowed in case <cc-monitor-queue-size> has not been provisioned. It is of type integer.
	<max-number-of-ccnl-requests-in-monitor-queue>	The <max-number-of-ccnl-requests-in-monitor-queue> element is an optional element to set the limit on the number of CCNL service requests in the monitor queue on the terminating MTAS. This element is mandatory in case <cc-monitor-queue-size> has been provisioned and not allowed in case <cc-monitor-queue-size> has not been provisioned. It is of type integer.

Table 14 – Communication Completion XML Elements

6.9 Communication Completion Monitor Opt Out

The XML elements for the communication completion monitor opt out service are detailed in Table 15.

XML element		Description
	<call-completion-monitor-opt-out>	The communication completion monitor opt out service. This allows a subscriber to be opted out of being monitored to support communication completion services to that subscriber. This is specified as an opt-out because the communication completion is more valuable the more targets for which communication completion is possible. Use xsi:nil=”true” to withdraw the entire service.
	<cc-monitor-opt-out-operator-configuration>	The configuration parameters for the communication completion monitor opt out service that are available to the operator rather than the user. This must be present on the creation of the <call-completion-monitor-opt-out> service.

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XML element		Description
	<activated>	The <activated> element has values “true” or “false”. When set to “true” the user is provisioned with the communication completion monitor opt out service. If set to “false” this will withdraw the service from the user. This must be present on the creation of the <call-completion-monitor-opt-out> service. Note: There are optional sub-options for this service that are of the activation type. If a sub-option is present and is set to the “deactivated” value, then the opt out is overridden and communication completion is offered for that sub-option of communication completion. If a sub-option is present and is set to the “activated” value, or the sub-option is not provided at all, then the opt out applies and no communication completion is offered.
	<ccbs>	The <ccbs> element has values “activated” or “deactivated”. When set to “deactivated” it disables the monitor opt out for the communication completion on busy service and ccbs is offered from the served user. When set to the value “activated”, the opt out applies.
	<ccnr>	The <ccnr> element has values “activated” or “deactivated”. When set to “deactivated” it disables the monitor opt out for the communication completion by no reply service and ccnr is offered from the served user. When set to the value “activated”, the opt out applies.
	<ccnl>	The <ccnl> element has values “activated” or “deactivated”. When set to “deactivated” it disables the monitor opt out for the communication completion by not logged-in service and ccnl is offered from the served user. When set to the value “activated”, the opt out applies.

Table 15 – Communication Completion Monitor Opt Out XML Elements

6.10 Call Return

The XML elements for the call return service are detailed in Table 16.

XML element		Description
	<call-return>	The call return service. Use xsi:nil=”true” to withdraw the entire service.
	<call-return-operator-configuration>	The configuration parameters for the call return service that are available to the operator rather than the user. This must be present on the creation of the <call-return> service.
	<activated>	The activated element has values “true” or “false”. When set to “true” the user is provisioned with the call return service. This must be present on the creation of the call return service.

Table 16 - Call Return XML elements

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6.11 Calling Name Identity Presentation

The XML elements for the calling name identity presentation service are detailed in Table 17.

XML element		Description
<calling-name-identity-presentation>		The calling name identity presentation service. Use <code>xsi:nil="true"</code> to withdraw the entire service.
	<cnip-operator-configuration>	The configuration parameters for the calling name identity presentation service that are available to the operator rather than the user. This must be present on the creation of the <calling-name-identity-presentation> service.
	<activated>	The activated element has values "true" or "false". When set to "true" the user is provisioned with the calling name identity presentation service. If set to "false" this will withdraw the user service, but the <code>cnip-user-configuration</code> element is kept. This must be present on the creation of the calling-name-identity-presentation service.
	<cnip-user-configuration>	The configuration parameters for the calling name identity presentation service that are available for the user to set directly. These can also be set on the user's behalf by the operator. This shall only be present if the service is provisioned i.e. <cnip-operator-configuration> is present and activated is "true".
	<active>	The <active> element has values "true" and "false". It controls whether the calling name identity presentation service is active or not for this subscriber. The calling name identity presentation service requires that the user also has the originating identity presentation service active.

Table 17 – Calling Name Identity Presentation XML Elements

6.12 Calling Party Category

The XML elements for the calling party category service are detailed in Table 18.

XML element		Description
<calling-party-category>		The calling party category service. Use <code>xsi:nil="true"</code> to withdraw the entire service.
	<cpc-operator-configuration>	The configuration parameters for the calling party category service that are available to the operator rather than the user. This must be present on the creation of the <calling-party-category> service.

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XML element		Description
	<activated>	The <activated> element has values “true” or “false”. When set to “true” the user is provisioned with the calling party category service. If set to “false” this will withdraw the service from the user. This must be present on the creation of the <calling-party-category> service.
	<cpc-value>	The <cpc-value> element is a string value, which specifies the calling party category value for the user. To clear the calling party category value for a user, include an empty <cpc-value> element in the Set Request.

Table 18 – Calling Party Category XML Elements

6.13 Carrier Pre-Select

The XML elements for the carrier pre-select service are detailed in Table 19.

XML element		Description
	<carrier-pre-select>	The carrier pre-select service. Use xsi:nil=”true” to withdraw the entire service.
	<cps-operator-configuration>	The configuration parameters for the carrier pre-select service that are available to the operator rather than the user. This must be present on the creation of the <carrier-pre-select> service.
	<activated>	The activated element has values “true” or “false”. When set to “true” the user is provisioned with the carrier pre-select service. If set to “false” this will withdraw the service from the user. This must be present on the creation of the carrier-pre-select service.
	<call-type-carrier>	The <call-type-carrier> element specifies a mapping between a call type and the carrier code to be pre-selected for calls of that type. The <call-type-carrier> element is a sub-MO allowing multiple instances with “call-type” as the unique key.
	<call-type>	The type of call. This is a string of between 1 and 32 characters that should match a call type configured into the node level configuration. This must be present on the creation of a <call-type-carrier>.
	<carrier-code>	The carrier code to be use for a call of the given type. This is a string beginning with a ‘+’ and followed by between 3 and 8 digits. This must be present on the creation of a <call-type-carrier>.

Table 19 – Carrier Pre-Select XML Elements

6.14 Carrier Pre-Select Rn

The XML elements for the carrier pre-select rn service are detailed in Table 20.

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XML element			Description
<carrier-pre-select-rn>			The carrier pre-select rn service. Use xsi:nil="true" to withdraw the entire service.
	<cpsrn-operator-configuration>		The configuration parameters for the carrier pre-select-rn service that are available to the operator rather than the user. This must be present on the creation of the <carrier-pre-select-rn> service.
		<activated>	The activated element has values "true" or "false". When set to "true" the user is provisioned with the carrier pre-select rn service. If set to "false" this will withdraw the service from the user. This must be present on the creation of the carrier-pre-select-rn service.
		<call-type-carrier-rn>	The <call-type-carrier-rn> element specifies a mapping between a call type and the global carrier code to be pre-selected for calls of that type along with the domain for that carrier. The <call-type-carrier-rn> element is a sub-MO allowing either one or two instances with "call-type" as the unique key.
		<call-type>	The type of call either "LOCAL" or "REMOTE". This must be present on the creation of a <call-type-carrier-rn>. The value "LOCAL" corresponds to calls to numbers with the same area code as the user. The value "REMOTE" corresponds to all other calls.
		<global-carrier-code>	The global carrier code to be use for a call of the given type. This is a string of between 3 and 8 digits. This must be present on the creation of a <call-type-carrier-rn>.

Table 20 – Carrier Pre-Select Rn XML Elements

6.15 Carrier Select

The XML elements for the carrier select service are detailed in Table 21.

XML element			Description
<carrier-select>			The carrier select service. Use xsi:nil="true" to withdraw the entire service.
	<cs-operator-configuration>		The configuration parameters for the carrier select service that are available to the operator rather than the user. This must be present on the creation of the <carrier-select> service.
		<activated>	The activated element has values "true" or "false". When set to "true" the user is provisioned with the carrier select service. If set to "false" this will withdraw the service from the user. This must be present on the creation of the carrier-select service.

Table 21 – Carrier Select XML Elements

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6.16 Carrier Select Rn

The XML elements for the carrier select rn service are detailed in Table 22.

XML element		Description
<carrier-select-rn>		The carrier select rn service. Use xsi:nil="true" to withdraw the entire service.
	<csrn-operator-configuration>	The configuration parameters for the carrier select rn service that are available to the operator rather than the user. This must be present on the creation of the <carrier-select-rn> service.
	<activated>	The activated element has values "true" or "false". When set to "true" the user is provisioned with the carrier select rn service. If set to "false" this will withdraw the service from the user. This must be present on the creation of the carrier-select-rn service.

Table 22 – Carrier Select Rn XML Elements

6.17 Closed User Group

The XML elements for the closed user group service are detailed in Table 23.

XML element		Description
<closed-user-group>		The closed user group service. Use xsi:nil="true" to withdraw the entire service.
	<cug-operator-configuration>	The configuration parameters for the closed user group service that are available to the operator rather than the user. This must be present on the creation of the closed user group service.
	<activated>	The activated element has values "true", "false" or profile. When set to "true" the user is provisioned with the closed user group service. If set to "false" this will withdraw the service from the user. This must be present on the creation of the closed user group service. If set to "profile" this user service is provisioned via a Service Profile. Thus, it is the Service Profile document that determines if the user service is activated or not.
	<cug-interlock-code>	The cug element specifies a closed user group that the user is a member of. The cug element is a sub-MO allowing multiple instances with "cug-index" as the unique key. This is limited to one member but is designed to be extended.
	<cug-index>	The local index for the CUG currently limited to 1. This must be present on the creation of a cug element.
	<cug-network-identity>	The network identity for the CUG. This must be present on the creation of the cug element.

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			<cug-binary-code>	The interlock code for the CUG. This must be present on the creation of the cug element.
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Table 23 – Closed User Group XML Elements

6.18 Common Data

The XML elements for the common data shared across services are detailed in Table 24.

XML element			Description
		<common-data>	Common data available across services. This data is available to the operator rather than the user. Unlike services this should never be withdrawn so this is not nillable.
		<area-code>	Area code 0-6 digits. Leave empty for numbering plans to which it does not apply.
		<country-code>	Country code 1-4 digits
		<display-name>	Name of subscriber of length between 0-64 characters.
		<integration>	The <integration> element specifies the mapping between a key and a corresponding value. This can be used for transparent storage of values required for integration with other systems. The <integration> element is a sub-MO allowing multiple instances with "key" as the unique key. There can be between 0 and 5 <integration> elements.
		<key>	The key for integration data. String of 1-20 characters. This must be present on the creation of an <integration> element.
		<value>	The value of the integration data that corresponds to the key. String of 0-50 characters. This must be present on the creation of an <integration> element.
		<language-tag>	Preferred language maximum 64 characters. Note: The non-standard character " " is supported.
		<rule-global-limit>	The maximum number of allowed rules in the user document. Not specified or zero limit means no limit
		<service-profile-identity>	The identity of a service profile that a user is linked to. Should be a SIP URI (RFC 3261). If the <service-profile-identity> element contains an empty string, the semantic is to remove the service profile link.

Table 24 – Common Data XML Elements

6.19 Communication Distribution

The XML elements for the communication distribution service are detailed in Table 25.

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XML element		Description
<communication-distribution>		The communication distribution service. Use xsi:nil="true" to withdraw the entire service. Users with the communication distribution service are not supported as targets for communication completion so the communication distribution service can only be activated if the user has <call-completion-monitor-opt-out> activated for all variants of communication completion.
	<fcd-operator-configuration>	The configuration parameters for the flexible communication distribution service that are available to the operator rather than the user. This must be present on the creation of the <communication-distribution> service.
	<activated>	The activated element has values "true" or "false". When set to "true" the user is provisioned with the communication distribution service. If set to "false" this will withdraw the service from the user. This must be present on the creation of the <communication-distribution> service.
	<max-targets>	The max-targets element controls the maximum number of distinct targets that the user can have for communication distribution in addition to the PRIMARY identity. Integer value between 2 and 10. This must be present on the creation of the <communication-distribution> service.
	<primary-hosting>	The primary-hosting element defines where the primary identity is hosted with values "IMS" for users hosted on the IMS network the MTAS is serving and "non-IMS" for users who have communication distribution performed by the IMS network but are not registered on the IMS network e.g. users on a separate circuit-switched network. This must be present on the creation of the <communication-distribution> service.
	<rule-limit>	The maximum number of allowed FCD rules in the user document. Not specified or zero limit means no limit.
	<fcd-divert-primary>	The fcd-divert-primary element has values "activated" or "deactivated". When set to "activated" the user is able to use divert-primary element to divert the "incoming communication distributed to PRIMARY" to different target. If set to "deactivated" this will withdraw the divert primary service from the user.
	<user-no-reply-timer>	The user-no-reply-timer has values "activated" or "deactivated". When set to "activated" it allows the subscriber to control the length of the no reply timer for the user, thus overriding the configured FCD no reply node timer.
	<fcd-op-conditions>	The <fcd-op-conditions> element is a grouping element for fine-grain provisioning options that control which conditions the subscriber is permitted to use in communication distribution rules. If a condition is absent, it disallows the subscriber to use that condition in communication distribution rules.

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XML element			Description
		<anonymous-condition>	The <anonymous-condition> element has values "activated" or "deactivated". When set to "activated" it allows the subscriber to use the <anonymous> condition in communication distribution rules.
		<busy-condition>	The <busy-condition> element has values "activated" or "deactivated". When set to "activated" it allows the subscriber to use the <fcd-call-state> condition with the value of "busy" in communication distribution rules.
		<identity-condition>	The <identity-condition> element has values "activated" or "deactivated". When set to "activated" it allows the subscriber to use the <identity> condition in communication distribution rules.
		<media-condition>	The <media-condition> element has values "activated" or "deactivated". When set to "activated" it allows the subscriber to use <media> conditions in communication distribution rules.
		<not-registered-condition>	The <not-registered-condition> element has values "activated" or "deactivated". When set to "activated" it allows the subscriber to use the <fcd-call-state> condition with the value of "not-registered" in communication distribution rules.
		<no-answer-condition>	The <no-answer-condition> element has values "activated" or "deactivated". When set to "activated" it allows the subscriber to use the <fcd-call-state> condition with the value of "no-answer" in communication distribution rules.
		<presence-status-condition>	The <presence-status-condition> element has values "activated" or "deactivated". When set to "activated" it allows the subscriber to use <presence-status> conditions in communication distribution rules.
		<validity-condition>	The <validity-condition> element has values "activated" or "deactivated". When set to "activated" it allows the subscriber to use the <validity> conditions in communication distribution rules.
		<not-reachable-condition>	The <not-reachable-condition> element has values "activated" or "deactivated". When set to "activated" it allows the subscriber to use the <fcd-call-state> condition with the value of "not-reachable" in communication distribution rules.
		<valid-periods-condition>	The <valid-periods-condition> element has values "activated" or "deactivated". When set to "activated" it allows the subscriber to use the <valid-periods> condition in communication distribution rules.
		<invalidity-condition>	The <invalidity-condition> element has values "activated" or "deactivated". When set to "activated" it allows the subscriber to use the <invalidity> condition in communication distribution rules.
		<served-identity-condition>	The <served-identity-condition> element has values "activated" or "deactivated". When set to "activated" it allows the subscriber to use the <served-identity> condition in communication distribution rules.

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XML element				Description
			<fcd-op-actions>	The <fcd-op-actions> element is a grouping element for fine-grain provisioning options to control which actions the user is permitted to use for communication distribution rules. If an action is absent, it disallows the subscriber to use that action in communication distribution rules.
			<rule-no-reply-timer>	The rule-no-reply-timer has values "activated" or "deactivated". When set to "activated" it allows the subscriber to use the no reply timer in the action of communication distribution rules to control the length of the no reply timer on a per rule basis.
			<play-announcement-action>	The play-announcement-action element has values "activated" or "deactivated". When set to "activated" it allows the subscriber to use the play-announcement action in communication distribution rules to control whether the caller is presented by specific announcement handled by generic announcement service.
			<fcd-user-configuration>	The configuration parameters for the flexible communication distribution service that are available for the user to set directly. These can also be set on the user's behalf by the operator. This shall only be present if the service is provisioned i.e. <fcd-operator-configuration> is present and activated is "true".
			<active>	Controls whether the flexible communication distribution service is active or not for this subscriber.
			<divert-primary>	The divert-primary element is used for diverting the "incoming communication distributed to PRIMARY" to an alternative target.
			<active>	The "active" element has values "true" or "false". It indicates whether FCD divert primary service is activated or not. This must be present on the creation of divert-primary element.
			<forward-to>	The target element specifies the identity to which the communication should be diverted. This takes the form of a sip: or tel: URI or "voicemail:internal" for forwarding to voice mail. Each tel: URI and sip: URI that was converted from a tel: URI according to section 19.1.6 of RFC 3261 contains a normalized number, or a number that can be normalized after removing a dynamic ad-hoc presentation SSC and/or a CSC. This must be present on the creation of a cdiv-rule.
			<target>	The <target> element specifies the identity to which the communication should be diverted. This takes the form of a sip: or tel: URI or "voicemail:internal" for forwarding to voice mail. Each tel: URI and sip: URI that was converted from a tel: URI according to section 19.1.6 of RFC 3261 [5] contains a normalized number, or a number that can be normalized after removing a dynamic ad-hoc presentation SSC and/or a CSC. This must be present on the creation of a <cdiv-rule>.

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XML element				Description
			<reveal-identity-to-caller>	The <reveal-identity-to-caller> element has values “true” or “false”. It controls whether the caller being notified that the call is being forwarded receives the target’s identity information. If it is not included then the default behaviour is to reveal the target’s identity to the caller (true).
			<notify-served-user>	The <notify-served-user> element has values “true” or “false”. It controls whether the served user is notified that the call is being forwarded. If it is not included then the default behaviour is not to notify the served user (false).
			<notify-served-user-on-outbound-call>	The <notify-served-user-on-outbound-call> element has values true or false. It controls whether the served user is notified that calls are being forwarded when he makes a call attempt. If it is not included then the default behaviour is not to notify the served user on outbound calls (false).
			<reveal-identity-to-target>	The <reveal-identity-to-target> element has values “true” and “false”. It controls whether the diverted-to party receives identity information of the diverting party. If it is not included then the default behaviour is to reveal the diverting party’s identity to the target (true).
			<fcd-service-options>	Grouping element for a set of zero or more service options.
			<NoReplyTimer>	The <NoReplyTimer> element specifies the time that must expire without any response before the <no-answer> condition is triggered. The value is an integer giving the timer in the range of 5 to 180 seconds. This value applies to rules with no-answer conditions which do not contain their own individual timer.
			<target-list>	A list defining related targets that can be included in communication distribution. The <target-list> in user-common-data 6.56 is the preferred way to define related targets so they are available across multiple services. The <target-list> is retained within communication-distribution for backwards compatibility. See section 6.63 for details of the contents of the <target-list> element.
			<fcd-ruleset>	Grouping element for a set of zero or more flexible communication distribution user rules.
			<fcd-rule>	An individual rule controlling communication distribution behaviour. The fcd-rule element is a sub-MO allowing multiple instances with “id” as the unique key.
			<id>	A unique identifier for an individual rule. This must be unique within the scope of the complete document. This must be present on the creation of an <fcd-rule>.
			<fcd-conditions>	The <fcd-conditions> element is a grouping element for conditions for a rule. All conditions must be satisfied for the rule to take effect. If no conditions are present then the rule is always applicable.

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XML element					Description
				<rule-deactivated>	The rule-deactivated element has values “true” or “false”. If present with the value “true” this has the effect of deactivating the individual rule and the rule is not checked. Set to “false” to remove this condition.
				<valid-periods>	The valid-periods element is a grouping element that allows assembly of complex time condition based upon several sub-conditions. In order for the valid-periods condition to be satisfied the current date/time must match with all the included sub-conditions. See section 6.64 for details of the contents of the <valid-periods> element.
				<validity>	The validity element is a grouping element for absolute time periods (intervals) within which the rule is valid. See section 6.65 for details of the contents of the <validity> element.
				<invalidity>	The <invalidity> element is a grouping element for absolute time periods (intervals) within which the rule is NOT valid. See section 6.60 for details of the contents of the <invalidity> element.
				<fcd-call-state>	The <fcd-call-state> condition controls which state the user must be in for the rule to apply. The value “busy” is satisfied if the user is busy in other calls. The value “no-answer” applies when there is no answer from the user. The value “not-registered” applies when the user is not registered on the MTAS. The value “not-reachable” applies when the user is not reachable because either a specific response has been received or the not reachable timer expires. The value “unconditional” is used to clear the other call state values so that the condition is satisfied regardless of the user’s call state.
				<fcd-caller-identity>	The <fcd-caller-identity> element is a grouping element for conditions which are based on the caller’s identity (or lack of an identity in the case of anonymous).
				<anonymous>	The <anonymous> element is an empty element specifying a condition which is satisfied if the caller is anonymous. This can be removed by deleting the enclosing <fcd-caller-identity> element or by replacing it with an <identity> element. The elements <anonymous> and <identity> are mutually exclusive.
				<identity>	The <identity> element is a grouping element for conditions which are based on the caller’s identity. The condition is satisfied if any of the included <one> or <many> elements within it is matched. See section 6.59 for details of the contents of the <identity> element. The elements <anonymous> and <identity> are mutually exclusive.
				<media>	The <media> element contains a media type that the session must include for the condition to be matched e.g. “audio” or “video”. This is a multi-value parameter so it can appear more than once with several media values that must all be satisfied for the overall condition to be matched.

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XML element					Description
				<presence-status>	The <presence-status> element contains a presence status value that the user must satisfy for the condition to be matched e.g. "meal", "meeting", "travel", "vacation". This is a multi-value parameter so it can appear more than once with several presence status values that must all be satisfied for the overall condition to be matched.
				<served-identity>	The <served-identity> element is a grouping element for conditions which are based on the user's served identity. The condition is satisfied if any of the included elements within it is matched. See section 6.60 for details of the contents of the <served-identity> element.
				<in-sip-request>	The <in-sip-request> element is a grouping element for regexp conditions on contents of a SIP request. It evaluates to true if ALL of the conditions included within it are fulfilled. See section 6.61 for details of the contents of the <in-sip-request> element.
				<fcd-actions>	The fcd-actions element is a grouping element for the actions for a rule. This must be present on the creation of an <fcd-rule>. Either <parallel-distribution> or <serial-distribution> must be present on the creation of an <fcd-rule>.
				<parallel-distribution>	The <parallel-distribution> element is a grouping element with details of the targets to which the communication should be distributed in parallel. See section 6.58 for details of the contents of the <parallel-distribution> element.
				<serial-distribution>	The <serial-distribution> element is a grouping element with details of the targets to which the communication should be distributed in series. See section 6.58 for details of the contents of the <serial-distribution> element.
				<flexible-distribution>	The <flexible-distribution> element is a grouping element with details of the targets to which the communication should be distributed in parallel or series. See section 6.58 for details of the contents of the <flexible-distribution> element.
				<play-announcement>	The play-announcement element has string values from 0 to 32 characters. When the play-announcement action is set with the string value containing characters with the length between 1 to 32, if there is any satisfying corresponding conditions and being diverted, the caller will be presented with the specific announcement handled by generic announcement service. When the play-announcement action is set with the string value containing character with the length of 0, any play-announcement action element in the rule will be deleted from the rule.
				<fcd-action-options>	Grouping element for a set of zero or more action options

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XML element						Description
					<NoReplyTimer>	The <NoReplyTimer> element specifies the time that must expire without answer before the no-answer condition is triggered. The value is an integer giving the timer in the range of 5 to 180 seconds. This shall only be present in rules with the value "no-answer" in a fcd-call-state condition.

Table 25 – Communication Distribution XML elements

6.20 Communication Diversion

The XML elements for the communication diversion service are detailed in Table 26.

XML element			Description
<communication-diversion>			The communication diversion service. Use xsi:nil="true" to withdraw the entire service.
	<cdiv-operator-configuration>		The configuration parameters for the communication diversion service that are available to the operator rather than the user. This must be present on the creation of the <communication-diversion> service.
	<activated>		The <activated> element has values "true" or "false". When set to "true" the user is provisioned with the communication diversion service. If set to "false" this will withdraw the user service and the <cdiv-user-configuration> element must be preserved. This must be present on the creation of the <communication-diversion> service.
	<cdiv-ruleset>		This ruleset is evaluated before the ruleset in the user configuration. Grouping element for a set of zero or more operator rules. See section 6.21 for details of the contents of the <cdiv-ruleset> element.
	<cdiv-ruleset-for-post-evaluation>		Grouping element for a set of zero or more operator rules that will be evaluated after any user rules. These rules apply regardless of whether <activated> is "true" or "false".
	<cdiv-ruleset>		This ruleset is evaluated after the ruleset in the user configuration. Grouping element for a set of zero or more operator rules. See section 6.21 for details of the contents of the <cdiv-ruleset> element.
	<user-no-reply-timer>		The user-no-reply-timer has values "activated" or "deactivated". When set to "activated" it allows the subscriber to control the length of the no reply timer for the user, thus overriding the configured CFNR nodal timer.

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XML element			Description
		<cdiv-op-conditions>	The <cdiv-op-conditions> element is a grouping element for fine-grain provisioning options that control which conditions the subscriber is permitted to use in communication diversion rules. If a condition is absent, it disallows the subscriber to use that condition in communication diversion rules.
		<anonymous-condition>	The <anonymous-condition> element has values "activated" or "deactivated". When set to "activated" it allows the subscriber to use the <anonymous> condition in communication diversion rules.
		<busy-condition>	The <busy-condition> element has values "activated" or "deactivated". When set to "activated" it allows the subscriber to use the <cdiv-call-state> condition with the value of "busy" in communication diversion rules.
		<identity-condition>	The <identity-condition> element has values "activated" or "deactivated". When set to "activated" it allows the subscriber to use the <identity> condition in communication diversion rules.
		<media-condition>	The <media-condition> element has values "activated" or "deactivated". When set to "activated" it allows the subscriber to use <media> conditions in communication diversion rules.
		<not-registered-condition>	The <not-registered-condition> element has values "activated" or "deactivated". When set to "activated" it allows the subscriber to use the <cdiv-call-state> condition with the value of "not-registered" in communication diversion rules.
		<no-answer-condition>	The <no-answer-condition> element has values "activated" or "deactivated". When set to "activated" it allows the subscriber to use the <cdiv-call-state> condition with the value of "no-answer" in communication diversion rules.
		<presence-status-condition>	The <presence-status-condition> element has values "activated" or "deactivated". When set to "activated" it allows the subscriber to use <presence-status> conditions in communication diversion rules.
		<validity-condition>	The <validity-condition> element has values "activated" or "deactivated". When set to "activated" it allows the subscriber to use the <validity> condition in communication diversion rules.
		<not-reachable-condition>	The <not-reachable-condition> element has values "activated" or "deactivated". When set to "activated" it allows the subscriber to use the <cdiv-call-state> condition with the value of "not-reachable" in communication diversion rules. The <not-reachable-condition> is new in MTAS 3.1
		<valid-periods-condition>	The <valid-periods-condition> element has values "activated" or "deactivated". When set to "activated" it allows the subscriber to use the <valid-periods> condition in communication diversion rules.

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XML element			Description
		<invalidity-condition>	The <invalidity-condition> element has values "activated" or "deactivated". When set to "activated" it allows the subscriber to use the <invalidity> condition in communication diversion rules.
		<served-identity-condition>	The <served-identity-condition> element has values "activated" or "deactivated". When set to "activated" it allows the subscriber to use the <served-identity> condition in communication diversion rules.
		<unconditional-condition>	The <unconditional-condition> element has values "activated" or "deactivated". When set to "activated" it allows the subscriber to use the <cdiv-call-state> condition with the value of "unconditional" in communication diversion rules. This is when there is no <cdiv-conditions> set, empty element <cdiv-conditions/> or <cdiv-conditions></cdiv-conditions> and an element <cdiv-actions> specified. Note: If the <unconditional-condition> element is absent it allows the subscriber to use the <cdiv-call-state> condition with the value of "unconditional" in communication diversion rules.
		<cdiv-op-actions>	The <cdiv-op-actions> element is a grouping element for fine-grain provisioning options to control which actions the user is permitted to use for communication diversion rules. If an action is absent, it disallows the subscriber to use that action in communication diversion rules.
		<notify-caller-action>	The <notify-caller-action> element has values "activated" or "deactivated". When set to "activated" it allows the subscriber to use the <notify-caller> action in communication diversion rules to control whether the caller is notified that the call is being forwarded.
		<notify-served-user-action>	The <notify-served-user-action> element has values "activated" or "deactivated". When set to "activated" it allows the subscriber to use the <notify-served-user> action in communication diversion rules to control whether the served user is notified that the call is being forwarded.
		<notify-served-user-on-outbound-call-action>	The <notify-served-user-on-outbound-call-action> element has values "activated" or "deactivated". When set to "activated" it allows the subscriber to use the <notify-served-user-on-outbound-call> action in communication diversion rules to control whether the served user is notified that calls are being forwarded when he makes a call attempt.
		<reveal-identity-to-caller-action>	The <reveal-identity-to-caller-action> has values "activated" or "deactivated". When set to "activated" it allows the subscriber to use the <reveal-identity-to-caller> action in communication diversion rules to control whether the caller being notified that the call is being forwarded receives the target's identity information.

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XML element			Description
		<reveal-identity-to-target-action>	The <reveal-identity-to-target-action> has values “activated” or “deactivated”. When set to “activated” it allows the subscriber to use the <reveal-identity-to-target> action in communication diversion rules to control whether the diverted-to party receives identity information of the diverting party.
		<rule-no-reply-timer>	The rule-no-reply-timer has values “activated” or “deactivated”. When set to “activated” it allows the subscriber to use the no reply timer in the action of communication diversion rules to control the length of the no reply timer on a per rule basis.
		<do-not-disturb-action>	The do-not-disturb-action element has values “activated” or “deactivated”. When set to “activated” it allows the subscriber to use the do-not-disturb action in communication diversion rules to control whether the caller is handled by do-not-disturb service (e.g. treated with specific charging scheme, etc.)
		<play-announcement-action>	The play-announcement-action element has values “activated” or “deactivated”. When set to “activated” it allows the subscriber to use the play-announcement action in communication diversion rules to control whether the caller is presented by specific announcement handled by generic announcement service.
		<rule-limit>	The maximum number of allowed CDIV rules in the user document. Not specified or zero limit means no limit.
		<cdiv-user-configuration>	The configuration parameters for the communication diversion service that are available for the user to set directly. These can also be set on the user’s behalf by the operator. This shall only be present if the service is provisioned i.e. <cdiv-operator-configuration> is present and activated is “true”.
		<active>	The <active> element has values “true” or “false”. It controls whether the communication diversion service is active or not for this subscriber.
		<cdiv-service-options>	Grouping element for a set of zero or more service options.
		<NoReplyTimer>	The NoReplyTimer element specifies the time that must expire without answer before the no answer condition is triggered. The value is an integer giving the timer in the range of 5 to 180 seconds. This value applies to rules with no-answer conditions which do not contain their own individual timer.
		<cdiv-ruleset>	Grouping element for a set of zero or more user rules. See section 6.21 for details of the contents of the <cdiv-ruleset> element.

Table 26 – Communication Diversion XML Elements

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6.21 Communication Diversion Ruleset

The XML elements for the communication diversion service are detailed in Table 27.

XML element				Description
<cdiv-ruleset>				Grouping element for a set of zero or more operator and user rules.
<cdiv-rule>				An individual rule controlling communication diversion behaviour. The <cdiv-rule> element is a sub-MO allowing multiple instances with "id" as the unique key.
<id>				A unique identifier for an individual rule. This must be unique within the scope of the complete document. This must be present on the creation of a <cdiv-rule>.
<cdiv-conditions>				The <cdiv-conditions> element is a grouping element for conditions for a rule. All conditions must be satisfied for the rule to take effect. If no conditions are present then the rule is always applicable. The conditions that are permitted depend on the fine grain provisioning options in <cdiv-op-conditions>.
<rule-deactivated>				The <rule-deactivated> element has values "true" or "false". If present with the value "true" this has the effect of deactivating the individual rule and the rule is not checked. Set to "false" to remove this condition.
<cdiv-call-state>				The <cdiv-call-state> condition controls which state the user must be in for the rule to apply. The value "busy" is satisfied if the user is busy in other calls. The value "no-answer" applies when there is no answer from the user. The value "not-registered" applies when the user is not registered on the MTAS. The value "not-reachable" applies when the user is not reachable because either a specific response has been received or the not reachable timer expires. The value "unconditional" is used to clear the other call state values so that the condition is satisfied regardless of the user's call state. The value "not-reachable" in the <cdiv-call-state> is new in MTAS 3.1.
<cdiv-caller-identity>				The <cdiv-caller-identity> element is a grouping element for conditions which are based on the caller's identity (or lack of an identity in the case of anonymous).
<anonymous>				The <anonymous> element is an empty element specifying a condition which is satisfied if the caller is anonymous. This can be removed by deleting the enclosing <cdiv-caller-identity> element or by replacing it with an <identity> element. The elements <anonymous> and <identity> are mutually exclusive.

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XML element				Description
			<identity>	The <identity> element is a grouping element for conditions which are based on the caller's identity. The condition is satisfied if any of the included <one> or <many> elements within it is matched. See section 6.59 for details of the contents of the <identity> element. The elements <anonymous> and <identity> are mutually exclusive.
			<media>	The <media> element contains a media type that the session must include for the condition to be matched e.g. "audio" or "video". This is a multi-value parameter so it can appear more than once with several media values that must all be satisfied for the overall condition to be matched.
			<validity>	The <validity> element is a grouping element for time periods (intervals) within which the rule is valid. See section 6.65 for details of the contents of the <validity> element.
			<presence-status>	The <presence-status> element contains a presence status value that the user must satisfy for the condition to be matched e.g. "meal", "meeting", "travel", "vacation". This is a multi-value parameter so it can appear more than once with several presence status values that must all be satisfied for the overall condition to be matched.
			<valid-periods>	The valid-periods element is a grouping element that allows assembly of complex time condition based upon several sub-conditions. In order for the valid-periods condition to be satisfied the current date/time must match with all the included sub-conditions. See section 6.64 for details of the contents of the <valid-periods> element.
			<invalidity>	The <invalidity> element is a grouping element for absolute time periods (intervals) within which the rule is NOT valid. See section 6.60 for details of the contents of the <invalidity> element.
			<served-identity>	The <served-identity> element is a grouping element for conditions which are based on the user's served identity. The condition is satisfied if any of the included elements within it is matched. See section 6.60 for details of the contents of the <served-identity> element.
			<cdiv-actions>	The <cdiv-actions> element is a grouping element for the actions for a rule. This must be present on the creation of a <cdiv-rule>.
			<forward-to>	The <forward-to> element is a grouping element with details of the target to which the communication should be diverted and optional control of notifications and which identities are revealed to whom. This must be present on the creation of a <cdiv-rule>.

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XML element				Description
			<target>	The <target> element specifies the identity to which the communication should be diverted. This takes the form of a sip: or tel: URI or "voicemail:internal" for forwarding to voice mail. Each tel: URI and sip: URI that was converted from a tel: URI according to section 19.1.6 of RFC 3261 [5] contains a normalized number, or a number that can be normalized after removing a dynamic ad-hoc presentation SSC and/or a CSC. This must be present on the creation of a <cdiv-rule>.
			<notify-caller>	The <notify-caller> element has values "true" or "false". It controls whether the caller is notified that the call is being forwarded. If it is not included then the default behaviour is to notify the caller (true).
			<reveal-identity-to-caller>	The <reveal-identity-to-caller> element has values "true" or "false". It controls whether the caller being notified that the call is being forwarded receives the target's identity information. If it is not included then the default behaviour is to reveal the target's identity to the caller (true).
			<notify-served-user>	The <notify-served-user> element has values "true" or "false". It controls whether the served user is notified that the call is being forwarded. If it is not included then the default behaviour is not to notify the served user (false).
			<notify-served-user-on-outbound-call>	The <notify-served-user-on-outbound-call> element has values true or false. It controls whether the served user is notified that calls are being forwarded when he makes a call attempt. If it is not included then the default behaviour is not to notify the served user on outbound calls (false).
			<reveal-identity-to-target>	The <reveal-identity-to-target> element has values "true" and "false". It controls whether the diverted-to party receives identity information of the diverting party. If it is not included then the default behaviour is to reveal the diverting party's identity to the target (true).
			<do-not-disturb>	The do-not-disturb element has values "true" and "false". If it's set to "true" the element is added into the actions part of the rule. If it's set to "false" the element is removed from the actions part of the rule.
			<play-announcement>	The play-announcement element has string values from 0 to 32 characters. When the play-announcement action is set with the string value containing characters with the length between 1 to 32, if there is any satisfying corresponding conditions and being diverted, the caller will be presented with the specific announcement handled by generic announcement service. When the play-announcement action is set with the string value containing character with the length of 0, any play-announcement action element in the rule will be deleted from the rule.
			<cdiv-action-options>	Grouping element for a set of zero or more action options

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XML element	Description
<NoReplyTimer>	The NoReplyTimer element specifies the time that must expire without answer before the no answer condition is triggered. The value is an integer giving the timer in the range of 5 to 180 seconds. This shall only be present in rules with the value "no-answer" in a cdiv-call-state condition.

Table 27 – Communication Diversion Ruleset XML Elements

6.22 Communication Diversion No Answer Timer

The XML elements for the communication diversion no answer timer service are detailed in Table 28.

XML element	Description
<communication-diversion-no-answer-timer>	The communication diversion no answer timer service. Use xsi:nil="true" to withdraw the entire service. This is deprecated in favour of the NoReplyTimer in communication-diversion.
<cdiv-no-answer-timer-operator-configuration>	The configuration parameters for the communication diversion no answer timer service that are available to the operator rather than the user. This must be present on the creation of the <cdiv-no-answer-timer-operator-configuration> service.
<activated>	The activated element has values "true" or "false". When set to "true" the user is provisioned with the communication diversion no answer timer service. If set to "false" this will withdraw the user service, but the cdiv-no-answer-timer-user-configuration element is kept. This must be present on the creation of the cdiv-no-answer-timer-operator-configuration service.
<cdiv-no-answer-timer-user-configuration>	The configuration parameters for the communication diversion no answer timer service that are available for the user to set directly. These can also be set on the user's behalf by the operator. This shall only be present if the service is provisioned i.e. <cdiv-no-answer-timer-operator-configuration> is present and activated is "true".
<active>	The <active> element has values "true" or "false". It controls whether the communication diversion no answer timer service is active or not for this subscriber. If <active> is set to "false" the timer configured at node level will apply.
<no-answer-timeout>	The <no-answer-timeout> element specifies the time that must expire without answer before the no answer condition is triggered. The value is an integer giving the timer in the range of 5 to 60 seconds.

Table 28 – Communication Diversion No Answer Timer XML Elements

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6.23 Communication Waiting

The XML elements for the communication waiting service are detailed in Table 29.

XML element		Description
<communication-waiting>		The communication waiting service. Use xsi:nil="true" to withdraw the entire service. If the communication waiting service is in mode 0 (normal mode) or alternate mode 1 [3], then it depends on the user call admission control service. The communication waiting service can only be activated if the user call admission control service is also activated and the waiting-limit is set to greater than zero. Due to the mutual dependency with user call admission control, both services must be updated in the same request in which communication waiting is activated or deactivated. If the communication waiting service is in alternate mode 2 or 4 [3], there is no dependency between the communication waiting service and the user call admission control service.
	<cw-operator-configuration>	The configuration parameters for the communication waiting service that are available to the operator rather than the user. This must be present on the creation of the <communication-waiting> service.
	<activated>	The <activated> element has values "true" or "false". When set to "true" the user is provisioned with the communication waiting service. If set to "false" this will withdraw the user service and the <cw-user-configuration> element must be preserved. This must be present on the creation of the <communication-waiting> service.
	<cw-user-configuration>	The configuration parameters for the communication waiting service that are available for the user to set directly. These can also be set on the user's behalf by the operator. This shall only be present if the service is provisioned i.e. <cw-operator-configuration> is present and activated is "true".
	<active>	The <active> element has values "true" and "false". It controls whether the communication waiting service is active or not

Table 29 – Communication Waiting XML Elements

6.24 Conference

The XML elements for the conference service are detailed in Table 30.

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XML element		Description
<conference>		The conference service. Use xsi:nil="true" to withdraw the entire service.
	<conf-operator-configuration>	The configuration parameters for the conference service that are available to the operator rather than the user. This must be present on the creation of the <conference> service.
	<activated>	The activated element has values "true" or "false". When set to "true" the user is provisioned with the conference service. If set to "false" this will withdraw the service from the user. This must be present on the creation of the conference service.
	<max-number-of-parties>	The maximum number of parties allowed in a conference created by this user. This is an integer in the range 3-32. This must be present on the creation of the <conference> service.
	<answer-confirmation>	If the answer-confirmation element is present the called party will be played an entry announcement and asked for a DTMF confirmation. Use xsi:nil="true" to delete answer-confirmation element.
	<block-dialout-invitations>	When the element is present the user is blocked from requesting the conference focus to invite participants using the dial-out method (including URI-list usage). This element is optional.

Table 30 – Conference XML Elements

6.25 Customized Alerting Tones

The XML elements for the customized alerting tones service are detailed in Table 31.

XML element		Description
<customized-alerting-tone>		The customized alerting tones service. Use xsi:nil="true" to withdraw the entire service.
	<cat-operator-configuration>	The configuration parameters for the customized alerting tones service that are available to the operator rather than the user. This must be present on the creation of the <customized-alerting-tone> service.
	<activated>	The activated element has values "true" or "false". When set to "true" the user is provisioned with the customized alerting tones service. If set to "false" this will withdraw the service from the user. This must be present on the creation of the customized alerting tones service.

Table 31 – Customized Alerting Tones XML Elements

6.26 Dial Tone Management

The XML elements for the Dial Tone Management service are detailed in Table 32.

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XML element		Description
<dial-tone-management>		The dial tone management service. Use xsi:nil="true" to withdraw the entire service.
	<dtm-operator-configuration>	The configuration parameters for the dial tone management service that are available to the operator rather than the user. This must be present on the creation of the <dial-tone-management> service.
	<activated>	The activated element has values "true" or "false". When set to "true" the user is provisioned with the dial tone management service. If set to "false" this will withdraw the service from the user. This must be present on the creation of the dial-tone-management service.

Table 32 – Dial Tone Management XML Elements

6.27 Dialog Event Notifier

The XML elements for the Dialog Event Notifier service are detailed in Table 33.

XML element		Description
<dialog-event-notifier>		The dialog event notifier service. Use xsi:nil="true" to withdraw the entire service.
	<den-operator-configuration>	The configuration parameters for the dialog event notifier service that are available to the operator rather than the user. This must be present on the creation of the dialog-event-notifier service.
	<activated>	The activated element has values "true" or "false". When set to "true" the user is provisioned with the dialog event notifier service. This must be present on the creation of the dialog-event-notifier service.
	<block-device-group-usage>	When the element is present a device belonging to the device group is blocked from using the dialog event notifier service. Allowed device groups are "MOBILE" and "FIXED". Use xsi:nil="true" to delete this element. This element is optional.

Table 33 – Dialog Event Notifier XML Elements

6.28 Distinctive Ring

The XML elements for the distinctive ring service are detailed in Table 34.

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XML element					Description
<distinctive-ring>					The distinctive ring service. Use xsi:nil="true" to withdraw the entire service.
<dr-operator-configuration>					The configuration parameters for the distinctive ring service that are available to the operator rather than the user. This must be present on the creation of the <distinctive-ring> service.
<activated>					The <activated> element has values "true" or "false". When set to "true" the user is provisioned with the distinctive ring service.. This must be present on the creation of the <distinctive-ring> service.
<dr-user-configuration>					The configuration parameters for the distinctive ring service that are available for the user to set directly. These can also be set on the user's behalf by the operator.
<active>					The <active> element has values "true" and "false". It controls whether the distinctive ring service is active or not for this subscriber.
<dr-ruleset>					Grouping element for a set of zero or more user rules.
<dr-rule>					An individual rule controlling distinctive ring behavior. The <dr-rule> element is a sub-MO allowing multiple instances with "id" as the unique key.
<id>					A unique identifier for an individual rule. This must be unique within the scope of the complete document. This must be present on the creation of a <dr-rule>.
<dr-conditions>					The <dr-conditions> element is a grouping element for conditions for a rule. All conditions must be satisfied for the rule to take effect. If no conditions are present then the rule is always applicable.
<served-identity>					The <served-identity> element is a grouping element for conditions which are based on the user's served identity. The condition is satisfied if any of the included elements within it is matched. See section 6.60 for details of the contents of the <served-identity> element.
<dr-actions>					The dr-actions element is a grouping element for the actions for a rule. This must be present on the creation of a dr-rule.
<alert-info>					The <alert-info> element specifies the name which will be used to find value of the Alert-info header for INVITE message. This must be present on the creation of a <dr-rule>.

Table 34 - Distinctive Ring XML Elements

6.29 Dynamic Black List

The XML elements for the Dynamic Black List service are detailed in Table 35.

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XML element				Description
<dynamic-black-list>				The dynamic black list service. Use xsi:nil="true" to withdraw the entire service.
	<dbl-operator-configuration>			The configuration parameters for the Dynamic Black List service that are available to the operator rather than the user. This must be present on the creation of the <dynamic-black-list> service.
		<activated>		The <activated> element has values "true" or "false". When set to "true" the user is provisioned with the dynamic black list service. If set to "false" this will withdraw the service from the user. This must be present on the creation of the <dynamic-black-list> service.
		<caller-details>		Details of a caller's identity to be used for incoming communication barring. Details are held here for callers to be barred whose identity is not to be revealed to the user. The <caller-details> element is a sub-MO allowing multiple instances with "insertion-time" as the unique key. Note: The <caller-details> element is removed if it is no corresponding ICB <rule>.
			<insertion-time>	The <insertion-time> element records the time that the caller-details element was added to dynamic-black-list. This must be present on the creation of a <caller-details> element.
		<identity-list>		The <identity-list> element is a list of identities of the caller that is to be barred. This must be present on the creation of a <caller-details> element.
			<identity>	The <identity> element records one of the public identities of the caller that is to be barred. The identity element is restricted to be a sip: URI, as defined in RFC 3261, or a tel: URI, as defined in RFC 3966. tel: URIs, and sip: URIs that have been converted from a tel: URI in accordance with section 19.1.6 of RFC 3261, must be normalized. This is a multi-value parameter.
		<expiry-time>		The <expiry-time> element records the time that the caller-details element expires and will no longer be used to bar calls. Absence of this element from a <caller-details> element, means that the <caller-details> element will not expire.
		<reason>		The <reason> element records the service that added the caller-details element to the dynamic-black-list. A value of "DBL" indicates that the caller-details element was added by an invocation of the dynamic black list service. A value of "MCR" indicates that the caller-details element was added by an invocation of the Malicious Communication Rejection service. This must be present on the creation of a <caller-details> element.

Table 35- Dynamic Black List XML Elements

6.30 Explicit Communication Transfer

The XML elements for the explicit communication transfer service are detailed in Table 36.

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XML element		Description
<explicit-communication-transfer>		The explicit communication transfer service. Use xsi:nil="true" to withdraw the entire service.
	<ect-operator-configuration>	The configuration parameters for the explicit communication transfer service that are available to the operator rather than the user. This must be present on the creation of the <explicit-communication-transfer> service.
	<activated>	The activated element has values "true" or "false". When set to "true" the user is provisioned with the explicit communication transfer service. If set to "false" this will withdraw the service from the user. This must be present on the creation of the explicit communication transfer service.

Table 36- Explicit Communication Transfer XML Elements

6.31 Flexible Identity Presentation

The XML elements for the flexible identity presentation service are detailed in Table 37

XML element		Description
<flexible-identity-presentation>		The flexible identity presentation service. Use xsi:nil="true" to withdraw the entire service.
	<fip-operator-configuration>	The configuration parameters for the flexible identity presentation service that are available to the operator rather than the user. This must be present on the creation of the <flexible-identity-presentation> service.
	<activated>	The activated element has values "true" or "false". When set to "true" the user is provisioned with the flexible identity presentation service. If set to "false" this will withdraw the user service, but the fip-user-configuration element is preserved. This must be present on the creation of the flexible-identity-presentation service.
	<fip-user-configuration>	The configuration parameters for the flexible identity presentation service that are available for the user to set directly. These can also be set on the user's behalf by the operator. This shall only be present if the service is provisioned i.e. <fip-operator-configuration> is present and activated is "true".
	<active>	The <active> element has values "true" and "false". It controls whether the flexible identity presentation service is active or not for this subscriber.
	<fip-identity>	The identity which replaces the served user's own identity. It is read only for the user interface and read write for the operator interface.

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		<msn-fip-identity>	The MSN identity which can be selected by the MSN service to replace the served user's own identity The msn-fip-identity element specifies the mapping between an id and the identity to be substituted when the id is used. The msn-fip-identity element is a sub-MO allowing multiple instances with "id" as the unique key.
		<id>	The id must be present on the creation of a msn-fip-identity element.
		<identity>	This element is read-only on the user interface. It can be written only on the operator interface.

Table 37 - Flexible Identity Presentation XML elements

6.32 Hotline

The XML elements for the hotline service are detailed in Table 38

XML element			Description
		<hotline>	The hotline service. Use xsi:nil="true" to withdraw the entire service.
		<hotline-operator-configuration>	The configuration parameters for the hotline service that are available to the operator rather than the user. This must be present on the creation of the <hotline> service.
		<activated>	The activated element has values "true" or "false". When set to "true" the user is provisioned with the hotline service. If set to "false" this will withdraw the user service, but the hotline-user-configuration element is preserved. This must be present on the creation of the hotline service.
		<unconditional-condition>	The unconditional-condition element groups parameters for Unconditional Hotline (Automatic Re-routing to Customer Care).
		<activated>	The activated element has values "true" or "false". When set to "true" the unconditional-condition is active and used by hotline service.
		<hotline-number>	The hotline-number is a number used for unconditional hotline diversion.
		<instant-condition>	The instant-condition element groups parameters for Instant Hotline.
		<activated>	The activated element has values "true" or "false". When set to "true" the instant-condition is active and used by hotline service.
		<hotline-number>	The hotline-number is a number used for instant hotline diversion if applicable (hotline call, unconditional condition is not present or not active, instant condition is active).
		<delayed-condition>	The delayed-condition element groups parameters for Delayed Hotline.
		<activated>	The activated element has values "true" or "false". When set to "true" the delayed-condition (in operator part) is active and used by hotline service.

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	<hotline-user-configuration>	The configuration parameters for the hotline service that are available for the user to set directly. These can also be set on the user's behalf by the operator. This shall only be present if the service is provisioned i.e. <hotline-operator-configuration> is present and activated is set to "true".
	<active>	The <active> element has values "true" and "false". It controls whether the hotline service (delayed) is active or not for this subscriber.
	<hotline-number>	The hotline-number is a number used for delayed hotline diversion if applicable (hotline call, unconditional condition not present or not active, instant condition not present or not active, delayed condition is active at operator and user level).
	<called-number>	The triggering number allows to specify additional criteria for Hotline service triggering (apart the service code defined in CM mtasHotlineServiceCode). The triggering number takes precedence over mtasHotlineServiceCode CM.

Table 38 - Hotline XML elements

6.33 Incoming Communication Barring

The XML elements for the incoming communication barring service are detailed in Table 39.

XML element	Description
<incoming-communication-barring>	The incoming communication barring service. Use xsi:nil="true" to withdraw the entire service.
<icb-operator-configuration>	The configuration parameters for the incoming communication barring service that are available to the operator rather than the user. This must be present on the creation of the <incoming-communication-barring> service.
<activated>	The activated element has values "true" or "false". When set to "true" the user is provisioned with the incoming communication barring service. If set to false this will withdraw the user service, but the icb-user-configuration element must be preserved. This must be present on the creation of the incoming-communication-barring service.
<icb-ruleset>	Grouping element for a set of zero or more operator rules. These rules apply regardless of whether <activated> is "true" or "false". See section 6.34 for details of the contents of the <icb-ruleset> element.
<icb-op-conditions>	The <icb-op-conditions> element is a grouping element for fine-grain provisioning options that control which condition elements the user is permitted to use in incoming communication barring rules. If a condition is absent, it disallows the subscriber to use that condition in incoming communication barring rules.

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XML element			Description
		<anonymous-condition>	The <anonymous-condition> element has values “activated” or “deactivated”. When set to “activated” it allows the subscriber to use the <anonymous> condition in incoming communication barring rules.
		<roaming-condition>	The <roaming-condition> element has values “activated” or “deactivated”. When set to “activated” it allows the subscriber to use the <roaming> condition in incoming communication barring rules.
		<communication-diverted-condition>	The <communication-diverted-condition> element has values “activated” or “deactivated”. When set to “activated” it allows the subscriber to use the <communication-diverted> condition in incoming communication barring rules.
		<identity-condition>	The <identity-condition> element has values “activated” or “deactivated”. When set to “activated” it allows the subscriber to use the <identity> condition in incoming communication barring rules.
		<media-condition>	The <media-condition> element has values “activated” and “deactivated”. When set to “activated” it allows the subscriber to use <media> conditions in incoming communication barring rules.
		<other-identity-condition>	The <other-identity-condition> element has values “activated” or “deactivated”. When set to “activated” it allows the subscriber to use the <other-identity> condition in incoming communication barring rules.
		<presence-status-condition>	The <presence-status-condition> element has values “activated” and “deactivated”. When set to “activated” it allows the subscriber to use <presence-status> conditions in incoming communication barring rules. This is not currently supported by incoming communication barring and should be omitted or set to “deactivated”.
		<validity-condition>	The <validity-condition> element has values “activated” or “deactivated”. When set to “activated” it allows the subscriber to use the <validity> condition in incoming communication barring rules.
		<valid-periods-condition>	The <valid-periods-condition> element has values “activated” or “deactivated”. When set to “activated” it allows the subscriber to use the <valid-periods> condition in incoming communication barring rules.
		<invalidity-condition>	The <invalidity-condition> element has values “activated” or “deactivated”. When set to “activated” it allows the subscriber to use the <invalidity> condition in incoming communication barring rules.
		<served-identity-condition>	The <served-identity-condition> element has values “activated” or “deactivated”. When set to “activated” it allows the subscriber to use the <served-identity> condition in incoming communication barring rules.

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XML element			Description
		<unconditional-condition>	<p>The <unconditional-condition> element has values “activated” or “deactivated”. When set to “activated” it allows the subscriber to use unconditional condition in incoming communication barring rules.</p> <p>This is when there is no <icb-conditions> set, empty element <icb-conditions/> or <icb-conditions></icb-conditions> and an element <cb-actions> specified.</p> <p>Note: If the <unconditional-condition> element is absent it allows the subscriber to use the unconditional condition in incoming communication barring rules.</p>
		<icb-op-actions>	<p>The <icb-op-actions> element is a grouping element for fine-grain provisioning options to control which action elements the user is permitted to use in incoming communication barring rules.</p> <p>If an action is absent, it disallows the subscriber to use that action in incoming communication barring rules.</p>
		<allow-true-action>	<p>The <allow-true-action> element has values “activated” or “deactivated”. When set to “activated” it allows the subscriber to use the <allow> action with the value of “true” in incoming communication barring rules to explicitly allow incoming communications that match the associated conditions. With this absent or set to “deactivated” the subscriber is only permitted to use the <allow> action with the value of “false” to bar incoming communications.</p>
		<do-not-disturb-action>	<p>The do-not-disturb-action element has values “activated” or “deactivated”. When set to “activated” it allows the subscriber to use the do-not-disturb action in incoming communication barring rules to control whether the caller is handled by do-not-disturb service (e.g. treated with specific charging scheme, etc.)</p>
		<play-announcement-action>	<p>The play-announcement-action element has values “activated” or “deactivated”. When set to “activated” it allows the subscriber to use the play-announcement action in incoming communication barring rules to control whether the caller is presented by specific announcement handled by generic announcement service.</p>
		<play-segmented-announcement-action>	<p>The play-announcement-action element has values “activated” or “deactivated”. When set to “activated” it allows the subscriber to use the play-segmented-announcement action in incoming communication barring rules to control whether the caller is presented by specific segmented announcement handled by generic announcement service.</p>
		<rule-limit>	<p>The maximum number of allowed incoming communication barring rules in the user document. Not specified or zero limit means no limit.</p>
		<icb-user-configuration>	<p>The configuration parameters for the incoming communication barring service that are available for the user to set directly. These can also be set on the user’s behalf by the operator. This shall only be present if the service is provisioned i.e. <icb-operator-configuration> is present and activated is “true”.</p>

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XML element		Description
	<active>	The <active> element has values “true” or “false”. It controls whether the incoming communication barring service is active or not for this subscriber. Note that this controls the user rules but has no effect on the operator rules.
	<icb-ruleset>	Grouping element for a set of zero or more user rules. See section 6.34 for details of the contents of the <icb-ruleset> element.

Table 39 – Incoming Communication Barring XML Elements

6.34 Incoming Communication Barring Ruleset

The XML elements for the <icb-ruleset> are detailed in Table 40.

<icb-ruleset>		Grouping element for a set of zero or more incoming communication barring rules.
	<icb-rule>	An individual rule controlling incoming communication barring behaviour. The <icb-rule> element is a sub-MO allowing multiple instances with “id” as the unique key.
	<id>	A unique identifier for an individual rule. This must be unique within the scope of the complete document. This must be present on the creation of an <icb-rule> element.
	<icb-conditions>	The <icb-conditions> element is a grouping element for conditions for a rule. All conditions must be satisfied for the rule to take effect. If no conditions are present then the rule is always applicable.
	<rule-deactivated>	The <rule-deactivated> element has values “true” or “false”. If present with the value “true” this has the effect of deactivating the individual rule and the rule is not checked. Set to “false” to remove this condition.
	<icb-caller-identity>	The <icb-caller-identity> element is a grouping element for conditions which are based on the caller’s identity (or lack of an identity in the case of anonymous).
	<anonymous>	The <anonymous> element is an empty element specifying a condition which is satisfied if the caller is anonymous. This can be removed by deleting the enclosing <icb-caller-identity> element or by replacing it with an <identity> or <other-identity> element. The elements <anonymous>, <identity> and <other-identity> are mutually exclusive.
	<other-identity>	The <other-identity> element is an empty element which matches any identity that has not been specified by any of the other rules in the ruleset. It allows for setting a default policy. This can be removed by deleting the enclosing <icb-caller-identity> element or by replacing it with an <anonymous> or <identity> element. The elements <anonymous>, <identity> and <other-identity> are mutually exclusive.

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			<identity>	The <identity> element is a grouping element for conditions which are based on the caller's identity. The condition is satisfied if any of the included <one> or <many> elements within it is matched. This can be removed by deleting the enclosing <icb-caller-identity> element or by replacing it with an <anonymous> or <other-identity> element. The elements <anonymous>, <identity> and <other-identity> are mutually exclusive. See section 6.59 for details of the contents of the <identity> element.
			<roaming>	The <roaming> element has values "true" or "false". If present with the value "true", this condition is satisfied if the subscriber is roaming. Set to "false" to remove this condition.
			<communication-diverted>	The <communication-diverted> element has values "true" or "false". If present with the value "true", this condition is satisfied if the incoming communication has been diverted. Set to "false" to remove this condition.
			<media>	The <media> element contains a media type that the session must include for the condition to be matched e.g. "audio" or "video". This is a multi-value parameter so it can appear more than once with several media values that must all be satisfied for the overall condition to be matched.
			<validity>	The <validity> element is a grouping element for time periods (intervals) within which the rule is valid. See section 6.65 for details of the contents of the <validity> element.
			<presence-status>	The <presence-status> element contains a presence status value that the user must satisfy for the condition to be matched e.g. "meal", "meeting", "travel", "vacation". This is a multi-value parameter so it can appear more than once with several presence status values that must all be satisfied for the overall condition to be matched. This condition is not currently supported by incoming communication barring and will always evaluate to false.
			<valid-periods>	The valid-periods element is a grouping element that allows assembly of complex time condition based upon several sub-conditions. In order for the valid-periods condition to be satisfied the current date/time must match with all the included sub-conditions. See section 6.64 for details of the contents of the <valid-periods> element.
			<invalidity>	The <invalidity> element is a grouping element for absolute time periods (intervals) within which the rule is NOT valid. See section 6.61 for details of the contents of the <invalidity> element.
			<served-identity>	The <served-identity> element is a grouping element for conditions which are based on the user's served identity. The condition is satisfied if any of the included elements within it is matched. See section 6.60 for details of the contents of the <served-identity> element.
			<cb-actions>	The <cb-actions> element is a grouping element for the actions for a rule. For communication barring an <allow> action must be present in each rule. This must be present on the creation of an <icb-rule> element. There is a choice: either a <play-announcement> or a <play-segmented-announcement> can be defined in the list of actions.

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		<allow>	The <allow> element has values “true” or “false”. If set to “false” then any incoming communications satisfying the corresponding conditions will be barred unless overridden by another rule with <allow> set to “true”. If set to “true” then any incoming communications satisfying the corresponding conditions will be allowed i.e. not barred. This must be present on the creation of an <icb-rule> element.
		<do-not-disturb>	The do-not-disturb element has values “true” or “false”. When set to “true” the do-not-disturb element is added into actions part of the rule and if there is any communications satisfying the corresponding conditions and being barred (allow=false), then the incoming communication will be handled by Do Not Disturb service instead of normal incoming communication barring service (e.g. treated with different charging scheme, etc.). If set to “false” then the element is removed from the subscriber actions part of the rule and the incoming communication will be handled by normal incoming communication barring service.
		<play-announcement>	The play-announcement element has string values from 0 to 32 characters. When the play-announcement action is set with the string value containing characters with the length between 1 to 32, if there is any communications satisfying the corresponding conditions and being barred (allow=false), the caller will be presented with the announcement associated with the announcement code pointed by the string value. When the play-announcement action is set with the string value containing character with the length of 0, any play-announcement action element in the rule will be deleted from the rule.
		<play-segmented-announcement>	If there is any communications satisfying the corresponding conditions, the caller will be presented with the segmented announcement associated with the announcement code pointed by the “announcement-name” attribute of the element. Before using any, the segmented (generic) announcements must be configured in MTAS with the same name as given in the “announcement-name” attribute of the “play-segmented-announcement” element. The segmented announcement may contain embedded variables, which can be presented in the “announcement-variable” child element. The configured segmented (generic) announcement shall contain as many standalone voice variable segments as many “announcement-variable” child elements are defined for the “play-segmented-announcement” action. The keyed “play-segmented-announcement” action with the “announcement-name” attribute can be deleted from the list of actions by setting the “xsi:nil” attribute to “true”. The “play-segmented-announcement” element is a sub-MO allowing instance with “announcement-name” as the unique key.
		<announcement-name>	The name of the announcement to be played. This must be present on the creation of a play-segmented-announcement element.

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				<announcement-variable>	The announcement variable to be embedded into the announcement. It's use is optional, i.e. a segmented announcement may or may not contain any variable segment. Maximum 32 announcement variables can be embedded into a segmented announcement. A keyed "announcement-variable" element with the "variable-name" attribute can be deleted from the list of announcement variables by setting the "xsi:nil" attribute to true. The "announcement-variable" element is a sub-MO allowing multiple instances with "variable-name" as the unique key.
				<variable-name>	The name of the announcement variable to be embedded. This must be present on the creation of an announcement-variable element inside a play-segmented-announcement element.
				<variable-value>	The variable value is defined in the variable-value child element of the announcement-variable element. According to H.248.9, the allowed characters in place of a variable value are ASCII 0x09, 0x20-0x7E

Table 40 – Incoming Communication Barring Ruleset XML Elements

6.35 Malicious Communication Identification

The XML elements for the malicious communication identification services are detailed in Table 41.

XML element		Description
<malicious-communication-identification>		The malicious communication identification service. Use xsi:nil="true" to withdraw the entire service.
	< mcid-operator-configuration>	The configuration parameters for the malicious communication identification service that are available to the operator rather than the user. This must be present on the creation of the <malicious-communication-identification> service.
	<activated>	The activated element has values "true" or "false". When set to "true" the user is provisioned with the malicious communication identification service. If set to "false" this will withdraw the service from the user. This must be present on the creation of the malicious-communication-identification service.
	<mcid-mode>	The <mcid-mode> element has values "permanent", "temporary" or "inactive". If set to "permanent" then all communications are logged. If set to "temporary" this allows a recent communication to be logged on user request. If set to "inactive" then terminating MCID is disabled. This must be present on the creation of the <malicious-communication-identification> service.

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XML element	Description
<mcid-orig-mode>	The <mcid-orig-mode> element has values “permanent” or “inactive”. If set to “permanent” then all originating communications are logged. If set to “inactive” then originating MCID is disabled.

Table 41 – Malicious Communication Identification XML Elements

6.36 Malicious Communication Rejection

The XML elements for the malicious communication rejection service are detailed in Table 42.

XML element	Description
<malicious-communication-rejection>	The malicious communication rejection service. Use xsi:nil="true" to withdraw the entire service.
<mcr-operator-configuration>	The configuration parameters for the malicious communication rejection service that are available to the operator rather than the user. This must be present on the creation of the <malicious-communication-rejection> service.
<activated>	The <activated> element has values “true” or “false”. When set to “true” the user is provisioned with the malicious communication rejection service. If set to “false” this will withdraw the service from the user. This must be present on the creation of the <malicious-communication-rejection> service.

Table 42 – Malicious Communication Rejection XML Elements

6.37 Media Policy

The XML elements for the media policy service are detailed in Table 43.

<media-policy>	The media policy service. Use xsi:nil="true" to withdraw the entire service.
<mp-operator-configuration>	The configuration parameters for the media policy service that are available to the operator rather than the user. This must be present on the creation of the <media-policy> service.
<activated>	The activated element has values “true” or “false”. When set to “true” the user is provisioned with the media policy service. This must be present on the creation of the media-policy service.
<mp-ruleset>	Grouping element for a set of zero or more operator rules.
<mp-rule>	An individual rule controlling media policy behavior. The <mp-rule> element is a sub-MO allowing multiple instances with “id” as the unique key.

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				<id>	A unique identifier for an individual rule. This must be unique within the scope of the complete document. This must be present on the creation of an <mp-rule> element.
				<mp-conditions>	The <mp-conditions> element is a grouping element for conditions for a rule. All conditions must be satisfied for the rule to take effect.
				<media>	The <media> element contains a media type that the session must include for the condition to be matched. Possible values are "audio", "video", "text", "application" and "message". This parameter can appear once in a rule and must be present on the creation of an <mp-rule> element.
				<mp-actions>	The <mp-actions> element is a grouping element for the actions for a rule. This must be present on the creation of an <mp-rule> element.
				<allow>	The <allow> element has values "true" or "false". If set to "false" then any media line matching the condition will be blocked. If set to "true" then the media line will not be affected. This element must be present on the creation of an <mp-rule> element.

Table 43 – Media Policy XML Elements

6.38 Multi Device Conference Policy

The XML elements for the multi device conference policy service are detailed in Table 44.

XML element			Description
<multi-device-conference-policy>			The multi device conference policy service. Use xsi:nil="true" to withdraw the entire service.
	<mdcp-operator-configuration>		The configuration parameters for the multi device conference policy service that are available to the operator rather than the user. This must be present on the creation of the multi-device-conference-policy service.
		<activated>	The activated element has values "true" or "false". When set to "true" the user is provisioned with the multi device conference policy service. If set to "false" this will withdraw the service from the user. This must be present on the creation of the multi-device-conference-policy service.
	<mdcp-device-group>		Defines the group of the devices. Operator can create several device groups. The mdcp- device-group element is a sub-MO allowing multiple instances with "name" as the unique key.
		<name>	Defines the name of the device group. MTAS allows "FIXED".

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XML element			Description
		<block-conference-usage>	When the element is present a device belonging to the device-group is blocked from using the conference service. Use xsi:nil="true" to delete this element. This element is optional.
		<block-dialout-invitations>	When the element is present a device belonging to the device-group is blocked from requesting the conference focus to invite participants using the dial-out method (including URI-list usage). Use xsi:nil="true" to delete this element. This element is optional.

Table 44 – Multi Device Conference Policy XML Elements

6.39 Multi Device User Call Admission Control

The XML elements for the multi device user call admission control service are detailed in Table 45.

XML element			Description
		<multi-device-user-call-admission-control>	The multi device user call admission control service. Use xsi:nil="true" to withdraw the entire service.
		<mducac-operator-configuration>	The configuration parameters for the multi device user call admission control service that is available to the operator rather than the user. This must be present on the creation of the multi-device-user-call-admission-control service.
		<activated>	The activated element has values "true" or "false". When set to "true" the user is provisioned with the multi device user call admission control service. If set to "false" this will withdraw the service from the user. This must be present on the creation of the multi-device-user-call-admission-control service.
		<mducac-device-group>	Defines the group of the devices. Operator can create several device groups, but only "ALL" must be present on the creation and is mandatory. The mducac-device-group element is a sub-MO allowing multiple instances with "name" as the unique key. Use xsi:nil="true" to delete this element.
		<name>	Defines the name of the device group. MTAS allows "ALL", "MOBILE" and "FIXED".
		<total-call-limit>	Defines the limit of sessions (originating and terminating) on all devices within the device group. The device group "ALL" must be present on the creation. Use xsi:nil="true" to delete this element. For all other groups this element is optional.

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XML element	Description
<simultaneous-device-usage>	Defines the limit of simultaneous sessions for a particular group of devices. Use xsi:nil="true" to delete this element. This element is optional. For the device group "ALL" this element is ignored.

Table 45 – Multi Device User Call Admission Control XML Elements

6.40 Northbound Call Control

The XML elements for the northbound call control service are detailed in Table 46.

XML element	Description
<northbound-call-control>	The northbound call control service. Use xsi:nil="true" to withdraw the entire service.
<ncc-operator-configuration>	The configuration parameters for the northbound call control service that are available to the operator rather than the user. This must be present on the creation of the <northbound-call-control> service. There is a choice: either a sequence of CAMEL application data (<gsm-scf-address>, <originating-service-key>, <terminating-service-key> and <default-call-handling>), or a sequence of Parlay X application data (<px-originating-trigger> and <px-terminating-trigger>) can be defined.
<activated>	The activated element has values "true" or "false". When set to "true" the user is provisioned with the northbound call control service. If set to "false" this will withdraw the service from the user. This must be present on the creation of the northbound call control service.
<gsm-scf-address>	This normalized E.164 number is the address of the gsmSCF. In case CAMEL application data is provisioned, this element must be present on the creation of the <northbound-call-control> service.
<originating-service-key>	This is the key that identifies the application within the gsmSCF. This must be present on the creation of the <northbound-call-control> service. A value of -1 can be provisioned, which means that CAMEL application will not be triggered for the user on the originating side.
<terminating-service-key>	This is the key that identifies the application within the gsmSCF. This must be present on the creation of the <northbound-call-control> service. A value of -1 can be provisioned, which means that CAMEL application will not be triggered for the user on the terminating side.
<default-call-handling>	Defines how the call shall proceed in case of signaling failure towards the gsmSCF. Possible values are continue and release. In case CAMEL application data is provisioned, this element must be present on the creation of the <northbound-call-control> service.

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XML element			Description
		<imsi>	The IMSI for this subscriber. Used by the NCC service CAMEL interaction service in MTAS, for the case when the served user is unregistered. Typically this will happen when an IMS user originates a call from a CS access (ICS use-case). This element is mandatory if CM attribute mtasNccImsiBehavior is set to 1.
		<px-originating-trigger>	The <px-originating-trigger> element is a grouping element for the data to be used for an originating Parlay X session.
		<px-application-address>	This is the URL, including the port, to the Parlay X application server to be used for an originating Parlay X session.
		<px-call-notification>	This element defines the possible Call Events that shall be reported on the CallNotification interface. This is a multi-value parameter so it can appear more than once with several call event values.
		<px-terminating-trigger>	The <px-terminating-trigger> element is a grouping element for the data to be used for an terminating Parlay X session.
		<px-application-address>	This is the URL, including the port, to the Parlay X application server to be used for an terminating Parlay X session.
		<px-call-notification>	This element defines the possible Call Events that shall be reported on the CallNotification interface. This is a multi-value parameter so it can appear more than once with several call event values.

Table 46 - Northbound Call Control XML Elements

6.41 Number Portability Announcement

The XML elements for the number portability announcement service are detailed in Table 47.

XML element			Description
		<number-portability-announcement>	The number portability announcement service. Use xsi:nil="true" to withdraw the entire service.
		<npa-operator-configuration>	The configuration parameters for the number portability announcement service that are available to the operator rather than the user. This must be present on the creation of the <number-portability-announcement> service.
		<activated>	The activated element has values "true" or "false". When set to "true" the user is provisioned with the number portability announcement service. This must be present on the creation of the number portability announcement service.

Table 47 – Number Portability Announcement XML Elements

6.42 Operator Controlled Outgoing Barring Programs

The XML elements for the operator controlled outgoing barring programs service are detailed in Table 48.

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XML element		Description
<operator-controlled-outgoing-barring-programs>		The operator controlled outgoing barring programs service. Use xsi:nil="true" to withdraw the entire service.
	<ocobp-operator-configuration>	The configuration parameters for the operator controlled outgoing barring programs service that are available to the operator rather than the user. This must be present on the creation of the <operator-controlled-outgoing-barring-programs> service.
	<activated>	The activated element has values "true" or "false". When set to "true" the user is provisioned with the operator controlled outgoing barring programs service. If set to "false" this will withdraw the service from the user. This must be present on the creation of the operator-controlled-outgoing-barring-programs service.
	<operator-barring-program>	The <operator-barring-program> element is a container for each of the categories of outgoing communications that is to be barred by the service. The operator-barring-program and operator-permitted-program are mutually exclusive.
	<category-name>	The <category-name> element contains the name of a category of calls to be barred. This is a multi-value parameter and can appear between 0 and 83 times to cover each category of outgoing communications to be barred. The value of each <category-name> element is a string of up to 32 characters that should match one of the category names defined by the mtasOcbBCatName or mtasOcbOpBCatName attributes [3] or one of the special values "Local", "Non Local" or "Allow Local".
	<operator-permitted-program>	The <operator-permitted-program> element is a container for each of the categories of outgoing communications that is to be allowed by the service – any identity not matched by one of these categories or the global white list is barred. The operator-barring-program and operator-permitted-program are mutually exclusive.
	<category-name>	The <category-name> element contains the name of a category of calls to be permitted. This is a multi-value parameter and can appear between 0 and 83 times to cover each category of outgoing communications to be permitted. The value of each category-name element is a string of up to 32 characters that should match one of the category names defined by the mtasOcbBCatName or mtasOcbOpBCatName attributes [3] or one of the special values "Local" or "Non Local".
	<operator-diversion-barring-program>	The <operator-diversion-barring-program> element is a container for each of the categories of outgoing communications that should be barred as diversion targets.

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XML element			Description
		<category-name>	The <category-name> element contains the name of a category of calls to be barred for diverted communications. This is a multi-value parameter and can appear between 0 and 83 times to cover each category of outgoing communications to be barred. The value of each <category-name> element is a string of up to 32 characters that should match one of the category names defined by the mtasOcbBCatName or mtasOcbOpBCatName attributes [3] or one of the special values "Local", "Non Local" or "Allow Local".

Table 48 – Operator Controlled Outgoing Barring Programs XML Elements

6.43 Outgoing Barring Programs

The XML elements for the outgoing barring programs service are detailed in Table 49.

XML element			Description
		<outgoing-barring-programs>	The outgoing barring programs service. Use xsi:nil="true" to withdraw the entire service.
		<obp-operator-configuration>	The configuration parameters for the outgoing barring programs service that are available to the operator rather than the user. This must be present on the creation of the <outgoing-barring-programs> service.
		<activated>	The activated element has values "true" or "false". When set to "true" the user is provisioned with the outgoing barring programs service. If set to "false" this will withdraw the user service, but the obp-user-configuration element must be preserved. This must be present on the creation of the outgoing-barring-programs service.
		<scheme>	The element <scheme> has values "single" and "multiple" and controls which type of barring programs apply to the subscriber. The "single" scheme allows one program at a time. With the "multiple" scheme, several programs can be combined at any time, allowing the individual programs to be simpler. This must be present on the creation of the <outgoing-barring-programs> service.
		<default-barring-program>	The element <default-barring-program> contains the number of the barring program to be used when the user via supplementary service codes activates barring program without providing a barring program. If the scheme is "single" allowed values are 0-255, while if scheme is "multiple" allowed values are 0-49. The element can be deleted by using xsi:nil="true" in a CAI3G Set request.

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XML element				Description
			<obp-user-configuration>	The configuration parameters for the outgoing barring programs service that are available for the user to set directly. These can also be set on the user's behalf by the operator. This shall only be present if the service is provisioned i.e. <obp-operator-configuration> is present and activated is "true".
			<active>	The <active> element has values "true" or "false". It controls whether the outgoing barring programs service is active or not for this subscriber.
			<provisioned-program>	The <provisioned-program> element is a containing element allowing the choice between either <single-program> or <multiple-programs>. The choice must reflect the provisioned value of <scheme>.
			<single-program>	The <single-program> element contains the number of the combined barring program to be used. It is an integer in the range 0-255. The elements <multiple-programs> and <single-program> are mutually exclusive.
			<multiple-programs>	The <multiple-programs> element is a container for each of the categories of outgoing communications that is to be barred by the service. The elements <multiple-programs> and <single-program> are mutually exclusive.
			<category-name>	The <category-name> element contains the name of a category of calls to be barred. This is a multi-value parameter and can appear between 0 and 16 times to cover each category of outgoing communications to be barred. The value of each <category-name> element is a string of up to 32 characters that should match one of the category names defined by the mtasOcbBCatName attributes [3] or one of the special values "Local", "Non Local" or "Allow Local".

Table 49 – Outgoing Barring Programs XML Elements

6.44 Outgoing Communication Barring

The XML elements for the outgoing communication barring service are detailed in Table 50.

XML element		Description
	<outgoing-communication-barring>	The outgoing communication barring service. Use xsi:nil="true" to withdraw the entire service.
	<ocb-operator-configuration>	The configuration parameters for the outgoing communication barring service that are available to the operator rather than the user. This must be present on the creation of the <outgoing-communication-barring> service.

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XML element			Description
		<activated>	The activated element has values “true” or “false”. When set to “true” the user is provisioned with the outgoing communication barring service. If set to false this will withdraw the user service, but the ocb-user-configuration element is preserved. This must be present on the creation of the outgoing-communication-barring service.
		<ocb-ruleset>	Grouping element for a set of zero or more operator rules. These rules apply regardless of whether <activated> is “true” or “false”. See section 6.45 for details of the content of the <ocb-ruleset>.
		<ocb-op-conditions>	The <ocb-op-conditions> element is a grouping element for fine-grain provisioning options that control which condition elements the user is permitted to use in outgoing communication barring rules. If a condition is absent, it disallows the subscriber to use that condition in outgoing communication barring rules.
		<identity-condition>	The <identity-condition> element has values “activated” or “deactivated”. When set to “activated” it allows the subscriber to use the <identity> condition in outgoing communication barring rules.
		<roaming-condition>	The <roaming-condition> element has values “activated” or “deactivated”. When set to “activated” it allows the subscriber to use the <roaming> condition in outgoing communication barring rules.
		<international-condition>	The <international-condition> element has values “activated” or “deactivated”. When set to “activated” it allows the subscriber to use the <international> condition in outgoing communication barring rules.
		<international-exHC-condition>	The <international-exHC-condition> element has values “activated” or “deactivated”. When set to “activated” it allows the subscriber to use the <international-exHC> condition in outgoing communication barring rules.
		<media-condition>	The <media-condition> element has values “activated” or “deactivated”. When set to “activated” it allows the subscriber to use <media> conditions in outgoing communication barring rules.
		<other-identity-condition>	The <other-identity-condition> element has values “activated” or “deactivated”. When set to “activated” it allows the subscriber to use the <other-identity> condition in outgoing communication barring rules.
		<presence-status-condition>	The <presence-status-condition> element has values “activated” or “deactivated”. When set to “activated” it allows the subscriber to use <presence-status> conditions in outgoing communication barring rules. This is not currently supported by outgoing communication barring and should be omitted or set to “deactivated”.
		<validity-condition>	The <validity-condition> element has values “activated” or “deactivated”. When set to “activated” it allows the subscriber to use the <validity> condition in outgoing communication barring rules.

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XML element			Description
		<valid-periods-condition>	The <valid-periods-condition> element has values “activated” or “deactivated”. When set to “activated” it allows the subscriber to use the <valid-periods> condition in outgoing communication barring rules.
		<invalidity-condition>	The <invalidity-condition> element has values “activated” or “deactivated”. When set to “activated” it allows the subscriber to use the <invalidity> condition in outgoing communication barring rules.
		<carrier-condition>	The <carrier-condition> element has values “activated” or “deactivated”. When set to “activated” it allows the subscriber to use the <carrier> condition in outgoing communication barring rules.
		<carrier-select-code>	The <carrier-select-code> element has values “activated” or “deactivated”. When set to “activated” it allows the subscriber to use the <carrier-select-code> element of the <carrier> condition in outgoing communication barring rules.
		<served-identity-condition>	The <served-identity-condition> element has values “activated” or “deactivated”. When set to “activated” it allows the subscriber to use the <served-identity> condition in outgoing communication barring rules.
		<unconditional-condition>	The <unconditional-condition> element has values “activated” or “deactivated”. When set to “activated” it allows the subscriber to use unconditional condition in outgoing communication barring rules. This is when there is no <ocb-conditions> set, empty element <ocb-conditions/> or <ocb-conditions></ocb-conditions> and an element <cb-actions> specified. Note: If the <unconditional-condition> element is absent it allows the subscriber to use unconditional condition in outgoing communication barring rules.
		<ocb-op-actions>	The <ocb-op-actions> element is a grouping element for fine-grain provisioning options to control which action elements the user is permitted to use in outgoing communication barring rules. If an action is absent, it disallows the subscriber to use that action in outgoing communication barring rules.
		<allow-true-action>	The <allow-true-action> element has values “activated” or “deactivated”. When set to “activated” it allows the subscriber to use the <allow> action with the value of “true” in outgoing communication barring rules to explicitly allow outgoing communications that match the associated conditions. With this absent or set to “deactivated” the subscriber is only permitted to use the <allow> action with the value of “false” to bar outgoing communications.
		<play-announcement-action>	The play-announcement-action element has values “activated” or “deactivated”. When set to “activated” it allows the subscriber to use the play-announcement action in outgoing communication barring rules to control whether the caller is presented by specific announcement handled by generic announcement service.

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XML element			Description
		<play-segmented-announcement-action>	The play-announcement-action element has values “activated” or “deactivated”. When set to “activated” it allows the subscriber to use the play-segmented-announcement action in outgoing communication barring rules to control whether the caller is presented by specific segmented announcement handled by generic announcement service.
		<rule-limit>	The maximum number of allowed outgoing communication barring rules in the user document. Not specified or zero limit means no limit.
		<ocb-user-configuration>	The configuration parameters for the outgoing communication barring service that are available for the user to set directly. These can also be set on the user’s behalf by the operator. This shall only be present if the service is provisioned i.e. <ocb-operator-configuration> is present and activated is “true”.
		<active>	The <active> element has values “true” or “false”. It controls whether the outgoing communication barring service is active or not for this subscriber. Note that this controls the user rules but has no effect on the operator rules.
		<ocb-ruleset>	Grouping element for a set of zero or more user rules. See section 6.45 for details of the content of the <ocb-ruleset>.

Table 50 – Outgoing Communication Barring XML Elements

6.45 Outgoing Communication Barring Ruleset

The XML elements for the outgoing communication barring ruleset, <ocb-ruleset> are detailed in Table 51.

<ocb-ruleset>			Grouping element for a set of zero or more outgoing communication barring rules.
		<ocb-rule>	An individual rule controlling outgoing communication barring behaviour. The <ocb-rule> element is a sub-MO allowing multiple instances with “id” as the unique key.
		<id>	A unique identifier for an individual rule. This must be unique within the scope of the complete document. This must be present on the creation of an <ocb-rule> element.
		<ocb-conditions>	The <ocb-conditions> element is a grouping element for conditions for a rule. All conditions must be satisfied for the rule to take effect. If no conditions are present then the rule is always applicable.
		<rule-deactivated>	The <rule-deactivated> element has values “true” or “false”. If present with the value “true” this has the effect of deactivating the individual rule and the rule is not checked. Set to “false” to remove this condition.
		<ocb-caller-identity>	The <ocb-caller-identity> element is a grouping element for conditions which are based on the called party’s identity.

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			<other-identity>	The <other-identity> element is an empty element which matches any identity that has not been specified by any of the other rules in the ruleset. It allows for setting a default policy. This can be removed by deleting the enclosing <ocb-caller-identity> element or by replacing it with an <identity> element. The elements <identity> and <other-identity> are mutually exclusive.
			<identity>	The <identity> element is a grouping element for conditions which are based on the called party's identity. The condition is satisfied if any of the included <one> or <many> elements within it is matched. This can be removed by deleting the enclosing <ocb-caller-identity> element or by replacing it with an <other-identity> element. The elements <identity> and <other-identity> are mutually exclusive. See section 6.59 for details of the contents of the <identity> element.
			<roaming>	The <roaming> element has values "true" or "false". If present with the value "true", this condition is satisfied if the subscriber is roaming. Set to "false" to remove this condition.
			<international>	The <international> element has values "true" or "false". If present with the value "true", this condition is satisfied if the subscriber calls someone who is in another country than the one where the subscriber calls from. Set to "false" to remove this condition.
			<international-exHC>	The <international-exHC> element has values "true" or "false". If present with the value "true", this condition is satisfied if the subscriber calls someone who is in another country than the one where the subscriber calls from and subscriber's home country. Set to "false" to remove this condition.
			<media>	The <media> element contains a media type that the session must include for the condition to be matched e.g. "audio" or "video". This is a multi-value parameter so it can appear more than once with several media values that must all be satisfied for the overall condition to be matched.
			<validity>	The <validity> element is a grouping element for time periods (intervals) within which the rule is valid. See section 6.65 for details of the contents of the <validity> element.
			<presence-status>	The <presence-status> element contains a presence status value that the user must satisfy for the condition to be matched e.g. "meal", "meeting", "travel", "vacation". This is a multi-value parameter so it can appear more than once with several presence status values that must all be satisfied for the overall condition to be matched. This condition is not currently supported by outgoing communication barring and will always evaluate to false.
			<valid-periods>	The valid-periods element is a grouping element that allows assembly of complex time condition based upon several sub-conditions. In order for the valid-periods condition to be satisfied the current date/time must match with all the included sub-conditions. See section 6.64 for details of the contents of the <valid-periods> element.

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		<invalidity>	The <invalidity> element is a grouping element for absolute time periods (intervals) within which the rule is NOT valid. See section 6.60 for details of the contents of the <invalidity> element.
		<carrier>	The <carrier> element is a grouping element for conditions which are based on the carrier selected for the call on call-by-call basis. If no sub-element is specified, all carriers are matched. The carriers that match to the pre-subscribed carriers for the current call-type are subject to this condition.
		<carrier-select-code>	The <carrier-select-code> element contains the dialed Carrier Select Code. This is a multi-value parameter so it can appear more than once with several Carrier Select Codes. If any of them is matches, the carrier condition is fulfilled.
		<carrier-name>	The <carrier-name> element contains an alias name of the carrier selected for the call on call-by-call basis. This is a multi-value parameter so it can appear more than once with several carrier names. If any of them is matches, the carrier condition is fulfilled.
		<served-identity>	The <served-identity> element is a grouping element for conditions which are based on the user's served identity. The condition is satisfied if any of the included elements within it is matched. See section 6.60 for details of the contents of the <served-identity> element.
		<cb-actions>	The <cb-actions> element is a grouping element for the actions for a rule. For communication barring an <allow> action must be present in each rule. This must be present on the creation of an <ocb-rule> element. There is a choice: either a <play-announcement> or a <play-segmented-announcement> can be defined in the list of actions.
		<allow>	The <allow> element has values "true" or "false". If set to "false" then any outgoing communications satisfying the corresponding conditions will be barred unless overridden by another rule with <allow> set to "true". If set to "true" then any outgoing communications satisfying the corresponding conditions will be allowed by this service i.e. not barred. This must be present on the creation of an <ocb-rule> element.
		<play-announcement>	The play-announcement element has string values from 0 to 32 characters. When the play-announcement action is set with the string value containing characters with the length between 1 to 32, if there is any communications satisfying the corresponding conditions and being barred (allow=false), the caller will be presented with the announcement associated with the announcement code pointed by the string value. When the play-announcement action is set with the string value containing character with the length of 0, any play-announcement action element in the rule will be deleted from the rule.

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				<play-segmented-announcement>	<p>If there is any communications satisfying the corresponding conditions, the caller will be presented with the segmented announcement associated with the announcement code pointed by the “announcement-name” attribute of the element. Before using any, the segmented (generic) announcements must be configured in MTAS with the same name as given in the “announcement-name” attribute of the “play-segmented-announcement” element.</p> <p>The segmented announcement may contain embedded variables, which can be presented in the “announcement-variable” child element. The configured segmented (generic) announcement shall contain as many standalone voice variable segments as many “announcement-variable” child elements are defined for the “play-segmented-announcement” action.</p> <p>The keyed “play-segmented-announcement” action with the “announcement-name” attribute can be deleted from the list of actions by setting the “xsi:nil” attribute to “true”.</p> <p>The “play-segmented-announcement” element is a sub-MO allowing instance with “announcement-name” as the unique key.</p>
				<announcement-name>	<p>The name of the announcement to be played. This must be present on the creation of a play-segmented-announcement element.</p>
				<announcement-variable>	<p>The announcement variable to be embedded into the announcement. It's use is optional, i.e. a segmented announcement may or may not contain any variable segment. Maximum 32 announcement variables can be embedded into a segmented announcement. A keyed "announcement-variable" element with the "variable-name" attribute can be deleted from the list of announcement variables by setting the "xsi:nil" attribute to true.</p> <p>The “announcement-variable” element is a sub-MO allowing multiple instances with “variable-name” as the unique key.</p>
				<variable-name>	<p>The name of the announcement variable to be embedded. This must be present on the creation of an announcement-variable element inside a play-segmented-announcement element.</p>
				<variable-value>	<p>The variable value is defined in the variable-value child element of the announcement-variable element. According to H.248.9, the allowed characters in place of a variable value are ASCII 0x09, 0x20-0x7E</p>

Table 51 – Outgoing Communication Barring Ruleset XML Elements

6.46 Originating Calling Name Identity Presentation

The XML elements for the calling name identity presentation service are detailed in Table 52.

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<originating-calling-name-identity-presentation>		The originating calling name identity presentation service. Use xsi:nil="true" to withdraw the entire service.
	<ocnip-operator-configuration>	The configuration parameters for the originating calling name identity presentation service that are available to the operator rather than the user. This must be present on the creation of the <originating-calling-name-identity-presentation> service.
	<activated>	The activated element has values "true" or "false". When set to "true" the user is provisioned with the originating calling name identity presentation service. If set to "false" this will withdraw the user service, but the ocnip-user-configuration element is preserved. This must be present on the creation of the originating-calling-name-identity-presentation service.

Table 52 – Originating Calling Name Identity Presentation XML Elements

6.47 Originating Identity Presentation

The XML elements for the originating identity presentation service are detailed in Table 53

XML element		Description
<originating-identity-presentation>		The originating identity presentation service. Use xsi:nil="true" to withdraw the entire service.
	<oip-operator-configuration>	The configuration parameters for the originating identity presentation service that are available to the operator rather than the user. This must be present on the creation of the <originating-identity-presentation> service.
	<activated>	The activated element has values "true" or "false". When set to "true" the user is provisioned with the originating identity presentation service. If set to "false" this will withdraw the user service, but the oip-user-configuration element is preserved. This must be present on the creation of the originating-identity-presentation service.
	<restriction-override>	The <restriction-override> element has values "override-active" or "override-not-active". The value "override-active" means that the originating identity will be presented even if the calling party has requested for their presentation to be restricted.
	<oip-user-configuration>	The configuration parameters for the originating identity presentation service that are available for the user to set directly. These can also be set on the user's behalf by the operator. This shall only be present if the service is provisioned i.e. <oip-operator-configuration> is present and activated is "true".
	<active>	The <active> element has values "true" or "false". It controls whether the originating identity presentation service is active or not for this subscriber.

Table 53 – Originating Identity Presentation XML Elements

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6.48 Originating Identity Presentation Restriction

The XML elements for the originating identity presentation restriction service are detailed in Table 54.

XML element		Description
<originating-identity-presentation-restriction>		The originating identity presentation restriction service. Use xsi:nil="true" to withdraw the entire service.
	<oir-operator-configuration>	The configuration parameters for the originating identity presentation restriction service that are available to the operator rather than the user. This must be present on the creation of the <originating-identity-presentation-restriction> service.
	<activated>	The <activated> element has values "true" or "false" . When set to "true" the user is provisioned with the originating identity presentation restriction service. If set to "false" this will withdraw the user service and the <oir-user-configuration> element must be preserved. This must be present on the creation of the <originating-identity-presentation-restriction> service.

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XML element		Description
	<mode>	<p>The <mode> element has values “permanent”, “temporary”, “ad-hoc-temporary-presentation-restricted” or “ad-hoc-temporary-presentation-not-restricted”.</p> <p>The value “permanent” is used to give the user a permanent restriction service. In this case the <oir-user-configuration> element must not be active.</p> <p>The value “temporary” gives an identity presentation restriction service where the user can choose default behavior and also whether to override this on a per-call basis. This must be present on the creation of the <originating-identity-presentation-restriction> service.</p> <p>The value “ad-hoc-temporary-presentation-restricted” gives an identity presentation restriction service where the user has presentation-restricted however the user can override this on a per-call basis. The element <oir-user-configuration> must have element <active> set to “true” and the <default-behaviour> element set to “presentation-restricted”.</p> <p>The value “ad-hoc-temporary-presentation-not-restricted” gives an identity presentation restriction service where the user has presentation-not-restricted however the user can override this on a per-call basis. The element <oir-user-configuration> must have element <active> set to “true” and the <default-behaviour> element set to “presentation-not-restricted”.</p>
	<restriction>	The <restriction> element has values “only-identity” or “all-private-information” and selects whether just the identity of the user is restricted or all private information.
	<oir-user-configuration>	The configuration parameters for the originating identity presentation restriction service that are available for the user to set directly. These can also be set on the user’s behalf by the operator. This shall only be present if the service is provisioned i.e. <oir-operator-configuration> is present and activated is “true”.
	<active>	The <active> element has values “true” or “false”. It controls whether the originating identity presentation restriction service is active or not for this subscriber.
	<default-behaviour>	The <default-behaviour> element has values “presentation-restricted” or “presentation-not-restricted”. It selects the default behaviour in temporary mode when the user does not select explicitly within the call whether to restrict their identity or not.

Table 54 – Originating Identity Presentation Restriction XML Elements

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6.49 Priority Call

The XML elements for the priority call service are detailed in Table 55.

XML element		Description
<priority-call>		The priority call service. Use xsi:nil="true" to withdraw the entire service.
	<priority-call-operator-configuration>	The configuration parameters for the priority call service that are available to the operator rather than the user. This must be present on the creation of the <priority-call> service.
	<activated>	The activated element has values "true" or "false". When set to "true" the user is provisioned with the priority call service. This must be present on the creation of the priority-call service.

Table 55 – Priority Call XML Elements

6.50 Session Transfer To Own Device

The XML elements for the session transfer to own device service are detailed in Table 56

XML element		Description
<session-transfer-to-own-device>		The session transfer to own device service. Use xsi:nil="true" to withdraw the entire service. Users with the session transfer to own device service are not supported as targets for communication completion so the session transfer to own device service can only be activated if the user has <call-completion-monitor-opt-out> activated for all variants of communication completion.
	<stod-operator-configuration>	The configuration parameters for the session transfer to own device service that are available to the operator rather than the user. This must be present on the creation of the <session-transfer-to-own-device> service.
	<activated>	The activated element has values "true" or "false". When set to "true" the user is provisioned with the session transfer to own device service. If set to "false" this will withdraw the service from the user. This must be present on the creation of the <session-transfer-to-own-device> service.
	<max-targets>	The max-targets element controls the maximum number of distinct targets that the user can have for communication distribution in addition to the PRIMARY identity. Integer value between 2 and 10. This must be present on the creation of the <session-transfer-to-own-device> service.

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XML element				Description
			<primary-hosting>	The primary-hosting element defines where the primary identity is hosted with values "IMS" for users hosted on the IMS network the MTAS is serving and "non-IMS" for users who have session transfer to own device performed by the IMS network but are not registered on the IMS network e.g. users on a separate circuit-switched network. This must be present on the creation of the <session-transfer-to-own-device> service.
			<rule-limit>	The maximum number of allowed FCD rules in the user document. Not specified or zero limit means no limit. Note that in session transfer to own device, the exactly same FCD rules are used.
			<stod-user-configuration>	The configuration parameters for the session transfer to own service that are available for the user to set directly. These can also be set on the user's behalf by the operator. This shall only be present if the service is provisioned i.e. <stod-operator-configuration> is present and activated is "true".
			<active>	Controls whether the session transfer to own device service is active or not for this subscriber.
			<target-list>	A list defining related targets that can be included in communication distribution. The <target-list> in user-common-data 6.56 is the preferred way to define related targets so they are available across multiple services. The <target-list> is retained within communication-distribution for backwards compatibility. See section 6.63 for details of the contents of the <target-list> element.
			<stod-ruleset>	Grouping element for a set of zero or more flexible communication distribution user rules.
			<fcd-rule>	An individual rule controlling communication distribution behaviour. The fcd-rule element is a sub-MO allowing multiple instances with "id" as the unique key.
			<id>	A unique identifier for an individual rule. This must be unique within the scope of the complete document. This must be present on the creation of an <fcd-rule>.
			<fcd-conditions>	The <fcd-conditions> element is a grouping element for conditions for a rule. All conditions must be satisfied for the rule to take effect. If no conditions are present then the rule is always applicable.
			<rule-deactivated>	The rule-deactivated element has values "true" or "false". If present with the value "true" this has the effect of deactivating the individual rule and the rule is not checked. Set to "false" to remove this condition.
			<valid-periods>	The valid-periods element is a grouping element that allows assembly of complex time condition based upon several sub-conditions. In order for the valid-periods condition to be satisfied the current date/time must match with all the included sub-conditions. See section 6.64 for details of the contents of the <valid-periods> element.

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XML element					Description
				<validity>	The validity element is a grouping element for absolute time periods (intervals) within which the rule is valid. See section 6.65 for details of the contents of the <validity> element.
				<invalidity>	The <invalidity> element is a grouping element for absolute time periods (intervals) within which the rule is NOT valid. See section 6.60 for details of the contents of the <invalidity> element.
				<fcd-actions>	The fcd-actions element is a grouping element for the actions for a rule. This must be present on the creation of an <fcd-rule>. Either <parallel-distribution> or <serial-distribution> must be present on the creation of an <fcd-rule>.
				<parallel-distribution>	The <parallel-distribution> element is a grouping element with details of the targets to which the communication should be distributed in parallel. See section 6.58 for details of the contents of the <parallel-distribution> element.
				<serial-distribution>	The <serial-distribution> element is a grouping element with details of the targets to which the communication should be distributed in series. See section 6.58 for details of the contents of the <serial-distribution> element.

Table 56 – Session Transfer To Own Device XML elements

6.51 Supplementary Service Codes

The XML elements for the supplementary service codes service are detailed in Table 57.

XML element			Description
		<supplementary-service-codes>	The supplementary service codes service. Use xsi:nil="true" to withdraw the entire service.
		<ssc-operator-configuration>	The configuration parameters for the supplementary service codes service that are available to the operator rather than the user. This must be present on the creation of the <supplementary-service-codes> service.
		<activated>	The <activated> element has values "true" or "false". When set to "true" the user is provisioned with the supplementary service codes service. If set to "false" this will withdraw the service from the user. This must be present on the creation of the <supplementary-service-codes> service.

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XML element			Description
		<pin-code>	The <pin-code> element holds the PIN code that the user must enter to authorize any feature access codes requiring a PIN. The PIN may be included in the clear in which case it consists of between 4 and 6 digits. Alternatively it can be encoded as an MD5 hash of the PIN code according to RFC 1321 [6]. The MD5 hash consists of 32 hex characters. When modified the operator should also delete any pin-failures element to re-enable the maximum number of attempts.
		<pin-failures>	Element to keep track of failed PIN attempts. Delete this element with xsi:nil="true" to re-enable the PIN with the maximum number of attempts. The <pin-failures> can also be used to lock a PIN code without deleting it by setting a <count> greater than the maximum allowed and a <first-fault> value far in the future.
		<count>	The count of consecutive failed PIN attempts. Once this exceeds the configured maximum number of allowed consecutive faulty attempts the PIN is locked.
		<first-fault>	The date and time of the first failed PIN attempt. This is used together with the node parameter for release lock hour to determine when the PIN failures element shall be cleared and SSC commands with PIN re-enabled.

Table 57 – Supplementary Service Codes XML Elements

6.52 Terminating Identity Presentation

The XML elements for the terminating identity presentation service are detailed in Table 58.

XML element			Description
		<terminating-identity-presentation>	The terminating identity presentation service. Use xsi:nil="true" to withdraw the entire service.
		<tip-operator-configuration>	The configuration parameters for the terminating identity presentation service that are available to the operator rather than the user. This must be present on the creation of the <terminating-identity-presentation> service.
		<activated>	The <activated> element has values "true" or "false". When set to "true" the user is provisioned with the terminating identity presentation service. If set to "false" this will withdraw the user service and the <tip-user-configuration> element must be preserved. This must be present on the creation of the <terminating-identity-presentation> service.
		<restriction-override>	The <restriction-override> element has values "override-active" or "override-not-active". The value "override-active" means that the terminating identity will be presented even if the called party has requested for their presentation to be restricted.

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XML element		Description
	<tip-user-configuration>	The configuration parameters for the terminating identity presentation service that are available for the user to set directly. These can also be set on the user's behalf by the operator. This shall only be present if the service is provisioned i.e. <tip-operator-configuration> is present and activated is "true".
	<active>	The <active> element has values "true" or "false". It controls whether the terminating identity presentation service is active or not for this subscriber.

Table 58 – Terminating Identity Presentation XML Elements

6.53 Terminating Identity Presentation Restriction

The XML elements for the terminating identity presentation service are detailed in Table 59.

XML element		Description
	<terminating-identity-presentation-restriction>	The terminating identity presentation restriction service. Use xsi:nil="true" to withdraw the entire service.
	<tir-operator-configuration>	The configuration parameters for the terminating identity presentation restriction service that are available to the operator rather than the user. This must be present on the creation of the <terminating-identity-presentation-restriction> service.
	<activated>	The <activated> element has values "true" or "false". When set to "true" the user is provisioned with the terminating identity presentation restriction service. If set to "false" this will withdraw the user service and the <tir-user-configuration> element must be preserved. This must be present on the creation of the <terminating-identity-presentation-restriction> service.
	<mode>	The <mode> element has values "permanent" or "temporary". The value "permanent" is used to give the user a permanent restriction service. In this case the <tir-user-configuration> element must not be active. The value "temporary" gives an identity presentation restriction service where the user can choose default behaviour and also whether to override this on a per-call basis. This must be present on the creation of the <terminating-identity-presentation-restriction> service. Note: The values "ad-hoc-temporary-presentation-restricted" and "ad-hoc-temporary-presentation-not-restricted" are not allowed and are rejected.
	<tir-user-configuration>	The configuration parameters for the terminating identity presentation restriction service that are available for the user to set directly. These can also be set on the user's behalf by the operator. This shall only be present if the service is provisioned i.e. <tir-operator-configuration> is present and activated is "true".

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XML element		Description
	<active>	The <active> element has values “true” and “false”. It controls whether the terminating identity presentation restriction service is active or not for this subscriber.
	<default-behaviour>	The <default-behaviour> element has values “presentation-restricted” and “presentation-not-restricted”. It selects the default behaviour in temporary mode when the user does not select explicitly within the call whether to restrict their identity or not.

Table 59 - Terminating Identity Presentation Restriction XML Elements

6.54 Three Party

The XML elements for the three party service are detailed in Table 60.

XML element		Description
	<three-pty>	The three party service. Use xsi:nil=”true” to withdraw the entire service.
	<three-pty-operator-configuration>	The configuration parameters for the three party service that are available to the operator rather than the user. This must be present on the creation of the <three-pty> service.
	<activated>	The activated element has values “true” or “false”. When set to “true” the user is provisioned with the three party service. This must be present on the creation of the three-pty service.

Table 60 – Three Party XML Elements

6.55 User Call Admission Control

The XML elements for the user call admission control service are detailed in Table 61.

XML element		Description
	<user-call-admission-control>	The user call admission control service. Use xsi:nil=”true” to withdraw the entire service.
	<ucac-operator-configuration>	The configuration parameters for the user call admission control service that are available to the operator rather than the user. This must be present on the creation of the <user-call-admission-control> service.
	<activated>	The activated element has values “true” or “false”. When set to “true” the user is provisioned with the user call admission control service. If set to “false” this will withdraw the service from the user. This must be present on the creation of the user-call-admission-control service.

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XML element		Description
	<orig-active-limit>	Defines the limit of originating, active sessions for this user. This must be present on the creation of the <user-call-admission-control-service>.
	<term-active-limit>	Defines the limit of terminating, active sessions for this user. This must be present on the creation of the <user-call-admission-control-service>.
	<total-active-limit>	Defines the limit of active sessions (i.e. the sum of originating and terminating active sessions) for this user. This must be present on the creation of the <user-call-admission-control-service>.
	<fixed-active-limit>	Defines the limit of active sessions (originating and terminating) on fixed devices for this user. This element is optional.
	<orig-all-limit>	Defines the limit of all originating sessions (i.e. the sum of active and inactive originating sessions) for this user. This must be present on the creation of the <user-call-admission-control-service>.
	<term-all-limit>	Defines the limit of all terminating sessions (i.e. the sum of active and inactive terminating sessions) for this user. This must be present on the creation of the <user-call-admission-control-service>.
	<total-all-limit>	Defines the limit of all sessions (i.e. the sum of all originating and terminating sessions) for this user. This must be present on the creation of the <user-call-admission-control-service>.
	<waiting-limit>	Defines the limit of waiting sessions for this user. This must be present on the creation of the <user-call-admission-control-service>. If the communication waiting service is in normal mode or alternate mode 1 [3], then the waiting limit can only be set greater than zero if the user also has the communication waiting service activated. Due to the mutual dependency with the communication waiting service both services must be updated in the same request on setting the waiting limit between zero and non-zero values. If the communication waiting service is in mode 2 or 4 [3], there is no dependency between the communication waiting service and the user call admission control service.

Table 61 – User Call Admission Control XML Elements

6.56 User Common Data

The XML elements for the user common data are detailed in Table 62.

XML element		Description
	<user-common-data>	Common data available to the user across multiple services. Use xsi:nil="true" to delete the user-common-data .
	<ucd-operator-configuration>	The configuration parameters for the user common data that are available to the operator rather than the user. This must be present on the creation of the <user-common-data> service.

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XML element		Description
	<activated>	The activated element has values "true" or "false". When set to "true" the user is provisioned with the user common data. If set to "false" this will withdraw the service from the user. This must be present on the creation of the <user-common-data> service.
	<max-targets>	The max-targets element controls the maximum number of distinct targets that the user can have in the target-list. Integer value between 2 and 10. This must be present on the creation of the <user-common-data> service.
	<max-device-targets>	The max-device-targets element controls the maximum number of distinct devices that the user can have in the target-device-list. Integer value between 2 and 10. This must be present on the creation of the <user-common-data> service.
	<target-device-list>	The target-device-list element has values "activated" or "deactivated". When set to "activated" the user is allowed to use the target-device-list element of the user common data. This must be present on the creation of the user common data.
	<holiday-list>	The <holiday-list> element has values "activated" or "deactivated". When set to "activated" the user is allowed to use the holiday-list element in the user part of the user common data.
	<home-location>	Network provided default Home Location of subscriber given in format conforming to P-Access-Network-Info header ABNF syntax described in 3GPP TS 24.229: IP Multimedia Call Control Protocol based on Session Initiation Protocol (SIP) and Session Description Protocol (SDP); Stage 3 (Release 10) section 7.2A.4.
	<time-zone-area>	The <time-zone-area> is the user home time zone area. The time-zone-area is in the form "Area/Location" and must be included in the list of time zones in IANA Time Zone Database. Example "Europe/Stockholm".
	<mmtel-charging-profile>	The mmtel-charging-profile element specifies the name of the mmtel charging profile to be used. The mmtel charging profile must be configured in MTAS if the mmtel-charging-profile element is set. If the element mmtel-charging-profile is not set the default charging profile is used. For more information on how to create a charging profile see reference [8].
	<auto-answer-avoidance-condition>	The auto-answer-avoidance-condition element has values "activated" or "deactivated". When set to "activated" the user is provisioned with the auto-answer avoidance feature. If set to "deactivated" this will withdraw the feature from the user.

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XML element			Description
		<in-sip-request-condition>	The <in-sip-request-condition> element has values "activated" or "deactivated". When set to "activated" it allows the subscriber to use the <in-sip-request> condition in supplementary service rules.
		<in-sip-request-condition-list>	The <in-sip-request-condition-list> is a grouping element for definitions of SIP regexp conditions.
		<flexcondition-definition>	The <flexcondition-definition> element is a grouping element for attributes which actually define a SIP regexp condition. The <flexcondition-definition> element is a sub-MO allowing multiple instances with "id" as the unique key.
		<id>	A key uniquely identifying the condition. This must be present on the creation of a flexcondition-definition element.
		<header>	A SIP header matched. This must be present on the creation of a flexcondition-definition element.
		<parameter>	A SIP header parameter matched.
		<value>	A regular expression to match against a given header or header parameter value. This must be present on the creation of a flexcondition-definition element.
		<match-inverse>	If set to "true", the SIP regexp condition will evaluate to true if the parameter value does NOT match the regular expression.
		<feature-tag-preferences>	Defines the target preferences feature tags controlled by MMTel AS. Use xsi:nil="true" to delete this element.
		<feature-tags>	Defines the feature tags. In case of multiple feature tags, they must be separated with semicolon. The string must be between 1 and 255 characters.
		<subscription>	The subscription element specifies the group of subscriber identity attributes. This element is a sub-MO allowing multiple instances with "id" as the unique key. Currently it is limited to one instance but is designed to be extended. Use xsi:nil="true" to delete this element. This element is optional.
		<id>	The <id> is a unique key for the subscription group, currently limited to 1. It must be present at the creation of a subscription element.
		<imsi>	The IMSI that is connected to this subscriber. The IMSI is a maximum 15-digit number as defined in 3GPP TS 23.003.
		<ucd-user-configuration>	The configuration parameters for the user common data that are available for the user to set directly. These can also be set on the user's behalf by the operator. This shall only be present if the service is provisioned i.e. <user-common-data> is present and activated is "true".

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XML element			Description
		<target-device-list>	A list of all of the devices associated with the user's identity which can be selected individually for distribution of calls. Up to 10 entries can be included.
		<fixed-targets>	If <fixed-targets> is set to "true" then the target identities are set by the operator and cannot be changed by the user.
		<target-device>	The <target-device> element is a sub-MO allowing multiple instances with "name" as the unique key.
		<name>	The name for the target device. This is the name by which distribution rules refer to devices as targets. This must be present on the creation of a <target-device> element.
		<terminal-selector>	The <terminal-selector> is the way that the individual device is selected. It is a string of between 1 and 60 characters. This must be present on the creation of a <target-device> element.
		<target-list>	A list of all of the related targets that can be included in distribution rules. See section 6.63 for details of the contents of the <target-list> element.
		<utc-offset>	The <utc-offset> element specifies the offset to be taken from UTC when determining times of day and when each day starts and ends. This element is used for valid-periods conditions when utc-offset is not specified in the valid-periods condition. If <utc-offset> element is omitted then the offset from the node CM attribute is used. It is also used for validity and invalidity conditions, when they are given with local time. If <utc-offset> element is omitted then the offset from the node CM attribute is used.
		<start-day-of-week>	The <start-day-of-week> element specifies the starting day of the week, used when evaluating time conditions related to weeks of year or containing weekly repetition. It also serves as base of determining the week number. When the attribute is set to the Monday, the week number is set according to ISO 8601; that is week no. 1 in the year is the first week with at least 4 days from the new year. Otherwise week no. 1 is the week of 1 st of January. If <start-day-of-week> element is omitted then the starting day from the node CM attribute is used.
		<non-workday-list>	A list of weekdays considered as non workdays during evaluation of the time conditions associated with the user's identity. Up to 7 entries can be included. If <non-workday-list> element is omitted then the node CM attribute defining the non-workday list is used.
		<weekday>	The <weekday> element specifies the weekday used as non-workday in the valid-periods condition. This is a multi-value parameter.

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XML element			Description
		<holiday-list>	A list of private holidays to be used during evaluation of the time conditions associated with the user's identity. Up to 20 entries can be included. Also inheritance of the public holidays configured on node level can be specified.
		<holiday>	The <holiday> element specifies one private holiday for the user. This is a multi-value parameter.
		<use-national>	When the <use-national> element is set to TRUE, beside the private holidays set in element <holiday>, also the public holidays configured on node level are used during evaluation of the time conditions associated with the user's identity.

Table 62 – User Common Data XML Elements

6.57 Voice Mail

The XML elements for the voice mail service are detailed in Table 63.

XML element			Description
		<voice-mail>	The voice mail service. Use xsi:nil="true" to withdraw the entire service.
		<vm-operator-configuration>	The configuration parameters for the voice mail service that are available to the operator rather than the user. This must be present on the creation of the <voice-mail> service.
		<activated>	The activated element has values "true" or "false". When set to "true" the user is provisioned with the voice mail service. This allows the user to include the special identity "voicemail:internal" as the target for communication diversion rules. If set to "false" this will withdraw the service from the user. This must be present on the creation of the voice-mail service.
		<voice-mail-address>	The <voice-mail-address> element specifies the target identity to "voicemail:internal". It takes the form of a normalized sip: or tel: URI or the special value "voicemail:internal". In the case of the special value of "voicemail:internal" it will be sent to the identity specified in the node level configuration parameter. This must be present on the creation of the <voice-mail> service. This element has a relationship with the voice-mail-retrieval-address element. When voice-mail-retrieval-address element is provisioned, then the target identity in the voice-mail-address element is used only for depositing the voicemail. Otherwise it is used both for depositing and retrieving the voicemail.

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XML element		Description
	<voice-mail-retrieval-address>	The voice-mail-retrieval-address element specifies the target identity to be used when the communication is redirected to retrieve the voicemail. It takes the form of a normalized sip: or tel: URI or the special value "voicemail:internal". In case of the special value of "voicemail:internal" the communication is redirected to the identity specified in the node level configuration parameter. Use xsi:nil="true" to remove voice-mail-retrieval-address element.

Table 63 – Voice Mail XML Elements

6.58 Distribution Actions

The XML elements for distribution actions are detailed in Table 64 and Table 65.

XML element		Description
	<parallel-distribution>	The <parallel-distribution> element is a grouping element with details of the targets to which the communication should be distributed in parallel.
	<ring-period>	The maximum time period for which the targets shall be left ringing in parallel without an answer.
	<target>	The target element is a sub-MO allowing multiple instances with "name" as the unique key. It is a reference by name to a target identity to which the communication should be distributed. At least one target must be present on creation of a <parallel-distribution> element.
	<name>	The name of a target identity. The name must be one of the following: the name of a target defined in user-common-data; the name of a target-device defined in user-common-data; the special value PRIMARY for all of the user's devices or, in the case of communication distribution the name of a target defined in the target-list within that service. The name must be present on the creation of a <target> element.

Table 64 – Parallel Distribution XML Elements

XML element		Description
	<serial-distribution>	The <serial-distribution> element is a grouping element with details of the targets to which the communication should be distributed in series.
	<target>	The target element is a sub-MO allowing multiple instances with "name" as the unique key. It is a reference by name to a target identity to which the communication should be distributed. At least one target must be present on creation of a <serial-distribution> element.
	<name>	The name of a target identity. The name must be one of the following: the name of a target defined in user-common-data; the name of a target-device defined in user-common-data; the special value PRIMARY for all of the user's devices or, in the case of communication distribution the name of a target defined in the target-list within that service. The name must be present on the creation of a <target> element.
	<ring-period>	The maximum time period for which this target shall be left ringing in without an answer before switching to the next target.

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Table 65 – Serial Distribution XML Elements

XML element		Description
<flexible-distribution>		The <flexible-distribution> element is a grouping element with details of the targets to which the communication should be distributed in series.
	<ring-period>	The maximum time period for which all of the targets shall be left ringing in without an answer before switching to the next target.
	<target>	The target element is a sub-MO allowing multiple instances with “name” as the unique key. It is a reference by name to a target identity to which the communication should be distributed.
	<name>	The name of a target identity. The name must be one of the following: the name of a target defined in user-common-data; the name of a target-device defined in user-common-data; the special value PRIMARY for all of the user’s devices or, in the case of communication distribution the name of a target defined in the target-list within that service. The name must be present on the creation of a <target> element.
	<ring-period>	The ring mode type - serial or parallel - that is to be used within the flexible distribution.
	<ring-mode>	The maximum time period for which all of the targets shall be left ringing in without an answer before switching to the next target.

Table 66 – Flexible Distribution XML Elements

6.59 Identity Condition

The XML elements for the <identity> condition are detailed in Table 67.

XML element		Description
<identity>		The <identity> element is a grouping element for conditions which are based on a user’s identity. The condition is satisfied if any of the <one> or <many> elements within it is matched. The <identity> condition must contain at least one sub-element to be valid. If an update would result in no contained sub-elements then the <identity> condition should be deleted instead by deleting the element which contains it.
	<one>	The <one> element specifies an individual identity to be matched. The <one> element is a sub-MO allowing multiple instances with “id” as the unique key.
	<id>	The individual identity to be matched. For all uses except incoming communication barring user rules, this takes the form of a sip: or tel: URI. For use within incoming communication barring user rules, this takes the form of a sip: or tel: or hidden: URI. Each tel: URI and sip: URI that was converted from a tel: URI according to section 19.1.6 of RFC 3261 [5] contains a normalized number. This must be present on the creation of a <one> element. The use of hidden: URIs in incoming communication barring user rules is new in MTAS 3.1.
	<many>	The <many> element specifies a match for a set of identities. The <many> element is a sub-MO allowing multiple instances with “domain” as the unique key.

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XML element			Description
		<domain>	The individual domain to be matched. A <many> element with an explicit domain value matches all identities within that domain. A <many> element with the special wildcard value "*" matches all identities. This must be present on the creation of a <many> element.
		<except-id>	An individual identity to be excluded from the identities matching the enclosing <many>. The <except-id> element is a sub-MO allowing multiple instances with "id" as the unique key.
		<id>	The individual identity to be excluded from the match. If this is within a <many> element with a specific domain then the excluded identity must be a sip: URI within that domain. If this is within a <many> element with the special wildcard value of "*", then it can be a sip: or tel: URI. Each tel: URI and sip: URI that was converted from a tel: URI according to section 19.1.6 of RFC 3261 [5] contains a normalized number. This must be present on the creation of an <except-id> element.
		<except-domain>	An individual domain to be excluded from a <many> with special value "*" that would otherwise match all identities. The <except-domain> element is a sub-MO allowing multiple instances with "domain" as the unique key.
		<domain>	The individual domain to be excluded from the match. This must be present on the creation of an <except-domain> element.
		<number-match>	The number-match element specifies a match for a set of numerical identities. The number-match element is a sub-MO allowing multiple instances with "starts-with" as the unique key.
		<starts-with>	The first few characters of the normalised form of the number to be matched. This must be present on the creation of a number-match element.

Table 67 – Identity Condition XML Elements

6.60 Served-identity Condition

The XML elements for the <served-identity> condition are detailed in Table 68.

XML element			Description
		<served-identity>	The <served-identity> element is a grouping element for conditions which are based on a served user's identity. The condition is satisfied if any of the <one> elements within it is matched. The <served-identity> condition must contain at least one sub-element to be valid. If an update would result in no contained sub-elements then the <served-identity> condition should be deleted.
		<one>	The <one> element specifies an individual served-identity to be matched. The <one> element is a sub-MO allowing multiple instances with "id" as the unique key.
		<id>	The individual served-identity to be matched. For all uses this takes the form of a sip: or tel: URI. Each tel: URI and sip: URI that was converted from a tel: URI according to section 19.1.6 of RFC 3261 [5] contains a normalized number. This element must be present on the creation of a <one> element.

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Table 68 – Served-identity Condition XML Elements

6.61 In-sip-request Condition

The XML elements for the <in-sip-request> condition are detailed in Table 69.

XML element		Description
<in-sip-request>		The <in-sip-request> element is a grouping element for regexp conditions on contents of a SIP request. It evaluates to true if ALL of the conditions included within it are fulfilled. The <in-sip-request> element must contain at least one <flexcondition> sub-element to be valid. If an update would result in no contained sub-elements then the <in-sip-request> condition should be deleted.
	<flexcondition>	The flexcondition element refers to the actual definition of the SIP regexp condition in the User Common Data. It evaluates to true when a value of the specified header or header parameter in the SIP request triggering FCD service matches the regular expression (or if it does not match if the "match-inverse" attribute in the condition definition is set to true). The flexcondition element is a sub-MO allowing multiple instances with "id" as the unique key.
	<id>	This element holds reference to actual definition of the SIP regexp condition in the User Common Data. This element must be present on the creation of a <flexcondition> element.

Table 69 – In-sip-request Condition XML Elements

6.62 Invalidity Condition

The XML elements for the <invalidity> condition are detailed in Table 70.

XML element		Description
<invalidity>		The <invalidity> element is a grouping element for time periods (intervals) within which the rule is NOT valid. The invalidity condition must contain at least one <interval>.
	<interval>	The <interval> element specifies a date and time period within which the <invalidity> condition is NOT satisfied. The <interval> element is a sub-MO allowing multiple instances with "from" as the unique key.
	<from>	The date and time that specifies the start of the NOT valid interval. It is a standard dateTime value e.g. "2008-11-27T20:00:00Z" for a UTC time or "2008-10-12T20:00:00-08:00" for a time with 8 hours offset from UTC. This must be present on the creation of an <interval> element. Note: To set date later than year 2036 is not supported on TSP and the value will not be correctly handled.
	<until>	The date and time that specifies the end of the NOT valid interval. It is a standard dateTime value e.g. "2008-11-27T20:00:00Z" for a UTC time or "2008-10-12T20:00:00-08:00" for a time with 8 hours offset from UTC. This must be present on the creation of an <interval> element. Note: To set date later than year 2036 is not supported on TSP and the value will not be correctly handled.

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Table 70 – Invalidity Condition XML Elements

6.63 Target List

The XML elements for the <target-list> element are detailed in Table 71.

XML element		Description
<target-list>		A list of all of the related targets that can be included in distribution rules in addition to the PRIMARY number itself i.e. that of the served user. Up to 10 entries can be included.
	<fixed-targets>	If <fixed-targets> is set to “true” then the target identities are set by the operator and cannot be changed by the user.
	<target>	The <target> element is a sub-MO allowing multiple instances with “name” as the unique key.
	<name>	The name for the distribution target. This is the name by which distribution rules refer to targets. This must be present on the creation of a <target> element.
	<id>	The <id> is the identity of the target. It is a sip: or tel: URI. Each tel: URI and sip: URI that was converted from a tel: URI according to section 19.1.6 of RFC 3261 [5] contains a normalized number, or a number that can be normalized after removing a dynamic ad-hoc presentation supplementary service code and/or a carrier select code. This must be present on the creation of a <target> element.
	<auto-answer-avoidance>	If <auto-answer-avoidance> element is set to “true” then the target is a subject of auto-answer avoidance feature and will be asked to additionally confirm the communication establishment.

Table 71 – Target List XML Elements

6.64 Valid Periods Condition

The XML elements for the <valid-periods> condition are detailed in Table 72.

XML element		Description
<valid-periods>		The valid-periods element is a grouping element that allows assembly of complex time condition based upon several sub-conditions. In order for the valid-periods condition to be satisfied the current date/time must match with all the included sub-conditions.
	<utc-offset>	The <utc-offset> element specifies the offset to be taken from UTC when determining times of day and when each day starts and ends. If <utc-offset> is omitted then the utc-offset specified by the <utc-offset> element in the user-common-data is used. If it is not included there then the offset from the node CM attribute is used.
	<valid-days>	The <valid-days> element specifies each of the days on which the condition would match, subject to also meeting the <valid-times> if present. If <valid-days> is omitted then the condition applies to all days of the week.
	<day>	The day of the week. Beside the name of the day, it allows usage of literals Workday, NonWorkday and Holiday. This is a multi-value parameter.

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XML element		Description
	<valid-times>	The <valid-times> element specifies periods of the day in which the condition would match, subject to also meeting the <valid-days>, if present. If <valid-times> is omitted then the condition applies to all times of the day. The <valid-times> condition must contain at least one <interval>.
	<interval>	A time interval. The <interval> element is a sub-MO allowing multiple instances with "from" as the unique key.
	<from>	The time of day at which the interval starts. The format is HH:MM in the 24 hour clock. This must be present on the creation of an <interval> element.
	<until>	The time of day at which the interval ends. The format is HH:MM in the 24 hour clock. The interval applies until the end of the specified minute. This must be present on the creation of an <interval> element.
	<valid-months>	The <valid-months> element specifies each of the months on which the condition would match, subject to also meeting other sub-conditions if present. If <valid-months> is omitted then it applies to all months of the year.
	<month>	The month of the year. The format is integer of the month number. This is a multi-value parameter.
	<valid-weeks>	The <valid-weeks> element specifies each of the weeks on which the condition would match, subject to also meeting other sub-conditions if present. If <valid-weeks> is omitted then it applies to all weeks of the year.
	<week>	The week of the year. The format is integer of the week number. This is a multi-value parameter.
	<repeat-daily>	The <repeat-daily> element specifies start day and repetition interval for the days on which the condition would match, subject to also meeting other sub-conditions if present. If <repeat-daily> is omitted then it applies to all days of the year.
	<begin-day>	The start day of the repetition. The format is YYYY-MM-DD. Note: To set date later than year 2036 is not supported on TSP and the value will not be correctly handled.
	<repeat-interval>	The repetition interval in days. The format is integer.
	<repeat-weekly>	The <repeat-weekly> element specifies start week and repetition interval for the weeks on which the condition would match, subject to also meeting other sub-conditions if present. If <repeat-weekly> is omitted then it applies to all weeks of the year.
	<begin-day>	The start day of the repetition. The format is YYYY-MM-DD. Note: To set date later than year 2036 is not supported on TSP and the value will not be correctly handled.
	<repeat-interval>	The repetition interval in weeks. The format is integer.
	<repeat-monthly>	The <repeat-monthly> element specifies start month and repetition interval for the months on which the condition would match, subject to also meeting other sub-conditions if present. If <repeat-monthly> is omitted then it applies to all months of the year.
	<begin-day>	The start day of the repetition. The format is YYYY-MM-DD. Note: To set date later than year 2036 is not supported on TSP and the value will not be correctly handled.
	<repeat-interval>	The repetition interval in months. The format is integer.
	<valid-monthdays>	The <valid-monthdays> element specifies each of the days on which the condition would match, subject to also meeting other sub-conditions if present. If <valid-monthdays> is omitted then the condition applies to all days of the month.

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XML element		Description
	<monthday>	The day of the month. Allowed formats: 1..31, -1..-31, [-1..-5][1..5][Monday..Sunday] This is a multi-value parameter.
	<except-holidays>	The <except-holidays> element specifies that if the current day matches to the holidays provisioned for the user, then the <valid-periods> condition is evaluated to false.

Table 72 – Valid Periods XML Elements

6.65 Validity Condition

The XML elements for the <validity> condition are detailed in Table 73.

XML element		Description
	<validity>	The <validity> element is a grouping element for time periods (intervals) within which the rule is valid. The validity condition must contain at least one <interval>.
	<interval>	The <interval> element specifies a date and time period within which the <validity> condition is satisfied. The <interval> element is a sub-MO allowing multiple instances with “from” as the unique key.
	<from>	The date and time that specifies the start of the valid interval. It is a standard dateTime value e.g. “2008-11-27T20:00:00Z” for a UTC time or “2008-10-12T20:00:00-08:00” for a time with 8 hours offset from UTC. This must be present on the creation of an <interval> element. Note: To set date later than year 2036 is not supported on TSP and the value will not be correctly handled.
	<until>	The date and time that specifies the end of the valid interval. It is a standard dateTime value e.g. “2008-11-27T20:00:00Z” for a UTC time or “2008-10-12T20:00:00-08:00” for a time with 8 hours offset from UTC. This must be present on the creation of an <interval> element. Note: To set date later than year 2036 is not supported on TSP and the value will not be correctly handled.

Table 73 – Validity Condition XML Elements

6.66 Create MMTel Service Profile

The top level MTAS-specific XML element in a Create request to create MMTel Service profile data is <createMMTelProfile>. Details are given in Table 74

XML element		Description
	<createMMTelProfile>	Used to create MMTel profile data.
	<publicId>	The default public user identity for the subscriber. This identity must already be configured on the HSS.
	<validate>	The validate feature – see section 6.5 for details.

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XML element	Description
<abbreviated-dialing>	The abbreviated dialing service – see section 6.6 for details.
<advice-of-charge>	The advice of charge service – see section 6.7 for details.
<call-completion>	The communication completion service – see section 6.8 for details.
<call-completion-monitor-opt-out>	The communication completion monitor opt out service – see section 6.9 for details.
<call-return>	The call return service – see section 6.10 for details
<calling-name-identity-presentation>	The calling name identity presentation service – see section 6.11 for details.
<calling-party-category>	The calling party category service – see section 6.12 for details.
<carrier-pre-select>	The carrier pre-select service – see section 6.13 for details.
<carrier-pre-select-rn>	The carrier pre-select rn service – see section 6.14 for details.
<carrier-select>	The carrier select service – see section 6.15 for details.
<carrier-select-rn>	The carrier select rn service – see section 6.16 for details.
<closed-user-group>	The closed user group service – see section 6.17 for details.
<communication-distribution>	The communication distribution service – see section 6.19 for details.
<communication-diversion>	The communication diversion service – see section 6.20 for details.
<communication-diversion-no-answer-timer>	The communication diversion no answer timer service – see section 6.21 for details.
<communication-waiting>	The communication waiting service – see section 6.23 for details.
<conference>	The conference service – see section 6.24 for details.
<customized-alerting-tone>	The customized alerting tones service – see section 6.25 for details.
<dial-tone-management>	The dial tone management service – see section 6.26 for details.
<dialog-event-notifier>	The dialog event notifier service - see section 6.27 for details.
<distinctive-ring>	The distinctive ring service - see section 6.28 for details.
<explicit-communication-transfer>	The explicit communication transfer service – see section 6.30 for details.
<flexible-identity-presentation>	The flexible identity presentation service – see section 6.31 for details
<hotline>	The hotline service – see section 6.32 for details.
<incoming-communication-barring>	The incoming communication barring service – see section 6.33 for details.

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XML element	Description
<malicious-communication-identification>	The malicious communication identification service – see section 6.35 for details.
<media-policy>	The media policy service – see section 6.37 for details.
<multi-device-conference-policy>	The multi device conference policy service – see section 6.38 for details.
<multi-device-user-call-admission-control>	The multi device user call admission control service – see section 6.39 for details.
<northbound-call-control>	The northbound call control service – see section 6.40 for details.
<number-portability-announcement>	The number portability announcement service – see section 6.41 for details.
<operator-controlled-outgoing-barring-programs>	The operator controlled outgoing barring programs service – see section 6.42 for details.
<outgoing-barring-programs>	The outgoing barring programs service – see section 6.43 for details.
<outgoing-communication-barring>	The outgoing communication barring service – see section 6.44 for details.
<originating-calling-name-identity-presentation>	The originating calling name identity presentation service – see section 6.46 for details.
<originating-identity-presentation>	The originating identity presentation service – see section 6.47 for details.
<originating-identity-presentation-restriction>	The originating identity presentation restriction service – see section 6.48 for details.
<priority-call>	The priority call service – see section 6.49 for details.
<session-transfer-to-own-device>	The session transfer to own device service – see section 6.50 for details.
<terminating-identity-presentation>	The terminating identity presentation service – see section 6.52 for details.
<terminating-identity-presentation-restriction>	The terminating identity presentation restriction service – see section 6.53 for details.
<three-pty>	The three party service – see section 6.54 for details.
<user-call-admission-control>	The user call admission control service – see section 6.55 for details
<voice-mail>	The voice mail service – see section 6.57 for details.

Table 74 – Create MMTelProfile Top Level XML Elements

The order of services is significant. Where more than one service is included in a request they must appear in the order shown.

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6.67 Set MMTel Service Profile

The top level MTAS-specific XML element in a Set request to modify MMTelProfile (Service Profile) data is <setMMTelProfile>. Details are given in Table 75.

XML element	Description
<setMMTelProfile>	Used to modify MMTel profile data.
<validate>	The validate feature – see section 6.5 for details
<concurrency-control>	The <concurrency-control> element is an optional element to control concurrent updates. If present then the set request will be accepted only if the service data version is still at the value given in this element i.e. no other updates have been performed. It is of type integer.
<abbreviated-dialing>	The abbreviated dialing service – see section 6.6 for details.
<advice-of-charge>	The advice of charge service – see section 6.7 for details.
<call-completion>	The communication completion service – see section 6.8 for details.
<call-completion-monitor-opt-out>	The communication completion monitor opt out service – see section 6.9 for details.
<call-return>	The call return service – see section 6.10 for details
<calling-name-identity-presentation>	The calling name identity presentation service – see section 6.11 for details.–
<calling-party-category>	The calling party category service – see section 6.12 for details.
<carrier-preselect>	The carrier pre-select service – see section 6.13 for details.
<carrier-pre-select-rn>	The carrier pre-select rn service – see section 6.14 for details.
<carrier-select>	The carrier select service – see section 6.15 for details.
<carrier-select-rn>	The carrier select rn service – see section 6.16 for details.
<closed-user-group>	The closed user group service – see section 6.17 for details.
<communication-distribution>	The communication distribution service – see section 6.19 for details.
<communication-diversion>	The communication diversion service – see section 6.20 for details.
<communication-diversion-no-answer-timer>	The communication diversion no answer timer service – see section 6.21 for details.
<communication-waiting>	The communication waiting service – see section 6.23 for details.
<conference>	The conference service – see section 6.24 for details.

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XML element	Description
<customized-alerting-tone>	The customized alerting tones service – see section 6.25 for details.
<dial-tone-management>	The dial tone management service – see section 6.26 for details.
<dialog-event-notifier>	The dialog event notifier service - see section 6.27 for details.
<distinctive-ring>	The distinctive ring service - see section 6.28 for details.
<explicit-communication-transfer>	The explicit communication transfer service – see section 6.30 for details.
<flexible-identity-presentation>	The flexible identity presentation service – see section 6.31 for details
<hotline>	The hotline service – see section 6.32 for details.
<incoming-communication-barring>	The incoming communication barring service – see section 6.33 for details.
<malicious-communication-identification>	The malicious communication identification service – see section 6.35 for details.
<media-policy>	The media policy service – see section 6.37 for details.
<multi-device-conference-policy>	The multi device conference policy service – see section 6.38 for details.
<multi-device-user-call-admission-control>	The multi device user call admission control service – see section 6.39 for details.
<northbound-call-control>	The northbound call control service – see section 6.40 for details.
<number-portability-announcement>	The number portability announcement service – see section 6.41 for details.
<operator-controlled-outgoing-barring-programs>	The operator controlled outgoing barring programs service – see section 6.42 for details.
<outgoing-barring-programs>	The outgoing barring programs service – see section 6.43 for details.
<outgoing-communication-barring>	The outgoing communication barring service – see section 6.44 for details.
<originating-calling-name-identity-presentation>	The originating calling name identity presentation service – see section 6.46 for details.
<originating-identity-presentation>	The originating identity presentation service – see section 6.47 for details.
<originating-identity-presentation-restriction>	The originating identity presentation restriction service – see section 6.48 for details.
<priority-call>	The priority call service – see section 6.49 for details.
<session-transfer-to-own-device>	The session transfer to own device service – see section 6.50 for details.
<terminating-identity-presentation>	The terminating identity presentation service – see section 6.52 for details.

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XML element	Description
<terminating-identity-presentation-restriction>	The terminating identity presentation restriction service – see section 6.53 for details
<three-pty>	The three party service – see section 6.54 for details.
<user-call-admission-control>	The user call admission control service – see section 6.55 for details
<voice-mail>	The voice mail service – see section 6.57 for details.

Table 75 – Set MMTelProfile Top Level XML Elements

The order of services is significant. Where more than one service is included in a request they must appear in the order shown.

6.68 Get Response MMTel Service Profile

The top level MTAS-specific XML element in a Get Response with the current MMTel Service profile data is <getResponseMMTelProfile>. Details are given in Table 76.

XML element	Description
<getResponseMMTelProfile>	Contains the currently configured MMTel profile data.
<publicId>	The default public user identity for the subscriber.
<concurrency-control>	The <concurrency-control> element is an integer value indicating the current version of the MMTel service data. This value can be used in a subsequent <setMMTel> request to make sure that no changes have been made to the service data since the version that was read.
<abbreviated-dialing>	The abbreviated dialing service – see section 6.6 for details.
<advice-of-charge>	The advice of charge service – see section 6.7 for details.
<call-completion>	The communication completion service – see section 6.8 for details.
<call-completion-monitor-opt-out>	The communication completion monitor opt out service – see section 6.9 for details.
<call-return>	The call return service – see section 6.10 for details
<calling-name-identity-presentation>	The calling name identity presentation service – see section 6.11 for details.–
<calling-party-category>	The calling party category service – see section 6.12 for details.
<carrier-preselect>	The carrier pre-select service – see section 6.13 for details.
<carrier-pre-select-rn>	The carrier pre-select rn service – see section 6.14 for details.

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XML element	Description
<carrier-select>	The carrier select service – see section 6.15 for details.
<carrier-select-rn>	The carrier select rn service – see section 6.16 for details.
<closed-user-group>	The closed user group service – see section 6.17 for details.
<communication-distribution>	The communication distribution service – see section 6.19 for details.
<communication-diversion>	The communication diversion service – see section 6.20 for details.
<communication-diversion-no-answer-timer>	The communication diversion no answer timer service – see section 6.21 for details.
<communication-waiting>	The communication waiting service – see section 6.23 for details.
<conference>	The conference service – see section 6.24 for details.
<customized-alerting-tone>	The customized alerting tones service – see section 6.25 for details.
<dial-tone-management>	The dial tone management service – see section 6.26 for details.
<dialog-event-notifier>	The dialog event notifier service - see section 6.27 for details.
<distinctive-ring>	The distinctive ring service - see section 6.28 for details.
<explicit-communication-transfer>	The explicit communication transfer service – see section 6.30 for details.
<flexible-identity-presentation>	The flexible identity presentation service – see section 6.31 for details
<hotline>	The hotline service – see section 6.32 for details.
<incoming-communication-barring>	The incoming communication barring service – see section 6.33 for details.
<malicious-communication-identification>	The malicious communication identification service – see section 6.35 for details.
<media-policy>	The media policy service – see section 6.37 for details.
<multi-device-conference-policy>	The multi device conference policy service – see section 6.38 for details.
<multi-device-user-call-admission-control>	The multi device user call admission control service – see section 6.39 for details.
<northbound-call-control>	The northbound call control service – see section 6.40 for details.
<number-portability-announcement>	The number portability announcement service – see section 6.41 for details.
<operator-controlled-outgoing-barring-programs>	The operator controlled outgoing barring programs service – see section 6.42 for details.
<outgoing-barring-programs>	The outgoing barring programs service – see section 6.43 for details.

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XML element	Description
<outgoing-communication-barring>	The outgoing communication barring service – see section 6.44 for details.
<originating-calling-name-identity-presentation>	The originating calling name identity presentation service – see section 6.46 for details.
<originating-identity-presentation>	The originating identity presentation service – see section 6.47 for details.
<originating-identity-presentation-restriction>	The originating identity presentation restriction service – see section 6.48 for details.
<priority-call>	The priority call service – see section 6.49 for details.
<session-transfer-to-own-device>	The session transfer to own device service – see section 6.50 for details.
<terminating-identity-presentation>	The terminating identity presentation service – see section 6.52 for details.
<terminating-identity-presentation-restriction>	The terminating identity presentation restriction service – see section 6.53 for details.
<three-pty>	The three party service – see section 6.54 for details.
<user-call-admission-control>	The user call admission control service – see section 6.55 for details
<voice-mail>	The voice mail service – see section 6.57 for details.

Table 76 – Get Response MMTelProfile Top Level XML Elements

6.69 Create MMTel ServiceNo

The top level MTAS-specific XML element in a Create request to create MMTel Service Number data is <createMMTelServiceNo>. Details are given in Table 77

XML element	Description
<createMMTelServiceNo>	Used to create MMTel Service Number data.
<publicId>	The default public user identity for the service number. This identity must already be configured on the HSS.
<service-number>	See section 6.72.

Table 77 – Create MMTelServiceNo Top Level XML Elements

6.70 Set MMTel ServiceNo

The top level MTAS-specific XML element in a Set request to modify MMTel Service Number data is <setMMTelServiceNo>. Details are given in Table 78.

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XML element		Description
<setMMTelServiceNo>		Used to modify MMTel Service Number data.
	<concurrency-control>	The <concurrency-control> element is an optional element to control concurrent updates. If present then the set request will be accepted only if the service data version is still at the value given in this element i.e. no other updates have been performed. It is of type integer.
	<service-number>	See section 6.72.

Table 78 – Set MMTelServiceNo Top Level XML Elements

6.71 Get Response MMTel ServiceNo

The top level MTAS-specific XML element in a Get Response with the current MMTel Service Number data is <getResponseMMTelServiceNo>. Details are given in Table 79.

XML element		Description
<getResponseMMTelServiceNo>		Contains the currently configured MMTel Service Number data.
	<publicId>	The default public user identity for the service number.
	<concurrency-control>	The <concurrency-control> element is an integer value indicating the current version of the MMTel ServiceNo data. This value can be used in a subsequent <setMMTelServiceNo> request to make sure that no changes have been made to the service data since the version that was read.
	<service-number>	See section 6.72.

Table 79 – Get Response MMTelServiceNo Top Level XML Elements

6.72 Service Number

The XML elements for the Service Number are detailed in Table 80.

XML element		Description
<service-number>		The Service Number services. Use xsi:nil="true" to withdraw the entire service number.
	<service-number-operator-configuration>	The configuration parameters for the service number services that is available to the operator rather than the user. This must be present on the creation of the <service_number> services.

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XML element			Description
		<activated>	The activated element has values “true” or “false”. When set to “true” the service number is ready for traffic operation This element must be present on the creation of the <service_number> services.
		<announcement-welcome-id>	Defines the welcome announcement when entering the conference system and requesting a pin code to be provided. This value must be aligned with the number configured for the announcement in the MRF/P.
		<announcement-retry-id>	Defines the retry announcement when incorrect pin is entered. This value must be aligned with the number configured for the announcement in the MRF/P. This element must be present on the creation of the <service_number> services.
		<announcement-hangup-id>	Defines the hangup announcement when the limit of number of attempts has been exceeded. This value must be aligned with the number configured for the announcement in the MRF/P. This element must be present on the creation of the <service_number> services.
		<announcement-wait-for-moderator-id>	Defines the wait for moderator announcement when the moderator has to join before the conference starts. This value must be aligned with the number configured for the announcement in the MRF/P. This element must be present on the creation of the <service_number> services.
		<pin-code-length>	Defines the number of digits in the PIN code. This element must be present on the creation of the <service_number> services.
		<pin-code-attempts>	Defines the number of PIN code attempts allowed until the conference service shall hang up. This element must be present on the creation of the <service_number> services.
		<activating-attendant-assistance>	The presence of this element defines whether Attendant Assistance is invoked when the limit of number of PIN code attempts has been exceeded. This element is optional.
		<announcement-attendant-assistance-id>	Defines the Attendant Assistance announcement when the limit of number of PIN code attempts has been exceeded. This value must be aligned with the number configured for the announcement in the MRFP. The Attendant Assistance announcement is played continuously. This element must be present on the creation when <activating-attendant-assistance> is present.
		<attendant-uri>	The SIP or TEL URI of the Attendant. This element must be present on the creation when <activating-attendant-assistance> is present.

Table 80 – Service Number XML Elements

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6.73 Create MMTel SchedConf

The top level MTAS-specific XML element in a Create request to create MMTel Scheduled Conference service data is <createMMTelSchedConf>. Details are given in Table 81.

XML element		Description
<createMMTelSchedConf>		Used to create MMTel Scheduled Conference service data.
	<publicId>	The default public user identity for the user. This identity must already be configured on the HSS.
	<scheduled-conference>	See section 6.76.

Table 81 – Create MMTelSchedConf Top Level XML Elements

6.74 Set MMTel SchedConf

The top level MTAS-specific XML element in a Set request to modify MMTel Scheduled Conference service data is <setMMTelSchedConf>. Details are given in Table 82.

XML element		Description
<setMMTelSchedConf>		Used to modify MMTel Scheduled Conference service data.
	<concurrency-control>	The <concurrency-control> element is an integer value indicating the current version of the MMTel SchedConf data. This value can be used in a subsequent <setMMTelSchedConf> request to make sure that no changes have been made to the service data since the version that was read.
	<scheduled-conference>	See section 6.76.

Table 82 – Set MMTelSchedConf Top Level XML Elements

6.75 Get Response MMTel SchedConf

The top level MTAS-specific XML element in a Get Response with the current MMTel Service data is <getResponseMMTelServiceNo>. Details are given in Table 83.

XML element		Description
<getResponseMMTelSchedConf>		Contains the currently configured MMTel Scheduled Conference service data.

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XML element		Description
	<publicId>	The default public user identity for the user..
	<concurrency-control>	The <concurrency-control> element is an integer value indicating the current version of the MMTel SchedConf data. This value can be used in a subsequent <setMMTelSchedConf> request to make sure that no changes have been made to the service data since the version that was read.
	<scheduled-conference>	See section 6.76.

Table 83 – Get Response MMTelSchedConf Top Level XML Elements

6.76 Scheduled Conference

The XML elements for the Scheduled Conference are detailed in Table 84.

XML element		Description
	<scheduled-conference>	The user data for scheduled conference service. Use xsi:nil="true" to withdraw the entire service.
	<scheduled-conference-operator-configuration>	The configuration parameters for the scheduled conference services that is available to the operator rather than the user. This must be present on the creation of the <scheduled-conference> services.
	<activated>	The activated element has values "true" or "false". When set to "true" the scheduled conference is ready for traffic operation. This element must be present on the creation of the <scheduled-conference> services.
	<service-number>	The identity of the Scheduled Conference Service Number that this user is served by. Must be a TEL URI (RFC 3966) The element must be present on the creation of the scheduled-conference services. In addition, the service number must be a valid PSI in the HSS.

- Table 84 – Scheduled Conference XML Elements

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7 Error Handling

7.1 Error Messages General

Error codes on this interface can be classified as:

- Header Faults
- CAI3G Body Faults
- HTTP Faults

In the event of a failure, one of these faults is sent in lieu of a response. This ensures that every request receives a response.

7.2 Header Faults

These errors relate to errors in the SOAP Header and as such are concerned with the SessionId, TransactionId or SequenceId. They are carried in a HTTP 500 Internal Error response.

7.2.1 Supported

The following SOAP Header Faults are supported as CAI3G errors:

CAI3G Error Code	SOAP ERROR CODE	Description	Re-Try on Failure
1001	Client	Invalid SessionId	No
1003	Client	SessionId Syntax Error	No
1101	Client	Invalid SequenceId	No
1201	Client	Invalid TransactionId	No

Table 85 – Supported Header Faults

“Re-Try on Failure” indicates if the request is faulty (value= “no”) and should be corrected before a retry is attempted.

7.2.2 Not Supported

The following SOAP Header Faults are not supported:

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CAI3G Error Code	Description	Explanation
1002	<i>Session Time-out</i>	<i>Any CAI3G request that contains a SessionId that was previously timed-out will receive a response of 1001.</i>

Table 86 – Unsupported Header Faults

7.2.3 Example of a CAI3G Header Fault

This example shows the response to a fault in the SOAP Header:

```
<soap-env:Header>
  <cai3g:sessionIdFault>
    <cai3g:faultactor>NEF</cai3g:faultactor>
    <cai3g:description>Private: Debugging Text</cai3g:description>
    <cai3g:faultcode>Invalid SessionId</cai3g:faultcode>
  </cai3g:sessionIdFault>
</soap-env:Header>
<soap-env:Body>
  <soap-env:Fault xmlns="">
    <faultcode>Client</faultcode>
    <faultstring>CAI3G Fault Exception</faultstring>
    <faultactor>NEF</faultactor>
    <detail>
      <cai3g:Cai3gFault>
        <cai3g:faultcode>1001</cai3g:faultcode>
        <cai3g:faultreason>
          <cai3g:reasonText>Invalid SessionId</cai3g:reasonText>
          <cai3g:reasonText>Private: Debugging Text</cai3g:reasonText>
        </cai3g:faultreason>
        <cai3g:faultrole>NEF</cai3g:faultrole>
      </cai3g:Cai3gFault>
    </detail>
  </soap-env:Fault>
</soap-env:Body>
```

Notes

1. It has been agreed that SOAP Header fault should be repeated in the SOAP body in this version of the protocol (as shown in the example). It is acknowledged that this approach (repeating the header fault in SOAP body) is in violation of the SOAP specification but is implemented to maintain Backwards Compatibility with the current version of EMA.

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7.3 CAI3G Body Faults

These errors relate to the body of a CAI3G request. They are carried in a HTTP 500 Internal Error response.

7.3.1 Supported

Of all the CAI3G errors listed in Table 2 in section 4.4.2 of reference [1], the following error codes are supported.

CAI3G Error Code	SOAP ERROR CODE	Description	Retry on Failure
2001	Client	Invalid Managed Object Type	No
2002	Client	Invalid Managed Object Id	No
3001	Client	Operation Not Allowed	No
3002	Client	Object Does Not Exist	No
3004	Client	Invalid User ID	No
3005	Client	Invalid Password	No
3013	Client	Invalid Parameter This error contains additional information in the ReasonText field. A full list of these errors is provided in section 7.3.2.1.	No
3014	Client	Login Failure	No
3015	Client	SessionId Not Consistent	No
3999	Client	Other Client Error Note: This error can contain additional information in the ReasonText field. A full list of these errors is provided in section 7.3.2.2	No
4001	Server	Operation Not Supported	No
4004	Server	Function Busy	Yes
4005	Server	Internal Fatal Error	Yes
4006	Server	External Fatal Error <ul style="list-style-type: none">This error can contain additional information in the ReasonText field. This includes cases where fatal errors are encountered on the Sh interface to the HSS. A full list of these errors is provided in section 7.3.2.3.	No

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4010	Server	Max Number of Sessions reached	CAI3G Manager decides
4999	Server	Other Server Error	No

Table 87 – Supported CAI3G Body Faults

Notes

- a) For some errors, extra information about the nature of the problem will be returned in the *reasonText* element within the *faultreason* element within the *Cai3gFault* element. Where this applies the *reasonText* is populated as detailed in section 7.3.2.
- b) A value of “no” in the “Re-Try on Failure” column indicates that the request is faulty and the request should be corrected before a retry is attempted. A value of “yes” in the “Re-Try on Failure” column indicates that the MTAS is faulty and the unchanged request can be resent to another MTAS

7.3.2 Additional Error Information

Extra information about the error is provided in the *reasonText* element of some CAI3G Faults. If there are more errors in the document the order of the *reasonText* is not predictable, but all errors must be corrected before the document is stored.

The actual text is shown in the following tables.

7.3.2.1 Error 3013, Invalid Parameter

Table 88 - Table 100 give details of the reason text that may be included with CAI3G error 3013, Invalid Parameter

Num	Reason Text	Description
1.	Failed to meet an application constraint: The service element “<service>” appears more than once.	A service element is repeated within the user configuration <i>For a list of possible values see note a)</i>

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Num	Reason Text	Description
2.	Failed to meet an application constraint: The service element "<service>" is present without being activated by the operator	<p>Each service element may only be present if the corresponding service has been activated by the operator.</p> <p>The absence of the service element signals to the user that the corresponding service is not activated,</p> <p><i>For a list of possible values see note a)</i></p>
3.	Failed to meet an application constraint: The service element, "<service>", is absent when it is activated by the operator	<p>The service element must be present if the corresponding service has been activated by the operator.</p> <p>The presence of the service element signals to the user that the corresponding service is activated.</p> <p><i>For a list of possible values see note a)</i></p>
4.	Failed to meet an application constraint: The number "<ORIGINAL_NUMBER-1>" is not suitable, please re-enter. The number "<ORIGINAL_NUMBER-N>" is not suitable, please re-enter.	<p>The request contains one or more numbers that cannot be converted to a normal form. The response will contain a separate sentence for each faulty number.</p> <p><i>The shown text has sentence for each of the two faulty numbers</i></p> <p>Note: This message can be combined with next message below.</p>
5.	Failed to meet an application constraint: The number "<ORIGINAL_NUMBER-1>" is not normalized, please re-enter as "<SUGGESTED_NUMBER-1>". The number "<ORIGINAL_NUMBER-N>" is not normalized, please re-enter as "<SUGGESTED_NUMBER-N>".	<p>The request contains one or more numbers that are not in a normal form. The response shows the number in the expected form. The response will contain a separate sentence for each faulty number.</p> <p><i>The shown text has two sentences for two non-normal numbers and a corresponding normalized number for each.</i></p> <p>Note: This message can be combined with previous message above.</p>

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Num	Reason Text	Description
6.	Failed to meet an application constraint: Sub-MO Failure: Rule id="<rule-id>" modify syntax used within a create context, key="<key-name>", value="<key-value>"	<p>The request includes the syntax to modify an existing sub-MO inside a create message or a create sub-MO request within a message.</p> <p>Within the context of a create message or create sub-MO, all references to child sub-Mos must also use create syntax (key attribute and key element both present and with the same value).</p>
7.	Failed to meet an application constraint: Sub-MO Failure: Rule id="<rule-id>" target of create already exists for key="<key-name>", value="<target-key-value>"	<p>A request to create a sub-MO cannot be performed because another sub-MO already exists with the proposed target key value.</p> <p>Possible values for <key-name> are:</p> <ul style="list-style-type: none"> • domain • from • id
8.	Failed to meet an application constraint: Sub-MO Failure: Rule id="<rule-id>" target of rename already exists for key="<key-name>", value="<target-key-value>"	<p>A request to rename an existing sub-MO cannot be performed because another sub-MO already exists with the proposed target key value.</p> <p>Possible values for <key-name> are:</p> <ul style="list-style-type: none"> • domain • from • id
9.	Failed to meet an application constraint: Sub-MO Failure: Rule id="<rule-id>" no element found for key="<key-name>", value="<key-value>"	<p>A request referring to an existing sub-MO cannot be performed because the sub-MO does not exist within the current document.</p>
10.	Failed to meet a license constraint: <license> License invalid, expired or not present.	<p>An attempt to set a service to be active is rejected because of the absence of a valid <license> license.</p> <p>Possible value for <license> is:</p> <ul style="list-style-type: none"> • Service Profile •

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Num	Reason Text	Description
11.	Invalid targets in Document, failure against dial plan list, failed targets are : <invalid-targets>.	One or more <invalid-targets> are not permitted by the dial plan for the user. These numbers can be from Communication Diversion forward-to targets, Communication Distribution targets, Abbreviated Dialing stored-numbers or Hotline hotline-numbers.
12.	Invalid targets in Document, failure against Outgoing Communication Barring rules containing carrier condition, failed targets are : <invalid-targets> in <service>	One or more <invalid-targets> are not permitted by the Outgoing Call Barring rules containing carrier condition. Possible values for <service> are: <ul style="list-style-type: none"> • Communication Distribution • Communication Diversion • User Common Data • Abbreviated Dialing • Session Transfer to Own Device • Hotline
13.	Failed to meet an application constraint: Number of rules for “<service>” exceeds service limit.	A request to update the service contains more rules than allowed for the service. Possible values for <service> are: <ul style="list-style-type: none"> • communication-distribution • communication-diversion • incoming-communication-barring • outgoing-communication-barring • session-transfer-to-own-device
14.	Failed to meet an application constraint: Number of rules in Document exceeds total limit.	A request to update the Document contains more service rules than allowed by the total limit.

Table 88 – Error 3013 ReasonText Values Common Across Multiple Services

Notes

- a) Possible values for <service> with a user part are
- abbreviated-dialing
 - calling-name-identity-presentation

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- communication-distribution
- communication-diversion
- cdiv-no-answer-timer
- communication-waiting
- distinctive-ring
- flexible-identity-presentation
- hotline
- incoming-communication-barring
- originating-calling-name-identity-presentation
- outgoing-barring-programs
- outgoing-communication-barring
- originating-identity-presentation
- originating-identity-presentation-restriction
- session-transfer-to-own-device
- terminating-identity-presentation
- terminating-identity-presentation-restriction
- user-common-data

Note that the originating-identity-presentation-restriction and terminating-identity-presentation-restriction service elements apply to temporary mode and not to permanent mode.

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Num	Reason Text	Description
1.	Failed to meet an application constraint: Message: "Element not found on Operator side". Service: "communication-diversion". Condition: "<condition>"	<p>An attempt has been made to use a Communication Diversion <condition> which the user has not subscribed to.</p> <p>Possible values for <condition> are:</p> <ul style="list-style-type: none">anonymousbusyidentitymedianot-registeredno-answerpresence-statusvaliditynot-reachablevalid-periodsinvalidityserved-identity

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Num	Reason Text	Description
2.	Failed to meet an application constraint: Message: "Element deactivated on Operator side". Service: "communication-diversion". Condition: "<condition>"	<p>An attempt has been made to use a Communication Diversion <condition> which the user has not subscribed to.</p> <p>Possible values for <condition> are:</p> <ul style="list-style-type: none"> • anonymous • busy • identity • media • not-registered • no-answer • presence-status • validity • not-reachable • valid-periods • invalidity • served-identity • unconditional
3.	Failed to meet an application constraint: Communication Diversion Failure: Rule id="<rule-id>" multiple "<condition>" elements	<p>Each Communication Diversion rule must have at most one of each of the following <condition> elements:</p> <ul style="list-style-type: none"> • anonymous • busy • identity • not-registered • no-answer • validity • not-reachable • valid-periods • invalidity • served-identity

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Num	Reason Text	Description
4.	Failed to meet an application constraint: Communication Diversion Failure: Rule id="<rule-id>", duplicate cp:except found. id=<identity>	Within an identity condition of a Communication Diversion rule, each "except" element with an "id" attribute must have a unique value for that id.
5.	Failed to meet an application constraint: Communication Diversion Failure: Rule id="<rule-id>", duplicate cp:except found. domain=<domain>	Within an identity condition of a Communication Diversion rule, each "except" element with a "domain" attribute must have a unique value for that domain.
6.	Failed to meet an application constraint: Communication Diversion Failure: Rule id="<rule-id>", Found duplicate "from" tags with value = <from-time>	Within a validity condition of a Communication Diversion rule, each "from" element must have a unique value.
7.	Failed to meet an application constraint: Communication Diversion Failure: Rule id="<rule-id>", duplicate cp:many found. domain=<domain>	Within an identity condition of a Communication Diversion rule, each "many" element with a "domain" attribute must have a unique value of domain.
8.	Failed to meet an application constraint: Communication Diversion Failure: Rule id="<rule-id>", duplicate cp:many found. No domain	Within an identity condition of a Communication Diversion rule there must be at most a single "many" element with no domain attribute.
9.	Failed to meet an application constraint: Communication Diversion Failure: Rule id="<rule-id>", duplicate cp:one found. id=<identity>	Within an identity condition of a Communication Diversion rule, each "one" element must have a unique id value.
10.	Failed to meet an application constraint: Communication Diversion Failure: Rule id="<rule-id>" cannot have "identity" and "anonymous" elements	The "identity" and "anonymous" conditions are contradictory so it is illegal to have them in the same rule
11.	Failed to meet an application constraint: Communication Diversion Failure: Rule id="<rule-id>" unknown elements	The rule contains elements that are not recognized.
12.	Failed to meet an application constraint: Communication Diversion Failure: Rule id="<rule-id>" not SIP or TEL URI in "except"	Within an identity condition of a Communication Diversion rule, each "except" element must have an id attribute that starts with 'sip:' or 'tel:'

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Num	Reason Text	Description
13.	Failed to meet an application constraint: Communication Diversion Failure: Rule id="<rule-id>", except id, "<identity>" does not start with sip:	Within an identity condition of a Communication Diversion rule, the "id" attribute in the element "except" of a "many" condition must start with 'sip:'
14.	Failed to meet an application constraint: Communication Diversion Failure: Rule id="<rule-id>", "except" domain "<except-domain>" does not match "many" domain "<many-domain>"	Within an identity condition of a Communication Diversion rule, the "except" elements within a "many" element with a domain attribute must have an "id" attribute that is a SIP URI within that domain
15.	Failed to meet an application constraint: Communication Diversion Failure: Rule id="<rule-id>", "id" missing in "except"	Within an identity condition of a Communication Diversion rule, each "except" element must have either an "id" attribute or a "domain" attribute.
16.	Failed to meet an application constraint: Communication Diversion Failure: Rule id="<rule-id>", not SIP or TEL URI in "one"	Within an identity condition of a Communication Diversion rule, each element "one" must have an id attribute that starts with 'sip:' or 'tel:'
17.	Failed to meet an application constraint: Message: "Element not found on Operator side". Service: "communication-diversion". Action: "<action>"	<p>An attempt has been made to use a Communication Diversion <action> which the user has not subscribed to.</p> <p>Possible values for <action> are:</p> <ul style="list-style-type: none">• notify-caller• notify-served-user• notify-served-user-on-outbound-call• reveal-identity-to-caller• reveal-identity-to-target• do-not-disturb• play-announcement

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Num	Reason Text	Description
18.	Failed to meet an application constraint: Message: "Element deactivated on Operator side". Service: "communication-diversion". Action: "<action>"	An attempt has been made to use a Communication Diversion <action> which the user has not subscribed to. Possible values for <action> are: <ul style="list-style-type: none">• notify-caller• notify-served-user• notify-served-user-on-outbound-call• reveal-identity-to-caller• reveal-identity-to-target• do-not-disturb• play-announcement
19.	Failed to meet an application constraint: Communication Diversion Failure: Rule id="<rule-id>" multiple "forward-to" elements	Each Communication Diversion rule must have at most one "forward-to" action.
20.	Failed to meet an application constraint: Communication Diversion Failure: Rule id="<rule-id>", missing "forward-to"	Each Communication Diversion rule must have one "actions" element containing one "forward-to" action.
21.	Failed to meet an application constraint: Communication Diversion Failure: Rule id="<rule-id>", missing "actions"	Each Communication Diversion rule must have one "actions" element.
22.	Failed to meet an application constraint: Communication Diversion Failure: Rule id="<rule-id>" "not-registered" cannot have "notify-served-user" as "true"	If the served-user is not registered, then he cannot be notified so this combination of elements is prohibited
23.	Failed to meet an application constraint: Communication Diversion Failure: Rule id="<rule-id>" "not-reachable" cannot have "notify-served-user" as "true"	If the served-user is not reachable, then he cannot be notified so this combination of elements is prohibited
24.	Failed to meet an application constraint: Communication Diversion Failure: Rule id="<rule-id>" illegal "actions" element "<element-name>"	The request contained an element within the "actions" element that is not recognized

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25.	Failed to meet an application constraint: Communication Diversion Failure: Rule id="<rule-id>", identity is not SIP or TEL URI or "voicemail:internal"	The element "target" within a forwarding action must be a SIP or TEL URI or "voicemail:internal".
26.	Failed to meet an application constraint: Communication Diversion Failure: Rule id="<rule-id>", Actions="forward-to", identity is same as user	The identity in the request is the same as the user. In other words, acceptance of this request would mean diverting the user to himself/herself.
27.	Failed to meet an application constraint: Communication Diversion Failure: Rule id="<rule-id>", Actions="forward-to", identity is an alias of user	The identity in the request is an alias of the user. In other words, acceptance of this request would mean diverting the user to himself/herself.
28.	Failed to meet an application constraint: Communication Barring conditions identity, "<barred identity>", conflicts with Communication Diversion forwarding identity, "<target>"	The target of a communication-diversion rule, <target> is barred by the end-user's outgoing communication barring of an individual <barred identity>.
29.	Failed to meet an application constraint: Communication Barring conditions identity with Number Match, "<barred identity>", conflicts with Communication diversion forwarding identity, "<target>"	The target of a communication-diversion rule, <target> is barred by the end-user's outgoing communication barring of an individual <barred identity> using number-match.
30.	Failed to meet an application constraint: Communication Diversion entry, "<target>", is barred by universal many condition	The target of a communication-diversion rule, <target>, is barred by the end-user's outgoing communication barring of all identities, and <target> does not appear in an exception.
31.	Failed to meet an application constraint: Communication Diversion forwarding identity, "<target>", is barred by many domain, <domain>	The target of a communication-diversion rule, <target>, is barred by the end-user's outgoing communication barring of all identities within <domain>, and <target> does not appear in an exception.
32.	Failed to meet an application constraint: Communication Diversion Failure: Rule id="<rule-id>" must not contain both "id" and "domain" in "except"	The element "except" within an identity condition must either have a single identity "id" attribute or a "domain" attribute. It must not have both.

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33.	Failed to meet an application constraint: Communication Diversion Failure: Rule id="<rule-id>", "voicemail:internal" present when not activated by the operator	The subscriber has attempted to use diversion to Voice Mail when this has not been activated by the operator.
34.	Failed to meet an application constraint: Communication Diversion forwarding identity, "<target>", is barred by the mtasOcbBlackList	The target of a communication-diversion rule, <target>, is barred by the mtasOcbBlackList CM attribute [3].
35.	Failed to meet an application constraint: Communication Diversion forwarding identity, "<target>", is barred by the mtasCDivBlackList	The target of a communication-diversion rule, <target>, is barred by the mtasCDivBlackList CM attribute [3].
36.	Failed to meet an application constraint: Communication Diversion Failure: Rule id="<rule-id>", identity "<target>" is not permitted	The target of a communication-diversion rule, <target>, is not permitted. This could be because it matches the mtasConfFactoryUri, mtas3ptyFactoryUri or any instance of MtasNaRa.
37.	Failed to meet an application constraint: Communication Diversion Failure: User may not have "user-no-reply-timer" provisioned with "operator-cdiv-no-answer-timer" provisioned	The user level NoReplyTimer, controlled by the user-no-reply-timer option in the communication-diversion service supersedes the communication-diversion-no-answer-timer. They cannot both be provisioned at the same time.
38.	Failed to meet an application constraint: Communication Diversion Failure: user "NoReplyTimer" is greater or equal to mtasMmtNoReplyTimer	The value entered is greater than the value configured in the mtasMmtNoReplyTimer object. Accepting this input would make the feature inoperable for this user as the ringing would time out first.
39.	Failed to meet an application constraint: Communication Diversion Failure: Rule id="<rule-id>", "NoReplyTimer" is greater or equal to mtasMmtNoReplyTimer	The value entered is greater than the value configured in the mtasMmtNoReplyTimer object. Accepting this input would make the feature inoperable for this user as the ringing would time out first
40.	Failed to meet an application constraint: Communication Diversion Failure: Rule id="<rule-id>", cannot have "NoReplyTimer" without "no-answer" elements	The NoReplyTimer is only valid for rules with the no-answer condition.

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41.	Failed to meet an application constraint: Message: "Element not found on Operator side". Service: "communication-diversion". Option: "<option>"	<p>An attempt has been made to use a Communication Diversion <option> which the user has not subscribed to.</p> <p>Possible values for <option> are:</p> <ul style="list-style-type: none">• user-no-reply-timer• rule-no-reply-timer <p>The value user-no-reply-timer applies to the use of NoReplyTimer at service level. The value rule-no-reply-timer applies to the use of NoReplyTimer in a rule.</p>
42.	Failed to meet an application constraint: Message: "Element deactivated on Operator side". Service: "communication-diversion". Option: "<option>"	<p>An attempt has been made to use a Communication Diversion <option> which the user has not subscribed to.</p> <p>Possible values for <option> are:</p> <ul style="list-style-type: none">• user-no-reply-timer• rule-no-reply-timer <p>The value user-no-reply-timer applies to the use of NoReplyTimer at service level. The value rule-no-reply-timer applies to the use of NoReplyTimer in a rule.</p>
43.	Failed to meet an application constraint: Communication Diversion Failure: Rule id="<rule-id>" multiple "NoReplyTimer" elements	Each Communication Diversion rule must have at most one "NoReplyTimer" action.
44.	Failed to meet an application constraint: Communication Diversion Failure: Rule id="<rule-id>", cannot have "busy" conditions element combined with "do-not-disturb" action.	The "do-not-disturb" action is not valid for rules containing "busy" condition.
45.	Failed to meet an application constraint: Communication Diversion Failure: Rule id="<rule-id>", cannot have "not-registered" conditions element combined with "do-not-disturb" action.	The "do-not-disturb" action is not valid for rules containing "not-registered" condition.

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46.	Failed to meet an application constraint: Communication Diversion Failure: Rule id="<rule-id>", cannot have "no-answer" conditions element combined with "do-not-disturb" action.	The "do-not-disturb" action is not valid for rules containing "no-answer" condition.
47.	Failed to meet an application constraint: Communication Diversion Failure: Rule id="<rule-id>", cannot have "not-reachable" conditions element combined with "do-not-disturb" action.	The "do-not-disturb" action is not valid for rules containing "not-reachable" condition.
48.	Failed to meet an application constraint: Communication Diversion Failure: Rule id="<rule-id>", multiple "do-not-disturb" elements	Each Communication Diversion rule must have at most one "do-not-disturb" action.
49.	Failed to meet an application constraint: Communication Diversion Failure: Rule id="<rule-id>", multiple "play-announcement" elements	Each Communication Diversion rule must have at most one "play-announcement" action.
50.	Failed to meet an application constraint: Communication Diversion Failure: Rule id="<rule-id>", Condition="served-identity", URI="<served-id>" does not match any of the served user's IRS PUIs	An attempt has been made to set a diversion rule for alias PUI, which is not listed in the subscriber's IRS.
51.	Failed to meet an application constraint: Communication Diversion forwarding identity, "<target>", is barred by the operator barring category, "<category-name>"	The target of a communication-diversion rule, <target>, is barred by the operator barring category.
52.	Failed to meet an application constraint: Communication Diversion forwarding identity, "<target>", is barred by the mtasOcbOpBCatDomain	The target of a communication-diversion rule, <target>, is barred by the mtasOcbOpBCatDomain CM attribute [3].
53.	Failed to meet an application constraint: Communication Diversion forwarding identity, "<target>", is barred in Communication Barring by Bar All Outgoing Calls (BAOC)	The target of a communication-diversion rule, <target>, is barred in Communication Barring by Bar All Outgoing Calls (BAOC). Note: This application constraint is not checked by default. The system needs to be configured to activate the application constraint.

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54.	Failed to meet an application constraint: Communication Diversion forwarding identity, "<target>", is barred by the vtasCDivBlackList	The target of a communication-diversion rule, <target>, is barred by the vtasCDivBlackList CM attribute [3].
55.	Failed to meet an application constraint: Communication Diversion Failure: Rule id="<rule-id>", the forward-to target contains carrier select data while carrier-select-rn service is not provisioned	The target of a Communication-Diversion rule contains carrier select data while carrier-select-rn service is not provisioned.
56.	Failed to meet an application constraint: Communication Diversion forwarding identity, "<target>", is barred by the barring category, "<category-name>"	The target of a communication-diversion rule, <target>, is barred by the barring category.

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1.	Failed to meet an application constraint: Communication Distribution Failure: Rule id="<rule-id>" multiple "<condition>" elements	Each Communication Distribution rule must have at most one of each of the following <condition> elements: <ul style="list-style-type: none">• validity• valid-periods• invalidity• anonymous• busy• identity• not-registered• no-answer• not-reachable• served-identity• in-sip-request
2.	Failed to meet an application constraint: Communication Distribution Failure: Rule id="<rule-id>" the usage of condition "<condition>" is not allowed by the Operator	An attempt has been made to use a Communication Distribution <condition> which the user has not subscribed to. Possible values for condition are: <ul style="list-style-type: none">• validity• valid-periods• invalidity• anonymous• busy• identity• media• not-registered• no-answer• presence-status• not-reachable• served-identity• in-sip-request

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Num	Reason Text	Description
3.	Failed to meet an application constraint: Communication Distribution Failure: Rule id="<rule-id>" the usage of action "<action>" is not allowed by the Operator	An attempt has been made to use a Communication Distribution <action> which the user has not subscribed to. Possible values for action are: <ul style="list-style-type: none"> play-announcement
4.	Failed to meet an application constraint: Communication Distribution Failure: The usage of NoReplyTimer on user level is not allowed by the Operator	An attempt has been made to use a Communication Distribution NoReplyTimer value on user level which the user has not subscribed to.
5.	Failed to meet an application constraint: Communication Distribution Failure: Rule id="<rule-id>", Found duplicate "from" tags with value = <from-time>	Within a validity condition of a Communication Distribution rule, each "from" element must have a unique value.
6.	Failed to meet an application constraint: Communication Distribution Failure: Rule id="<rule-id>" unknown elements	The rule contains elements that are not recognized.
7.	Failed to meet an application constraint: Communication Distribution Failure: Rule id="<rule-id>" missing action elements	Each Communication Distribution rule must have at least one action element.
8.	Failed to meet an application constraint: Communication Distribution Failure: Rule id="<rule-id>" multiple action elements	Each Communication Distribution rule must have at most one "actions" element from the followings: "parallel-distribution" action, "serial-distribution" action or "flexible-distribution" action.
9.	Failed to meet an application constraint: Communication Distribution Failure: Rule id="<rule-id>" missing "actions"	Each Communication Distribution rule must have at least one "actions" element with either one "parallel-distribution" action or one "serial-distribution" action or one "flexible-distribution" action.
10.	Failed to meet an application constraint: Communication Distribution Failure: Rule id="<rule-id>" there must be exactly one action present from the following: "serial-distribution", "parallel-distribution", "flexible-distribution"	Each Communication Distribution rule must have at most one of the following action elements not more: serial-distribution, parallel-distribution, flexible-distribution

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11.	Failed to meet an application constraint: Communication Distribution Failure: Rule id="<rule-id>" the action "play-announcement" must appear at most once	Each Communication Distribution rule must have one play-announcement action at most.
12.	Failed to meet an application constraint: Communication Distribution Failure: Rule id="<rule-id>" "NoReplyTimer" must appear at most once	Each Communication Distribution rule must have at most one but not more NoReplyTimer element for the subscriber.
13.	Failed to meet an application constraint: Communication Distribution Failure: Rule id="<rule-id>" too many actions elements	Each Communication Distribution rule must have at most three action elements. One for the distribution: serial-, parallel- or flexible-distribution, one for the play-announcement action and one for the NoReplyTimer on rule level.
14.	Failed to meet an application constraint: Communication Distribution Failure: Rule id="<rule-id>" illegal "actions" element "<element-name>"	The request contained an element within the "actions" element that is not recognized
15.	Failed to meet an application constraint: Communication Distribution Failure: Target id "<id>" is not SIP or TEL URI	Each target within the target-list must have an id which is a SIP or TEL URI.
16.	Failed to meet an application constraint: Communication Distribution Failure: Target id "<id>" is same as user	The id value, <id>, of a target in the target-list is the same as that of the user. For distribution to include the user the special name PRIMARY, PRIMARY_MOBILE or PRIMARY_FIXED should be used in the serial-distribution, parallel-distribution or flexible-distribution action.
17.	Failed to meet an application constraint: Communication Distribution Failure: Target id "<id>" is an alias of user	The id value, <id>, of a target in the target-list is the same as an alias of the user. For distribution to include the user the special name PRIMARY, PRIMARY_MOBILE or PRIMARY_FIXED should be used in the serial-distribution, parallel-distribution or flexible-distribution action.

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18.	Failed to meet an application constraint: Communication Barring conditions identity, "<barred identity>", conflicts with Communication Distribution target id "<id>"	The id value, <id>, of a target in the target-list is barred by the end-user's outgoing communication barring of an individual <barred identity>.
19.	Failed to meet an application constraint: Communication Barring conditions identity using Number Match, "<barred identity>", conflicts with Communication Distribution target id "<id>"	The id value, <id>, of a target in the target-list is barred by the end-user's outgoing communication barring of an individual <barred identity> using number-match.
20.	Failed to meet an application constraint: Communication Distribution target id, "<id>", is barred by universal many condition	The id value, <id>, of a target in the target-list is barred by the end-user's outgoing communication barring of all identities, and <id> does not appear in an exception.
21.	Failed to meet an application constraint: Communication Distribution target id, "<id>", is barred by many domain, "<domain>"	The id value, <id>, of a target in the target-list is barred by the end-user's outgoing communication barring of all identities within <domain>, and <id> does not appear in an exception.
22.	Failed to meet an application constraint: Communication Distribution target id, "<id>", is barred by the mtasOcbBlackList	The id value, <id>, of a target in the target-list is barred by the mtasOcbBlackList CM attribute [3].
23.	Failed to meet an application constraint: Communication Distribution target id, "<id>", is barred by the mtasCDivBlackList	The id value, <id>, of a target in the target-list is barred by the mtasCDivBlackList CM attribute [3].
24.	Failed to meet an application constraint: Communication Distribution Failure: Exceeded maximum number of targets	The number of targets in the target-list is greater than the max-targets allowed by the operator.
25.	Failed to meet an application constraint: Communication Distribution Failure: Repeated target name "<name>" in target-list	Each target in the target-list must have a unique name.
26.	Failed to meet an application constraint: Communication Distribution Failure: Reserved target name "<name>" in target-list	Reserved words PRIMARY, PRIMARY_MOBILE, PRIMARY_FIXED and VOICEMAIL must not be used as target names in the target-list.

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27.	Failed to meet an application constraint: Communication Distribution Failure: Rule id="<rule-id>", repeated target name "<name>" in distribution list	Each target in each serial-distribution, parallel-distribution or flexible-distribution action must have a unique name.
28.	Failed to meet an application constraint: Communication Distribution Failure: Rule id="<rule-id>", target name "<name>" in distribution list is not valid	Each target in each serial-distribution, parallel-distribution or flexible-distribution action must have a matching name either in the FCD target-list or in the common target list or in the common device list, or it has to be a special value PRIMARY, PRIMARY_MOBILE, PRIMARY_FIXED or VOICEMAIL.
29.	Failed to meet an application constraint: Communication Distribution Failure: Communication Distribution is not permitted to be activated with Communication Diversion activated and the "<call-state-condition>" activated	The Communication Distribution service is not allowed with the Communication Diversion service activated with any of the following <call-state-condition> values activated: <ul style="list-style-type: none"> • busy-condition • not-registered-condition • no-answer-condition • not-reachable-condition
30.	Failed to meet an application constraint: Communication Distribution Failure: Target id "<id>" is not permitted	The identity in the request is not permitted. This could be because it matches the mtasConfFactoryUri, mtas3ptyFactoryUri or any instance of MtasNaRa.
31.	Failed to meet an application constraint: Communication Distribution Failure: Communication Distribution requires Communication Completion Monitor Opt Out	The Communication Distribution service requires the user to be opted out of all forms of Communication Completion monitoring i.e. it cannot be a target for Communication Completion
32.	Failed to meet an application constraint: Communication Distribution Failure: Target name "<name>" in target-list is already used	Each target in the target list action must have a unique name within the names of common targets, common devices and flexible communication distribution targets.

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33.	Failed to meet an application constraint: Communication Distribution Failure: Rule id="<rule-id>", PRIMARY target cannot be used together with a target device from the target device list in the same parallel distribution set	There are conflicting targets within the parallel distribution set. This could be because the PRIMARY target and a target device from the target device list in User Common Data are used in the same parallel distribution set.
34.	Failed to meet an application constraint: Communication Distribution Failure: Rule id="<rule-id>", target from the common device list is not allowed for non-IMS Primary user	For a non-IMS hosted PRIMARY number, it is not allowed to target a specific device.
35.	Failed to meet an application constraint: Rule id="<rule-id>", Communication Distribution name "<name>" with target id, "<id>", is barred by the mtasCDivBlackList	The id value, <id>, of a target from the common target list is barred by the mtasCDivBlackList CM attribute.
36.	Failed to meet an application constraint: Communication Distribution Failure: Rule id="<rule-id>", VOICEMAIL present when not activated by the operator	VOICEMAIL is not permitted to be a target in case of missing activated voicemail service provided by the operator.
37.	Failed to meet an application constraint: Communication Distribution Failure: Rule id="<rule-id>" the first target in a flexible-distribution action cannot have parallel ring-mode	Each Communication Distribution rule with the flexible-distribution action must not have a target configured as parallel.
38.	Failed to meet an application constraint: Communication Distribution Failure: Rule id="<rule-id>" a target with parallel ring-mode cannot have ring-period attribute.	Each Communication Distribution rule with the flexible-distribution action must not have a parallel target configured with ring-period attribute.
39.	Failed to meet an application constraint: Communication Distribution Failure: Rule id="<rule-id>" the target "<target>" is present more than once in a parallel group	Each Communication Distribution rule with the flexible-distribution action must not have a target configured more than one in the same parallel target group. But it is allowed to configure the same target multiple times in the same target list but in different parallel groups.

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40.	Failed to meet an application constraint: Communication Distribution Failure: Rule id="<rule-id>" PRIMARY target cannot be used with busy, no-answer, not-registered or not-reachable conditions	PRIMARY must not be configured as a target if the same Communication Distribution rule contains busy, no-answer, not-registered or not-reachable condition.
41.	Failed to meet an application constraint: Communication Distribution Failure: Rule id="<rule-id>" anonymous and identity conditions cannot be present in the same rule	Each Communication Distribution rule must not have anonymous and identity conditions configured at the same time.
42.	Failed to meet an application constraint: Communication Distribution Failure: "Element: "divert-primary" deactivated on Operator side	An attempt has been made to use Communication Distribution Divert Primary service which the user has not subscribed to.
43.	Failed to meet an application constraint: Communication Distribution Failure: Element: "divert-primary" not found on Operator side	An attempt has been made to use Communication Distribution Divert Primary service which the user has not subscribed to.
44.	Failed to meet an application constraint: Communication Distribution Failure: Service: "divert-primary" usage is not supported	An attempt has been made to use Communication Distribution Divert Primary service while the operator does not provide such service.
45.	Failed to meet an application constraint: Communication Distribution Failure: Target id: "<id>" in "divert-primary" is not SIP or TEL URI	The target of the Communication Distribution Divert Primary service must have an id which is a SIP or TEL URI.
46.	Failed to meet an application constraint: Communication Distribution Target id: "<id>" in "divert-primary" is barred by the mtasOcbBlackList	The target of the Communication Distribution Divert Primary service has a target with an id which is barred by the mtasOcbBlackList CM attribute.
47.	Failed to meet an application constraint: Communication Distribution Failure: Element: "notify-caller" is not permitted in "divert-primary"	The Communication Distribution Divert Primary service's "forward-to" element, beside containing target element, can only contain the following optional elements: <ul style="list-style-type: none">- reveal-identity-to-caller- notify-served-user- notify-served-user-on-outbound-call- reveal-identity-to-target

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48.	Failed to meet an application constraint: Communication Distribution Failure: Rule id="<rule-id>", Condition="served-identity", URI="<served-id>" does not match any of the served user's IRS PUIs	An attempt has been made to set a distribution rule for the alias PUI, which is not listed in the subscriber's IRS.
49.	Failed to meet an application constraint: Communication Distribution Failure: Rule id="<rule-id>", identity is not SIP or TEL URI in "one"	Within an identity condition of a Communication Distribution rule, each element "one" must have an id attribute that starts with 'sip:' or 'tel:'.
50.	Failed to meet an application constraint: Communication Distribution Failure: Element "auto-answer-avoidance" is not allowed to be in the target. It must be defined in the User Common Data	The element "target" must not include attribute "auto-answer-avoidance" in service Communication Distribution. It must be defined in the "target" in the User Common Data.
51.	Failed to meet an application constraint: Communication Distribution Failure: Rule id="<rule-id>", PRIMARY target cannot be used together with PRIMARY_MOBILE in the same parallel distribution set	There are conflicting targets within the parallel distribution set. This could be because the PRIMARY and the PRIMARY_MOBILE targets are used in the same parallel distribution set.
52.	Failed to meet an application constraint: Communication Distribution Failure: Rule id="<rule-id>", condition="in-sip-request", Flexcondition id="<flexcondition-id>" has not been defined in the User Common Data	The subscriber has attempted to set a flexcondition not defined in the User Common Data.
53.	Failed to meet an application constraint: Communication Distribution Failure: Rule id="<rule-id>", PRIMARY_MOBILE target cannot be used together with a target device from the target device list in the same parallel distribution set	There are conflicting targets within the parallel distribution set. This could be because the PRIMARY_MOBILE target and a target device from the target device list in User Common Data are used in the same parallel distribution set.
54.	Failed to meet an application constraint: Communication Distribution Failure: Rule id="<rule-id>" PRIMARY_MOBILE target cannot be used with busy, no-answer, not-registered or not-reachable conditions	PRIMARY_MOBILE must not be configured as a target if the same Communication Distribution rule contains busy, no-answer, not-registered or not-reachable condition.

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55.	Failed to meet an application constraint: Communication Distribution Failure: Rule id="<rule-id>", PRIMARY target cannot be used together with PRIMARY_FIXED in the same parallel distribution set	There are conflicting targets within the parallel distribution set. This could be because the PRIMARY and the PRIMARY_FIXED targets are used in the same parallel distribution set.
56.	Failed to meet an application constraint: Communication Distribution Failure: Rule id="<rule-id>" , PRIMARY_MOBILE target cannot be used together with PRIMARY_FIXED in the same parallel distribution set	There are conflicting targets within the parallel distribution set. This could be because the PRIMARY_MOBILE and the PRIMARY_FIXED targets are used in the same parallel distribution set.
57.	Failed to meet an application constraint: Communication Distribution Failure: Rule id="<rule-id>", PRIMARY_FIXED target cannot be used together with a target device from the target device list in the same parallel distribution set	There are conflicting targets within the parallel distribution set. This could be because the PRIMARY_FIXED target and a target device from the target device list in User Common Data are used in the same parallel distribution set.
58.	Failed to meet an application constraint: Communication Distribution target id, "<id>", is barred in Communication Barring by Bar All Outgoing Calls (BAOC)	The target of a communication-distribution rule, <id>, is barred in Communication Barring by Bar All Outgoing Calls (BAOC). Note: This application constraint is not checked by default. The system needs to be configured to activate the application constraint.
59.	Failed to meet an application constraint: Communication Distribution target id, "<id>", is barred by the vtaCDivBlackList	The id value, <id>, of a target in the target-list is barred by the vtaCDivBlackList CM attribute [3].
60.	Failed to meet an application constraint: Rule id="<rule-id>", Communication Distribution name "<name>" with target id, "<id>", is barred by the vtaCDivBlackList	The id value, <id>, of a target from the common target list is barred by the vtaCDivBlackList CM attribute [3].

Table 90 Error 3013 Reason Text – Communication Distribution

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Num	Reason Text	Description
1.	Failed to meet an application constraint: Message: "Element not found on Operator side". Service: "outgoing-communication-barring". Condition: "<condition>"	<p>An attempt has been made to use an Outgoing Communication Barring <condition> which the user has not subscribed to.</p> <p>Possible values for <condition> are:</p> <ul style="list-style-type: none">• roaming• international• international-exHC• identity• media• other-identity• presence-status• validity• carrier• valid-periods• invalidity• served-identity

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Num	Reason Text	Description
2.	Failed to meet an application constraint: Message: "Element deactivated on Operator side". Service: "outgoing-communication-barring". Condition: "<condition>"	<p>An attempt has been made to use an Outgoing Communication Barring <condition> which the user has not subscribed to.</p> <p>Possible values for <condition> are:</p> <ul style="list-style-type: none"> • roaming • international • international-exHC • identity • media • other-identity • presence-status • validity • carrier • valid-periods • invalidity • served-identity • unconditional
3.	Failed to meet an application constraint: Message: "Element not found on Operator side". Service: "incoming-communication-barring". Condition: "<condition>"	<p>An attempt has been made to use an Incoming Communication Barring <condition> which the user has not subscribed to.</p> <p>Possible values for <condition> are:</p> <ul style="list-style-type: none"> • anonymous • roaming • communication-diverted • identity • media • other-identity • presence-status • validity • valid-periods • invalidity • served-identity

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Num	Reason Text	Description
4.	Failed to meet an application constraint: Message: "Element deactivated on Operator side". Service: "incoming-communication-barring". Condition: "<condition>"	<p>An attempt has been made to use an Incoming Communication Barring <condition> which the user has not subscribed to.</p> <p>Possible values for <condition> are:</p> <ul style="list-style-type: none">• anonymous• roaming• communication-diverted• identity• media• other-identity• presence-status• validity• valid-periods• invalidity• served-identity• unconditional

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Num	Reason Text	Description
5.	Failed to meet an application constraint: Communication Barring Failure: Rule id="<rule-id>", multiple "<condition>" elements	<p>Each Incoming Communication Barring rule must have at most one of each of the following <condition> elements:</p> <ul style="list-style-type: none">• anonymous• roaming• communication-diverted• identity• other-identity• validity• valid-periods• invalidity• served-identity <p>Each Outgoing Communication Barring rule must have at most one of each of the following <condition> elements:</p> <ul style="list-style-type: none">• roaming• international• international-exHC• identity• other-identity• validity• carrier• valid-periods• invalidity• served-identity
6.	Failed to meet an application constraint: Communication Barring Failure: Rule id="<rule-id>", duplicate cp:except found. id=<identity>	Within an identity condition of a Communication Barring rule, each "except" element with an "id" attribute must have a unique value for that id.
7.	Failed to meet an application constraint: Communication Barring Failure: Rule id="<rule-id>", duplicate cp:except found. domain=<domain>	Within an identity condition of a Communication Barring rule, each "except" element with a "domain" attribute must have a unique value for that domain.

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Num	Reason Text	Description
8.	Failed to meet an application constraint: Communication Barring Failure: Rule id="<rule-id>", Found duplicate "from" tags with value = <from-time>	Within a validity condition of a Communication Barring rule, each "from" element must have a unique value.
9.	Failed to meet an application constraint: Communication Barring Failure: Rule id="<rule-id>", duplicate cp:many found. domain=<domain>	Within an identity condition of a Communication Barring rule, each "many" element with a "domain" attribute must have a unique value of domain.
10.	Failed to meet an application constraint: Communication Barring Failure: Rule id="<rule-id>", duplicate cp:many found. No domain	Within an identity condition of a Communication Barring rule, there must be at most a single "many" element with no domain attribute.
11.	Failed to meet an application constraint: Communication Barring Failure: Rule id="<rule-id>", duplicate cp:one found. id=<identity>	Within an identity condition of a Communication Barring rule, each "one" element must have a unique id value.
12.	Failed to meet an application constraint: Communication Barring Failure: Rule id="<rule-id>", cannot have "identity" and "anonymous" elements	The elements "identity" and "anonymous" are contradictory so it is prohibited to have them in the same rule.
13.	Failed to meet an application constraint: Communication Barring Failure: Rule id="<rule-id>", unknown elements	The rule contains elements that are not recognized.
14.	Failed to meet an application constraint: Communication Barring Failure: Rule id="<rule-id>", not SIP or TEL URI in "except"	Within an identity condition of a Communication Barring rule, the id attribute in the element "except" must start with 'sip:' or 'tel:'
15.	Failed to meet an application constraint: Communication Barring Failure: Rule id="<rule-id>", "except Id" <identity> does not start with sip:	Within an identity condition of a Communication Barring rule, the id attribute in the element "except" of a "many" condition with a domain attribute must start with 'sip:'
16.	Failed to meet an application constraint: Communication Barring Failure: Rule id="<rule-id>", "except" domain <except-domain> does not match "many" domain <many-domain>	Within an identity condition of a Communication Barring rule, the "except" elements within a "many" element with a domain attribute must have an "id" attribute that is a SIP URI within that domain.

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Num	Reason Text	Description
17.	Failed to meet an application constraint: Communication Barring Failure: Rule id="<rule-id>", "id" missing in "except"	Within an identity condition of a Communication Barring rule, each "except" element must have either an "id" attribute or a "domain" attribute.
18.	Failed to meet an application constraint: Communication Barring Failure: Rule id="<rule-id>", identity is not SIP or TEL URI in "one"	Within an identity condition of an Outgoing Communication Barring rule, each "one" element must have an id attribute that starts with 'sip:' or 'tel:'.
19.	Failed to meet an application constraint: Communication Barring Failure: Rule id="<rule-id>", identity is not SIP or TEL or hidden: URI in "one"	Within an identity condition of an Incoming Communication Barring rule, each "one" element must have an id attribute that starts with 'sip:' or 'tel:' or 'hidden:'.
20.	Failed to meet an application constraint: Communication Barring Failure: Rule id="<rule-id>", hidden: URI "<hidden-uri>" is unmatched.	Within an identity condition of an Incoming Communication Barring rule, each hidden: URI must match a corresponding caller-details element in the operator data.
21.	Failed to meet an application constraint: Message: "User element active but Operator element missing". Service: "outgoing-communication-barring". Action: "allow"	An attempt has been made to set the Outgoing Communication Barring "allow" action to 'true' but the user has not subscribed to this.
22.	Failed to meet an application constraint: Message: "User element active but Operator element inactive". Service: "outgoing-communication-barring". Action: "allow"	An attempt has been made to set the Outgoing Communication Barring "allow" action to 'true' but the user has not subscribed to this.
23.	Failed to meet an application constraint: Message: "User element active but Operator element missing". Service: "incoming-communication-barring". Action: "allow"	An attempt has been made to set the Incoming Communication Barring "allow" action to 'true' but the user has not subscribed to this.
24.	Failed to meet an application constraint: Message: "User element active but Operator element inactive". Service: "incoming-communication-barring". Action: "allow"	An attempt has been made to set the Incoming Communication Barring "allow" action to 'true' but the user has not subscribed to this.

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Num	Reason Text	Description
25.	Failed to meet an application constraint: Communication Barring Failure: Rule id="<rule-id>", missing "actions"	Each Communication Barring rule must have one "allow" action.
26.	Failed to meet an application constraint: Communication Barring Failure: Rule id="<rule-id>", illegal "actions" element "<element-name>"	The request contained an element within the "actions" element that is not recognized.
27.	Failed to meet an application constraint: Communication Barring Failure: Rule id="<rule-id>", must not contain both "id" and "domain" in "except"	The element "except" within an identity condition must either have a single identity "id" attribute or a "domain" attribute. It must not have both.
28.	Failed to meet an application constraint: Communication Barring Failure: Rule id="<rule-id>", cannot have "do-not-disturb" and "allow" with value = "true".	The elements "do-not-disturb" and "allow" with value = "true" are contradictory so it is prohibited to have them in the same rule.
29.	Failed to meet an application constraint: Communication Barring Failure: Rule id="<rule-id>", cannot have "play-announcement"/"play-segmented-announcement" and "allow" with value = "true".	The elements "play-announcement"/"play-segmented-announcement" and "allow" with value = "true" are contradictory so it is prohibited to have them in the same rule.
30.	Failed to meet an application constraint: Communication Barring Failure: Rule id="<rule-id>", multiple "<actions>" elements	<p>Each Incoming Communication Barring rule must have at most one of each of the following <actions> elements:</p> <ul style="list-style-type: none"> allow do-not-disturb play-announcement play-segmented-announcement <p>Each Outgoing Communication Barring rule must have at most one of each of the following <actions> elements:</p> <ul style="list-style-type: none"> allow play-announcement play-segmented-announcement

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Num	Reason Text	Description
31.	Failed to meet an application constraint: Message: "Element deactivated on Operator side". Service: "incoming-communication-barring". Action: "<action>"	An attempt has been made to use an Incoming Communication Barring <action> which the user has not subscribed to. Possible values for <action> are: <ul style="list-style-type: none"> do-not-disturb play-announcement play-segmented-announcement
32.	Failed to meet an application constraint: Message: "Element deactivated on Operator side". Service: "outgoing-communication-barring". Action: "<action>"	An attempt has been made to use an Outgoing Communication Barring <action> which the user has not subscribed to. Possible value for <action> is: <ul style="list-style-type: none"> play-announcement play-segmented-announcement
33.	Failed to meet an application constraint: Communication Barring Failure: Rule id="<rule-id>", "carrier-select-code" element is not activated, and it is present in the user configuration	A request to update the OCB user rule set is rejected because the operator did not allow usage of the "carrier-select-code" element within the "carrier" condition.
34.	Failed to meet an application constraint: Communication Barring Failure: User may not have the "carrier" condition activated without Carrier Select or Carrier Select Rn service activated.	Carrier condition can be activated for the user for usage in the Outgoing Communication Barring user rule set, only when the user has CS or CS Rn service activated.
35.	Failed to meet an application constraint: Communication Barring Failure: User may not have the "carrier-select-code" element activated without Carrier Select Rn service activated.	The carrier-select-code element can be activated for the user for usage in the Outgoing Communication Barring user rule set, only when the user has CS Rn service activated.
36.	Failed to meet an application constraint: Communication Barring Failure: Rule id="<rule-id>", Hidden URI is not allowed in identity conditions of Outgoing Communication Barring rules!	An attempt has been made to set a hidden uri in an outgoing communication barring rule which is not allowed.

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Num	Reason Text	Description
37.	Failed to meet an application constraint: Communication Barring Failure: Rule id="<rule-id>", Condition="served-identity", URI="<served-id>" does not match any of the served user's IRS PUIs	An attempt has been made to set a barring rule for the alias PUI, which is not listed in the subscriber's IRS.

Table 91 Error 3013 Reason Text – Communication Barring

Num	Reason Text	Description
1.	Failed to meet an application constraint: Communication Completion Failure: Communication Completion requires Monitor Queue Size, Max Number Of CCBS Requests In Monitor Queue and Max Number Of CCNR Requests In Monitor Queue.	An attempt has been made to set a monitor queue size, max number of CCBS requests and max number of CCNR requests where either the queue size or one (or both) of the max number of CCxx requests has been left out which is not allowed. Either all (i.e. queue size and max number of requests for both CCBS and CCNR respectively) or none are allowed.
2.	Failed to meet an application constraint: Communication Completion Failure: Monitor Queue Size has to be larger or equal to Max Number Of CCBS Requests In Monitor Queue as well as larger or equal to Max Number Of CCNR Requests In Monitor Queue. As well as larger or equal to Max Number Of CCNL Requests In Monitor Queue	An attempt has been made to set monitor queue size, max number of CCBS requests, max number of CCNR requests and max number of CCNL requests where at least one of the CCxx limits exceeds the monitor queue size which is not allowed.

Table 92 – Error 3013 Reason Text – Communication Completion

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Num	Reason Text	Description
1.	Failed to meet an application constraint: Distinctive Ring Failure: Rule id="<rule-id>" multiple "one" elements	Each Distinctive Ring rule must have at most one "one" element.
2.	Failed to meet an application constraint: Distinctive Ring Failure: Rule id="<rule-id>" unknown elements	The rule contains elements that are not recognized.
3.	Failed to meet an application constraint: Distinctive Ring Failure: Rule id="<rule-id>", missing "alert-info"	Each Distinctive Ring rule must have one "actions" element containing one "alert-info" action.
4.	Failed to meet an application constraint: Distinctive Ring Failure: Rule id="<rule-id>" illegal "actions" element "<element-name>"	The request contained an element within the "actions" element that is not recognized
5.	Failed to meet an application constraint: Distinctive Ring Failure: Rule id="<rule-id>", Condition="served-identity", URI="<served-id>" does not match any of the served user's IRS PUIs.	The subscriber has attempted to set a Distinctive Ring for the alias PUI, which is not listed in the subscriber's IRS.

Table 93 – Error 3013 Reason Text –Distinctive Ring

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Num	Reason Text	Description
1.	Failed to meet an application constraint: Multi Device User Call Admission Control Failure: Missing device group with name "ALL"	The Multi Device User Call Admission Control must have at least one device group with name "ALL".
2.	Failed to meet an application constraint: Multi Device User Call Admission Control Failure: For device group "ALL", total-call-limit element is missing	Device group with name "ALL" must have "total-call-limit" element.
3.	Failed to meet an application constraint: Multi Device User Call Admission Control Failure: For device group "<name>", Total Call Limit must be less than or equal to the Total Call Limit of device group "ALL"	The Multi Device User Call Admission Control limits are inconsistent – the Total Call Limit must be less than or equal to Total Call Limit of the device group "ALL"
4.	Failed to meet an application constraint: Multi Device User Call Admission Control Failure: For device group "<name>," Simultaneous Device Usage must be less than or equal to the Total Call Limit of device group "ALL"	The Multi Device User Call Admission Control limits are inconsistent – the Simultaneous Device Usage must be less than or equal to Total Call Limit of the device group "ALL"
5.	Failed to meet an application constraint: Multi Device User Call Admission Control Failure: This service cannot be provisioned at the same time as service User Call Admission Control	It is only allowed to have one of Multi Device User Call Admission Control or User Call Admission Control at the same time.

Table 94 – Error 3013 Reason Text – Multi Device User Call Admission Control

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Num	Reason Text	Description
1.	Failed to meet an application constraint: User Common Data Failure: Reserved target name "<name>" in target-list	Reserved words PRIMARY, PRIMARY_MOBILE, PRIMARY_FIXED and VOICEMAIL must not be used as target names in the target-list.
2.	Failed to meet an application constraint: User Common Data Failure: Target name "<name>" in target-list is already used	Each target in the target list must have a unique name within the names of common targets, common devices and flexible communication distribution targets.
3.	Failed to meet an application constraint: User Common Data Failure: Target id "<id>" in target-list is already used	The URI in the common target list is not unique.
4.	Failed to meet an application constraint: User Common Data Failure: The terminal-selector "<terminal-selector>" is not unique	The terminal selector in the common device list is not unique.
5.	Failed to meet an application constraint: User Common Data Failure: Target id "<id>" is not SIP or TEL URI	Each target within the common target list must have an id which is a SIP or TEL URI.
6.	Failed to meet an application constraint: User Common Data Failure: Target id "<id>" is same as user or an alias of it	The id value, <id>, of a target in the common target list is the same as that of the user or an alias of it.
7.	Failed to meet an application constraint: User Common Data Failure: Target id "<id>" is not permitted	The identity in the request is not permitted. This could be because it matches the mtasConfFactoryUri, the mtas3ptyFactoryUri or the mtasNaRa
8.	Failed to meet an application constraint: User Common Data target id, "<id>", is barred by the mtasOcbBlackList	The id value, <id>, of a target in the common target list is barred by the mtasOcbBlackList CM attribute [3].
9.	Failed to meet an application constraint: User Common Data Failure: Exceeded maximum number of Device targets	The number of targets in the common device list is greater than the max-targets allowed by the operator.

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Num	Reason Text	Description
10.	Failed to meet an application constraint: User Common Data Failure: Exceeded maximum number of targets	The number of targets in the common target list is greater than the max-targets allowed by the operator.
11.	Failed to meet an application constraint: User Common Data Failure: target-device-list not activated, and it is present in the user configuration!	A request to update target-device-list is rejected because the operator did not allow usage of the "target-device-list".
12.	Failed to meet an application constraint: User Common Data Failure: holiday-list not activated, and it is present in the user configuration!	A request to update holiday-list is rejected because the operator did not allow usage of the "holiday-list".
13.	Failed to meet an application constraint: Communication Barring conditions identity, "<barred identity>", conflicts with User Common Data target id, "<id>"	The id value, <id>, of a target in the target-list is barred by the end-user's outgoing communication barring of an individual <barred identity>.
14.	Failed to meet an application constraint: Communication Barring conditions identity using Number Match, "<barred identity>", conflicts with User Common Data target id, "<id>"	The id value, <id>, of a target in the target-list is barred by the end-user's outgoing communication barring of an individual <barred identity> using number-match.
15.	Failed to meet an application constraint: User Common Data target id, "<id>", is barred by universal many condition	The id value, <id>, of a target in the target-list is barred by the end-user's outgoing communication barring of all identities, and <id> does not appear in an exception.
16.	Failed to meet an application constraint: User Common Data target id, "<id>", is barred by many domain, "<domain>"	The id value, <id>, of a target in the target-list is barred by the end-user's outgoing communication barring of all identities within <domain>, and <id> does not appear in an exception.
17.	Failed to meet an application constraint: User Common Data Failure: Reserved target name "VOICEMAIL" in target list	A reserved name has been used for the name of a target in the target list. The name VOICEMAIL is reserved to refer to the operator defined address of the voicemail service.

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Num	Reason Text	Description
18.	Failed to meet an application constraint: User Common Data Failure: The element time-zone-area, "<time-zone-area>", has an unknown value.	The value is not included in the time zone file used by MTAS
19.	Failed to meet an application constraint: User Common Data Failure: The element mmtel-charging-profile, "<mmtel-charging-profile>", has an unknown name	The name of the mmtel charging profile is not configured in MTAS.
20.	Failed to meet an application constraint: User Common Data Failure: Element "auto-answer-avoidance" is present without being activated by the operator	A request to update auto-answer-avoidance is rejected because the operator did not allow usage of auto-answer-avoidance.
21.	Failed to meet an application constraint: User Common Data Failure: Flexcondition definition id="<flexcondition-definition-id>", header="<header>" contains at least one character that is not allowed	The 'header' element of the flexcondition definition contains some not allowed character. Only the following characters are allowed: '0'-'9', 'a'-'z', 'A'-'Z', '-', '.', '!', '%', '*', '_', '+', '(', ')', '~'.
22.	Failed to meet an application constraint: User Common Data Failure: Flexcondition-definition id="<flexcondition-definition-id>", parameter="<parameter>" contains at least one character that is not allowed	The 'parameter' element of the flexcondition definition contains some not allowed character. Only the following characters are allowed: '0'-'9', 'a'-'z', 'A'-'Z', '-', '.', '!', '%', '*', '_', '+', '(', ')', '~'.

Table 95 Error 3013 Reason Text – User Common Data

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Num	Reason Text	Description
1.	Failed to meet an application constraint: communication-diversion-no-answer-timer no-answer-timeout is greater or equal to mtasMmtNoReplyTimer	The value entered is greater than the value configured in the mtasMmtNoReplyTimer object. Accepting this input would make the feature inoperable for this user as the ringing would time out first
2.	Failed to meet an application constraint: "operator-voice-mail" "voice-mail-address" is not SIP or TEL URI or "voicemail:internal"	The provided voice-mail-address is not of type SIP or TEL URI or "voicemail:internal".
3.	Failed to meet an application constraint: "operator-voice-mail" "voice-mail-address" is barred by the mtasOcbBlackList	The provided voice-mail-address is barred by the mtasOcbBlackList CM attribute [3].
4.	Failed to meet an application constraint: "operator-voice-mail" "voice-mail-address" is barred by the mtasCDivBlackList	The provided voice-mail-address is barred by the mtasCDivBlackList CM attribute [3].
5.	Failed to meet an application constraint: "operator-voice-mail" "voice-mail-address" cannot be the same as mtasConfFactoryUri	The provided voice-mail-address is not permitted because it is the same as the mtasConfFactoryUri CM attribute [3].
6.	Failed to meet an application constraint: "operator-voice-mail" "voice-mail-address" cannot be the same as mtas3ptyFactoryUri	The provided voice-mail-address is not permitted because it is the same as the mtas3ptyFactoryUri CM attribute [3].
7.	Failed to meet an application constraint: Barring Programs Failure: Barring Programs Scheme Type Inconsistent	There is a mismatch between the Outgoing Barring Programs scheme and the user's subscription. For the multiple scheme the user must use the "multiple-programs" element. For the single scheme the user must use the "single-program" element.
8.	Failed to meet an application constraint: User Call Admission Control Failure: Originating Active Limit must be less than or equal to the Total Active Limit	The User Call Admission Control limits are inconsistent – the Originating Active Limit must be less than or equal to the Total Active Limit.
9.	Failed to meet an application constraint: User Call Admission Control Failure: Terminating Active Limit must be less than or equal to the Total Active Limit	The User Call Admission Control limits are inconsistent – the Terminating Active Limit must be less than or equal to the Total Active Limit.

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10.	Failed to meet an application constraint: User Call Admission Control Failure: Fixed Active Limit must be less than or equal to the Total Active Limit	The User Call Admission Control limits are inconsistent – the Fixed Active Limit must be less than or equal to the Total Active Limit.
11.	Failed to meet an application constraint: User Call Admission Control Failure: Originating Active Limit must be less than or equal to the Originating All Limit	The User Call Admission Control limits are inconsistent – the Originating Active Limit must be less than or equal to the Originating All Limit.
12.	Failed to meet an application constraint: User Call Admission Control Failure: Terminating Active Limit must be less than or equal to the Terminating All Limit	The User Call Admission Control limits are inconsistent – the Terminating Active Limit must be less than or equal to the Terminating All Limit.
13.	Failed to meet an application constraint: User Call Admission Control Failure: Total Active Limit must be less than or equal to the Total All Limit	The User Call Admission Control limits are inconsistent – the Total Active Limit must be less than or equal to the Total All Limit.
14.	Failed to meet an application constraint: User Call Admission Control Failure: Originating All Limit must be less than or equal to the Total All Limit	The User Call Admission Control limits are inconsistent – the Originating All Limit must be less than or equal to the Total All Limit.
15.	Failed to meet an application constraint: User Call Admission Control Failure: Terminating All Limit must be less than or equal to the Total All Limit	The User Call Admission Control limits are inconsistent – the Terminating All Limit must be less than or equal to the Total All Limit.
16.	Failed to meet an application constraint: User Call Admission Control Failure: Wait Limit must be less than or equal to the difference between the Total All Limit and Total Active Limit or the difference between the Terminating All Limit and the Terminating Active Limit	The User Call Admission Control limits are inconsistent – the Wait Limit must be less than or equal to the smaller of the difference between the Total All Limit and Total Active Limit and the difference between the Terminating All Limit and the Terminating Active Limit.
17.	Failed to meet an application constraint: User Call Admission Control Failure: User may not have Communication Waiting Service activated with User Call Admission Control waiting limit set to zero	User Call Admission Control with a waiting limit greater than zero is required for the Communication Waiting service in mode 0 (normal mode) and in alternate mode 1. This restriction does not apply when the Communication Waiting service is in alternate mode 2 or 4.

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18.	Failed to meet an application constraint: User Call Admission Control Failure: Wait limit may not be set to greater than zero without the Communication Waiting Service activated	A Wait Limit of greater than zero is only valid with the Communication Waiting Service provisioned, when the Communication Waiting Service is configured in normal mode and in alternate mode 1. This restriction does not apply when Communication Waiting service is in alternate mode 2 or 4.
19.	Failed to meet an application constraint: User Call Admission Control Failure: User may not have Communication Waiting Service activated without User Call Admission Control activated	In normal mode and in alternate mode 1, the Communication Waiting service depends on the User Call Admission Control service and so it requires User Call Admission Control to be activated. This restriction does not apply when Communication Waiting service is in alternate mode 2 or 4.
20.	Failed to meet an application constraint: Abbreviated Dialing Failure: Stored number "<stored-number>" is not permitted	The Abbreviated Dialing stored number <stored-number>, is not permitted. This could be because it matches the mtasConfFactoryUri, mtas3ptyFactoryUri or any instance of MtasNaRa.
21.	Failed to meet an application constraint: Communication Barring conditions identity, "<barred identity>", conflicts with Abbreviated Dialing stored number, "<stored-number>"	The Abbreviated Dialing stored number <stored-number> is barred by the end-user's outgoing communication barring of an individual <barred identity>.
22.	Failed to meet an application constraint: Communication Barring conditions identity using Number Match, "<barred identity>", conflicts with conflicts with Abbreviated Dialing stored number, "<stored-number>"	The Abbreviated Dialing stored number <stored-number> is barred by the end-user's outgoing communication barring of an individual <barred identity> using number-match.
23.	Failed to meet an application constraint: conflicts with Abbreviated Dialing stored number, "<stored-number>", is barred by universal many condition	The Abbreviated Dialing stored number <stored-number> is barred by the end-user's outgoing communication barring of all identities, and <stored-number> does not appear in an exception.
24.	Failed to meet an application constraint: conflicts with Abbreviated Dialing stored number, "<stored-number>", is barred by many domain, "<domain>"	The Abbreviated Dialing stored number <stored-number> is barred by the end-user's outgoing communication barring of all identities within <domain>, and <stored-number> does not appear in an exception.

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25.	Failed to meet an application constraint: Dynamic Black List Failure: Dynamic Black List requires Incoming Communication Barring with the Identity condition	Incoming Communication Barring with the Identity condition enabled is required for Dynamic Black List to be activated.
26.	Failed to meet an application constraint: Malicious Communication Rejection Failure: Malicious Communication Rejection requires Dynamic Black List	Dynamic Blacklist is required for Malicious Communication Rejection to be enabled
27.	Failed to meet an application constraint: "common-data" element doesn't match with any of the users identities.	None of the user identities matches with the elements "country-code" and "area-code" defined in element "common-data".
28.	Failed to meet an application constraint: Abbreviated Dialing Failure: Stored number is not a SIP or TEL URI: "<stored-number>"	The stored number must be a SIP or TEL URI.
29.	Failed to meet an application constraint: Barring Programs Failure: Barring Programs Scheme Type is Multiple and Default-Barring-Program is greater than 49.	The scheme is set to "multiple" in Barring programs and the default-barring-program is greater than 49. Allowed values for default-barring-program is 0-49 when scheme is "multiple".
30.	Failed to meet an application constraint: Flexible Identity Presentation Failure: FIP identity "<fip-identity>" is not SIP or TEL URI or contains a non-global phone number.	The FIP identity must be an id which is a SIP or TEL URI. In case the URI contains a phone number that number must be in global phone number format.
31.	Failed to meet an application constraint: Flexible Identity Presentation Failure: MSN FIP identity "<msn-fip-identity>" is not SIP or TEL URI or contains a non-global phone number.	The FIP identity must be an id which is a SIP or TEL URI. In case the URI contains a phone number that number must be in global phone number format.
32.	Failed to meet an application constraint: Flexible Identity Presentation Failure: Not possible to assign the FIP service, due to the fact that the user has Ad-hoc Conference service assigned and the node does not support co-location	FIP service cannot be activated if the Ad-hoc Conference is active and co-location is disabled.

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33.	Failed to meet an application constraint: Ad-hoc Conference Failure: Not possible to assign the Ad-hoc Conference service, due to the fact that the user has FIP service assigned and the node does not support co-location	Ad-hoc Conference service cannot be activated if the FIP is active and co-location is disabled.
34.	Failed to meet an application constraint: Flexible Identity Presentation Failure: Activate without FIP identity/MSN FIP identity or previously stored FIP identity/MSN FIP identity is not allowed.	It is mandatory to either: - have a FIP identity/MSN FIP identity already defined or - specify a FIP identity/ MSN FIP identity in the activation request in order for the activation to succeed.
35.	Failed to meet an application constraint: Flexible Identity Presentation Failure: FIP identity <fip-identity> cannot be removed if the service is active.	The service is meaningless without having a fip identity defined, so removing a fip identity is not allowed with an active service status.
36.	Failed to meet an application constraint: Hotline Failure: hotline number "<hotline-number>" scheme is not supported.	The only supported hotline number schemes are: sip and tel.
37.	Failed to meet an application constraint: Hotline Failure: identity 'customer@customer.com' is neither SIP nor TEL URI.	In Hotline must the hotline-number be a SIP or TEL URI.
38.	Failed to meet an application constraint: Hotline Failure: identity is an alias of user.	The identity in the request is an alias of the user. In other words, acceptance of this request would mean diverting the user to himself/herself.
39.	Failed to meet an application constraint: Hotline Failure: hotline number "<hotline-number>" is barred by the mtasOcbBlackList.	The target of a hotline condition, <hotline-number>, is barred by the mtasOcbBlackList CM attribute [3].
40.	Failed to meet an application constraint: Hotline Failure: empty hotline number is not allowed for active user configuration.	The value of <hotline-number> in delayed condition of user part must not be empty if the condition is active.

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41.	Failed to meet an application constraint: Originating Identity Restriction Failure: When value "ad-hoc-temporary-presentation-restricted" is set user configuration must have element active set to "true" and the default-behaviour element set to "presentation-restricted"	When value "ad-hoc-temporary-presentation-restricted" is given the element <oir-user-configuration> must have element <active> set to "true" and the <default-behaviour> element set to "presentation-restricted".
42.	Failed to meet an application constraint: Originating Identity Restriction Failure: When value "ad-hoc-temporary-presentation-not-restricted" is set user configuration must have element active set to "true" and the default-behaviour element set to "presentation-not-restricted"	When value "ad-hoc-temporary-presentation-not-restricted" is given the element <oir-user-configuration> must have element <active> set to "true" and the <default-behaviour> element set to value "presentation-not-restricted".
43.	Failed to meet an application constraint: Originating Identity Restriction Failure: Element restriction must be present	When service <originating-identity-presentation-restriction> has element <mode> with values "permanent", "temporary" or "ad-hoc-temporary-presentation-restricted" the element <restriction> must be present.
44.	Failed to meet an application constraint: Originating Identity Restriction Failure: Element restriction cannot be present when value "ad-hoc-temporary-presentation-not-restricted" is set	When value "ad-hoc-temporary-presentation-not-restricted" is given the element <restriction> cannot be present.
45.	Failed to meet an application constraint: Session Transfer to Own Device Failure: Element "auto-answer-avoidance" is not allowed to be in the target. It must be defined in the User Common Data	The element <target> must not include the element <auto-answer-avoidance> in service Session Transfer to Own Device. It must be defined in the <target> in the User Common Data.
46.	Failed to meet an application constraint: Session Transfer to Own Device target id, "<id>", is barred in Communication Barring by Bar All Outgoing Calls (BAOC)	The target of a Session Transfer to Own Device rule, <id>, is barred in Communication Barring by Bar All Outgoing Calls (BAOC). Note: This application constraint is not checked by default. The system needs to be configured to activate the application constraint.
47.	Failed to meet an application constraint: "operator-voice-mail" "voice-mail-address" is barred by the vtasCDivBlackList	The provided voice-mail-address is barred by the vtasCDivBlackList CM attribute [3].

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48.	Failed to meet an application constraint: The service element, "<service>", cannot have user configuration when restriction mode is "permanent"	In service user configuration is not allowed when mode is set to permanent. Possible values for <service> are: <ul style="list-style-type: none"> • originating-identity-presentation-restriction • terminating-identity-presentation-restriction
49.	Failed to meet an application constraint: Carrier Pre-Select Rn Failure: User may not have Carrier Pre-Select Rn service without a country code and an area code defined	Carrier Pre-Select Rn service requires the area-code and country-code to be set in service Common Data. Note: Both elements are required, but the area-code can be empty if the country does not use area code.
50.	Failed to meet an application constraint: Carrier Select Rn Failure: User may not have Carrier Select Rn service without a country code and an area code defined	Carrier Select Rn service requires the area-code and country-code to be set in service Common Data. Note: Both elements are required, but the area-code can be empty if the country does not use area code.
51.	Failed to meet an application constraint: The service element, "<service>", cannot have user configuration when restriction mode is "permanent"	When the mode is set to permanent it is not allowed to have user configuration. Possible values for <service> are: <ul style="list-style-type: none"> • originating-identity-presentation-restriction • terminating-identity-presentation-restriction
52.	Failed to meet an application constraint: "operator-voice-mail" "voice-mail-retrieval-address" is not SIP or TEL URI or "voicemail:internal"	The provided voice-mail-retrieval-address is not of type SIP or TEL URI or "voicemail:internal".
53.	Failed to meet an application constraint: "operator-voice-mail" "voice-mail-retrieval-address" is barred by the mtasOcbBlackList	The provided voice-mail- retrieval-address is barred by the mtasOcbBlackList CM attribute.
54.	Failed to meet an application constraint: "operator-voice-mail" "voice-mail-retrieval-address" cannot be the same as mtasConfFactoryUri	The provided voice-mail- retrieval-address is not permitted because it is the same as the mtasConfFactoryUri CM attribute.

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55.	Failed to meet an application constraint: "operator-voice-mail" "voice-mail-retrieval-address" cannot be the same as mtas3ptyFactoryUri	The provided voice-mail- retrieval-address is not permitted because it is the same as the mtas3ptyFactoryUri CM attribute.
56.	Failed to meet an application constraint: Northbound Call Control Failure: The element imsi is missing.	The CM attribute mtasNccImsiBehavior is enabled and IMSI is not provisioned neither in the Northbound Call Control nor in the User Common Data sections in the service data.
57.	Failed to meet an application constraint: Advice of Charge Failure: At least one of the service-types aoc-s, aoc-d or aoc-e must be activated	In service Advice of Charge must at least one of service-types aoc-s, aoc-d or aoc-e be activated
58.	Failed to meet an application constraint: Dynamic Black List Failure: Identity "<identity>" is not SIP or TEL URI	The provided identity in Dynamic Black List is not of type SIP or TEL URI
59.	Failed to meet an application constraint: Dynamic Black List Failure: Duplicate identities found for <user >	In service Dynamic Black List, the indicated user is set more than once.
60.	Failed to meet an application constraint: Northbound Call Control Failure: Found duplicate px-call-notification element with value = "<value>", in trigger "<trigger>"	In px-call-notification element, the same value is added for the same trigger.

Table 96 Error 3013 Reason Text – Other Services

Note: There are restrictions when adding Services to a Service Profile

Num	Reason Text	Description
1.	Failed to meet an application constraint: operator-dynamic-black-list not allowed in service profile	It is not allowed to define Dynamic Black List in a service profile
2.	Failed to meet an application constraint: operator-supplementary-service-codes not allowed in service profile	Supplementary service codes are not allowed in a service profile
3.	Failed to meet an application	Malicious Communication rejection

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	constraint: operator-malicious-communication-rejection not allowed in service profile	service is not allowed in a service profile
4.	Failed to meet an application constraint: The activated element cannot have value "profile"	The <activated> element must have value "true" or "false"
5.	Failed to meet an application constraint: Failure: Rule id="<rule-id>" with condition served-identity not allowed in service profile	The condition Served Identity is not allowed to be set in service profile. The condition Served Identity can exist is in the following services: Communication Distribution, Communication Diversion, Distinctive Ring, Incoming Communication Barring and Outgoing Communication Barring

Table 97 – Error 3013 Reason Text – Service Profiles

Operator provisioning are not allowed in the user document except for DBL, MCR and SSC when performing CAI3G Create and Set in a user document linked to a service profile.

Num	Reason Text	Description
1.	Failed to meet an application constraint: Service Number Failure: Modification of pin code length is not allowed on an activated service number	The pin-code-length attribute can only be modified when the Service Number is in state inactive and all hosted conference meetings deleted.
2.	Failed to meet an application constraint: Service Number Failure: Cannot have "activating-attendant-assistance" element without "announcement-attendant-assistance-id" and "attendant-uri" elements	The sub elements <announcement-attendant-assistance-id> and <attendant-uri> are mandatory when creating an <activating-attendant-assistance> element.

Table 98 – Error 3013 Reason Text – Service Number service

Note: There are restrictions when setting data to a Service Number service.

Num	Reason Text	Description
1.	Failed to meet an application constraint: Scheduled Conference Failure: Service number Identity is not a TEL URI	The service-number identity element must be defined as a TEL URI (RFC 3966)

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2.	Failed to meet an application constraint: Scheduled Conference Failure: Failed to find the service number: <service number>	The service-number identity element must refer to an existing service number PSI in the HSS
3.	Failed to meet an application constraint: Scheduled Conference Failure: Operation not allowed on active service	Operations to modify the service-number identity or delete the complete user document are not allowed if the Scheduled Conference service of the user is in active state

Table 99 – Error 3013 Reason Text – Scheduled Conference Service

Note: There are restrictions when adding data to a Scheduled Conference Service.

Num	Reason Text	Description
1.	Failed to meet an application constraint: Media policy: Rule id=<rule-id>, no condition element	An attempt has been made to add a media policy rule without a condition. Each rule must have exactly one condition element.
2.	Failed to meet an application constraint: Media policy: Rule id=<rule-id>, no action element	An attempt has been made to add a media policy rule without an action. Each rule must have exactly one action element.

Table 100 – Error 3013 Reason Text – Media Policy

7.3.2.2 Error 3999, Other Client Error

Num	Reason Text	Description
1.	Document Too Large	HSS is unable to handle the requested volume of data
2.	Concurrent Update Clash	Document has been updated in the interim. This only applies if the 'concurrency-control' element is used.

Table 101 – Error 3999 ReasonText

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7.3.2.3 Error 4006, External Error

Num	ReasonText	Description
1.	Retry Count Exhausted	Every request to update the document has been rejected.
2.	Single Value Parameter Failure: Rule id="<rule-id>" multiple elements found for single-value parameter	A set request referring to an existing single-value parameter matches multiple existing nodes in the document. The subscriber's document on the HSS is invalid.
3.	Sub-MO Failure: Rule id="<rule-id>" multiple elements found for key="<key-name>", value="<key-value>"	A set request referring to an existing sub-MO matches multiple existing nodes in the document. The subscriber's document on the HSS is invalid. Possible values for <key-name> are: <ul style="list-style-type: none">• domain• from• id
4.	The requested UserData does not exist	The request is set to a subscriber (user) or Service Profile (user) that does not exist in HSS.
5.	Failed to create reference table <reference table number> for service number <service number>	Possible values for <reference table number> are: 0 – 3. Example of value for <service number> is: tel:+4685590012 Note: The Service Number must be provisioned in HSS.

Table 102 – 4006 ReasonText

7.3.3 Example of a CAI3G Body Fault

To show an example of an error response, the following example assumes that the CAI3G Manager has sent a request that results in a user document that is too large to be stored on HSS. The response is shown below as an XML instance. This message validates against the generic CAI3G schema.

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```
<soap-env:Header>
  <cai3g:SessionId>S1</cai3g:SessionId>
  <cai3g:TransactionId>3</cai3g:TransactionId>
  <cai3g:SequenceId>100</cai3g:SequenceId>
</soap-env:Header>
<soap-env:Body>
  <soap-env:Fault>
    <faultcode>soap-env:Client</faultcode>
    <faultstring>This is a client error</faultstring>
    <detail>
      <cai3g:Cai3gFault>
        <cai3g:faultcode>3999</cai3g:faultcode>
        <cai3g:faultreason>
          <cai3g:reasonText>Other Client Error</cai3g:reasonText>
          <cai3g:reasonText>Document too large</cai3g:reasonText>
          <cai3g:reasonText>Private: Debugging Text</cai3g:reasonText>
        </cai3g:faultreason>
        <cai3g:faultrole>NEF</cai3g:faultrole>
      </cai3g:Cai3gFault >
    </detail>
  </soap-env:Fault>
</soap-env:Body>
```

Figure 3 – Example Error Response (Error Processing Body)

Points to note:

- 1. Faultcode in the SOAP namespace maps to ‘SOAP Error Code’ in Table 85 and Table 87 of this document and to table 2 of ref [1].
- 2. Faultcode in the Cai3g namespace maps to ‘CAI3G Error Code’ in Table 85 and Table 87 of this document and to table 2 of ref [1].
- 3. The reasonText within faultreason maps to the Description column of table 2 of ref [1] and Table 85 and Table 87 of this document.
- 4. The faultrole field will contain ‘NEF’ (Network Element Function).

7.3.4 CAI3G Body Faults that are Not Supported

Of all the CAI3G errors listed in Table 2 in section 4.4.2 of ref [1], the following error codes are not supported.

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CAI3G Error Code	Description	Explanation
2003	Unsupported DataType	
2999	Other Request Error	Use 3999
3003	Object Already Exists	If a request to Create is received but the document (object) already exists then MTAS will respond with OK
3006	Object Does Not Exist	Use 2002 (or 3015 for Logout with Body/Header mismatch)
3007	Invalid Filter	Filters are not supported
3008	Invalid Subscription ID	Subscribe is not supported.
3009	Invalid Managed Object ID	Use 2002
3010	Invalid MO Attribute	See Note a)
3011	Insufficient MO Attributes	See Note a)
3012	Insufficient Parameter	See Note a)
4002	Object Not Supported	If the MO Type is not supported the error 2001 will be returned
4003	Filter Not Supported	Filters are not supported
4007	CAI3G Version Not Supported	
4008	MO Version Not Supported	Our MO is not versioned.
4009	Reached the limitation	Error is likely to be detected by Axis2 which has no knowledge of CAI3G Fault Details

Table 103 – CAI3G Body Faults that are not supported

Note a) Errors 3010, 3011 and 3012 will all result in a failure to validate the XML document instance. It will not be possible to categorize the error further so error 3013 will be returned.

7.4 HTTP response

7.4.1 204 No Content

MTAS processed the request, but is not returning any content.

7.5 HTTP Faults

Where faults are detected in the transport layer or at a basic level in MTAS then another HTTP fault may be reported. Other HTTP faults as used by MTAS are also shown in this section

7.5.1 500 Internal Server Error

MTAS sends this error to show a basic problem with the node.

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7.5.2 503 Service Unavailable

MTAS sends this error to show that the node is in an Administrative State of Locked or Shutting Down.

7.5.3 503 Service Unavailable (with re-try after populated)

This indicates that the MTAS node is in overload. MTAS will respond to the CAI3G Manager with a HTTP response code of '503 Service Unavailable' with the retry-after field in the header populated. The format of retry-after in the HTTP Header is specified in Section 14.37 of reference [2].

An example to indicate a delay of two minutes would be:

Retry-After: 120

When the CAI3G manager receives the response it should assume that if one MTAS node in the cluster is reporting overload then all nodes are in, or near, overload and should not send any requests to any MTAS node before this time has expired.

Note: The scenario exists where the node is so overloaded that it may not respond within the time-out. There is no mechanism for accurately reporting this position.

7.5.4 Corrective Action

In the event that MTAS sends HTTP 500 Internal Error Response Code without a SOAP or CAI3G error then the CAI3G Manager should re-send the request to another MTAS node.

7.6 Other Errors

In addition to the above it is possible that a received message was so badly corrupted that further analysis proved impossible. In this case, it will not be possible to send a response (because the sender could not be identified).

7.7 Node Failure, no reply

In the event of MTAS failing to reply to a request within a time-out period, the CAI3G Manager should send the same request to another MTAS node.

8 Miscellaneous

8.1 Binding to namespaces

The XML specification offers a variety of options on how to bind elements to namespaces.

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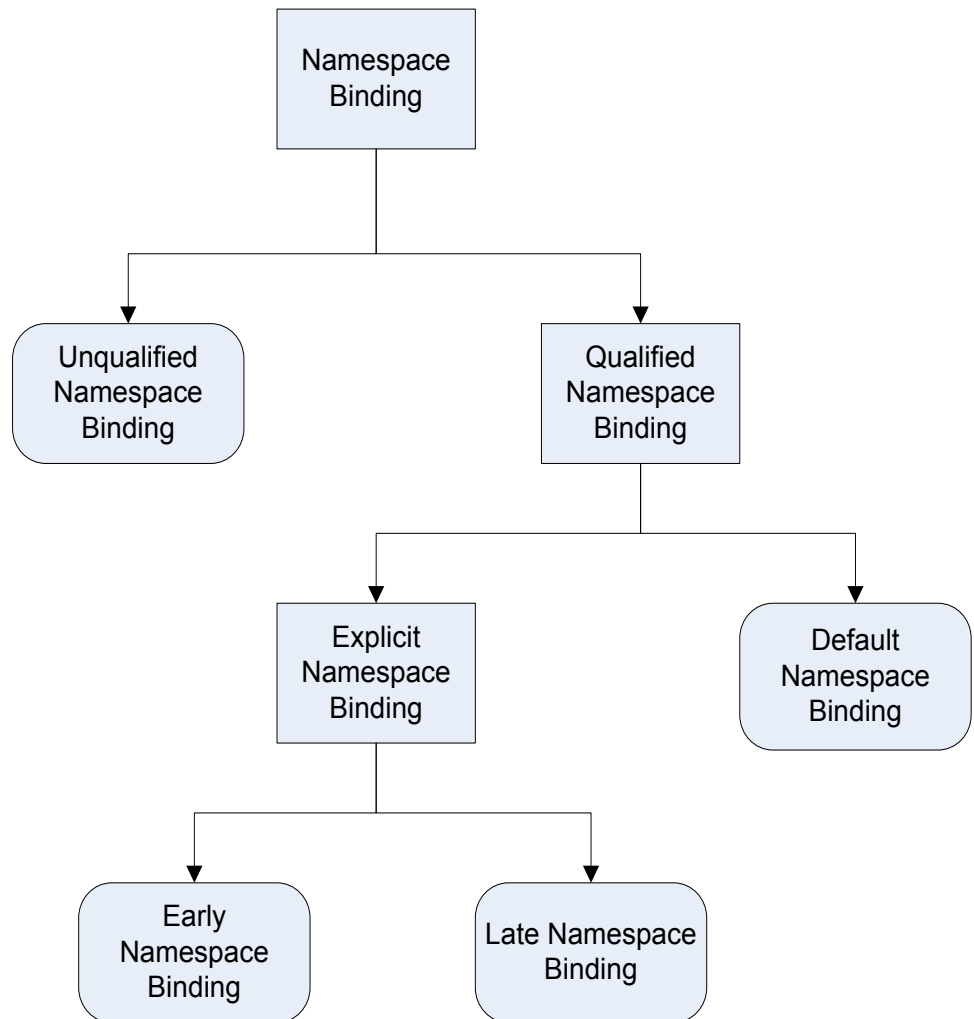


Figure 4 – Namespace Binding

Figure 4 shows the factors that can affect namespace binding of XML elements. Default namespace binding does not apply to attributes.

Sharp-edged boxes are classified further into smooth-edged boxes which are mentioned in the text below.

Unqualified elements do not appear on this interface and are not discussed further.

Within a qualified binding, namespace bindings can either be explicit or default.

Using default namespace binding means that the element belongs to the default namespace defined in the header. An element with a default namespace binding does not have a prefix or an explicit namespace binding.

Explicit Namespace bindings can be defined in the first element (early) or 'as required' (late) or at any point in-between.

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Notes

1. A prefix is only a short-form of a namespace. Usage of prefix is shown here but it is not relevant to the principle of namespace binding.

8.1.1 Early Binding

This document uses the style of early explicit binding as shown below:

```
<?xml version="1.0" encoding="UTF-8"?>
<soap-env:Envelope
xmlns:soap-env="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:mc="http://schemas.ericsson.com/mtas/mmtel/cai3g"
xmlns:cai3g="http://schemas.ericsson.com/cai3g1.2/"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://schemas.xmlsoap.org/soap/envelope/
../schemas/cai3g/Soap-Envelope.xsd
http://schemas.ericsson.com/cai3g1.2/
../schemas/cai3g/cai3g1.2_header-fault-corrected.xsd
http://schemas.ericsson.com/mtas/mmtel/cai3g
../schemas/mmtel/mmtel_aggregated_service.xsd">
  <soap-env:Header>
    <cai3g:SessionId>23258</cai3g:SessionId>
    <cai3g:TransactionId>109</cai3g:TransactionId>
    <cai3g:SequenceId>39002</cai3g:SequenceId>
  </soap-env:Header>
  <soap-env:Body>
    <cai3g:Create>
      <cai3g:MOType>MMTel@http://schemas.ericsson.com/mtas/mmtel/cai3g</cai3g:MOType>
      <cai3g :MOId>
        <mc :publicId>sip :user@ericsson.com</mc :publicId>
      </cai3g:MOId>
    </cai3g:Create>
  </soap-env:Body>
</soap-env:Envelope>
```

The main features to note here are that the namespace declarations are at the head of the file

8.1.2 Late Binding

It is equally valid to write the same instance document as follows:

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```
<?xml version="1.0" encoding="UTF-8"?>
<Envelope
  xmlns="http://schemas.xmlsoap.org/soap/envelope/"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:schemaLocation="http://schemas.xmlsoap.org/soap/envelope/
    ../schemas/cai3g/Soap-Envelope.xsd
    http://schemas.ericsson.com/cai3g1.2/
    ../schemas/cai3g/cai3g1.2_header-fault-corrected.xsd
    http://schemas.ericsson.com/mtas/mmtel/cai3g
    ../schemas/mmtel/mmtel_aggregated_service.xsd">
  <Header>
    <SessionId xmlns="http://schemas.ericsson.com/cai3g1.2/">23258</SessionId>
    <TransactionId xmlns="http://schemas.ericsson.com/cai3g1.2/">109
    </TransactionId>
    <SequenceId xmlns="http://schemas.ericsson.com/cai3g1.2/">39002</SequenceId>
  </Header>
  <Body>
    <Create xmlns="http://schemas.ericsson.com/cai3g1.2/">
      <MOType>MMTel</MOType>
      <MOId>
        <publicId xmlns="http://schemas.ericsson.com/mtas/mmtel/cai3g">
          sip:user@ericsson.com</publicId>
        </MOId>
      </Create>
    </Body>
  </Envelope>
```

The main features to note here are elements are bound to a namespace at the point of use.

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9 Embedded Files

9.1 Schemas

The CAI3G interface needs schema files that are defined in ref [4] which are accessed through a relative pathname, therefore in order for the zipped schemas to work out-of-the-box, the directory structure- as shown in Figure 5 needs to be used.

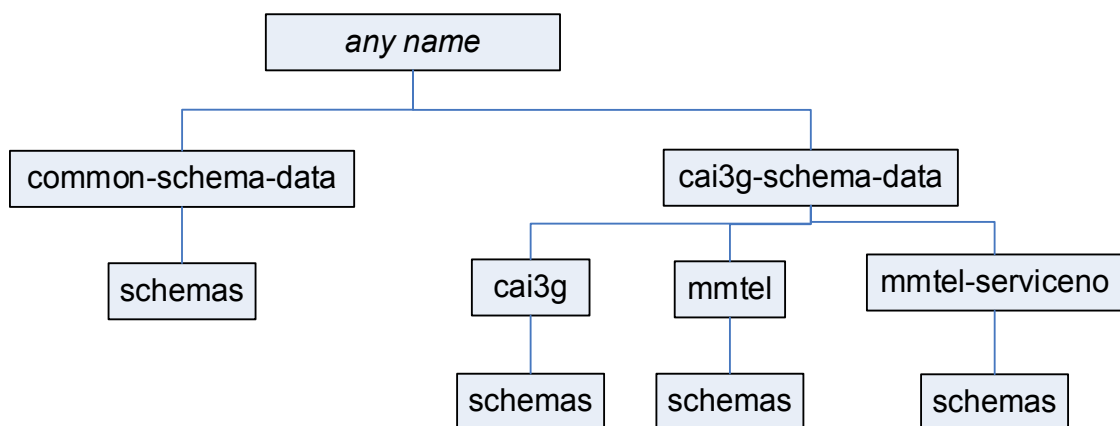


Figure 5 – Directory Structure for the CAI3G Schema Files

The schema files used on this interface are zipped and are available in ref [9].

10 Glossary

10.1 Terms

Concept or Term	Explanation
Cluster	An MTAS cluster comprises a group of nodes.
Connection	<p>A path between IP nodes. This concept becomes meaningful when the path is persisted by the TCP protocol.</p> <p>At any point in time on the CAI3G interface, a connection can support at most one session</p>

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Concept or Term	Explanation
Multi Value Parameter	A CAI3G category of an XML construct where the element can <ul style="list-style-type: none">• Occur more than once• Not contain further elements
Node	An MTAS node supports one or more instance of MTAS. Each MTAS instance will run on a different processor. See cluster.
Operator-Part	The part of the MMTel document that is accessible by the operator.
Provisioning	When this document describes provisioning <i>requests</i> , it means the 1 st definition. Use the 2 nd definition, when this document uses the term provisioning on its own. <ol style="list-style-type: none">1. The collective name for Get, Set, Creation and Deletion on the CAI3G interface2. Providing the subscriber with facilities or services that are potentially chargeable.
Service Data	The subscriber's MMTel configuration data as stored in XML on the HSS
Session	A CAI3G concept that is initiated by a successful Login request and is terminated by a successful Logout request or by an inactivity timeout. All provisioning requests must be part of a session
Single Value Parameter	A CAI3G category of an XML construct where the element can <ul style="list-style-type: none">• Occur at most once• Not contain further elements
Structured Parameter	A CAI3G category of an XML construct where the element can <ul style="list-style-type: none">• Occur at most once• Contain further elements
sub-Managed Object	A CAI3G category of an XML construct where the element can <ul style="list-style-type: none">• Occur more than once• Contain further elements

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Concept or Term	Explanation
Transaction	<p>The execution of a CAI3G request and associated response. (Note: Every CAI3G request has a response).</p> <p>A typical transaction might or might not comprise two threads. For example</p> <ol style="list-style-type: none">1. EMA request that is sent to HSS2. HSS response that is sent to the CAI3G Manager
User-Part	The part of the MMTel document that is accessible by the user (it is also accessible by the operator). It is largely composed of elements defined by TISpan.
Virtual IP Address.	Every MTAS node publishes a virtual IP address to the adjoining nodes that require a transport mechanism.

10.2 Abbreviations

Abbreviation	Explanation
3PP	3 rd Party Products
CAC	Call Admission Control
CAI3G	Customer Administration Interface 3 rd Generation
CAMEL	Customized Applications for Mobile Enhanced Logic
CCBS	Communication Completion Busy Subscriber
CCNL	Communication Completion Not Logged-in
CCNR	Communication Completion by No Reply
CFU	Communication Forwarding Unconditional
CUG	Closed User Group
CPC	Calling Party Category
CSC	Carrier Select Code
EMA	Ericsson Multi Activation
FIP	Flexible Identity Presentation
HSS	Home Subscriber Server
HTTP	Hyper Text Transfer Protocol
HTTPS	Hypertext Transfer Protocol Secure
IETF	Internet Engineering Task Force

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Abbreviation	Explanation
IP	Internet Protocol
ITU-T	International Telecommunications Union - Telecommunications
IVR	Interactive Voice Recognition
MMTel	Multi-Media Telecommunications
MO	Managed Object
MOId	Managed Object Identifier
MSN	Multi Subscriber Number
NEF	Network Element Function
PSI	Public Service Identity
OSI	Open System Interconnection
SIP	Session Initiation Protocol
SOAP	Simple Object Application Protocol
SSC	Supplementary Service Code
sub-MO	sub-Managed Object
TCP	Transmission Control Protocol
TISPAN	Telecommunications and Internet converged Services and Protocols for Advanced Networking
URI	Uniform Resource Identifier
URL	Uniform Resource Locator
WSDL	Web Services Description Language
XDMS	XML Document Management Server
XML	eXtensible Markup Language

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References

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- [2] Hypertext Transfer Protocol -- HTTP/1.1 (RFC 2616)
- [3] TSP: MTAS Parameter Description - 1/190 84-AVA 901 09/n**
CBA: Managed Object Model (MOM) - 155 54-LZN 765 0163/n**
- [4] MTAS Common Types Structure - 5/190 01-AVA 901 18
- [5] SIP: Session Initiation Protocol - IETF RFC 3261
- [6] The MD5 Message-Digest Algorithm – IETF RFC 1321
- [7] HTTP Over TLS – IETF: RFC 2818
- [8] MTAS Charging Management Guide - 3/1553-AVA 901 09/n **
- [9] MTAS CAI3G Schemas - 1/190 09-AVA 901 18

** See the Customer or Support library for the Application System in question