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configuration management;
Protocol specification
(3GPP TS 24.384 version 13.0.1 Release 13)**



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Contents

Intellectual Property Rights	2
Foreword.....	2
Modal verbs terminology.....	2
Foreword.....	6
1 Scope	7
2 References	7
3 Definitions and abbreviations.....	8
3.1 Definitions	8
3.2 Abbreviations	8
4 General	9
4.1 MCPTT service administrator configuration.....	9
4.2 MCPTT UE configuration.....	10
4.2.1 Online configuration	10
4.2.2 Offline configuration	11
4.3 MCPTT server.....	11
4.4 Configuration management server.....	12
5 Functional entities	12
5.1 Configuration management client (CMC).....	12
5.2 Configuration management server (CMS)	12
6 Procedures	13
6.1 Introduction	13
6.2 Common procedures.....	13
6.2.1 General.....	13
6.2.2 Client procedures	13
6.2.3 MCPTT server procedures.....	13
6.2.4 Configuration management server procedures.....	13
6.3 Configuration management procedures.....	14
6.3.1 General.....	14
6.3.1.1 Client procedures	14
6.3.1.2 Configuration management server procedures.....	14
6.3.2 Configuration management document creation procedure	14
6.3.2.1 General	14
6.3.2.2 Configuration management client (CMC) procedures	14
6.3.2.3 Configuration management server (CMS) procedures	14
6.3.3 Configuration management document retrieval procedure	14
6.3.3.1 General	14
6.3.3.2 Client procedures	14
6.3.3.2.1 General client (GC) procedures.....	14
6.3.3.2.2 Configuration management client (CMC) procedures.....	14
6.3.3.2.3 MCPTT server procedures.....	15
6.3.3.3 Configuration management server procedures	15
6.3.4 Configuration management document update procedure.....	15
6.3.4.1 General	15
6.3.4.2 Configuration management client procedures.....	15
6.3.4.3 Configuration management server procedures.....	15
6.3.5 Configuration management document deletion procedure	15
6.3.5.1 General	15
6.3.5.2 Configuration management Client (CMC) procedures	15
6.3.5.3 Configuration management server (CMS) procedures.....	15
6.3.6 Configuration management document element creation or replacement procedure	15
6.3.6.1 General	15

6.3.6.2	Client procedures	16
6.3.6.2.1	General client procedures	16
6.3.6.2.2	Configuration management client procedures	16
6.3.6.3	Configuration management server procedures	16
6.3.7	Configuration management document element deletion procedure	16
6.3.7.1	General	16
6.3.7.2	Client procedures	16
6.3.7.2.1	General client procedures	16
6.3.7.2.2	Configuration management client procedures	16
6.3.7.3	Configuration management server procedures	16
6.3.8	Configuration management document element fetching procedure	16
6.3.8.1	General	16
6.3.8.2	Client procedures	17
6.3.8.2.1	General client procedures	17
6.3.8.2.2	Configuration management client procedures	17
6.3.8.2.3	MCPTT server procedures	17
6.3.8.3	Configuration management server procedures	17
6.3.9	Configuration management document attribute creation or replacement procedure	17
6.3.9.1	General	17
6.3.9.2	Client procedures	17
6.3.9.2.1	General client procedures	17
6.3.9.2.2	Configuration management client procedures	17
6.3.9.3	Configuration management server procedures	17
6.3.10	Configuration management document attribute deletion procedure	17
6.3.10.1	General	17
6.3.10.2	Client procedures	18
6.3.10.2.1	General client procedures	18
6.3.10.2.2	Configuration management client procedures	18
6.3.10.3	Configuration management server procedures	18
6.3.11	Configuration management document attribute fetching procedure	18
6.3.11.1	General	18
6.3.11.2	Client procedures	18
6.3.11.2.1	General client procedures	18
6.3.11.2.2	Configuration management client procedures	18
6.3.11.2.3	MCPTT server procedures	18
6.3.11.3	Configuration management server procedures	18
6.3.12	Configuration management document namespace binding fetching procedure	18
6.3.12.1	General	18
6.3.12.2	Client procedures	19
6.3.12.2.1	General client procedures	19
6.3.12.2.2	Configuration management client procedures	19
6.3.12.2.3	MCPTT server procedures	19
6.3.12.3	Configuration management server procedures	19
6.3.13	Configuration management subscription and notification procedure	19
6.3.13.1	General	19
6.3.13.2	Client procedures	19
6.3.13.2.1	General client (GC) procedures	19
6.3.13.2.2	Configuration management client procedures	19
6.3.13.2.3	MCPTT server procedures	19
6.3.13.3	Configuration management server procedures	20
7	Configuration management documents	20
7.1	Introduction	20
7.2	MCPTT UE initial configuration document	20
7.2.1	General	20
7.2.2	Coding	20
7.2.2.1	Structure	20
7.2.2.2	Application Unique ID	22
7.2.2.3	XML Schema	22
7.2.2.4	Default Document Namespace	22
7.2.2.5	MIME type	22
7.2.2.6	Validation Constraints	23

7.2.2.7	Data Semantics.....	23
7.2.2.8	Naming Conventions.....	24
7.2.2.9	Global documents	24
7.2.2.10	Resource interdependencies	24
7.2.2.11	Authorization Policies.....	24
7.2.2.12	Subscription to Changes.....	24
7.3	MCPTT UE configuration document	24
7.3.1	General.....	24
7.3.2	Coding	24
7.3.2.1	Structure.....	24
7.3.2.2	Application Unique ID.....	25
7.3.2.3	XML Schema	25
7.3.2.4	Default Document Namespace.....	25
7.3.2.5	MIME type.....	25
7.3.2.6	Validation Constraints.....	25
7.3.2.7	Data Semantics.....	26
7.3.2.8	Naming Conventions.....	27
7.3.2.9	Global documents	27
7.3.2.10	Resource interdependencies	27
7.3.2.11	Authorization Policies.....	27
7.3.2.12	Subscription to Changes.....	27
7.4	MCPTT User profile document.....	28
7.4.1	General.....	28
7.4.2	Coding	28
7.4.2.1	Structure 28	
7.4.2.2	Application Unique ID.....	30
7.4.2.3	XML Schema	30
7.4.2.4	Default Namespace	32
7.4.2.5	MIME type.....	32
7.4.2.6	Validation Constraints.....	32
7.4.2.7	Data Semantics.....	32
7.4.2.8	Naming Conventions.....	35
7.4.2.9	Global documents	35
7.4.2.10	Resource interdependencies	35
7.4.2.11	Access Permissions Policies.....	35
7.4.2.12	Subscription to Changes.....	35
7.5	MCPTT service configuration document	36
7.5.1	General.....	36
7.5.2	Coding	36
7.5.2.1	Structure.....	36
7.5.2.2	Application Unique ID.....	37
7.5.2.3	XML Schema	37
7.5.2.4	Default Namespace	39
7.5.2.5	MIME type.....	39
7.5.2.6	Validation Constraints.....	39
7.5.2.7	Data Semantics.....	41
7.5.2.8	Naming Conventions.....	43
7.5.2.9	Global documents	43
7.5.2.10	Resource interdependencies	43
7.5.2.11	Authorization Policies.....	43
7.5.2.12	Subscription to Changes.....	43
Annex A (informative):	Signalling flows	44
Annex B (informative):	Change history	45
History		46

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1 Scope

This document specifies the configuration management documents and protocols needed to support Mission Critical Push To Talk (MCPTT) online configuration over the CSC-4 and CSC-5 reference points. Configuration management documents defined in this document includes:

- MCPTT UE initial configuration document;
- MCPTT UE configuration document;
- MCPTT user profile document; and
- MCPTT service configuration document.

Mission critical communication services are services that require preferential handling compared to normal telecommunication services, e.g. in support of police or fire brigade.

The MCPTT service can be used for public safety applications and also for general commercial applications (e.g., utility companies and railways).

This document is applicable to an MCPTT UE supporting the configuration management client functionality, to application server supporting the configuration management server functionality, and to application server supporting the MCPTT server functionality.

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

- [1] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".
- [2] OMA OMA-TS-XDM_Core-V2_1-20120403-A: "XML Document Management (XDM) Specification".
- [3] 3GPP TS 22.179: "Mission Critical Push to Talk (MCPTT) over LTE; Stage 1".
- [4] 3GPP TS 24.383: "Mission Critical Push to Talk (MCPTT) Management Object (MO)".
- [5] 3GPP TS 24.381: "Mission Critical Push to Talk (MCPTT) group management Protocol specification".
- [6] 3GPP TS 24.382: "Mission Critical Push to Talk (MCPTT) identity management Protocol specification".
- [7] 3GPP TS 29.283: "Diameter Data Management Applications".
- [8] 3GPP TS 23.179: "Functional architecture and information flows to support mission critical communication services; Stage 2".
- [9] 3GPP TS 24.379: "Mission Critical Push to Talk (MCPTT) call control Protocol specification".
- [10] 3GPP TS 24.380: "Mission Critical Push to Talk (MCPTT) media plane control Protocol specification".

- [11] IETF RFC 5875: "An Extensible Markup Language (XML) Configuration Access Protocol (XCAP) Diff Event Package".
- [12] 3GPP TS 24.333: "Proximity-services (ProSe) Management Objects (MO)".
- [13] IETF RFC 4745: "Common Policy: A Document Format for Expressing Privacy Preferences".
- [14] IETF RFC 4825: "The Extensible Markup Language (XML) Configuration Access Protocol (XCAP)".
- [15] IETF RFC 6878: "IANA Registry for the Session Initiation Protocol (SIP)"Priority" Header Field".

3 Definitions and abbreviations

3.1 Definitions

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

MCPTT network: A network infrastructure that supports the MCPTT service.

Offline Configuration: Configuration of the MCPTT UE without connectivity with any MCPTT network. Configuration of the MCPTT UE is achieved using some external device (e.g. a laptop) with some kind of IP connectivity with the MCPTT UE (e.g. over USB, WLAN, Bluetooth, etc).

Off-network operation: An MCPTT UE operating without connectivity to an MCPTT network (not even via a relay).

Online Configuration: Configuration of the MCPTT UE using the MCPTT network. Configuration of the MCPTT UE is achieved using the network connectivity with the MCPTT UE (e.g. over LTE).

On-network operation: An MCPTT UE operating with connectivity to an MCPTT network including when network connectivity is achieved via a relay.

For the purposes of the present document, the following terms and definitions given in OMA OMA-TS-XDM_Core-V2_1 [2] apply:

XDMC

XDMS

For the purposes of the present document, the following terms and definitions given in 3GPP TS 22.179 [3] apply:

MCPTT administrator

MCPTT UE

MCPTT User Profile

MCPTT service

Mission Critical Push To Talk

3.2 Abbreviations

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

AUID Application Unique IDentity

CMC	Configuration Management Client
CMS	Configuration Management Server
FQDN	Fully Qualified Domain Name
GC	General Client
HTTP	HyperText Transfer Protocol
HTTPS	HyperText Transfer Protocol Secure
IANA	Internet Assigned Numbers Authority
IETF	Internet Engineering Task Force
IP	Internet Protocol
MCPTT	Mission Critical Push To Talk
MIME	Multi-Purpose Internet Mail Extensions
MO	Management Object
OMA	Open Mobile Alliance
ProSe	Proximity Services
RFC	Request For Comments
SIP	Session Initiation Protocol
UE	User Equipment
URI	Uniform Resource Identifier
USB	Universal Serial Bus
WLAN	Wireless Local Area Network
XCAP	XML Configuration Access Protocol
XDM	XML Document Management
XDMC	XML Document Management Client
XDMS	XML Document Management Server
XML	eXtensible Markup Language
XUI	XCAP Unique Identifier

4 General

4.1 MCPTT service administrator configuration

An MCPTT service administrator can, using an MCPTT UE configure the:

- MPCTT UE initial configuration document;
- MPCTT UE configuration document;
- MPCTT user profile document;
- MPCTT service configuration document; and
- MPCTT group document.

The format of the MPCTT UE initial configuration document for configuration by an MCPTT service administrator is defined in subclause 7.2.

The format of the MPCTT UE configuration document is defined in subclause 7.3.

The format of the MPCTT user profile document is defined in subclause 7.4.

The format of the MPCTT service configuration document is defined in subclause 7.5.

The format of the MPCTT group document is defined in 3GPP TS 24.381 [5].

To create a new configuration document on the configuration management server, the MCPTT UE uses the procedures in subclause 6.3.2.2.

To update an existing configuration document on the configuration management server, the MCPTT UE uses the procedures in subclause 6.3.4.2.

To delete an existing configuration document on the configuration management server, the MCPTT UE uses the procedures in subclause 6.3.5.2.

To create a new MCPTT group document on the configuration management server, the MCPTT UE uses the procedures in 3GPP TS 24.381 [5].

To update an existing MCPTT group document on the configuration management server, the MCPTT UE uses the procedures in 3GPP TS 24.381 [5].

To delete an existing MCPTT group document on the configuration management server, the MCPTT UE uses the procedures in 3GPP TS 24.381 [5].

4.2 MCPTT UE configuration

4.2.1 Online configuration

In order to obtain access to the MCPTT service the MCPTT UE needs to obtain configuration data from the MCPTT UE initial configuration document, the MCPTT UE configuration document, the MCPTT user profile document and the MCPTT group document.

The format of the MCPTT UE initial configuration document downloaded to the MCPTT UE during online configuration is defined in 3GPP TS 24.383 [4].

The format of the MCPTT UE configuration document downloaded to the MCPTT UE during online configuration is defined in subclause 7.3.

The format of the MCPTT user profile document downloaded to the MCPTT UE during online configuration is defined in subclause 7.4.

The format of the MCPTT group document downloaded to the MCPTT UE during online configuration is defined in 3GPP TS 24.381 [5].

Figure 4.2.1-1 shows the MCPTT UE online configuration time sequence.

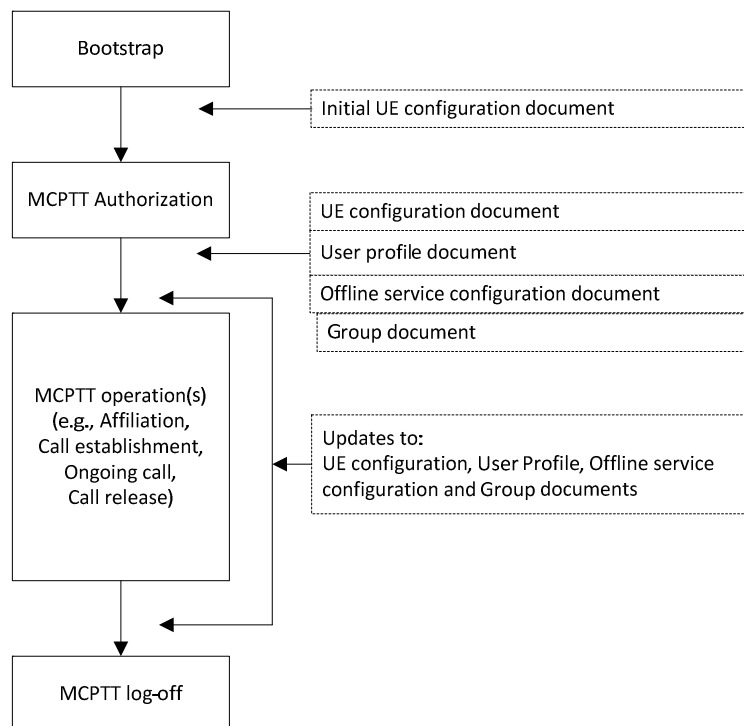


Figure 4.2.1-1 MCPTT UE online configuration time sequence

Upon startup the MCPTT UE bootstraps the required information (e.g. FQDN or IP address) to locate the server for the MCPTT UE initial configuration managed object (MO). If the MCPTT UE initial configuration MO has changed from the version stored in the MCPTT UE, the updated MCPTT UE initial configuration MO is downloaded to the MCPTT UE.

Editor's Note: Where the MCPTT UE bootstraps the required information to locate the server for the MCPTT UE initial configuration managed object (MO) form is FFS.

The MCPTT UE contacts the identity management server using the HTTPS URI stored in initial configuration MO and performs MCPTT User authentication as specified in 3GPP TS 24.382 [6].

The MCPTT UE, using the MCPTT ID obtained during MCPTT user authentication, subscribes to the MCPTT UE configuration document, the MCPTT user profile document and the MCPTT service configuration document using the procedure specified in subclause 6.1.2.1.2 of OMA OMA-TS-XDM_Core-V2_1 [2] "XDMC" (i.e., the CMS acts as a Subscription Proxy) and subscribes to the MCPTT group document using the procedure specified in 3GPP TS 24.381 [5]. If these documents have been updated since the current version stored in the MCPTT UE, then the MCPTT UE will receive a SIP NOTIFY request with an XCAP Diff document (see IETF RFC 5875 [11]), in which case the CMC updates its local document copies in accordance with OMA OMA-TS-XDM_Core-V2_1 [2]. Retrieval by the MCPTT UE using the notified HTTPS URI of the MCPTT group document is performed as specified in 3GPP TS 24.381 [5].

NOTE: The MCPTT UE can be notified of changes to the configuration documents at any time while using the MCPTT service.

4.2.2 Offline configuration

In order to obtain access to the MCPTT service the MCPTT UE needs to obtain configuration data from the MCPTT UE initial configuration document, the MCPTT UE configuration document, the MCPTT user profile document, the MCPTT service configuration document and the MCPTT group document.

The MCPTT UE, using the MCPTT ID obtained during MCPTT user authentication, subscribes to the MCPTT UE configuration document and MCPTT user profile document using the procedure specified in subclause 6.3.13.2.2 and subscribes to the MCPTT group document using the procedure specified in 3GPP TS 24.381 [5]. If these documents have been updated since the current version stored in the MCPTT UE, then the MCPTT UE will receive a SIP NOTIFY request containing an HTTPS URI of the document. Retrieval by the MCPTT UE, using the notified HTTPS URI, of the MCPTT UE configuration document and MCPTT user profile document is performed as specified in subclause 6.3.3.2.2. Retrieval by the MCPTT UE using the notified HTTPS URI of the MCPTT group document is performed as specified in 3GPP TS 24.381 [5].

NOTE: The MCPTT UE can be notified of changes to the configuration documents at any time while using the MCPTT service.

The format of the MCPTT UE initial configuration document downloaded to the MCPTT UE during offline configuration is defined in 3GPP TS 24.383 [4].

The format of the MCPTT UE configuration document downloaded to the MCPTT UE during offline configuration is defined in 3GPP TS 24.383 [4].

The format of the MCPTT user profile document downloaded to the MCPTT UE during offline configuration is defined in 3GPP TS 24.383 [4].

The format of the MCPTT service configuration document downloaded to the MCPTT UE during offline configuration is defined in 3GPP TS 24.383 [4].

The format of the MCPTT group document downloaded to the MCPTT UE during offline configuration is defined in 3GPP TS 24.383 [4].

4.3 MCPTT server

The MCPTT server obtains the MCPTT service configuration document that contains the mission critical organisation configured parameters that defined the behaviour of the MCPTT service from the configuration management server.

The format of the MCPTT service configuration document downloaded to the MCPTT server is defined in subclause 7.5.

The MCPTT server obtains the MCPTT service configuration document that contains the mission critical organisation configured parameters that defined the behaviour of the MCPTT service from the configuration management server.

The MCPTT server subscribes to the MCPTT service configuration document for each mission critical organisation that is provisioned that is supported by the MCPTT server using the procedure specified in subclause 6.3.13.2.3. How the MCPTT server is provisioned with the identities of the mission critical organisations is out of scope of this specification.

If the MCPTT service configuration document has been updated since the current version stored at the MCPTT server, then the MCPTT server will receive a SIP NOTIFY request containing an HTTPS URI of the MCPTT service configuration document. Retrieval by the MCPTT server, using the notified HTTPS URI, of the MCPTT service configuration document is performed as specified in subclause 6.3.3.2.3.

NOTE: The MCPTT server can be notified of changes to the MCPTT service management configuration document at any time while operating the MCPTT service.

The format of the MCPTT service configuration document downloaded to the MCPTT server is defined in subclause 7.5.

4.4 Configuration management server

Once an MCPTT user profile has been created or updated by the MCPTT UE, the configuration management server uses the procedures specified in 3GPP TS 29.283 [7] to store MCPTT user profile in the MCPTT user database.

In order to download MCPTT the user profile to an MCPTT UE or to support an MCPTT UE updating the MCPTT user profile, the configuration management server uses the procedures specified in 3GPP TS 29.283 [7] to obtain the MCPTT user profile from the MCPTT user database.

In order to be notified of changes to an MCPTT user profile that have been subscribed to by an MCPTT UE, the configuration management server uses the procedures specified in 3GPP TS 29.283 [7] to be notified of changes to the MCPTT user profile stored in the MCPTT user database.

In order to delete the MCPTT user profile when requested by an MCPTT UE, the configuration management server uses the procedures specified in 3GPP TS 29.283 [7] to delete the MCPTT user profile from the MCPTT user database.

5 Functional entities

5.1 Configuration management client (CMC)

The CMC shall:

- support the role of XDMC as specified in OMA OMA-TS-XDM_Core-V2_1 [2]; and
- support the procedures in subclause 6.3.13.2, subclause 6.3.2.2 and subclause 6.3.3.2.2.

The CMC may support the procedures in subclause 6.2.2, subclause 6.3.4.2 and subclause 6.3.5.2.

5.2 Configuration management server (CMS)

The CMS shall:

- support the role of XDMS as specified in OMA OMA-TS-XDM_Core-V2_1 [2]; and
- support the procedures in subclause 6.3.13.3, subclause 6.2.4, subclause 6.3.2.3, subclause 6.3.3.3, subclause 6.3.4.3 and subclause 6.3.5.3.

6 Procedures

6.1 Introduction

This clause specifies procedures enabling a group management client (CMC) and an MCPTT server to have the MCPTT configuration managed using the configuration management server (CMS).

The following procedures are defined for management of configuration management documents:

- configuration management document creation procedure;
- configuration management document retrieval procedure;
- configuration management document update procedure;
- configuration management document deletion procedure;
- configuration management document element creation or replacement procedure;
- configuration management document element deletion procedure;
- configuration management document element fetching procedure;
- configuration management document attribute creation or replacement procedure;
- configuration management document attribute deletion procedure;
- configuration management document attribute fetching procedure;
- configuration management document namespace binding fetching procedure; and
- configuration management document subscription and notification procedure.

6.2 Common procedures

6.2.1 General

This subclause contains common procedures applied on HTTP signalling specified in this document.

6.2.2 Client procedures

The CMC shall send the HTTP request over TLS connection as specified for the HTTP client in the UE in annex A of 3GPP TS 24.382 [6].

6.2.3 MCPTT server procedures

The MCPTT server shall send the HTTP request as specified for the HTTP client in the network entity in annex A of 3GPP TS 24.382 [6].

6.2.4 Configuration management server procedures

The CMS shall handle the HTTP request as specified for the HTTP server in annex A of 3GPP TS 24.382 [6].

6.3 Configuration management procedures

6.3.1 General

6.3.1.1 Client procedures

A CMC shall support subclause 6.1.1 "*Document Management*" and subclause 6.1.2 "*Subscribing to Changes in XDM Resources*" of OMA OMA-TS-XDM_Core-V2_1 [2].

6.3.1.2 Configuration management server procedures

A CMS shall support subclause 6.2.1 "*Document Management*", subclause 6.2.2 "*Subscriptions to Changes in XDM Resources*", subclause 6.2.4 "*Access Permissions*", and subclause 6.6 "*Procedures of the Subscription Proxy*" applicable for SIP subscription method. Refer to OMA OMA-TS-XDM_Core-V2_1 [2].

6.3.2 Configuration management document creation procedure

6.3.2.1 General

This subclause addresses the scenario for configuration management creation by administrators as described in 3GPP TS 23.179 [8].

6.3.2.2 Configuration management client (CMC) procedures

In order to create a configuration management document, a CMC shall create an XML document of one of the appropriate application usages specified in subclause 7.3.1, subclause 7.4.1, subclause 7.5.1 or subclause 7.2.1, and shall send the XML document to the network according to procedures specified in OMA OMA-TS-XDM_Core-V2_1 [2] "*Create or Replace a Document*".

6.3.2.3 Configuration management server (CMS) procedures

A CMS shall support receiving XML documents of the application usage specified in subclause 7.3.1, subclause 7.4.1, subclause 7.5.1 and subclause 7.2.1 according to procedures specified in OMA OMA-TS-XDM_Core-V2_1 [2] "*PUT Handling*" where the Request-URI of the HTTP PUT request identifies an XML document of the appropriate application usage.

6.3.3 Configuration management document retrieval procedure

6.3.3.1 General

This subclause describes how retrieval of a configuration management document takes place.

6.3.3.2 Client procedures

6.3.3.2.1 General client (GC) procedures

In order to retrieve a configuration management document, a GC shall send an HTTP GET request with the Request URI that references the document to be updated to the network according to procedures specified in OMA OMA-TS-XDM_Core-V2_1 [2] "*Retrieve a Document*".

6.3.3.2.2 Configuration management client (CMC) procedures

In order to retrieve a configuration management document, a CMC shall perform the procedures in subclause 6.3.3.2.1 specified for GC. Subclause 7.5 specifies which configuration management documents can be retrieved from the CMS over the CSC-4 reference point.

6.3.3.2.3 MCPTT server procedures

In order to retrieve a configuration management document via the CSC-5 reference point, an MCPTT Server shall perform the procedures in subclause 6.3.3.2.1 specified for GC. Subclause 7.5 specifies which configuration management documents can be retrieved from the CMS via the CSC-5 reference point.

6.3.3.3 Configuration management server procedures

A CMS shall support handling an HTTP GET request from a CMC and an MCPTT Server according to procedures specified in OMA OMA-TS-XDM_Core-V2_1 [2] "*GET Handling*" where the Request-URI of the HTTP GET request identifies an XML document of the appropriate application usage.

6.3.4 Configuration management document update procedure

6.3.4.1 General

This subclause describes the procedures for updating of a configuration management document.

6.3.4.2 Configuration management client procedures

In order to update a configuration management document, a CMC shall create an XML document of one of the appropriate application usages specified in subclause 7.2.1, subclause 7.3.1, subclause 7.4.1, or subclause 7.5.1, and shall send the XML document to the network according to procedures specified in OMA OMA-TS-XDM_Core-V2_1 [2] "*Create or Replace a Document*".

6.3.4.3 Configuration management server procedures

A CMS shall support receiving an XML document of the application usages specified in subclause 7.2.1, subclause 7.3.1, subclause 7.4.1, and subclause 7.5.1 according to the procedures specified in OMA OMA-TS-XDM_Core-V2_1 [2] "*PUT Handling*" where the Request-URI of the HTTP PUT request identifies an XML document of the appropriate application usage.

6.3.5 Configuration management document deletion procedure

6.3.5.1 General

This subclause describes deletion of a configuration management document.

6.3.5.2 Configuration management Client (CMC) procedures

In order to delete a configuration management document, a CMC shall send an HTTP DELETE request with the Request URI that references the XML document to be deleted to the network according to procedures specified in OMA OMA-TS-XDM_Core-V2_1 [2] "*Delete a Document*".

6.3.5.3 Configuration management server (CMS) procedures

A CMS shall support handling an HTTP DELETE request from a CMC according to procedures specified in OMA OMA-TS-XDM_Core-V2_1 [2] "*DELETE Handling*" where the Request-URI of the HTTP DELETE request identifies an XML document of the appropriate application usage.

6.3.6 Configuration management document element creation or replacement procedure

6.3.6.1 General

This procedure enables the CMC to create or replace an element of a configuration management document from CMS.

6.3.6.2 Client procedures

6.3.6.2.1 General client procedures

In order to create or replace an element of a configuration management document, a GC shall send an HTTP PUT request with the Request URI that references the element of the document to be created or replaced to the network according to procedures specified in OMA OMA-TS-XDM_Core-V2_1 [2] "*Create or Replace an Element*".

6.3.6.2.2 Configuration management client procedures

In order to create or replace an element of a configuration management document, a CMC shall perform the procedures in subclause 6.3.6.2.1 specified for GC.

6.3.6.3 Configuration management server procedures

A CMS shall support handling an HTTP PUT request from a CMC according to procedures specified in OMA OMA-TS-XDM_Core-V2_1 [2] "*PUT Handling*" where the Request-URI of the HTTP PUT request identifies an element of XML document of the appropriate application usage.

6.3.7 Configuration management document element deletion procedure

6.3.7.1 General

This procedure enables the CMC to delete an element of a configuration management document from CMS.

6.3.7.2 Client procedures

6.3.7.2.1 General client procedures

In order to delete an element of a configuration management document, a GC shall send an HTTP DELETE request with the Request URI that references the element of the document to be deleted to the network according to procedures specified in OMA OMA-TS-XDM_Core-V2_1 [2] "*Delete an Element*".

6.3.7.2.2 Configuration management client procedures

In order to delete an element of a configuration management document, a CMC shall perform the procedures in subclause 6.3.7.2.1 specified for GC.

6.3.7.3 Configuration management server procedures

A CMS shall support handling an HTTP DELETE request from a CMC according to procedures specified in OMA OMA-TS-XDM_Core-V2_1 [2] "*DELETE Handling*" where the Request-URI of the HTTP DELETE request identifies an element of XML document of the appropriate application usage.

6.3.8 Configuration management document element fetching procedure

6.3.8.1 General

This procedure enables the CMC or the MCPTT server to fetch an element of a configuration management document from the CMS.

6.3.8.2 Client procedures

6.3.8.2.1 General client procedures

In order to fetch an element of a configuration management document, a GC shall send an HTTP GET request with the Request URI that references the element of the document to be fetched to the network according to procedures specified in OMA OMA-TS-XDM_Core-V2_1 [2] "*Retrieve an Element*".

6.3.8.2.2 Configuration management client procedures

In order to fetch an element of a configuration management document, a CMC shall perform the procedures in subclause 6.3.8.2.1 specified for GC.

6.3.8.2.3 MCPTT server procedures

In order to fetch an element of a configuration management document, an MCPTT server shall perform the procedures in subclause 6.3.8.2.1 specified for GC.

6.3.8.3 Configuration management server procedures

A CMS shall support handling an HTTP GET request from CMC according to procedures specified in OMA OMA-TS-XDM_Core-V2_1 [2] "*GET Handling*" where the Request-URI of the HTTP GET request identifies an element of XML document of the appropriate application usage.

6.3.9 Configuration management document attribute creation or replacement procedure

6.3.9.1 General

This procedure enables the CMC to create or replace an attribute of a configuration management document from CMS.

6.3.9.2 Client procedures

6.3.9.2.1 General client procedures

In order to create or replace an attribute of a configuration management document, a GC shall send an HTTP PUT request with the Request URI that references the element of the document to be created or replaced to the network according to procedures specified in OMA OMA-TS-XDM_Core-V2_1 [2] "*Create or Replace an Attribute*".

6.3.9.2.2 Configuration management client procedures

In order to create or replace an attribute of a configuration management document, a CMC shall perform the procedures in subclause 6.3.9.2.1 specified for GC.

6.3.9.3 Configuration management server procedures

A CMS shall support handling an HTTP PUT request from a CMC according to procedures specified in OMA OMA-TS-XDM_Core-V2_1 [2] "*PUT Handling*" where the Request-URI of the HTTP PUT request identifies an attribute of XML document of the appropriate application usage.

6.3.10 Configuration management document attribute deletion procedure

6.3.10.1 General

This procedure enables the CMC to delete an attribute of a configuration management document from the CMS.

6.3.10.2 Client procedures

6.3.10.2.1 General client procedures

In order to delete an attribute of a configuration management document, a GC shall send an HTTP DELETE request with the Request URI that references the attribute of the document to be deleted to the network according to procedures specified in OMA OMA-TS-XDM_Core-V2_1 [2] "*Delete an Element*".

6.3.10.2.2 Configuration management client procedures

In order to delete an attribute of a configuration management document, a CMC shall perform the procedures in subclause 6.3.10.2.1 specified for GC.

6.3.10.3 Configuration management server procedures

A CMS shall support handling an HTTP DELETE request from CMC according to procedures specified in OMA OMA-TS-XDM_Core-V2_1 [2] "*DELETE Handling*" where the Request-URI of the HTTP DELETE request identifies an attribute of XML document of the appropriate application usage.

6.3.11 Configuration management document attribute fetching procedure

6.3.11.1 General

This procedure enables the CMC or the MCPTT server to fetch an attribute of a configuration management document from the CMS.

6.3.11.2 Client procedures

6.3.11.2.1 General client procedures

In order to fetch an attribute of a configuration management document, a GC shall send an HTTP GET request with the Request URI that references the attribute of the document to be fetched to the network according to procedures specified in OMA OMA-TS-XDM_Core-V2_1 [2] "*Retrieve an Attribute*".

6.3.11.2.2 Configuration management client procedures

In order to fetch an attribute of a configuration management document, a CMC shall perform the procedures in subclause 6.3.11.2.1 specified for GC.

6.3.11.2.3 MCPTT server procedures

In order to fetch an attribute of a configuration management document, an MCPTT server shall perform the procedures in subclause 6.3.11.2.1 specified for GC.

6.3.11.3 Configuration management server procedures

A CMS shall support handling an HTTP GET request from a CMC according to procedures specified in OMA OMA-TS-XDM_Core-V2_1 [2] "*GET Handling*" where the Request-URI of the HTTP GET request identifies an attribute of XML document of the application usage specified in subclause 7.2.

6.3.12 Configuration management document namespace binding fetching procedure

6.3.12.1 General

This procedure enables the CMC or the MCPTT server to fetch a namespace binding of a configuration management document from the CMS.

6.3.12.2 Client procedures

6.3.12.2.1 General client procedures

In order to fetch a namespace binding of a configuration management document, a GC shall send an HTTP GET request according to procedures specified in OMA OMA-TS-XDM_Core-V2_1 [2] "*Fetch Namespace Bindings*".

6.3.12.2.2 Configuration management client procedures

In order to fetch a namespace binding of a configuration management document, a CMC shall perform the procedures in subclause 6.3.12.2.1 specified for GC.

6.3.12.2.3 MCPTT server procedures

In order to fetch a namespace binding of a configuration management document, an MCPTT server shall perform the procedures in subclause 6.3.12.2.1 specified for GC.

6.3.12.3 Configuration management server procedures

A CMS shall support handling an HTTP GET request from a CMC according to procedures specified in OMA OMA-TS-XDM_Core-V2_1 [2] "*GET Handling*" where the Request-URI of the HTTP GET request identifies a namespace binding of XML document of the appropriate application usage.

6.3.13 Configuration management subscription and notification procedure

6.3.13.1 General

This subclause describes subscription to a configuration management document.

6.3.13.2 Client procedures

6.3.13.2.1 General client (GC) procedures

In order to subscribe to a Configuration document, a GC shall send a SIP SUBSCRIBE request to the network according to procedures specified in OMA OMA-TS-XDM_Core-V2_1 [2] "*Subscribing to Changes in the XDM Resources*". In the SUBSCRIBE request, the GC:

- a) if direct subscription is used, shall set the Request URI to a SIP URI containing:
 - the XUI part of the XCAP URI pointing to the MCPTT group document; and
 - an "auid" parameter set to "org.3gpp.mcptt"; and
- b) if subscription via a subscription proxy is used, shall set the Request URI to the SIP-URI of the subscription proxy.

NOTE: The body of the SIP SUBSCRIBE request contains a list of XCAP URIs pointing to the resources(s) that the GC subscribes to.

6.3.13.2.2 Configuration management client procedures

In order to subscribe to Configuration management document, a CMC shall perform the procedures in subclause 6.3.13.2.1 specified for GC.

6.3.13.2.3 MCPTT server procedures

In order to subscribe to Configuration management document, an MCPTT server shall perform the procedures in subclause 6.3.13.2.1 specified for GC.

6.3.13.3 Configuration management server procedures

A CMS shall support handling a SIP SUBSCRIBE request from CMC and MCPTT Server according to procedures specified in OMA OMA-TS-XDM_Core-V2_1 [2] "*Subscriptions to Changes in XDM Resources*".

7 Configuration management documents

7.1 Introduction

This subclause defines the structure, default document namespace, AUID, XML schema, MIME type, validation constraints and data semantics of the following documents:

- MCPTT UE initial configuration document;
- MCPTT UE configuration document;
- MCPTT user profile document; and
- MCPTT service configuration document.

7.2 MCPTT UE initial configuration document

7.2.1 General

The MCPTT UE initial configuration document is specified in this subclause. The MCPTT UE initial configuration document content is based on requirements of Annex B.6 of 3GPP TS 23.179 [8], and structure and procedures of OMA OMA-TS-XDM_Core-V2_1-20120403-A [2]. The usage of an MCPTT UE initial configuration in the MCPTT service is described in 3GPP TS 24.379 [9] and 3GPP TS 24.380 [10]. The schema definition is provided in subclause 7.22.3. Each MCPTT UE of a mission critical organization is configured with an MCPTT UE initial configuration document that is identified by the instance ID of the MCPTT UE.

7.2.2 Coding

7.2.2.1 Structure

The MCPTT UE initial configuration document structure is specified in this subclause.

The <mcptt-UE-initial-configuration> document:

- 1) shall include a "domain" attribute;
- 2) may include a list of <mcptt-UE-id> elements;
- 3) shall include a <common> element;
- 4) shall include an <on-network> element;
- 5) shall include an <off-network> element; and
- 6) may include any other attribute for the purposes of extensibility.

The <common> element:

- 1) shall contain a <Resource-Priority> element.

The <on-network> element:

- 1) shall contain a <Timers> element containing:
 - a) a "T100" attribute;

- b) a "T101" attribute;
 - c) a "T103" attribute;
 - d) a "T104" attribute; and
 - e) a "T132" attribute;
- 2) shall contain an <HPLMN> element containing:
- a) a "PLMN" attribute;
 - b) a <service> element; and
 - c) a list of <VPLMN> elements; and
- 3) shall contain an <App-Server-Info> element containing:
- a) an "idms" attribute;
 - b) a "gms" attribute;
 - c) a "cms" attribute; and
 - d) a "kms" attribute.

The <off-network> element:

- 1) shall contain a <Timers> element containing:
- a) a "TFG1" attribute;
 - b) a "TFG2" attribute;
 - c) a "TFG3" attribute;
 - d) a "TFG4" attribute;
 - e) a "TFG5" attribute.
 - f) a "TFG11" attribute;
 - g) a "TFG12" attribute;
 - h) a "TFP1" attribute;
 - i) a "TFP2" attribute;
 - j) a "TFP3" attribute;
 - k) a "TFP4" attribute;
 - l) a "TFP5" attribute;
 - m) a "TFP6" attribute;
 - n) a "TFP7" attribute;
 - o) a "TFB1" attribute;
 - p) a "TFB2" attribute;
 - q) a "T201" attribute;
 - r) a "T202" attribute;
 - s) a "T203" attribute;
 - t) a "T204" attribute;

- u) a "T205" attribute;
 - v) a "T230" attribute;
 - w) a "TFE1" attribute; and
 - x) a "TFE2" attribute; and
- 2) shall contain a <Counters> element containing:
- a) a "CFP1" attribute;
 - b) a "CFP3" attribute;
 - c) a "CFP4" attribute;
 - d) a "CFP6" attribute;
 - e) a "CFP11" attribute.
 - f) a "CFP12" attribute;
 - g) a "C201" attribute;
 - h) a "C204" attribute; and
 - i) a "C205" attribute.

The <VPLMN> element shall contain:

- 1) a "PLMN" attribute; and
- 2) a <service> element.

The <service> element shall contain:

- 1) an <MCPTT-to-con-ref> element;
- 2) an <MC-common-core-to-con-ref> element; and
- 3) an <MC-ID-to-con-ref> element.

The <mcptt-UE-id> element.

Editor's Note: The format of the <mcptt-UE-id> that contains the identity(s) of the MCPTT UE(s) for whom this configuration is intended is FFS

7.2.2.2 Application Unique ID

The AUID shall be set to "org.3gpp.mcptt".

7.2.2.3 XML Schema

Editor's Note: XML schema needs to be provided

7.2.2.4 Default Document Namespace

The default document namespace used in expanding URIs shall be "urn:3gpp:ns:mcpttUEinitConfig:1.0".

7.2.2.5 MIME type

The MIME type for the service configuration document shall be "vnd.3gpp.mcptt-ue-init-config+xml".

7.2.2.6 Validation Constraints

If the AUID value of the document URI or node URI in the Request-URI is other than that specified in subclause 7.5.2.2, then the configuration management server shall return an HTTP 409 (Conflict) response including the XCAP error element <constraint-failure>. If included, the "phrase" attribute should be set to "invalid application id used".

If the XUI value of the document URI or node URI in the Request-URI does not match the XUI of the service configuration document URI, the configuration management server shall return an HTTP 409 (Conflict) response including the XCAP error element <constraint-failure>. If included, the "phrase" attribute should be set to "invalid XUI".

The MCPTT UE initial configuration document shall conform to the XML Schema described in subclause 7.3.2.3.

The <mcptt-UE-initial-configuration> element is the root element of the XML document. The <mcptt-UE-initial-configuration> element can contain sub-elements.

The <mcptt-UE-initial-configuration> element shall contain one <common> element, one <on-network> element and one <off-network> element.

If the <mcptt-UE-initial-configuration> element does not conform to one of the three choices above, then the configuration management server shall return an HTTP 409 (Conflict) response including the XCAP error element <constraint-failure>. If included, the "phrase" attribute should be set to "semantic error".

If the "domain" attribute does not contain a syntactically correct domain name, then the configuration management server shall return an HTTP 409 (Conflict) response including the XCAP error element <constraint-failure>. If included, the "phrase" attribute should be set to "syntactically incorrect domain name".

If the "domain" attribute contains an unknown domain name, then the configuration management server shall return an HTTP 409 (Conflict) response including the XCAP error element <constraint-failure>. If included, the "phrase" attribute should be set to "unknown domain name".

Editor's Note: The validation of the rest of the elements is FFS

7.2.2.7 Data Semantics

The "domain" attribute of the <mcptt-UE-initial-configuration> element contains the domain name of the mission critical organization.

Editor's Note: The semantics of the <mcptt-UE-id is FFS

The <common> element contains MCPTT UE initial configuration data common to both on and off network service.

The <on-network> element contains MCPTT UE initial configuration data for on-network service only.

The <off-network> element contains MCPTT UE initial configuration data for off-network service only.

In the <common> element:

- 1) the <Resource-Priority> element.

Editor's Note: The semantics of the <Resource-Priority> is FFS

In the <on-network> element:

- 1) the <Timers> element;

Editor's Note: The semantics of the <Timers> is FFS

- 2) the <HPLMN> element; and

Editor's Note: The semantics of the <HPLMN> is FFS

- 3) the <AppServerInfo> element.

Editor's Note: The semantics of the <AppServerInfo> is FFS

In the <off-network> element:

- 1) the <Timers> element, and
- 2) the <Counters> element.

7.2.2.8 Naming Conventions

This specification defines no naming conventions.

7.2.2.9 Global documents

This specification requires no global documents.

7.2.2.10 Resource interdependencies

There are no resource interdependencies.

7.2.2.11 Authorization Policies

The authorization policies for manipulating an MCPTT UE initial configuration document shall conform to those described in OMA OMA-TS-XDM_Core-V2_1-20120403-A [2] subclause 5.1.5 "*Authorization*".

7.2.2.12 Subscription to Changes

The MCPTT UE initial configuration document application usage shall support subscription to changes as specified in OMA OMA-TS-XDM_Core-V2_1-20120403-A [2] subclause 6.2.2 "*Subscriptions to changes in the XDM Resources*".

7.3 MCPTT UE configuration document

7.3.1 General

The MCPTT UE configuration document is specified in this subclause. The MCPTT UE configuration document content is based on requirements of Annex B.2 of 3GPP TS 23.179 [8], and structure and procedures of OMA OMA-TS-XDM_Core-V2_1-20120403-A [2]. The usage of an MCPTT UE configuration in the MCPTT service is described in 3GPP TS 24.379 [9] and 3GPP TS 24.380 [10]. The schema definition is provided in subclause 7.3.2.3. Each MCPTT UE of a mission critical organization is configured with an MCPTT UE configuration document that is identified by the instance ID of the MCPTT UE.

7.3.2 Coding

7.3.2.1 Structure

The MCPTT UE configuration document structure is specified in this subclause.

The <mcptt-UE-configuration> document:

- 1) shall include a "domain" attribute;
- 2) may include a list of <mcptt-UE-id> elements;
- 3) may include a <common> element;
- 4) may include an <on-network> element; and
- 5) may include any other attribute for the purposes of extensibility.

The <common> element:

- 1) shall contain a <private-call> element containing:

- a) a <Max-Simul-Call-N10> element; and
- 2) shall contain an <MCPTT-Group-Call> element containing:
 - a) a <Max-Simul-Call-N4> element;
 - b) a <Max-Simul-Trans-N5> element; and
 - c) a <Prioritized-MCPTT-Group> element containing:
 - i) a list of <MCPTT-Group-Priority> elements.

The <on-network> element:

- 1) shall contain a <IPv6Preferred> element; and
- 2) may contain a <Relay-Service> element containing:
 - a) optionally a <Relay-MCPTT-Groups> element containing:
 - i) a list of <Relay-MCPTT-Group-ID> elements.

The <mcptt-UE-id> element:

Editor's Note: The format of the <mcptt-UE-id> that contains the identity(s) of the MCPTT UE(s) for whom this configuration is intended is FFS

The <MCPTT-Group-Priority> element contains:

- 1) an "MCPTT-Group-ID" attribute; and
- 2) a "group-priority-hierarchy" attribute.

The <Relay-MCPTT-Group-ID> element:

- 1) shall contain an "MCPTT-Group-ID" attribute; and
- 2) shall contain a "Relay-Service-Code" attribute.

7.3.2.2 Application Unique ID

The AUID shall be set to "org.3gpp.mcptt".

7.3.2.3 XML Schema

Editor's Note: XML schema needs to be provided

7.3.2.4 Default Document Namespace

The default document namespace used in expanding URIs shall be "urn:3gpp:ns:mcpttUEConfig:1.0".

7.3.2.5 MIME type

The MIME type for the service configuration document shall be "vnd.3gpp.mcptt-ue-config+xml".

7.3.2.6 Validation Constraints

If the AUID value of the document URI or node URI in the Request-URI is other than that specified in subclause 7.3.2.2, then the configuration management server shall return an HTTP 409 (Conflict) response including the XCAP error element <constraint-failure>. If included, the "phrase" attribute should be set to "invalid application id used".

If the XUI value of the document URI or node URI in the Request-URI does not match the XUI of the service configuration document URI, the configuration management server shall return an HTTP 409 (Conflict) response

including the XCAP error element <constraint-failure>. If included, the "phrase" attribute should be set to "invalid XUI".

The MCPTT UE configuration document shall conform to the XML Schema described in subclause 7.3.2.3.

The <mcptt-UE-configuration> element is the root element of the XML document. The <mcptt-UE-configuration> element can contain sub-elements.

The <mcptt-UE-configuration> element shall contain either:

- 1) one <common> element only;
- 2) one <common> element and one <on-network> element; or
- 3) one <on-network> element only.

If the <mcptt-UE-configuration> element does not conform to one of the three choices above, then the configuration management server shall return an HTTP 409 (Conflict) response including the XCAP error element <constraint-failure>. If included, the "phrase" attribute should be set to "semantic error".

If the "domain" attribute does not contain a syntactically correct domain name, then the configuration management server shall return an HTTP 409 (Conflict) response including the XCAP error element <constraint-failure>. If included, the "phrase" attribute should be set to "syntactically incorrect domain name".

If the "domain" attribute contains an unknown domain name, then the configuration management server shall return an HTTP 409 (Conflict) response including the XCAP error element <constraint-failure>. If included, the "phrase" attribute should be set to "unknown domain name".

Editor's Note: The validation of the <mcptt-UE-id> is FFS

If the <Max-Simul-Call-N10> element of the <private-call> element contains a value less than 1 and greater than 4, then the configuration management server shall return an HTTP 409 (Conflict) response including the XCAP error element <constraint-failure>. If included, the "phrase" attribute should be set to "element value out of range".

If the <Max-Simul-Call-N4> element, or <Max-Simul-Trans-N5> element of the <MCPTT-Group-Call> element contains a value less than 1, then the configuration management server shall return an HTTP 409 (Conflict) response including the XCAP error element <constraint-failure>. If included, the "phrase" attribute should be set to "element value out of range".

If the "MCPTT-Group-ID" attribute of the <MCPTT-group-priority> element or <Relay-MCPTT-Group-ID> element does not conform to the syntax of a valid MCPTT group ID, then the configuration management server shall return an HTTP 409 (Conflict) response including the XCAP error element <constraint-failure>. If included, the "phrase" attribute should be set to "semantic error".

If the "group-priority-hierarchy" attribute of the <MCPTT-group-priority> element contains a value less than 1 and greater than 8, then the configuration management server shall return an HTTP 409 (Conflict) response including the XCAP error element <constraint-failure>. If included, the "phrase" attribute should be set to "element value out of range".

If the "Relay-Service-Code" attribute of the <Relay-MCPTT-Group-ID> element does not conform to the syntax of a valid Relay service code as defined in 3GPP TS 24.333 [12], then the configuration management server shall return an HTTP 409 (Conflict) response including the XCAP error element <constraint-failure>. If included, the "phrase" attribute should be set to "semantic error".

7.3.2.7 Data Semantics

The "domain" attribute of the <mcptt-UE-configuration> element contains the domain name of the mission critical organization.

Editor's Note: The semantics of the <mcptt-UE-id> is FFS

The <common> element contains MCPTT UE configuration data common to both on and off network service.

The <on-network> element contains MCPTT UE configuration data for on-network service only.

In the <common> element:

- 1) the <Max-Simul-Call-N10> element of the <private-call> element contains an integer indicating the maximum number of simultaneous calls (N10) allowed for an on-network or off-network private call with floor control;
- 2) the <Max-Simul-Call-N4> element of the <MCPTT-Group-Call> element contains an integer indicating the number of simultaneous calls (N4) allowed for an on-network or off-network group call;
- 3) the <Max-Simul-Trans-N5> element of the <MCPTT-Group-Call> element contains an integer indicating the maximum number of allowed simultaneous transmissions for an on-network or off-network group call; and
- 4) the <Prioritized-MCPTT-Group> element of the <MCPTT-Group-Call> element contains a list of <MCPTT-Group-Priority> elements that each contain "MCPTT-Group-ID" attribute identifying an MCPTT group and a "group-priority-hierarchy" attribute that contain an integer that identifies the relative priority level of that MCPTT group with 1 being the lowest priority and 8 being the highest priority.

In the <on-network> element:

- 1) the <IPv6Preferred> element,
 - a) if the UE has both IPv4 and IPv6 host configuration and:
 - i) if IPv6Preferred is set to true then the UE shall user IPv6 for all on-network signalling and media; otherwise
 - ii) if IPv6Preferred is set to false then the UE shall user IPv4 for all on-network signalling and media;
 - b) if the UE has only IPv4 host configuration then the UE shall user IPv4 for all on-network signalling and media;
 - c) if the UE has only IPv6 host configuration then the UE shall user IPv6 for all on-network signalling and media; and
- 2) the <Relay-MCPTT-Groups> element of the <Relay-Service> element contains a list of <Relay-MCPTT-Group-ID> elements that each contain "MCPTT-Group-ID" attribute identifying an MCPTT group that is allowed to be used via a relay and a "Relay-Service-Code" attribute as specified in 3GPP TS 24.333 [12].

7.3.2.8 Naming Conventions

This specification defines no naming conventions.

7.3.2.9 Global documents

This specification requires no global documents.

7.3.2.10 Resource interdependencies

There are no resource interdependencies.

7.3.2.11 Authorization Policies

The authorization policies for manipulating an MCPTT UE configuration document shall conform to those described in OMA OMA-TS-XDM_Core-V2_1-20120403-A [2] subclause 5.1.5 "Authorization".

7.3.2.12 Subscription to Changes

The MCPTT UE configuration document application usage shall support subscription to changes as specified in OMA OMA-TS-XDM_Core-V2_1-20120403-A [2] subclause 6.2.2 "Subscriptions to changes in the XDM Resources".

Editor's note [WID: MCPTT]: The coding of the parameters defined in table B.2-1 of 3GPP TS 23.179 needs to be harmonised with the corresponding MO defined in 3GPP TS 24.383.

7.4 MCPTT User profile document

7.4.1 General

The User Profile document is specified in this subclause. The MCPTT User Profile document content is based on requirements of Annex B.3 of 3GPP TS 23.179 [8], and structure and procedures of OMA OMA-TS-XDM_Core-V2_1-20120403-A [2]. The usage of an MCPTT User Profile in the MCPTT service is described in 3GPP TS 24.379 [9]. The schema definition is provided in subclause 7.4.2.

7.4.2 Coding

7.4.2.1 Structure

The User Profile document structure is specified in this subclause.

The <user-profile> document:

- 1) shall include an "XUI-URI" attribute that contains the XUI of the user for whom this user profile is intended;
- 2) shall include a "user-profile-index" attribute that indicates the particular user profile document in the collection;
- 3) may include any other attribute for the purposes of extensibility;
- 4) may include one <ProfileName> element specifying the name of the user profile;
- 5) may include zero or more <common> elements, each of which:
 - a) shall have an "index" attribute for uniqueness purposes;
 - b) shall include one <UserAlias> element containing one or more <alias-entry> elements, each indicating an alphanumeric alias of the user. Each <alias-entry> element shall have an "index" attribute for uniqueness purposes;
 - c) shall include one <MCPTTUserID> element that contains a <uri-entry> that contains the MCPTT User ID , which is a URI, and may contain a <display-name> element with a human readable name;
 - d) shall include one <MaxAffiliations> element indicating the maximum number of group affiliations of the user;
 - e) shall include one <PrivateCall> element. The <PrivateCall> element contains one or more <entry> elements indicating users who can be called in a private call. Each <entry> element shall contain a <uri-entry> element containing either a SIP URI or a TEL URI set to a valid user address, and may contain a <display-name> child string element containing a human readable name;
 - f) shall contain one <MCPTT-group-call> element containing:
 - i) one <MaxCalls> element indicating the maximum number of simultaneously received group calls;
 - ii) one <MaxTransmissions> element indicating the maximum number of simultaneous transmissions received in one group call;
 - iii) one <EmergencyCall> element containing:
 - A) one <MCPTTGroupInitiation> element indicating the group to be used for initiation of an MCPTT emergency group call. The <MCPTTGroupInitiation> element shall contain a <uri-entry> element containing an MCPTT Group Identity, which is a URI, and may contain a <display-name> string element containing a human readable name of the group; and
 - B) one <Recipient> element containing one or more <entry> element, each containing a <uri-entry> element containing either a SIP URI or TEL URI of a recipient for an emergency private call, and may contain a <display-name> string element. Each <entry> element shall have an "index" attribute;
 - iv) one <ImminentPerilCall> element containing:

- A) one <MCPTTGroupInitiation> element containing a <uri-entry> element containing the MCPTT Group ID, which is a URI, to be used for initiation of an MCPTT imminent peril group call, and may contain a <display-name> with a human readable name of the group; and
- v) one <EmergencyAlert> element containing:
 - A) a <Recipient> element containing a list of <entry> elements containing a <uri-entry> element containing either a SIP URI or TEL URI of a recipient for an emergency alert, and may contain a <display-name> string element containing a human readable name. Each <entry> element shall have an "index" attribute; and
- g) shall contain one <Priority> element indicating the priority for the user initiating or receiving calls;
- 6) shall include zero or more <OffNetwork> elements each of which:
 - a) shall have an "index" attribute for uniqueness purposes; and
 - b) shall include one or more <MCPTTGroupInfo> elements, each containing one or more <entry> elements. Each <entry> element shall contain a <uri-entry> element with an MCPTT Group ID, and may contain a <display-name> element with a human readable name of the group. Each <MCPTTGroupInfo> and each <entry> element shall have an "index" attribute;
- 7) shall include zero or more <OnNetwork> elements each of which:
 - a) shall have an "index" attribute for uniqueness purposes;
 - b) shall include one or more <MCPTTGroupInfo> elements, each containing one or more <entry> elements. Each <entry> element shall contain a <uri-entry> element with an MCPTT Group ID, and may contain a <display-name> element with a human readable name of the group. Each <MCPTTGroupInfo> and each <entry> element shall have an "index" attribute;
 - c) shall include one User Info ID containing a URI in accordance with 3GPP TS 24.333 [12];
 - d) shall include one <MaxAffiliations> element indicating the maximum number of group affiliations of the user; and
 - e) shall include one or more <ImplicitAffiliations> elements, each containing one or more <entry> elements. Each <entry> element shall contain a <uri-entry> element with an MCPTT Group ID to which the MCPTT user requests to be implicitly affiliated. Each <entry> element may contain a <display-name> element with a human readable name of the group. Each <ImplicitAffiliations> and each <entry> element shall have an "index" attribute;
- 8) a <ruleset> element conforming to IETF RFC 4745 [13] containing a sequence of zero or more <rule> elements:
 - a) the <conditions> of a <rule> element may include the <identity> element as described in IETF RFC 4745 [13];
 - b) the <actions> child element of any <rule> element may contain:
 - i) an <allow-private-call> element indicating the user is authorized to make a private call;
 - ii) an <allow-manual-commencement> element indicating the user is authorized to make a private call with manual commencement;
 - iii) an <allow-automatic-commencement> element indicating the user is authorized to make a private call with automatic commencement;
 - iv) an <allow-force-auto-answer> element indicating the user is authorized to force automatic answer for a private call;
 - v) an <allow-failure-restriction> element indicating the user is authorized to restrict notification of a call failure reason for a private call;
 - vi) an <allow-emergency-group-call> element indicating the user is authorized to make an emergency group call;

- vii) an <allow-emergency-private-call> element indicating the user is authorized to make an emergency private call;
 - viii) an <allow-cancel-group-emergency> element indicating the user is authorized to cancel an emergency with this group;
 - ix) an <allow-cancel-private-emergency-call> element indicating the user is authorized to cancel a private emergency call;
 - x) an <allow-imminent-peril-call> element indicating the user is authorized to make an imminent peril group call;
 - xi) an <allow-cancel-imminent-peril> element indicating the user is authorized to cancel an imminent peril group call;
 - xii) an <allow-activate-emergency-alert> element indicating the user is authorized to activate an emergency alert;
 - xiii) an <allow-cancel-emergency-alert> element indicating the user is authorized to cancel an emergency alert;
 - xiv) an <allow-offnetwork> element indicating the user is authorized for off-network services; and
 - xv) an <allow-imminent-peril-change> element that indicates the user is authorized to change an off-network group call in progress to an off-network imminent peril group call; and
- 9) may include any other element for the purposes of extensibility.

7.4.2.2 Application Unique ID

The AUID shall be "org.3gpp.mcptt.user-profile".

7.4.2.3 XML Schema

The User Profile Document shall be composed according to the following XML schema:

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema
  xmlns="urn:3gpp:mcptt:user-profile"
  xmlns:xs="http://www.w3.org/2001/XMLSchema"
  targetNamespace="urn:3gpp:mcptt:user-profile"
  elementFormDefault="qualified" attributeFormDefault="unqualified">
  <xs:import namespace="http://www.w3.org/XML/1998/namespace"
    schemaLocation="http://www.w3.org/2001/xml.xsd"/>

  <xs:element name="user-profile">
    <xs:complexType>
      <xs:choice minOccurs="1" maxOccurs="unbounded">
        <xs:element name="ProfileName" type="ProfileNameType"/>
        <xs:element name="Common" type="CommonType"/>
        <xs:element name="OffNetwork" type="OffNetworkType"/>
        <xs:element name="OnNetwork" type="OnNetworkType"/>
        <xs:any namespace="##other" processContents="lax"/>
      </xs:choice>
      <xs:attribute name="XUI-URI" type="xs:anyURI" use="required"/>
      <xs:attribute name="user-profile-index" type="xs:anyURI" use="required"/>
      <xs:anyAttribute processContents="lax"/>
    </xs:complexType>
  </xs:element>

  <xs:complexType name="ProfileNameType">
    <xs:simpleContent>
      <xs:extension base="xs:token">
        <xs:attribute ref="xml:lang"/>
      </xs:extension>
    </xs:simpleContent>
  </xs:complexType>

  <xs:complexType name="CommonType">
    <xs:choice minOccurs="1" maxOccurs="unbounded">
      <xs:element name="UserAlias" type="UserAliasType"/>
    </xs:choice>
  </xs:complexType>
```

```

    <xs:element name="MCPTTUserID" type="EntryType"/>
    <xs:element name="MaxAffililations" type="xs:nonNegativeInteger"/>
    <xs:element name="PrivateCall" type="ListEntryType"/>
    <xs:element name="MCPTT-group-call" type="MCPTTGroupCallType"/>
    <xs:any namespace="##other" processContents="lax"/>
  </xs:choice>
  <xs:anyAttribute processContents="lax"/>
</xs:complexType>

<xs:complexType name="UserAliasType">
  <xs:choice minOccurs="0" maxOccurs="unbounded">
    <xs:element name="alias-entry" type="AliasEntryType"/>
    <xs:any namespace="##other" processContents="lax"/>
  </xs:choice>
  <xs:attributeGroup ref="IndexType"/>
  <xs:anyAttribute processContents="lax"/>
</xs:complexType>

<xs:complexType name="AliasEntryType">
  <xs:simpleContent>
    <xs:extension base="xs:token">
      <xs:attributeGroup ref="IndexType"/>
      <xs:attribute ref="xml:lang"/>
    </xs:extension>
  </xs:simpleContent>
</xs:complexType>

<xs:complexType name="ListEntryType">
  <xs:choice minOccurs="0" maxOccurs="unbounded">
    <xs:element name="entry" type="EntryType"/>
    <xs:any namespace="##other" processContents="lax"/>
  </xs:choice>
  <xs:attribute ref="xml:lang"/>
  <xs:anyAttribute processContents="lax"/>
</xs:complexType>

<xs:complexType name="EntryType">
  <xs:sequence>
    <xs:element name="uri-entry" type="xs:anyURI"/>
    <xs:element name="display-name" type="DisplayNameElementType" minOccurs="0" maxOccurs="1"/>
    <xs:any namespace="##other" processContents="lax"/>
  </xs:sequence>
  <xs:attributeGroup ref="IndexType"/>
  <xs:anyAttribute processContents="lax"/>
</xs:complexType>

<xs:complexType name="DisplayNameElementType">
  <xs:simpleContent>
    <xs:extension base="xs:string">
      <xs:attribute ref="xml:lang"/>
      <xs:anyAttribute processContents="lax"/>
    </xs:extension>
  </xs:simpleContent>
</xs:complexType>

<xs:complexType name="MCPTTGroupCallType">
  <xs:choice minOccurs="0" maxOccurs="unbounded">
    <xs:element name="MaxCalls" type="xs:positiveInteger"/>
    <xs:element name="MaxTransmissions" type="xs:positiveInteger"/>
    <xs:element name="EmergencyCall" type="EmergencyCallType"/>
    <xs:element name="ImminentPerilCall" type="ImminentPerilCallType"/>
    <xs:element name="EmergencyAlert" type="EmergencyAlertType"/>
    <xs:element name="Priority" type="xs:nonNegativeInteger"/>
    <xs:any namespace="##other" processContents="lax"/>
  </xs:choice>
  <xs:anyAttribute processContents="lax"/>
</xs:complexType>

<xs:complexType name="EmergencyCallType">
  <xs:sequence>
    <xs:element name="MCPTTGroupInitiation" type="EntryType"/>
    <xs:element name="Recipient" type="ListEntryType"/>
    <xs:any namespace="##other" processContents="lax"/>
  </xs:sequence>
  <xs:anyAttribute processContents="lax"/>
</xs:complexType>

<xs:complexType name="ImminentPerilCallType">

```



```

<xs:sequence>
  <xs:element name="MCPTTGroupInitiation" type="EntryType"/>
  <xs:any namespace="##other" processContents="lax"/>
</xs:sequence>
<xs:attributeGroup ref="IndexType"/>
<xs:anyAttribute processContents="lax"/>
</xs:complexType>

<xs:complexType name="EmergencyAlertType">
  <xs:sequence>
    <xs:element name="Recipient" type="ListEntryType"/>
    <xs:any namespace="##other" processContents="lax"/>
  </xs:sequence>
  <xs:anyAttribute processContents="lax"/>
</xs:complexType>

<xs:complexType name="OffNetworkType">
  <xs:choice minOccurs="0" maxOccurs="unbounded">
    <xs:element name="MCPTTGroupInfo" type="ListEntryType"/>
    <xs:any namespace="##other" processContents="lax"/>
  </xs:choice>
  <xs:anyAttribute processContents="lax"/>
</xs:complexType>

<xs:complexType name="OnNetworkType">
  <xs:choice minOccurs="0" maxOccurs="unbounded">
    <xs:element name="MCPTTGroupInfo" type="ListEntryType"/>
    <xs:element name="UserInfoID" type="xs:anyURI"/>
    <xs:element name="MaxAffiliations" type="xs:nonNegativeInteger"/>
    <xs:element name="ImplicitAffiliations" type="ListEntryType"/>
    <xs:element name="PrivateCall" type="ListEntryType"/>
    <xs:any namespace="##other" processContents="lax"/>
  </xs:choice>
  <xs:anyAttribute processContents="lax"/>
</xs:complexType>

<xs:attributeGroup name="IndexType">
  <xs:attribute name="index" type="xs:token"/>
</xs:attributeGroup>
</xs:schema>

```

7.4.2.4 Default Namespace

The default namespace used in expanding URIs shall be "urn:3gpp:mcptt:user-profile" defined in subclause [7.4.2.3](#).

Editor's note [WID: MCPTT]: The above namespace remains to be determined. This is place holder text.

7.4.2.5 MIME type

The MIME type for the User Profile Document shall be "application/vnd.3gpp.mcptt.user-profile+xml".

7.4.2.6 Validation Constraints

The User Profile document shall conform to the XML Schema described in subclause 7.4.2.3 "XML Schema", with the clarifications given in this subclause.

The value of the "XUI-URI" attribute of the <user-profile> element shall be the same as the XUI value of the Document URI for the User Profile document. If not, the XDMS shall return an HTTP "409 Conflict" response as described in IETF RFC 4825 [14], including the <constraint-failure> error element. If included, the "phrase" attribute SHOULD be set to "Wrong User Profile URI".

7.4.2.7 Data Semantics

The <ProfileName> element is of type "token", and corresponds to the "Name" element of subclause 5.2.3 in 3GPP TS 24.383 [4].

The <alias-entry> element is of type "token", and corresponds to the leaf nodes of the "UserAlias" element of subclause 5.2.8 in 3GPP TS 24.383 [4].

The <display-name> element is of type "string", is optional, and does not appear in the User Profile object specified in 3GPP TS 24.383 [4].

The <uri-entry> element is of type "anyURI".

The "index" attribute is of type "token".

The "user-profile-index" is of type "token".

The <MCPTTUser ID> element contains the element <uri-entry> which is of type "anyURI", and corresponds to the "MCPTTUserID" element of subclause 5.2.9 in 3GPP TS 24.383 [4].

The <MaxAffiliations> element is of type "nonNegativeInteger", and corresponds to the "MaxAffiliations" element of subclause 5.2.10 in 3GPP TS 24.383 [4].

The <MaxCalls> element is of type "positiveInteger", and corresponds to the "MaxCalls" element of subclause 5.2.19 in 3GPP TS 24.383 [4].

The <MaxTransmissions> element is of type "positiveInteger", and corresponds to the "MaxTransmissions" element of subclause 5.2.20 in 3GPP TS 24.383 [4].

The <Priority> element is of a type from a namespace referenced in IETF RFC 6878 [15], and corresponds to the "Priority" element of subclause 5.2.36 in 3GPP TS 24.383 [4].

The <allow-private-call> element is of type Boolean, as follows, and corresponds to the "Authorized" element of subclause 5.2.12 in 3GPP TS 24.383 [4].

- | | |
|---------|---|
| "true" | instructs the Application Server performing the originating participant function that the user is authorized to request a private call request using procedures as defined by the enabler. The recipient must be a user identified in a <user-entry> element of the <PrivateCall> element, which corresponds to leaf nodes of "UserAuthorized" in subclause 5.2.13 in 3GPP TS 24.383 [4]. |
| "false" | instructs the Application Server performing the originating participant function to reject private call request using procedures as defined by the enabler. This shall be the default value taken in the absence of the element; |

The <allow-manual-commencement> element is of type Boolean, as follows, and corresponds to the "ManualCommence" element of subclause 5.2.14 in 3GPP TS 24.383 [4].

- | | |
|---------|--|
| "true" | instructs the Application Server performing the originating participant function to that the user is authorized to request a private call with manual commencement using procedures as defined by the enabler. |
| "false" | instructs the Application Server performing the originating participant function to that the user is not authorized to request a private call with manual commencement using procedures as defined by the enabler. |

The <allow-automatic-commencement> element is of type Boolean, as follows, corresponds to the "AutoCommence" element of subclause 5.2.15 in 3GPP TS 24.383 [4].

- | | |
|---------|---|
| "true" | instructs the Application Server performing the originating participant function to that the user is authorized to request a private call with automatic commencement using procedures as defined by the enabler. |
| "false" | instructs the Application Server performing the originating participant function to that the user is not authorized to request a private call with automatic commencement using procedures as defined by the enabler. |

The <allow-force-auto-answer> element is of type Boolean, as follows, and corresponds to the "AutoAnswer" element of subclause 5.2.16 in 3GPP TS 24.383 [4].

- | | |
|---------|--|
| "true" | instructs the Application Server performing the originating participant function to that the user is authorized to request a private call with forced automatic commencement using procedures as defined by the enabler. |
| "false" | instructs the Application Server performing the originating participant function to that the user is not authorized to request a private call with forced automatic commencement using procedures as defined by the enabler. |

The <allow-failure-restriction> element is of type Boolean, as follows, and corresponds to the "FailRestrict" element of subclause 5.2.17 in 3GPP TS 24.383 [4].

"true"
"false"

The <allow-emergency-group-call> element is of type Boolean, as follows, and corresponds to the "Enabled" element of subclause 5.2.22 in 3GPP TS 24.383 [4].

"true" instructs the Application Server performing the originating participant function to that the user is authorized to request an emergency group call using procedures as defined by the enabler.
"false" instructs the Application Server performing the originating participant function to that the user is not authorized to request an emergency group call using procedures as defined by the enabler.

The <allow-emergency-private-call> element is of type Boolean, as follow, and corresponds to the "Authorized" element of subclause 5.2.23 in 3GPP TS 24.383 [4].

"true" instructs the Application Server performing the originating participant function to that the user is authorized to request an emergency private call using procedures as defined by the enabler.
"false" instructs the Application Server performing the originating participant function to that the user is not authorized to request an emergency private call using procedures as defined by the enabler.

The <allow-cancel-group-emergency-call> element is of type Boolean, as follows, and corresponds to the "CancelMCPTTGroup" element of subclause 5.2.25 in 3GPP TS 24.383 [4].

"true" instructs the Application Server performing the originating participant function to that the user is authorized to cancel an emergency group call using procedures as defined by the enabler.
"false" instructs the Application Server performing the originating participant function to that the user is not authorized to cancel an emergency group call using procedures as defined by the enabler.

The <allow-cancel-private-emergency-call> element is of type Boolean, as follows, and corresponds to the "CancelPrivate" of subclause 5.2.26 in 3GPP TS 24.383 [4].

"true" instructs the Application Server performing the originating participant function to that the user is authorized to cancel an emergency private call using procedures as defined by the enabler.
"false" instructs the Application Server performing the originating participant function to that the user is not authorized to cancel an emergency private call using procedures as defined by the enabler.

The <allow-imminent-peril-call> element is of type Boolean, as follows, and corresponds to the "Authorized" of subclause 5.2.29 in 3GPP TS 24.383 [4].

"true" instructs the Application Server performing the originating participant function to that the user is authorized to request an imminent peril group call using procedures as defined by the enabler.
"false" instructs the Application Server performing the originating participant function to that the user is not authorized to request an imminent peril group call using procedures as defined by the enabler.

The <allow-cancel-imminent-peril-call> element is of type Boolean, as follows, and corresponds to the "Cancel" of subclause 5.2.30 in 3GPP TS 24.383 [4].

"true" instructs the Application Server performing the originating participant function to that the user is authorized to cancel an imminent peril group call using procedures as defined by the enabler.
"false" instructs the Application Server performing the originating participant function to that the user is not authorized to cancel an imminent peril group call using procedures as defined by the enabler.

The <allow-activate-emergency-alert> element is of type Boolean, as follows, and corresponds to the "Authorized" of subclause 5.2.33 in 3GPP TS 24.383 [4].

"true"	instructs the Application Server performing the originating participant function to that the user is authorized to activate an emergency alert using procedures as defined by the enabler.
"false"	instructs the Application Server performing the originating participant function to that the user is not authorized to activate an emergency alert using procedures as defined by the enabler.

The <allow-cancel-emergency-alert> element is of type Boolean, as follows, and corresponds to the "Cancel" of subclause 5.2.34 in 3GPP TS 24.383 [4].

"true"	instructs the Application Server performing the originating participant function to that the user is authorized to cancel an emergency alert using procedures as defined by the enabler.
"false"	instructs the Application Server performing the originating participant function to that the user is not authorized to cancel an emergency alert using procedures as defined by the enabler.

The <allow-offnetwork> element is of type Boolean, as follows, and corresponds to the "Authorized" of subclause 5.2.42 in 3GPP TS 24.383 [4].

"true"	instructs the Application Server performing the originating participant function to that the user is authorized for off-network service using procedures as defined by the enabler.
"false"	instructs the Application Server performing the originating participant function to that the user is not authorized for off-network service using procedures as defined by the enabler.

The <allow-imminent-peril-change> element is of type Boolean, as follows, and corresponds to the "Change" of subclause 5.2.47 in 3GPP TS 24.383 [4].

"true"	instructs the Application Server performing the originating participant function to that the user is authorized to change an off-network group call in-progress to an off-network emergency group call using procedures as defined by the enabler.
"false"	instructs the Application Server performing the originating participant function to that the user is not authorized to change an off-network group call in-progress to an off-network emergency group call using procedures as defined by the enabler.

7.4.2.8 Naming Conventions

The name of User Profile Document shall be "user-profile".

7.4.2.9 Global documents

Not applicable.

7.4.2.10 Resource interdependencies

This Application Usage is interdependent on user profile data in the MCPTT Database and the MCPTT Management Object.

7.4.2.11 Access Permissions Policies

The authorization and access policies for a User Profile Document shall conform to those described in OMA OMA-TS-XDM_Core-V2_1-20120403-A [2] subclause 5.1.5 "*Authorization*" and subclause 5.6.7 "*Access Permissions Document*" with the following exceptions:

- 1) The Principal (i.e., the user) of the User Profile document shall have permission to create, modify, or delete <alias-entry> child elements of the <UserAlias> elements, if the rule of the Access Permissions document associated with the User Profile contains the action element <allow-any-operation-own-data>, as specified in OMA OMA-TS-XDM_Core-V2_1-20120403-A [2] subclause 5.6.7 "*Access Permissions Document*".

7.4.2.12 Subscription to Changes

The User Access Policy Application Usage shall support subscription to changes as specified in OMA OMA-TS-XDM_Core-V2_1-20120403-A [2] subclause 6.2.2 "*Subscriptions to changes in the XDM Resources*".

7.5 MCPTT service configuration document

7.5.1 General

The MCPTT service configuration document is specified in this subclause. The MCPTT service configuration document content is based on requirements of Annex B.5 of 3GPP TS 23.179 [8], and structure and procedures of OMA OMA-TS-XDM_Core-V2_1-20120403-A [2]. The usage of an MCPTT service configuration in the MCPTT service is described in 3GPP TS 24.379 [9] and 3GPP TS 24.380 [10]. The schema definition is provided in subclause 7.5.2.3. Each mission critical organization is configured with an MCPTT service configuration document.

7.5.2 Coding

7.5.2.1 Structure

The service configuration document structure is specified in this subclause.

The <service configuration> document:

- 1) shall include a "domain" attribute;
- 2) may include a <common> element;
- 3) may include an <on-network> element;
- 4) may include an <off-network> element; and
- 5) may include any other attribute for the purposes of extensibility.

The <common> element:

- 1) may include an <alias> element;
- 2) may contain a <broadcast-group> element containing:
 - a) a <num-levels-group-hierarchy> element; and
 - b) a <num-levels-user-hierarchy> element;

The <on-network> element:

- 1) may contain a <emergency-call> element containing:
 - a) a <private-cancel-timeout> element; and
 - b) a <group-time-limit> element.
- 2) may contain a <private-call> element containing:
 - a) a <hang-time> element;
 - b) a <max-duration- with-floor-control > element; and
 - c) a <max-duration-without-floor-control> element;
- 3) may contain a <num-levels-hierarchy> element;
- 4) may contain a <transmit-time> element containing:
 - a) a <time-limit> element; and
 - b) a <time-warning> element;
- 5) may contain a <hang-time-warning> element; and
- 6) may contain a <floor-control-queue> element containing:

- a) a <depth> element; and
- b) a <max-user-request-time> element; and
- 7) may contain a <timer-TNG1> element;

The <off-network> element:

- 1) may contain a <emergency-call> element containing:
 - a) a <private-cancel-timeout> element; and
 - b) a <group-time-limit> element.
- 2) may contain a <private-call> element containing:
 - a) a <hang-time> element; and
 - b) a <max-duration-with-floor-control> element;
- 3) may contain a <num-levels-hierarchy> element;
- 4) may contain a <transmit-time> element containing:
 - a) a <time-limit> element; and
 - b) a <time-warning> element.
- 5) may contain a <hang-time-warning> element;
- 6) may contain a <default-prose-per-packet-priority> element; and
- 7) may contain a <allow-log-metadata> element.

7.5.2.2 Application Unique ID

The AUID shall be set to "org.3gpp.mcptt".

7.5.2.3 XML Schema

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema attributeFormDefault="unqualified" elementFormDefault="qualified"
xmlns:xs="http://www.w3.org/2001/XMLSchema"
targetNamespace="urn:3gpp:ns:mcpttServiceConfig:1.0"
xmlns:mcpttsc="urn:3gpp:ns:mcpttServiceConfig:1.0">

<!-- the root element -->
  <xs:element name="service-configuration-info" type="service-configuration-info-Type"/>

<!-- the root type -->
<!-- this is refined with one or more sub-types -->
  <xs:complexType name="service-configuration-Type">
    <xs:sequence>
      <xs:any namespace="##any" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
    </xs:sequence>
    <xs:anyAttribute namespace="##any" processContents="lax"/>
  </xs:complexType>

<!-- definition of an element of one of the subtypes -->
  <xs:element name="service-configuration-params" type="service-configuration-params-Type"/>

<!-- definition of the service-configuration-params-Type subtype-->
  <xs:complexType name="service-configuration-params-Type">
    <xs:sequence>
      <xs:attribute name="domain" type="anyURI" use="required"/>
      <xs:element name="common" type="commonType" minOccurs="1"/>
      <xs:element name="on-network" type="on-networkType" minOccurs="0"/>
      <xs:element name="off-network" type="off-networkType" minOccurs="0"/>
      <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
    </xs:sequence>
    <xs:attribute name="Path" type="xs:anyURI" use="optional"/>
  </xs:complexType>

```

```

    <xs:anyAttribute namespace="##any" processContents="lax"/>
  </xs:complexType>

  <xs:complexType name="commonType">
    <xs:sequence>
      <xs:element name="alias" type="xs:string" minOccurs="0"/>
      <xs:element name="broadcast-group" type="broadcast-groupType" minOccurs="0"/>
      <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
    </xs:sequence>
    <xs:attribute name="Path" type="xs:anyURI" use="optional"/>
    <xs:anyAttribute namespace="##any" processContents="lax"/>
  </xs:complexType>

  <xs:complexType name="on-networkType">
    <xs:sequence>
      <xs:element name="emergency-call" type="emergency-callType" minOccurs="0"/>
      <xs:element name="private-call" type="private-callType" minOccurs="0"/>
      <xs:element name="num-levels-hierarchy" type="xs:unsignedShort" minOccurs="0"/>
      <xs:element name="transmit-time" type="transmit-timeType" minOccurs="0"/>
      <xs:element name="hang-time-warning" type="xs:duration" minOccurs="0"/>
      <xs:element name="floor-control-queue" type="floor-control-queueType" minOccurs="0"/>
      <xs:element name="timer-TNG1" type="xs:duration" minOccurs="0"/>
      <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
    </xs:sequence>
    <xs:attribute name="Path" type="xs:anyURI" use="optional"/>
    <xs:anyAttribute namespace="##any" processContents="lax"/>
  </xs:complexType>

  <xs:complexType name="off-networkType">
    <xs:sequence>
      <xs:element name="emergency-call" type="emergency-callType" minOccurs="0"/>
      <xs:element name="private-call" type="private-callType" minOccurs="0"/>
      <xs:element name="num-levels-hierarchy" type="xs:unsignedShort" minOccurs="0"/>
      <xs:element name="transmit-time" type="transmit-timeType" minOccurs="0"/>
      <xs:element name="hang-time-warning" type="xs:duration" minOccurs="0"/>
      <xs:element name="default-prose-per-packet-priority" type="default-prose-per-packet-
priorityType" minOccurs="0"/>
      <xs:element name="allow-log-metadata" type="xs:boolean" minOccurs="0"/>
      <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
    </xs:sequence>
    <xs:attribute name="Path" type="xs:anyURI" use="optional"/>
    <xs:anyAttribute namespace="##any" processContents="lax"/>
  </xs:complexType>

  <xs:complexType name="private-callType">
    <xs:sequence>
      <xs:element name="hang-time" type="xs:duration" minOccurs="0"/>
      <xs:element name="max-duration-with-floor-control" type="xs:duration" minOccurs="0"/>
      <xs:element name="max-duration-without-floor-control" type="xs:duration" minOccurs="0"/>
      <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
    </xs:sequence>
    <xs:attribute name="Path" type="xs:anyURI" use="optional"/>
    <xs:anyAttribute namespace="##any" processContents="lax"/>
  </xs:complexType>

  <xs:complexType name="broadcast-groupType">
    <xs:sequence>
      <xs:element name="num-levels-group-hierarchy" type="xs:unsignedShort" minOccurs="0"/>
      <xs:element name="num-levels-user-hierarchy" type="xs:unsignedShort" minOccurs="0"/>
      <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
    </xs:sequence>
    <xs:attribute name="Path" type="xs:anyURI" use="optional"/>
    <xs:anyAttribute namespace="##any" processContents="lax"/>
  </xs:complexType>

  <xs:complexType name="emergency-callType">
    <xs:sequence>
      <xs:element name="private-cancel-timeout" type="xs:duration" minOccurs="0"/>
      <xs:element name="group-time-limit" type="xs:duration" minOccurs="0"/>
      <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
    </xs:sequence>
    <xs:attribute name="Path" type="xs:anyURI" use="optional"/>
    <xs:anyAttribute namespace="##any" processContents="lax"/>
  </xs:complexType>

  <xs:complexType name="transmit-timeType">
    <xs:sequence>
      <xs:element name="time-limit" type="xs:duration" minOccurs="0"/>

```

```

    <xs:element name="time-warning" type="xs:duration" minOccurs="0"/>
    <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
  </xs:sequence>
  <xs:attribute name="Path" type="xs:anyURI" use="optional"/>
  <xs:anyAttribute namespace="##any" processContents="lax"/>
</xs:complexType>

<xs:complexType name="floor-control-queueType">
  <xs:sequence>
    <xs:element name="depth" type="xs:unsignedShort" minOccurs="0"/>
    <xs:element name="max-user-request-time" type="xs:duration" minOccurs="0"/>
    <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
  </xs:sequence>
  <xs:attribute name="Path" type="xs:anyURI" use="optional"/>
  <xs:anyAttribute namespace="##any" processContents="lax"/>
</xs:complexType>

<xs:complexType name="default-prose-per-packet-priorityType">
  <xs:sequence>
    <xs:element name="mcptt-private-call-signalling" type="xs:unsignedShort" minOccurs="0"/>
    <xs:element name="mcptt-private-call-media" type="xs:unsignedShort" minOccurs="0"/>
    <xs:element name="mcptt-emergency-private-call-signalling" type="xs:unsignedShort"
minOccurs="0"/>
    <xs:element name="mcptt-emergency-private-call-media" type="xs:unsignedShort" minOccurs="0"/>
    <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
  </xs:sequence>
  <xs:attribute name="Path" type="xs:anyURI" use="optional"/>
  <xs:anyAttribute namespace="##any" processContents="lax"/>
</xs:complexType>
</xs:schema>

```

7.5.2.4 Default Namespace

The default namespace used in expanding URIs shall be "urn:3gpp:ns:mcpttServiceConfig:1.0".

7.5.2.5 MIME type

The MIME type for the service configuration document shall be "vnd.3gpp.mcptt-service-config+xml".

7.5.2.6 Validation Constraints

If the AUID value of the document URI or node URI in the Request-URI is other than that specified in subclause 7.5.2.2, then the configuration management server shall return an HTTP 409 (Conflict) response including the XCAP error element <constraint-failure>. If included, the "phrase" attribute should be set to "invalid application id used".

If the XUI value of the document URI or node URI in the Request-URI does not match the XUI of the service configuration document URI, the configuration management server shall return an HTTP 409 (Conflict) response including the XCAP error element <constraint-failure>. If included, the "phrase" attribute should be set to "invalid XUI".

The service configuration document shall conform to the XML Schema described in subclause 7.5.2.3.

The <service-configuration-info> element is the root element of the XML document. The <service-configuration-info> element can contain sub-elements.

NOTE 1: The sub-elements of the <service-configuration-info> are validated by the <xs:any namespace="##any" processContents="lax" minOccurs="0" maxOccurs="unbounded"/> particle of the <mcptt-info> element.

The <service-configuration-params> element is a subelement of the <service-configuration-info> element.

If the <service-configuration-info> element does not contain a <service-configuration-params> element, then the configuration management server shall return an HTTP 409 (Conflict) response including the XCAP error element <constraint-failure>. If included, the "phrase" attribute should be set to "mandatory element is missing".

If the <service-configuration-params> element does not include a <common> element, an <on-network> element or an <off-network> element, then the configuration management server shall return an HTTP 409 (Conflict) response

including the XCAP error element <constraint-failure>. If included, the "phrase" attribute should be set to "mandatory element is missing".

The <service-configuration-params> element shall contain either:

- 1) one <common> element only;
- 2) one <common> element and one <on-network> element;
- 3) one <common> element and one <off-network> element;
- 4) one <on-network> element only;
- 5) one <off-network> element only; or
- 6) one <on-network> element and one <off-network> element.

If the <service-configuration-params> element does not confirm to one of the six choices above, then the configuration management server shall return an HTTP 409 (Conflict) response including the XCAP error element <constraint-failure>. If included, the "phrase" attribute should be set to "semantic error".

If the "domain" attribute does not contain a syntactically correct domain name, then the configuration management server shall return an HTTP 409 (Conflict) response including the XCAP error element <constraint-failure>. If included, the "phrase" attribute should be set to "syntactically incorrect domain name".

If the "domain" attribute contains an unknown domain name, then the configuration management server shall return an HTTP 409 (Conflict) response including the XCAP error element <constraint-failure>. If included, the "phrase" attribute should be set to "unknown domain name".

The value of the <num-levels-group-hierarchy> element in the <broadcast-group> element refers to variable B1 defined in Annex A of 3GPP TS 22.179 [3].

The value of the <num-levels-user-hierarchy> element in the <broadcast-group> element refers to variable B2 defined in Annex A of 3GPP TS 22.179 [3].

The value of the <num-levels-group-hierarchy> element, the <num-levels-user-hierarchy> element or the <depth> element do not contain a semantically valid value, then the configuration management server shall return an HTTP 409 (Conflict) response including the XCAP error element <constraint-failure>. If included, the "phrase" attribute should be set to "semantic error".

If the <num-levels-priority-hierarchy> element of the <off-network> element contains a value less than 1 and greater than 4, then the configuration management server shall return an HTTP 409 (Conflict) response including the XCAP error element <constraint-failure>. If included, the "phrase" attribute should be set to "element value out of range".

If the <num-levels-priority-hierarchy> element of the <on-network> element contains a value less than 1 and greater than 4, then the configuration management server shall return an HTTP 409 (Conflict) response including the XCAP error element <constraint-failure>. If included, the "phrase" attribute should be set to "element value out of range".

NOTE 2: The higher the <priority-hierarchy> value, the higher the priority given to override an active transmission.

If the <off-network> element contains a <private-call> element with a <max-duration-without-floor-control> element, it shall be ignored.

If any of the constituent elements of the <default-prose-per-packet-priority> element contain a value less than 1 and greater than 8, then the configuration management server shall return an HTTP 409 (Conflict) response including the XCAP error element <constraint-failure>. If included, the "phrase" attribute should be set to "element value out of range".

NOTE 3: The higher the <default-prose-per-packet-priority> value, the higher the priority given to the signalling or media.

The following elements conform to the "xs: duration" XML type:

- 1) <hang-time>;
- 2) <hang-time-warning>;

- 3) <max-duration-with-floor-control>;
- 4) <max-duration-without-floor-control>;
- 5) <private-cancel-timeout>;
- 6) <group-time-limit>;
- 7) <max-user-request-time>;
- 8) <time-limit>;
- 9) <time-warning>; and
- 10) <timer-TNG1>.

The elements of "xs: duration" type specified above shall be represented in seconds using the element value: "PT<h>H<m>M<n>S" where <n> represents a valid value in seconds.

NOTE 4: "xs:duration" allows the use of decimal notion for seconds, e.g. 300ms is represented as <PT0.3S>.

If any of the elements of "xs: duration" type specified above contain values that do not conform to the "PT <n>S" structure then the configuration management server shall return an HTTP 409 (Conflict) response including the XCAP error element <constraint-failure>. If included, the "phrase" attribute should be set to "invalid format for duration".

If an invalid value is received for <n>, then the configuration management server shall return an HTTP 409 (Conflict) response including the XCAP error element <constraint-failure>. If included, the "phrase" attribute should be set to "invalid value for duration".

The service configuration server ignores any unknown element and any unknown attribute.

If the configuration management server receives a duplicate element or attribute, it shall return an HTTP 409 (Conflict) response including the XCAP error element <constraint-failure>. If included, the "phrase" attribute should be set to "duplicate attribute or element received".

7.5.2.7 Data Semantics

The "domain" attribute of the <service-configuration-params> element contains the domain name of the mission critical organization.

The <common> element contains service configuration data common to both on and off network service.

The <on-network> element contains service configuration data for on-network service only.

The <off-network> element contains service configuration data for off-network service only.

In the <common> element:

- 1) the <alias> element contains an alphanumeric name assigned by the MCPTT administrator of minimum length (N3);
- 2) the <num-levels- group-hierarchy> element of the <broadcast-group> element contains an integer indicating the number levels of group hierarchy for group-broadcast groups; and
- 3) the <num-levels-user-hierarchy> element of the <broadcast-group> element contains an integer indicating the number levels of user hierarchy for user-broadcast groups;

In the <on-network> element:

- 1) the <private-cancel-timeout> element of the <emergency-call> element contains the timeout value for the cancellation of an in-progress on-network emergency private call;
- 2) the <group-time-limit> element of the <emergency-call> element contains the time limit for an in-progress on-network emergency call on an MCPTT group;
- 3) the <hang-time> element of the <private-call> element contains the value of the hang timer for on-network private calls;

NOTE: The hang time is a configurable maximum length of the inactivity (silence) period between consecutive MCPTT transmissions within the same call.

- 4) the <max-duration-with-floor-control> element of the <private-call> element contains the maximum duration allowed for an on-network private call with floor control;
- 5) the <max-duration-without-floor-control> element of the <private-call> element contains the maximum duration allowed for an on-network private call without floor control;
- 6) the <num-levels-priority-hierarchy> element contains a priority hierarchy for determining what participants, participant types, and urgent transmission types shall be granted a request to override an active on-network MCPTT transmission;
- 7) the <time-limit> element of the <transmit-time> element contains the transmit time limit in an on-network group or private call transmission;
- 8) the <time-warning> element of the <transmit-time> element contains the warning time before the on-network transmit time is reached;
- 9) the <hang-time-warning> element contains the warning time before the on-network hang time is reached;
- 10) the <depth> element of the <floor-control-queue> element contains the maximum size of the floor control queue;
- 11) the <max-user-request-time> element of the <floor-control-queue> element contains the maximum time for a user's floor control request to be queued; and
- 12) the <timer-TNG1> element contains the value of the "acknowledged call setup timeout" used by the controlling MCPTT function when handling a group call with required group members.

In the <off-network> element:

- 1) the <private-cancel-timeout> element of the <emergency-call> element contains the timeout value for the cancellation of an in-progress off-network emergency private call;
- 2) the <group-time-limit> element of the <emergency-call> element contains the time limit for an in-progress off-network emergency call on an MCPTT group;
- 3) the <hang-time> element of the <private-call> element contains the value of the hang timer for off-network private calls;
- 4) the <max-duration-with-floor-control> element of the <private-call> element contains the maximum duration allowed for an off-network private call with floor control;
- 5) the <num-levels-priority-hierarchy> element contains a priority hierarchy for determining what participants, participant types, and urgent transmission types shall be granted a request to override an active off-network MCPTT transmission;
- 6) the <time-limit> element of the <transmit-time> element contains the transmit time limit in an off-network group or private call transmission;
- 7) the <time-warning> element of the <transmit-time> element contains the warning time before the off-network transmit time is reached;
- 8) the <hang-time-warning> element contains the warning time before the off-network hang time is reached;
- 9) the <default-prose-per-packet-priority> element contains priority values for off-network calls, for each of the following constituent elements:
 - a) mcptt private call signalling;
 - b) mcptt private call media;
 - c) mcptt emergency private call signalling; and
 - d) mcptt emergency private call media; and
- 10) the <allow-log-metadata> element contains one of the following values:

- a) "true" which indicates that logging of metadata for MCPTT group calls, MCPTT private calls and non-call activities from MCPTT UEs operating in off-network mode, is enabled; and
- b) "false" which indicates that logging of metadata for MCPTT group calls, MCPTT private calls and non-call activities from MCPTT UEs operating in off-network mode, is not enabled.

7.5.2.8 Naming Conventions

This specification defines no naming conventions.

7.5.2.9 Global documents

This specification requires no global documents.

7.5.2.10 Resource interdependencies

There are no resource interdependencies.

7.5.2.11 Authorization Policies

The authorization policies for manipulating a service configuration document shall conform to those described in OMA OMA-TS-XDM_Core-V2_1-20120403-A [2] subclause 5.1.5 "*Authorization*".

7.5.2.12 Subscription to Changes

The service configuration document application usage shall support subscription to changes as specified in OMA OMA-TS-XDM_Core-V2_1-20120403-A [2] subclause 6.2.2 "*Subscriptions to changes in the XDM Resources*".

Annex A (informative): Signalling flows

Editor's note [WID: MCPTT]: The included signalling flows will be limited to illustrate key functionalities and will not cover all possible scenarios.

Annex B (informative): Change history

Change history							
Date	TSG #	TSG Doc.	CR	Rev	Subject/Comment	Old	New
2015-12					Initial proposal to CT1	-	0.0.0
2016-01					Agreed contributions C1-160308, C1-160309, C1-160311 from CT1#95-bis.	0.0.0	0.1.0
2016-02					Agreed contributions C1ah-160054, C1ah-160060, C1ah-160089, C1ah-160090, C1ah-160091, C1ah-160092, C1ah-160106 from CT1 Ad-Hoc on MCPTT.	0.1.0	0.2.0
2016-02					Agreed contributions C1-161130, C1-161225, C1-161226, C1-161227, C1-161355, C1-161500, C1-161511, C1-161513, C1-161531 from CT1#96.	0.2.0	0.3.0
2016-03	CT-71	CP-160057			Version 1.0.0 created for presentation for information and approval	0.3.0	1.0.0
2016-03	CT-71				Version 13.0.0 created after approval	1.0.0	13.0.0
2016-03	CT-71				Rapporteur post CT clean up	13.0.0	13.0.1

History

Document history		
V13.0.1	May 2016	Publication