

MTAS Interface to CAT-S (CAT)

INTERWORK DESCR

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1 Document History

Rev	Date	Sign	Comment
A	2012-09-26	ELEERIK	Clone from 3/155 19-CRA 119 2105 rev B
B	2013-08-12	EADAMGR	Updated with support of SIP Headers filtering.
C	2014-08-29	ETHTZS	Updated chapter 8 References, to make the document platform-agnostic.
D	2015-11-16	eattpte	Deprecated CM names replaced.
E	2016-03-24	xmilmat	MTASv 1.0 -Updated References: CBA link to MOM
F	2016-06-07	Ebarcsk	Added chapter 3.6 change SDP while playing the CAT signal

2 Scope and Purpose

2.1 Interface Entities

The Customized Alerting Tones Server (CAT-S) is a dedicated server node used for generating Customized Alerting Tones (CAT) signal. The CAT signal is music or announcement played for the caller on terminating calls to the served user.

The provisioning and evaluation of service rules for the CAT signal generation, the provisioning, storing and managing of the media content used as CAT signal is implemented in the CAT Server. MTAS interacts with CAT-S when the served user is provisioned with the CAT service.

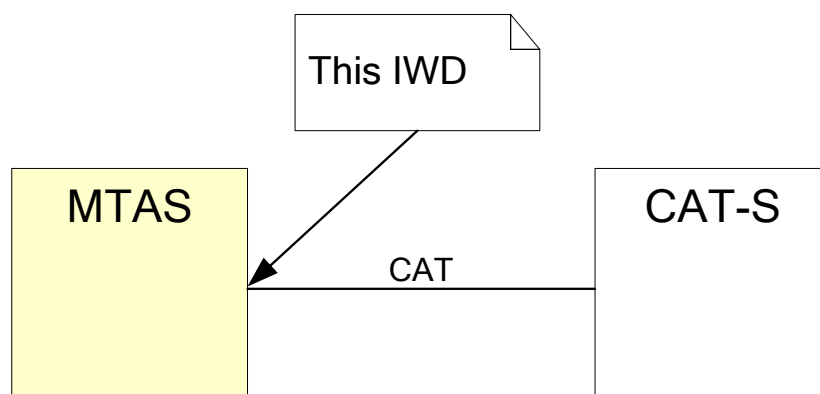


Figure 1 MTAS and CAT-S connectivity

In the rest of the document CAT interface refers to the interface used for interacting with the CAT-S.

2.2 Interface Role

In the context of the CAT interface, the role of MTAS is a client that uses network multimedia services.

2.3 Services

Table 1: Offered Services

Offered Service	Description
-	-

Table 2: Used Services

Used Service	Description
CAT Signal Service with SDP offer	Trigger and stop of CAT signal generation by the CAT-S on behalf of the served user with received SDP offer from the originating network.
CAT Signal Service without SDP offer	Trigger and stop of CAT signal generation by the CAT-S on behalf of the served user with no received SDP offer from the originating network.

2.4 Encapsulation and Addressing

2.4.1 CAT Interface

The protocol on the CAT interface used by MTAS is basic SIP, as described in RFC3261 [1].

On network layer either IPv4 or IPv6 can be used. In SIP headers and bodies IPv4 and IPv6 addresses can be mixed.

The services used on this interface are listed in Table 2: Used Services. No services are offered on this interface.

When MTAS uses the CAT Signal Service without SDP offer, it expects that CAT-S is capable to generate SDP offer on receiving INVITE with no SDP.

When the initial request over the CAT interface has encountered transport failure or timeout, MTAS tries to contact the next element in the result of DNS SRV and/or A/AAAA lookup(s).

The presence and values of headers of INVITE sent to CAT-S can be configured with the following attributes of CAT MO: mtasCatUseHistoryInfo, mtasCatUsePChargingVector, mtasCatUseXFci, mtasCatRequestUriUserPart. For details see [2].

3 Procedures

3.1 Overview

The requested service is specified by the existence of the SDP in the SIP INVITE sent to CAT-S on the CAT interface.

3.2 Lower Level Procedures

N/A

3.3 CAT Signal Service with SDP offer

3.3.1 Triggering and stopping the CAT signal

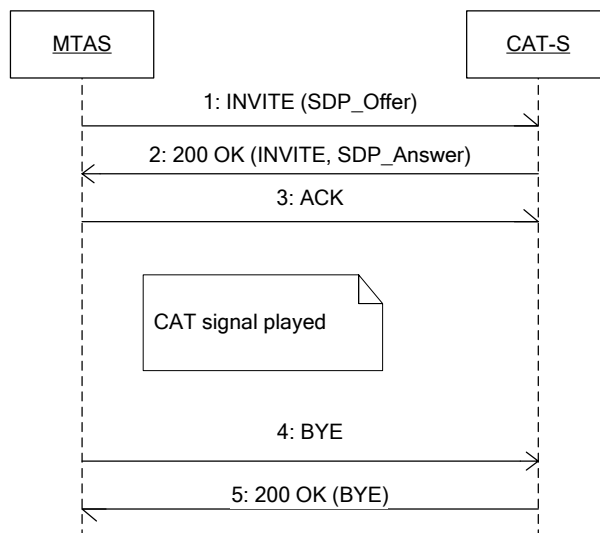


Figure 2 Triggering and stopping the CAT signal

1. MTAS sends SIP INVITE to CAT-S with an SDP offer. See Table 3 for details of the Request-URI and headers of the INVITE message.
2. CAT-S sends SIP 200 OK including an SDP answer.

3. MTAS sends a SIP ACK to CAT-S to trigger playing the CAT signal. MTAS expects that the CAT signal is only played after the ACK is received.

4. MTAS sends a SIP BYE to CAT-S when the CAT signal has to be stopped.

5. CAT-S responds with a SIP 200 OK.

3.4 CAT Signal Service without SDP offer

3.4.1 Triggering and stopping the CAT signal

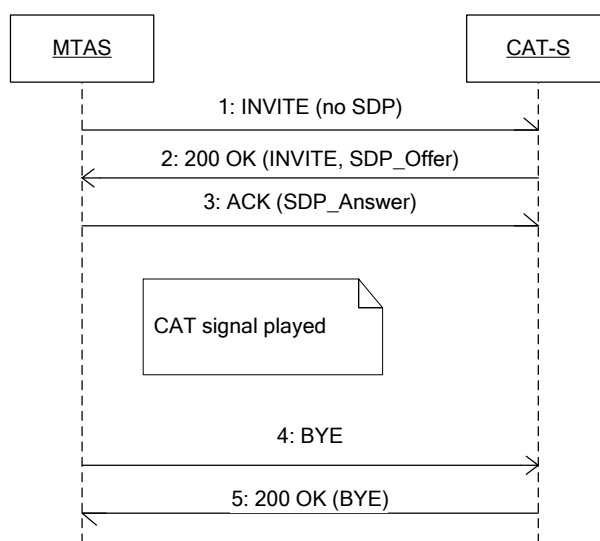


Figure 3 Triggering and stopping the CAT signal

1. MTAS sends SIP INVITE to CAT-S without an SDP offer.
See Table 3 for details of the Request-URI and headers of the INVITE message.

2. CAT-S sends SIP 200 OK including an SDP offer.

3. MTAS sends a SIP ACK to CAT-S including an SDP answer to trigger playing the CAT signal.

4. MTAS sends a SIP BYE to CAT-S when the CAT signal has to be stopped.

5. CAT-S responds with a SIP 200 OK.

3.5 Premature termination of CAT signal

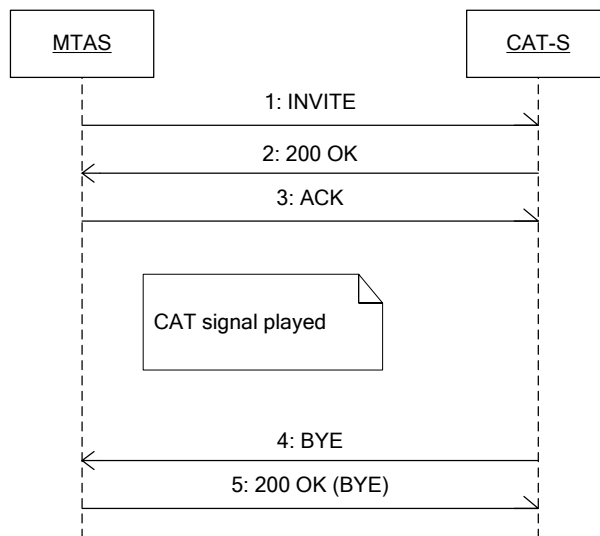
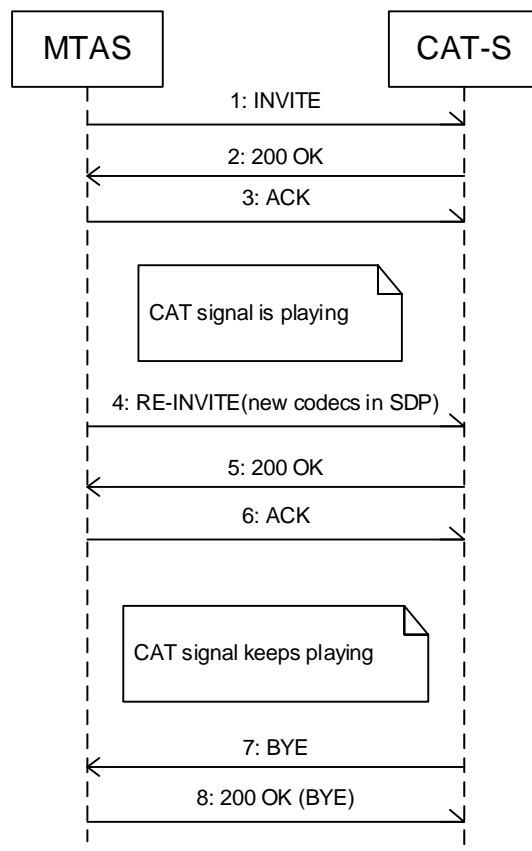


Figure 4 Premature termination of the CAT signal

1. MTAS sends SIP INVITE to CAT-S with or without an SDP offer.
2. CAT-S sends SIP 200 OK.
3. MTAS sends a SIP ACK to CAT-S.
4. The CAT signal prematurely terminates in the CAT signal. CAT-S sends a SIP BYE to MTAS.
5. MTAS responds with a SIP 200 OK.

3.6 Changing codec during CAT signal



1. MTAS sends SIP INVITE to CAT-S with or without an SDP offer.
2. CAT-S sends SIP 200 OK.
3. MTAS sends a SIP ACK to CAT-S.
4. MTAS sends SIP REINVITE to CAT-S with changed SDP
5. CAT-S sends SIP 200 OK.
6. MTAS sends a SIP ACK to CAT-S.
7. The CAT signal prematurely terminates in the CAT signal. CAT-S sends a SIP BYE to MTAS.
8. MTAS responds with a SIP 200 OK.

4 Information Model

4.1 General

This section describes the SIP headers that are used by MTAS.

4.2 CAT Signal Service, with or without SDP offer

MTAS uses the following SIP headers to trigger the CAT signal:

Table 3 SIP headers for CAT Signal Service, with or without SDP offer

Header	P	Comment
Request-URI	M	<servd_user>@<CAT_hostname CAT_IPAddress>, where the <servd_user> is one of: <ul style="list-style-type: none"> the normalized telephone number of the served user, the user part of the SIP URI of the served user, value configured in MTAS with mtasCatRequestUriUserPart CM attribute.
P-Asserted-Identity	M	Copied from the INVITE to the served user if mtasCatRequestUriUserPart CM is empty or Request-URI of the INVITE sent to CAT Server if mtasCatRequestUriUserPart CM is set.
To	O	Copied from the INVITE to the served user.
From	O	Copied from the INVITE to the served user.
Privacy	O	Copied from the INVITE to the served user.
History-Info	O	Not included if mtasCatUseHistoryInfo CM is set to 0. Copied from the INVITE to the served user if mtasCatUseHistoryInfo CM is set to 1. Copied from the INVITE to the served user and updated if mtasCatUseHistoryInfo CM is set to 2.
P-Charging-Vector	O	Not included if mtasCatUsePChargingVector CM is set to 0. Copied from the INVITE to the served user if mtasCatUsePChargingVector CM is set to 1. Only the following parameters are copied: icid-value, icid-generated-at, orig-ioi.
X-FCI	O	Not included if mtasCatUseXFci CM is set to 0. Copied from the INVITE to the served user if mtasCatUseXFci CM is set to 1.

In the following example shows the Request-URI used in the INVITE when MTAS orders CAT-S at hostname *ms2.example.net* to play a CAT signal on behalf of user with normalized number telephone number *+46812345678*:

```
sip: +46812345678@ms2.example.net ;user=phone
```

If the served user is *alice@homedomain.net*, the following Request-URI is used in the INVITE sent to the CAT-S:

```
sip: alice@ms2.example.net
```

If *mtasCatRequestUriUserPart* CM is set to *prbt* and *mtasSpecializedMediaResourceName* CM is set to *cat-server.net*, the following Request-URI is used in the INVITE sent to the CAT-S:

```
sip: prbt@cat-server.net
```

MTAS handles all SIP responses. The CAT-S related responses are listed in the following table:

Table 4 SIP Responses for Announcement Service, not chained and not segmented

SIP code and reason phrase	Reason
200 OK	CAT signal can be played for the specified served user and caller.
4xx	CAT signal cannot be played for the specified served user and caller.
503 Service Unavailable	There are no free resources in the CAT-S to execute the service.

5 Formal Syntax or Schema

None

6 Related Standards

See [1].

7 Terminology

7.1 Abbreviations

CAT	Customized Alerting Tones
CAT-S	Customized Alerting Tones Server

7.2 Definitions

CAT signal

Music or announcement played for the caller on terminating calls to the served user by the external Customized Alerting Tones Server.

8 References

- [1] RFC3261 - SIP: Session Initiation Protocol
- [2] TSP: MTAS Parameter Description, 1/190 84-AVA 901 09/n**
CBA: Managed Object Model MTAS, 155 54-LZN 765 0163/n**

**See the Customer or Support library for the Application System in question to get the correct document version.