

MTAS Network Provided Ring Back Tone Management

MTAS

USER GUIDE

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Contents

1	Introduction	1
1.1	Prerequisites	1
2	Overview	3
2.1	Subfunctions	3
2.2	Interaction with Other Services	3
3	RBT Service Configuration	5
3.1	RBT Announcements Configuration	5
3.2	RBT Administrative State Configuration	6
3.3	Early Media Suppression Configuration	6
3.4	RBT Transparent Mode	6
3.5	Suppress Service	6
3.6	Wholesale for RBT Configuration	7
3.7	Service Data Configuration	7
4	Performance Management	9
5	Fault Management	11





1 Introduction

This document describes how to configure the Ring Back Tone (RBT) service in the MTAS.

1.1 Prerequisites

It is assumed that the user of this document is familiar with the Operation and Maintenance (O&M) area, in general.

1.1.1 Licenses

To enable the RBT service in the MTAS, the Multimedia Telephony (MMTel) AS Voice Base license must be installed. For more information about the MMTel AS Voice Base license, see [MTAS Licenses](#).

1.1.2 Documents

Before starting any procedure in this document, ensure that the following documents are available:

- Ericsson Command-Line Interface User Guide
- Managed Object Model (MOM)

1.1.3 Conditions

The following condition must apply:

- An Ericsson Command-Line Interface (ECLI) session in Exec mode is in progress.





2 Overview

The network-provided RBT service is an IMS terminating service that triggers a Media Resource Function Processor (MRFP) to generate an RBT signal (customized welcome message or ringing tone) to the caller while the served user is alerted. The tone is common for all IMS subscribers, and is only configurable by an operator. If there is an internal Media Resource Function Controller (MRFC), the tone can be an announcement or an H.248.1 E7 tone. If there is an External MRFC, the tone can only be an announcement.

2.1 Subfunctions

The subfunctions included in the RBT service are described in this section.

2.1.1 Trigger and Stop RBT Signal

The Trigger and Stop RBT Signal subfunction is responsible for the triggering and stopping the RBT signal generation by the MRFP on behalf of the served user.

2.1.2 Configure Service

The Configure Service use case is the Configuration Management (CM) part of the RBT service, see Section 3 on page 5.

2.2 Interaction with Other Services

This section describes how the RBT service interacts with other services.

2.2.1 Charging

The RBT service is not reported in charging messages generated during the setup of an MMTel session.

2.2.2 Customized Alerting Tones

If the MTAS is configured to play RBT signals, and the served user is provisioned with the Customized Alert Tones (CAT) service, then the CAT signal is attempted to be played first. If the play of CAT signal fails, the MTAS falls back to the RBT signal.

For more information about the CAT service, see [MTAS Customized Alerting Tones Management Guide](#).



2.2.3 Communication Diversion on No Reply

If the RBT signal generation is triggered in the MRFP, and the Communication Forwarding on No Reply (CFNR) timer expiration occurs, then the CFNR service is started. The RBT signal is stopped, and a CFNR announcement is played to the served user.

Note: The CFNR can have an announcement provisioned to be played before the diverted INVITE is sent out. In that case, the CFNR announcement replaces the RBT.

For more information about the Communication Diversion (CDIV) service, see [MTAS Communication Diversion Management Guide](#).

2.2.4 Flexible Communication Distribution

The RBT acts on every dialog to distribution targets changing the Session Description Protocol (SDP) direction, just like in the basic scenario. The Flexible Communication Distribution (FCD) announcement is infinite, and the RBT signal is not played if it is activated. If the FCD announcement is disabled, the RBT signals start when the FCD generates 180 ringing.

If the FCD diversion is not immediate, and the RBT signal was started, it is stopped and replaced with an FCD announcement.

For more information about the FCD service, see [MTAS Flexible Communication Distribution Management Guide](#).

2.2.5 Communication Waiting

When Transparent Mode is disabled (CM `mtasMmtTransparentMode` set to 0), the RBT does not include the Communication Waiting Used (CWU) indication in 180 ringing. When Transparent Mode is enabled (CM `mtasMmtTransparentMode` set to 1), and the CWU indication is present in a 180 Ringing with SDP, information is forwarded to the caller. When 180 Ringing includes CWU indication but does not contain SDP, then the 180 Ringing is mapped to 183 Session Progress with the CWU indication and forwarded to the caller.

The RBT announcement suppresses the Communication Waiting (CW) announcement.

For more information about the CW service, see [MTAS Communication Waiting Management Guide](#).

2.2.6 Network Announcement

Network announcements take precedence over the RBT signals, and replace the RBT signals with network announcements.



3 RBT Service Configuration

The RBT service is controlled by the `MtasRbt` Managed Object (MO). An overview of the RBT MO structure is illustrated in Figure 1. The `MtasRbt` MO is the child to the `MtasMmt` MO. The `MtasRbt` MO contains attributes that control the RBT service.

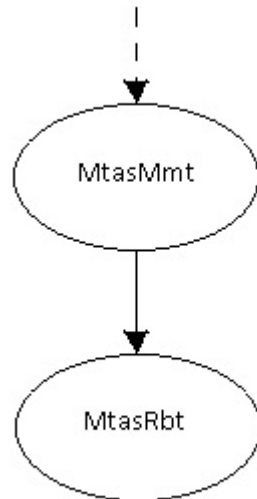


Figure 1 RBT MO Structure

For information on configurable MOs and attributes related to the RBT service, see [Managed Object Model \(MOM\)](#).

3.1 RBT Announcements Configuration

The generic announcements that are played to a caller when the RBT service is activated are set by the `mtasRbtAnnouncements` attribute in the `MtasRbt` MO.

Note: The `mtasRbtAnnouncements` triggers chained announcements to the caller in the order of configuration, and the last in the list is played as infinite tone. This behavior can be overridden by using the `MtasAnnouncementParameters` MO.

It is not allowed to delete the last RBT announcement if the RBT administrative state is unlocked.

For more information on the `mtasAnnouncementParameters` and the RBT attributes, see [Managed Object Model \(MOM\)](#). For more information on the generic announcements, see [MTAS Generic Announcement Management Guide](#).



3.2 RBT Administrative State Configuration

The RBT service is enabled by setting the `mtasRbtAdministrativeState` attribute in the `MtasRbt` MO to 1 (UNLOCKED). If the `mtasRbtAdministrativeState` is set to 0 (LOCKED), no RBT service is provided by the MTAS.

The RBT service must not be unlocked if no RBT announcement is defined.

3.3 Early Media Suppression Configuration

The RBT service behavior for the early media suppression is controlled by the `mtasRbtSendonlySdp` attribute. When `mtasRbtSendonlySdp` is set to `SENDONLY`, the MTAS changes the SDP direction to `sendonly` in the SDP offer sent to the served user to suppress the early media. The value `SENDONLY` also forces the SDP renegotiation if the called party accepts the communication. When the `mtasRbtSendonlySdp` attribute is set to `UNCHANGED`, the SDP is relayed as received, and other nodes are responsible for the suppression.

The `mtasRbtSendonlySdp` attribute must be set to 0 (UNCHANGED) if transparent mode is enabled, which is when `mtasMmtTransparentMode` is set to 1. If `mtasRbtSendonlySdp` is set to a value other than 0, `100rel` must be supported in the initial INVITE for the RBT service to trigger the tone.

3.4 RBT Transparent Mode

The RBT service can work in Transparent Mode when `mtasMmtTransparentMode` is set to 1 (ENABLED).

The RBT Service in Transparent Mode passes all early messages from the Called party to Calling party so as from Calling Party to Called party. To constrain unwanted backward early media from target terminals, the RBT Service suppresses the P-Early-Media header value by using the P-Early-Media: inactive header in SIP signals relayed upstream.

3.5 Suppress Service

The RBT service can be suppressed for roaming users when `mtasRbtSuppressTone=1`. Network Provided Location Information together with the MSISDN of the served user is used to determine if the user is roaming.

MSISDN is retrieved from the HSS if needed at the arrival of 180 Ringing response. If Network Provided Location Information is not available in the incoming message, its retrieval from the HSS can be enabled in MMTel Telephony AS by using the `mtasMmtNpIiTerminating` attribute.

The CCM service is used to check the roaming condition, that is, comparing a Country Calling Code (CCC) and Mobile Country Code (MCC) to decide if they belong to the same country.



For this purpose, the CCM service must be configured with the Country Code Mapping (CCM), see [MTAS Country Code Mapping Management Guide](#).

3.6 Wholesale for RBT Configuration

The RBT service supports Wholesale. The RBT is configurable on the Virtual Telephony Provider (VTP) level.

Wholesale for RBT is activated when the following attributes are set to 1 (Unlocked):

- The `vtasRbtAdministrativeState` attribute in the `VtasRbt` MO
- The `mtasRbtAdministrativeState` attribute in the `MtasRbt` MO

For more information about the Wholesale service, see [MTAS Wholesale Support Management Guide](#).

3.7 Service Data Configuration

There is no operator subscription level service configuration defined for the RBT service.

3.7.1 Operator Subscription Level Service Configuration

There is no operator subscription level service configuration defined for the RBT service. The configuration pertains to the data set through the Ericsson Multi Activation (EMA) using Customer Administration Interface Third Generation (CAI3G) protocol.

3.7.2 Subscriber Subscription Level Service Configuration

There is no subscriber subscription level service configuration defined for the RBT service. The configuration pertains to the Ut reference point.





4 Performance Management

For measurements related to the RBT service, see MTAS Performance Measurements.





5 Fault Management

There is no alarm connected to the RBT service.