SIP-DECT
Integrated Messaging and Alerting Application

RELEASE 6.1

INSTALLATION AND CONFIGURATION GUIDE

Mitel®

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SIP-DECT Integrated Messaging and Alerting Application
Installation and Configuration Guide
Release 6.1
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Integrated Messaging and Alerting Service

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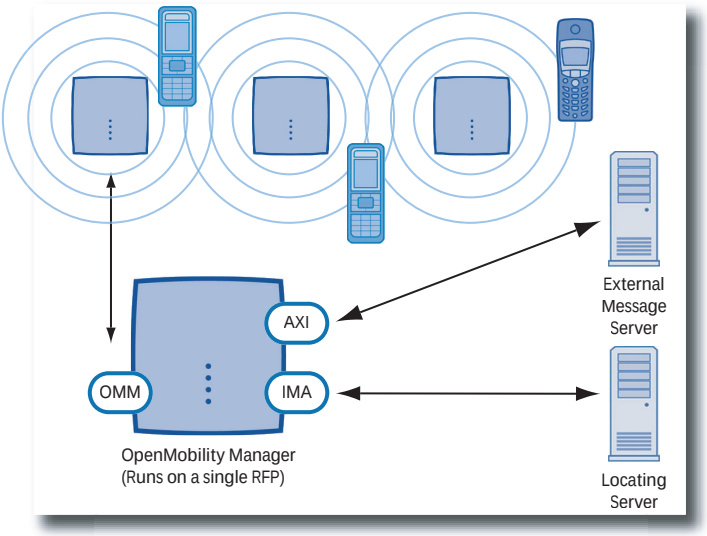
INTEGRATED MESSAGING AND ALERTING SERVICE

OVERVIEW

The OpenMobility Integrated Messaging and Alerting service (OM IMA) is a messaging and alarm service for the SIP-DECT solution. The OM Integrated Messaging and Alerting service supports the delivery of messages between DECT phones.

The SIP-DECT solution generally targets larger DECT networks. A complete system comprises as many as 10000 DECT phones communicating in a DECT network with up to 4096 DECT base stations (also called Radio Fixed Parts, or RFPs). The following figure depicts the overall architecture of the complete messaging solution.



The OpenMobility Manager (OMM) and the OM Integrated Messaging & Alerting service (OM IMA) both run on a single DECT base station (or RFP) or on a dedicated Linux server system. The OM Locating application uses IMA to send messages to DECT phones. Other external messaging solutions, such as a message server or an alarm server,

communicate by means of a networked and encrypted XML interface (OM AXI) to send messages directly to DECT phones.

SUPPORTED MESSAGE FORMAT

The OM IMA service delivers text messages, tracks alarms, and controls the necessary signaling to the DECT base stations available in the DECT network. The IMA service also supports bulk message delivery, where it is possible to address up to 20 uers iwth a single message, or send a message to all users.

All delivered text messages support the following characteristics:

- contain up to 1000 characters
- have a priority such as info, low, normal, high, emergency, or alert (the alert message is reserved for the Locating server)
- can be received in the background or in the foreground (pop-up)
- may trigger a read confirmation which is sent to the originator
- may require manual confirmations from the receiver
- may transport a vCard that is automatically stored in the recipients phone book which may also configure a short dialing entry
- include a call back number that is dialled immediately if the receiver presses the off hook key while the message is displayed (paging messages only)
- can include options that overwrite DECT phone settings when sent to Mitel 600 DECT phones. Options include settings for melody, volume, ringer, vibrator, or display color; they may also disconnect a call, initiate a callback, or suppress in-band signaling.

Tip: Message options can be set in the IMA configuration file or when sending messages via the OM Application XML Interface (OM AXI). See the *SIP-DECT OM System Manual* for more information.

OM IMA SERVICE FEATURES

The OM IMA service runs on the same DECT base station or server that hosts the OMM. No additional hardware is required to support the following features:

- sending and receiving text messages between DECT phones, which includes normal messages, alarm messages or messages queuing in a job list
- sending messages from a messaging server such as the OpenMobility Locating application to the DECT phones

With additional configuration, the following features are supported:

- management of confirmations and application of escalation rules for alarm messages (alarm scenario)
- alarm scenarios that are triggered only when initiated by a specific user (e.g., sending alarm messages from a DECT phone, triggered by pressing a predefined SOS key or by the ManDown function)
- querying mail from an email server, triggering alarm messages by email subject, or sending email via a Messaging Gateway (requires additional configuration)
- subscription to RSS feeds and receiving news as text messages, triggered by an alarm scenario based on RSS feed contents (requires additional configuration)
- sending entries stored in the personal DECT phone directory as vCard to another DECT phone

- sending vCards from a messaging server (e.g. to configure a short dialing entry for a feature access code (FAC) that triggers a function such as a door opener)
- sending paging messages to a DECT phone to request that the DECT phone immediately dial a call back number contained in the paging message
- overwriting DECT phone settings with message options sent to Mitel 600 DECT phones (e.g., to increase the volume setting in an alarm scenario)

Note that the limited storage capacity of the DECT base station does not allow storage of message contents. However, you can extend the OM IMA service with a separate messaging application, which runs, for example, on a PC server system.

OTHER DOCUMENTATION

This user guide describes installation, administration and usage of the OM Integrated Messaging and Alerting service. Please refer also to the information provided in other SIP-DECT system documents:

- *SIP-DECT OM System Manual*
  Describes the installation, administration, and maintenance of a SIP-DECT system.
- *SIP-DECT OM Locating Application*
  Describes installing and using the DECT handset locating application.
- *SIP-DECT DECT Phone Sharing and Provisioning*
  Describes the enhanced user and DECT phone management features and the OM DECT phone provisioning.
- *SIP-DECT OM User Monitoring*
  Describes how to use the OM monitoring capabilities on DECT phones.

- *SIP-DECT Mitel 600 Messaging and Alerting Applications*
  Describes the messaging features specific to the Mitel 600 DECT phones.
- *Mitel 600 series SIP-DECT User Guide*
  Describes how to use the Mitel 600 DECT phones on the SIP-DECT system.

NOTES ON LICENSES

You need the appropriate licenses to configure and use the OM IMA application. Upload the license file generated on the Mitel license server either in the “OM Management Portal” (Java tool) or via the OMM Web service. The following licenses are required to operate the OM IMA service:

- OM System License [Number]: Enables telephony for a number of DECT base stations
- OM Messaging and Alerting System License: enables additional priorities for receiving text messages (emergency, locating alert) and enhanced messaging / alarm features (e.g. setting audio parameters, displaying colors). Without this license, only standard messaging is available.

Note: Basic messaging (sending and receiving messages between DECT phones with basic priorities) is supported by default, without additional licensing. The license confirmation you received contains detailed information on activating the service.

INSTALLATION AND ACTIVATION

The OM Integrated Messaging & Alerting service does not require separate installation, because the necessary software is already present in the software container of the OMM. In addition, the OM IMA service is always active to provide message routing for external applications (e.g., the OM Locating Server).

Only message routing from DECT phone to DECT phone can be activated or deactivated if such messaging will be handled by another external application.

Additional IMA services for alarming, email and RSS can be enabled or disabled by changing the optional IMA configuration file.

ENABLING MESSAGING FOR DECT PHONES

There are several messaging options that you can set for a DECT phone. You can enable permissions for:

- sending messages
- sending vCards (private phone book entries sent as vCard messages)
- receiving vCards

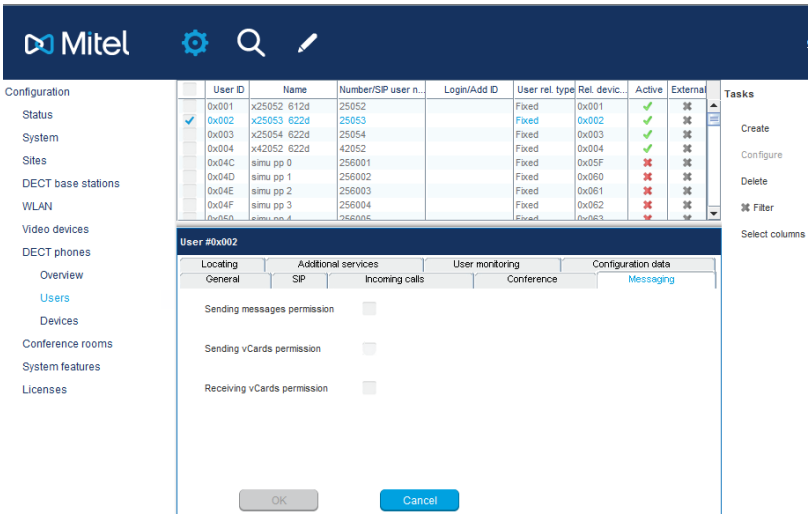
You can only configure these settings through the OM Management Portal (OMP) tool.

SIP-DECT® supports Java web start to launch the OMP. You must have Java 1.7 or later runtime environment installed on your PC to run the OMP. The OMP.jar file is available in the

OMM software installation directory, or you can download the jar file from the OM Web service interface.

1. Double-click on the OMP.jar file to launch the OMP.
2. Enter the **IP address** of the DECT base station or Linux server hosting the OMM, and the **User name** and **Password** required to access the OMM.
3. In the left navigation pane, click on **DECT Phones** to expand the list of sub menus, then click **Users** to display a list of DECT phone users in the main window.
4. Select one of the users from the list and click **Configure**, under the **Tasks** list in the right-side pane.

   The OMP displays a User detail panel below the list of users.
5. Click on the **Messaging** tab and enable or disable the options you want to set for the DECT phone.



- **Sending messages permission**: allows DECT phone user to send messages.
- **Sending vCards permission**: allows DECT phone user to send private phone book entries as vCard messages.
- **Receiving vCards permission**: Enable this option if received vCard messages should be automatically stored in the private phone book of the DECT phone user. If this option is disabled, the DECT phone user must manually enable receiving vCards. The manually enabled mode ends automatically after 10 minutes.

6. Click **OK** to confirm your settings.

CONFIGURING THE OM IMA SERVICE

To configure and use additional functions with the OM IMA service (e.g., IMA services for alarming, email and RSS), you must provide a configuration file and configure the download URL in the OMM so that the OMM can access it.

As of SIP-DECT 6.0, you can use a central provisioning server to store all configuration and resource files, and specify the URL in the OMM Web service or the OMP (under the **System** -> **Provisioning** menu). The IMA configuration file on the provisioning server is optional, but if used, it must be named “ima.cfg”. See the *OM System Manual* for more information on this feature.

As of SIP-DECT 6.0, you can also upload an IMA configuration file manually into the OMM via the OMP (on the **System** -> **Data management** -> **IMA** tab). See the OM System Manual for more information. The IMA configuration is stored in the OMM database and available after a system reset. You can also download or manually delete the IMA configuration file.

If the provisioning server and/or the IMA configuration URL are configured, and/or an IMA configuration file was uploaded, the OMM uses IMA configuration in the following order:

1. uploaded file
2. IMA configuration URL
3. Provisioning URL

An ima.cfg loaded from a server is automatically deleted from the OMM upon receipt of a File Not Found response or after the (IMA/Provisioning) server URL is disabled.

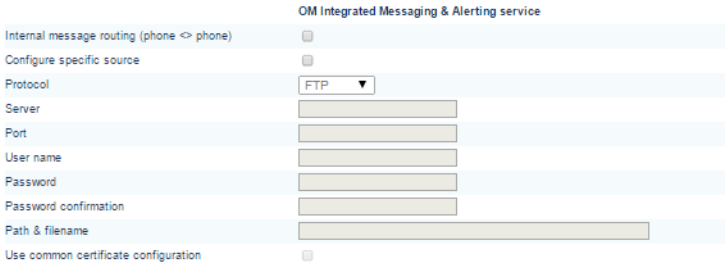
The following example shows a configuration that specifies that a message is sent if the SOS button is pressed on a DECT phone:

```
<Alarm Scenario>
   <as alarmTriggerId="SOS" level="1" recipients="tel:1001"
      priority="PrioHigh" alarmMsg="SOS from %n (%R)">
</AlarmScenario>
```

To activate this configuration, do the following:

1. Copy the above sample configuration to a text editor (e.g., “Notepad++”) and save to a new file (select “UTF-8 with BOM” as the file type). Change the phone number in the “recipients” attribute to match a currently subscribed DECT phone.
2. Place the configuration file on a server located in your LAN and set the configure the download URL in the OMM.
   - If you are using an external provisioning server for all SIP-DECT configuration and resource files, set the **Configuration file URL** in the **System** -> **Provisioning** menu).
   - If you are using a different server to store the ima.cfg file, set the URL under the **System** -> **System Settings** menu, in the **OM Integrated Messaging &**

Alerting service section. See the *OM System Manual* for a detailed description of these parameters).



3. Click **OK** at the top of the **System Settings** page to confirm your changes to the URL settings. When you confirm the changed URL settings, the OM IMA service is restarted. The OMM downloads the configuration file which in turn changes the OM IMA service configuration.

   If the OM IMA service cannot load the configuration file, you will see a red error symbol on the **System settings** page, and a more detailed message on the OMM **Status** page. Correct the settings or change the TFTP, HTTP, or FTP server's configuration until no further errors are indicated.

4. Press the configured SOS softkey on a second DECT phone. This should initiate the SOS call and concurrently send a text message to the number you entered in the configuration file.

CONFIGURATION

The OM Integrated Messaging & Alerting service is configured through a configuration file. The configuration file is downloaded by the OM IMA service on startup, or taken from the OMM database (stored with last download from a file server or manual upload).

The following section provides basic information about the message structure and some basic concepts.

BASIC MESSAGING CONCEPTS

The OM Integrated Messaging and Alerting service enables messaging services for Mitel 600 DECT phones. This includes support for the following message types:

- **Idle Box**: a system pop-up message without confirmation or tone
- **Info Message / Confirmation**: a system pop-up message announced by a tone
- **Normal Message**: a standard message from another user without confirmation; pop-up display only if that is configured on the receiving DECT handset
- **Urgent Message**: a message from a user, with pop-up display and confirmation
- **Alarm Message**: an alarm message (from alarm application only)
- **Normal Job**: a message automatically added to the job list
- **Urgent Job**: a job message with completion confirmation
- **Alarm Job**: an urgent job message (from alarm application only)

- **Localization Alert**: a special message that triggers an audible tone typically used to locate a person in danger (e.g. after Man-Down or SOS)

Note: Text messaging is also supported for the Mitel 142d DECT phone, but this feature is only available in conjunction with the Mitel Alarm Server.

Each message consists of the following components:

COMPONENT	FORMAT / PURPOSE
Date/Time, ID	Time stamp when message was sent, with a unique ID
Sender	Identifies originator, URI (e.g. tel:1001 or mailto:a@b)
Sender's Name	For display purposes only
Recipient	Identifies addressee, URI (e.g. tel:2002)
Recipient's Name	For display purposes only
Priority	Info, low, normal, high, alarm, locating alert
Flags	Message or job, auto delete flag
Encoding	Content encoding (typically UTF-8)
Confirmations required	Msg received, msg read, accept task, complete task
Content Type	Typically "plain text", others reserved for future ext.
Content	If content type is "plain text": up to 1000 characters

While different message types can be identified by specific display icons, the specific message handling will support the message purpose. Further options can be configured, see the Alarm Scenario section.

For example, a pop-up message is displayed in a window overlaying the current display. If the DECT phone user closes the window temporarily, the message is re-displayed after

some activity (e.g. after the user completes a phone call). Also, each message carries a flag (Auto Delete Option) which deletes the message automatically after the final confirmation.

MESSAGE HANDLING

The following table shows how specific message types are handled on the Mitel 600 DECT phones.

MESSAGE TYPE	PRIORITY	STORED IN FOLDER	AUTO DELETE OPTION	POP-UP / RE-POPUP
Idle Box	-	-	Yes	No / No
Info / Confirmation	Low	-	Yes	Yes / No
Normal Message	Normal	Inbox	Yes	As configured / After call (if popup = yes)
Urgent Message	High	Inbox	Yes	Yes / Yes
Alarm Message	Alarm	Inbox	Yes	Yes / Yes
Normal Job	Normal	Jobs	Yes	Yes / Yes
Urgent Job	High	Jobs	Yes	Yes / Yes
Alarm Job	Alarm	Jobs	Yes	Yes / Yes
Localization Alert (OM Locating only)	Loc-Alert	-	Yes	Yes / Yes

MESSAGE TYPE	READ	ACCEPTED	COMPLETED	AUDIBLE SIGNAL
Idle Box	None			-
Info / Confirmation	None			Confirmation tone
Normal Message	None			Handset config: normal msg. tone
Urgent Message	Yes	-	-	Handset config: urgent msg. tone
Alarm Message	Yes	-	-	Handset config: alarm msg. tone
Normal Job	Yes	Yes	-	Handset config: normal msg. tone
Urgent Job	Yes	Yes	Yes	Handset config: urgent msg. tone
Alarm Job	Yes	Yes	Yes	Handset config: alarm msg. tone
Localization Alert (OM Locating only)	Yes	-	-	Defined by admin.

URI SYNTAX

For some configuration items, you need to specify recipient or destination attributes. These are encoded with a specific syntax, denoted as URI

URI	DESCRIPTION
tel:	Addresses a DECT handset by phone number
ppn:	Addresses a DECT handset by portable part number
cb:	Call back number (for callBackNumber parameter only)
mailto:	Addresses an E-mail recipient
alarm:	Triggers an alarm
emailsubject:	Configures alarm trigger that is matched by email subject

Some URIs also support an asterisk wildcard:

- The “tel:*” URI addresses all DECT phones that support messaging. Note that messages sent to this URI cannot enforce confirmations, so confirmation timeout and alarm scenario escalation are not supported.
- The “emailsubject:Example*” URI matches all subjects starting with “Example”.

VCARD SUPPORT

Mitel 600 DECT phones support receiving vCards that are automatically pushed to the personal directory of the DECT phone. The vCard syntax (RFC 2426) defines different keys

that must be mapped to the directory entry keys of the DECT phone.

DIRECTORY KEY	VCARD KEYS	CONTENT
Name	Primary: “FN:” Secondary: “N:”	[String] (UTF-8 or Latin-1)
Private number	Primary: “TEL;HOME” Secondary: “...;HOME;VOICE” Tertiary: “TEL;ISDN”	[Number]
Business number	Primary: “TEL;WORK” Secondary: “…;WORK;VOICE” Tertiary: “TEL;VOICE” Quaternary: “TEL;PREF”	[Number]
Mobile number	Primary: “TEL;CELL” Secondary: “…;CELL;VOICE”	[Number]
Fax number	Primary: “TEL;FAX” Secondary: “…;FAX”	[Number]
E-mail	Primary: “EMAIL” Secondary: “EMAIL;PREF;INTERNET”	[E-mail Address]
Quick-dial	“X-QC”	“2” - “9”
Melody name	“X-MEL”	[String]
VIP-number	“X-VIP”	[Number]
Character set	Primary: “VERSION” Secondary: “CHARSET”	[Mapping ID]
Framing	...of vCard: “BEGIN:VCARD” and “END:VCARD”	

During translation, the DECT phone evaluates the primary key first. If this is not found, the subsequent key alternatives are evaluated.

The following example shows an alarm scenario with vcard:

```
<Alarm Scenario>
   <as alarmTriggerId="VCARD" level="1"
      recipients="tel:*" priority="PrioNormal"
     alarmMsg="BEGIN:VCARD&#x0D;&#x0A;VERSION:3.0&#x0D;&#x
0A;
       FN:Miller&#x0D;&#x0A;TEL;HOME;VOICE:1234&#x0D;&#x0A;
      END:VCARD" vCard="true" />0
</AlarmScenario>
```

Note: Remove the line breaks in the “alarmMsg” attribute.

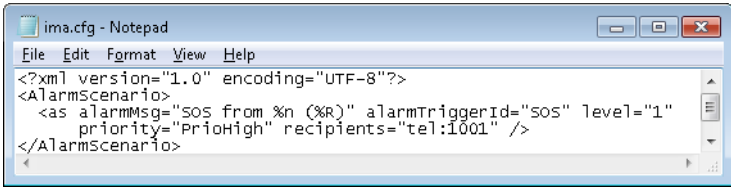
CONFIGURATION FILE SYNTAX

The OM Integrated Messaging & Alerting service configuration file has an XML syntax that can be edited using a plain text editor that supports UTF-8 with BOM (e.g., Notepad ++). If you are already familiar with the XML syntax requirements, you may skip to “Configuration File Reference” on page 23.

The XML configuration file is always encoded in UTF-8. If you need to enter characters not available in the standard ASCII 32-127 character set, make sure to save the file as UTF-8 with BOM.

In the first line of the configuration file, the optional XML declaration may be used. All subsequent lines should follow a well-formed XML syntax. The following basic example illustrates the syntax. In this example, the configuration specifies that a high priority message is sent to the 1001 phone

number if someone presses the SOS button on the DECT phone.



Each configuration file consists of a series of XML tags. Each XML tag can be written as single tag (e.g. <as />) or as start-end tag combination which may nest other tags (for example, <AlarmScenario><as /><AlarmScenario>). If you use start-end tags, the tags must be balanced. For example, the following nesting is invalid: <AlarmScenario><as></AlarmScenario></as>.

You can insert any number of white space characters between two tags (i.e., space, tab, or a line end character). You can also include XML comments between tags (e.g. <!-- this is a comment -->) to improve readability.

An XML tag may have one or more attributes (e.g. “level="1"”). An attribute must be separated from preceding characters by a white space. The attribute value must be enclosed in single or double quotation marks.

The XML tag names and the attribute names are case sensitive. The OMM service only accepts known XML tags and attributes. Moreover, the XML tags must follow a prescribed sequence and nesting, and only pre-defined attributes are allowed for specific tags.

CONFIGURATION FILE REFERENCE

You configure email accounts, RSS feeds, as well as alarm scenarios in the OM Integrated Messaging & Alerting service configuration file. You can put the desired configuration statements in any sequence, provided that you keep the necessary XML syntax.

The following tables indicate required attributes as “Mandatory” in the Default column. This column will otherwise show the default setting applied if the attribute is omitted. A dash (-) denotes an empty default string.

MAILBOX ACCOUNT

This configuration file item is used to configure an email account for polling available messages. The OM IMA service polls this account and forwards the acquired emails as text messages to different DECT phones.

ATTRIBUTE	TYPE / VALUES	DEFAULT	DESCRIPTION
mailbox	EmailNone, EmailPOP3, NONE	Mandatory	Determines the mailbox account type; Use “NONE” to stop polling the account
mbServer	[IP or DNS]	Mandatory	Identifies the mailbox server
trySslFirst	True, False	False	If set to “true” the OM IMA service tries to use SSL for encryption; If that fails, the standard port is tried (optional encryption with StartTLS)

ATTRIBUTE	TYPE / VALUES	DEFAULT	DESCRIPTION
pollTime	[Number]	30	Poll interval (minimum time in seconds, 10-3600s)
sinceTimestamp	[Number]	0	Used to ignore older mails stored in the mailbox; Use “0” to poll all mails, otherwise use value in seconds after 01-01-1970
mbPort	[Number]	0	Port number for POP3; Use “0” for standard port
mbSslPort	[Number]	0	Port number for SSL encrypted POP3; Use “0” for standard port
mbUser	[String]	-	User name for the POP3 mailbox account
mbPassword	[String]	-	Password for the POP3 mailbox account

The email account will be polled by the OM IMA service on a regular basis. If a new email comes in, the email is fetched and removed from the email server. The OM IMA service then forwards the email to the recipient noted in the subject of the email.

For example, to address a particular DECT phone, send an email with the following subject:

tel:1001 Hello, you just got mail!

If the email cannot be delivered, the OM IMA service replies with an error mail if the SendmailAccount is configured. For example:

IMA [noreply:ima]: Error: Transmission attempt repeatedly failed

Otherwise, the email is sent as a normal text message to the addressed DECT phone. The DECT phone user may respond to this text message, which in turn is forwarded to the original email sender.

Notes

- You can define only one <MailBoxAccount />configuration. If the configuration file contains more than one configuration entry, only the last configuration entry is used.
- Incoming email is converted to the UTF-8 character set if applicable.
- If an incoming email cannot be delivered (e.g. because the DECT phone cannot be reached), the original sender will get an error E-mail after a certain time.

SEND MAIL ACCOUNT

This configuration file item is used to configure an email account for sending messages. The OM IMA service will

forward text messages received from DECT phones via this email account.

ATTRIBUTE	TYPE / VALUES	DEFAULT	DESCRIPTION
auth	AuthNone, AuthPOP3, AuthSMTP	Mandatory	Mail is always sent using SMTP. Some SMTP servers require authentication with user name and password (“AuthSMTP: setting). Some SMTP servers require polling first (send-after-poll: “AuthPOP3” setting)
smtpServer	[IP or DNS]	Mandatory	Identifies the SMTP server.
senderAddress	[String]	-	Email address used as the sender for all outgoing emails.
trySslFirst	True, False	False	If set to “true” the OM IMA service tries to use SSL for encryption; If that fails, the standard port is tried (optional encryption with StartTLS)
smtpPort	[Number]	0	Port number for SMTP. Use “0” for standard port
smtpSslPort	[Number]	0	Port number for SSL-encrypted SMTP. Use “0” for standard port
smtpUser	[String]	-	User name for SMTP (“AuthSMTP” only)
smtpPassword	[String]	-	Password for SMTP (“AuthSMTP” only)

ATTRIBUTE	TYPE / VALUES	DEFAULT	DESCRIPTION
mbPort	[Number]	0	Port number for POP3 (“AuthPOP3” only); use “0” for standard port.
mbSslPort	[Number]	0	Port number for SSL-encrypted POP3 (“AuthPOP3” only); use “0” for standard port.
mBUser	[String]	-	User name for the POP3 mailbox account (“AuthPOP3” only)
mbPassword	[String]	-	Password for the POP3 mailbox account (“AuthPOP3” only)
mbServer	[String]	-	Name or IP address of the POP3/IMAP server, if POP3/IMAP authentication is used

RSS / FEED

These configuration file items are used to configure one or more news sources, which are then typically polled to deliver text messages to DECT phones. You configure an RSS feed that is usually offered by a web site that publishes frequently updated content. The RSS feed is then polled on a regular basis. If a new RSS entry appears, a message is sent to the DECT phones that are attached to the service.

The required configuration is split in two parts:

1. Define the RSS feed to poll. For example:

```
<RSS>
    <feed url="http://rss.cnn.com/rss/cnn_tech.rss"
trigger="CNNtech"/>
</RSS>
```

2. You define a corresponding alarm scenario (see Alarm-Scenario / as section) which is used to send a text message when a new RSS entry is detected. For example:

```
<AlarmScenario>
    <as alarmTriggerId="CNNtech" level="1"
        recipients="tel:1001;tel:1002" alarmMsg="CNN: %c"
        priority="PrioInfo" autoDelete="true" popUp="false" />
</AlarmScenario>
```

Only the <feed /> tag carries attributes that configure the RSS feed properties. Each single <feed /> tag needs to be enclosed by <RSS></RSS> tags.

ATTRIBUTE	TYPE / VALUES	DEFAULT	DESCRIPTION
url	[String]	Mandatory	URL of the RSS feed. Typically http protocol and *.xml or *.rss file type
trigger	[String]	Mandatory	An ID string that identifies the alarm scenario used to send out received news. Requires an <as /> tag with a matching alarmTriggerId attribute.
refresh	[Number]	3600	Poll interval for the RSS feed.

To prevent the RSS feed source from overloading the OM IMA service, only one new RSS entry is considered when the RSS feed is polled. During a poll operation, the OM IMA service compares the ID and content of the newest RSS entry against the values stored from the previous poll operation. If, for

example, the RSS feed delivers a bulk update that marks several RSS entries as new, the next poll operation will only forward the newest entry as a text message.

If you expect the RSS feed to update frequently, consider using a shorter refresh setting.

ALARM SCENARIO / AS

These configuration file items are used to configure one or more alarm scenarios. Each alarm scenario is triggered by a pre-defined signal.

You can establish a tiered escalation system with up to three escalation levels. This can be used to trigger subsequent alarms if the original alarm is not confirmed by the recipients, as in the following example:

```
<AlarmScenario>
   <as alarmTriggerId="MANDOWN" level="1"
      recipients="tel:1001;tel:1002;tel:1003"
      requiredPosConfirmCount="1" confirmTimeout="30"
      priority="PrioAlarm" alarmMsg="%n (%R) MAN Down!">
         <alarmConfirm>ConfRead</alarmConfirm>
   </as>
</AlarmScenario>

<AlarmScenario>
  <as alarmTriggerId="MANDOWN" level="2"
     recipients="tel:*;mailto:manager@company.com"
     priority="PrioAlarm" alarmMsg="Unhandled: %n (%R) MAN
Down!"/>
</AlarmScenario>
```

Only the <as /> tag carries attributes that configure the alarm scenario. Each single <as /> tag needs to be enclosed by <AlarmScenario> </AlarmScenario> tags.

ATTRIBUTE	TYPE / VALUES	DESCRIPTION
alarmTriggerId	[String] **Default**: n/a (Mandatory)	An ID value or a string with keywords that trigger the alarm. See section below: Details on alarmTriggerId Attribute
level	[Number] **Default**: n/a (Mandatory)	The escalation level for the alarm scenario. Use “1” for the first level alarm scenario. Add alarm scenarios with higher escalation levels but an identical “alarmTriggerId” setting.
recipients	[String] **Default**: n/a (Mandatory)	A semicolon separated list of URIs (up to 10) that should receive the alarm message. See section below: Details on recipients Attribute.
alarmMsg	[String] **Default**: n/a (Mandatory)	Text message template to be send to the recipients. See section below: Details on alarmMsg Attribute.
<alarmConfirm> *	XML tags **Default**: none	Expected recipient confirmation. See section below: Details on <alarmConfirm> tag sequence.

ATTRIBUTE	TYPE / VALUES	DESCRIPTION
requiredPosConfirmCount *	[Number] **Default**: 0	Number of expected confirmations. Use “0” to disable alarm scenario escalation; Use “1” or higher to escalate to the next alarm scenario level if fewer than the specified confirmations are detected.
confirmTimeout *	[Number] **Default**: 0	Time to wait until the alarm scenario escalates. Use “0” to disable alarm scenario escalation.
priority	PrioInfo PrioLow PrioNormal PrioHigh PrioAlarm **Default**: PrioHigh	Priority setting for the text messages to be sent.
popUp *	True False **Default**: True	Set to “true” to display text message as pop-up.
autoDelete *	True False **Default**: False	Set to “true” to delete the message from the DECT phone automatically when it reaches the final state.
vCard *	True False **Default**: False	If set to “true”, the alarm message contains a vCard.

ATTRIBUTE	TYPE / VALUES	DESCRIPTION
postDialSeparator	[String] (arbitrary combination of “#” and “*”) **Default**: -	Treats post-dialed digits that are dialed after the configured alarm trigger FAC (Feature Access Code). The separator characters split the post-dialed digits into calling party numbers.
callBackNumber *	cb:[String] or tel:[String} **Default**: -	Callback number that is sent within the alarm message to the recipient. Enables the recipient to dial this number with the off-hook key. cb:[Number]: call back to this number, e.g. “cb:1234”. cb:#%1R: call back to first number extracted from post-dialed digits (“#%1R” - “#%9R”); cb:%R: call back to originator of alarm message if applicable (i.e. the originator has a phone number). **Note**: The “tel:” URI type is equivalent to “cb:”. Other URI types are not allowed.
compareDescription1	[String] **Default**: n/a (Optional)	Alarm scenario only starts if initiated by a user who is specified in “Description 1” of the user settings and matches the compareDescription1 attribute
compareDescription2	[String] **Default**: n/a (Optional)	Alarm scenario only starts if initiated by a user who is specified in “Description 2” of the user settings and matches the compareDescription1 attribute

ATTRIBUTE	TYPE / VALUES	DESCRIPTION
compareSender	[Numbers] **Default**: n/a (Optional)	Alarm scenario only starts if initiated by users with the specified URIs. Each URI is separated by ";" and the list must end with ";" (e.g., "tel:10;tel:11;"

* Supported by Mitel 600 DECT

If the message is sent to a Mitel 600 DECT phone, the following message option attributes may be added to the <as /> tag. Note that using message options requires the OM Messaging and Alerting System license (see "Notes on Licenses" on page 9).

OPTION ATTRIBUTE	VALUE	DESCRIPTION
melody	[Numbers], 0-10	Overwrites DECT phone melody for this message. 0 = no melody 1-10 = message melody 1-10
explicitToneSelection	[String]	Overwrites DECT phone melody for this message. Contains the melody name (specified in the DECT phone specification and depends on the DECT phone model). If this element is used the melody element is obsolete.
volume	[Numbers], 0-100	Overwrites DECT phone volume for this message. 0 = off 100 = loudest

OPTION ATTRIBUTE	VALUE	DESCRIPTION
ringerTone	true, false	Overwrites DECT phone “user ringer” setting for this message. True = active False = use DECT phone default
increasingVol	true, false	Overwrites DECT phone “increasing volume” setting for this message. True = active False = use DECT phone default
vibraCall	true, false	Overwrites DECT phone “vibration” setting for this message. True = active False = use DECT phone default
noInband	true, false	Overwrites DECT phone “in-band new message signalization” setting for this message. True = no in-band signaling False = use DECT phone default
disconnectCall	[Numbers], 1	Automatically disconnects a call when the message is received at the DECT phone. Example: disconnectCall=”1”
autoCallback	[Numbers], 1	Establishes automatic callback from the message recipient’s DECT phone to a phone number. Example: autoCallback="1" callbackNumber="2961". **Note**: The DECT phone user must press the hook key to un-mute the connection.

OPTION ATTRIBUTE	VALUE	DESCRIPTION
textColourR, textColourG, textColourB	[Numbers], 0-255 Three values required	Text color for the message (R, G, B). Example: textColourR="255" textColourG="255" textColourB="255"
bgColourR, bgColourG, bgColourB	[Numbers], 0-255 Three values required	Background color for the message (R, G, B). Example: textColourR="255" textColourG="255" textColourB="255"
alarmStatusMessages	true, false	If set, an alarm state message is sent state to the activator (sender) of the alarm trigger
msgToAlarmSource	true, false	If set, the sender address of an alarm trigger is not removed from alarm message recipient list.

The following example shows how to use message options with an alarm scenario:

```
<AlarmScenario>
    <as alarmTriggerId="Alarm-Fire" level="1"
      compareSender="tel:201;" recipients="tel:*"
      priority="PrioAlarm" popUp="true" textColourR="255"
      textColourB="255" textColourG="255" bgColourR="255"
      bgColourB="0" bgColourG="0" alarmMsg="Fire!!!"
      disconnectCall="1" vibraCall="1" increasingVol="1"
      ringerTone="1" melody="2" volume="50">
      <alarmConfirm>ConfRead</alarmConfirm>
      <alarmConfirm>ConfOrder</alarmConfirm>
    </as>
</AlarmScenario>
```

Escalating Alarm Scenarios

The most versatile feature of alarm scenario handling is the ability to escalate to the next alarm level if an alarm is not sufficiently confirmed by the alarm recipients. If you configure such a multi-level alarm scenario, consider how a typical escalation scenario takes place:

1. The alarm is triggered (e.g. by a DECT phone user pressing the SOS button or similar). The OM IMA service sends a text message to the recipients as configured.
2. The OM IMA service waits for confirmations from the alarm recipients.

Note: Alarm scenario messages of the previous alarm level or messages that received the required confirmations are deleted automatically.

alarmTriggerId Attribute Details

The “alarmTriggerId” attribute identifies the alarm scenario and also selects the source that triggers the alarm. The following alarm triggers are supported:

ALARM TRIGGER	DESCRIPTION
emailsubject:text	Matches a specific subject received via the OMM’s email account (see MailBoxAccountsection). Note that the URI text may be terminated by an asterisk (“*”) to ignore trailing subject text (i.e., the “emailsubject:*” URI matches all emails).
SOS	SOS call from a DECT handset detected
MANDOWN	Man-down alarm from a DECT handset detected

ALARM TRIGGER	DESCRIPTION
DISTRESS_OPERATOR_TIMEOUT	No operator reaction on alarm condition detected by the locating server.
PAGEBYMENU	Paging with optional call back triggered by DECT handset menu command detected.
CALLBACK	Callback by a DECT phone triggered by paging message detected.
VCARD	Special VCARD alarm trigger (see vCard Support section).
OMM-	OMM health state triggers. These start with “OMM-”, followed by one of: • “OK-” • “WARNING-” • “ERROR-” and one of • “SYNC” • “STANDBY” • “DBTRANSFER” • “DOWNLOAD” • “LICENSE” • “RFP” • “IMA” • “UMO” • “USBMEM” • “PPPROFILE” • “LICENSESERVER” • “VIDEO” • “SIP” • “SIPCERT” • “AXIPROVISIONINGCOMMANDS” • “PROVISIONINGSERVER”

ALARM TRIGGER	DESCRIPTION
	Example: “OMM-WARNING-SYNC”. This trigger supports a wildcard (e.g., “OMM-WARNING-*” matches all warnings). A reason suffix is also supported (e.g., “-License hurt” makes up “OMM-WARNING-LICENSE-License hurt”.
UMON-LOC-ERR-	User monitoring triggers that provide possible causes when a user becomes unavailable: • “UMON-OK-USERSTATE” • UMON-WARN-USERSTATE” • UMON-ERR-USERSTATE” • “LOC-ERR-USERSTATE”
[RSS-Trigger]	Trigger defined by trigger attribute of an RSS feed (see RSS / feed section).

recipients Attribute Details

The mandatory “recipients” attribute defines a semicolon separated list of URIs (see URI Syntax section). You can mix different URI types (e.g. “mailto:admin@domain.com;tel:1001” is valid). In the “recipients” context, handling of post-dialed digits is also supported. For example, “tel:#%1R” sends the alarm message to the first number extracted from the post-dialed digits (valid from #%1 to #%9).

alarmMsg Attribute Details

The mandatory “alarmMsg” attribute defines a template for the text message. The template includes place holders that are

replaced before the message is sent to all recipients. The following place holders are supported:

PLACEHOLDER	REPLACED BY
%s	Sender (URI), e.g. “tel:1001” if SOS button pressed on this phone
%r	Receiver (URI), e.g. “tel:30” if SOS button called this number
%t	Sending time (24 hour format, HH:MM:SS)
%T	Sending time (12 hour format, HH:MM:SS am/pm)
%d	Sending date (EU format, DD.MM.YYYY)
%D	Sending date (US format, YY-MM-DD)
%p	DECT portable part number (ppn), e.g. “1” for first entry in list
%n	DECT portable part user name
%R	DECT portable part calling party number (CPN)
%#1n	Name of the number extracted from post dialed-digits (#1 - #9)
%#1R	Number extracted from post dialed-digits (#1 - #9)
%c	Message content - from source that triggered the alarm
%i	Alarm trigger ID, e.g. “sos”
%l	Previous alarm escalation level
%u	Confirmations received (from previous escalation level)
%x	Rejections received (from previous escalation level)
%e	Confirmations expected (of previous escalation level)
%o	Escalation time-out (of previous escalation level)

<alarmConfirm> Tag Sequence Details

It is possible to attach one or more alarm confirmations to the alarm scenario. These can be added to an <as> tag as enclosed tag sequence as shown in the following example:

```
<AlarmScenario>
    <as alarmTriggerId="SOS" |
        level="1" recipients="tel:1001"
        alarmMsg="SOS was initiated: %c"
>
    <alarmConfirm>ConfRead</alarmConfirm>
    </as>
</AlarmScenario>
```

You can add the following alarm confirmations:

- <alarmConfirm>ConfRead</alarmConfirm>
- <alarmConfirm>ConfOrder</alarmConfirm>
- <alarmConfirm>ConfCompletion</alarmConfirm>

Note that the alarm confirmations are ignored if you broadcast to all DECT phones by adding the “tel:*” URI to the “recipients” attribute.

DEBUGGING THE IMA SERVICE

If your OM IMA implementation is complex, you must create the configuration in several iterative steps. For example, you start with a simple configuration and add new features step by step.

The modified IMA configuration file must be stored on the server and must be reloaded by the OMM. Use the **Update** button to initiate reload of configuration files. Alternatively, you can upload the IMA configuration file manually into the OMM via the OMP (**System** -> **Data management** -> **IMA** tab).

During this iterative configuration process, , watch the configuration file parsing and verify the message processing triggered by the configuration.

To support the OM IMA configuration development, the DECT base station and the OMM running on the DECT base station offer a debugging console that can be used during the OM IMA configuration cycle. For example, you can start and stop message routing between DECT phones, re-load the configuration file, and view the debugging console output.

CAUTION: Only use the console commands described here! Other available commands may destroy you configuration and render your SIP-DECT system inoperable.

OMM CONSOLE LOGIN

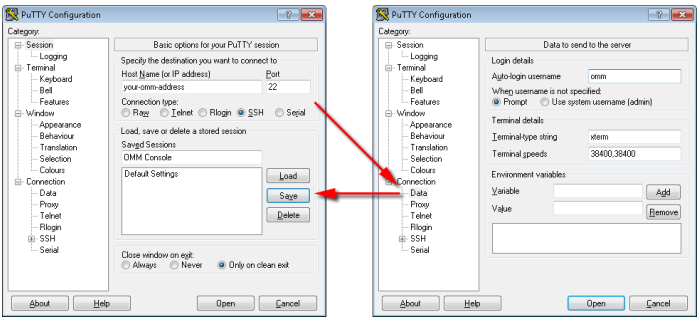
The following description applies if you run the OMM on a DECT base station.

Note: For a PC-based OMM, log in to the Linux GUI and open a terminal window. Enter the “su” command to gain administrative rights. Start the OMM console with the “/usr/sbin/ommconsole” command.

You need a secure shell (SSH) program such as the OpenSSH client (Linux) or the PuTTY SSH client (Open Source, Windows) to use the RFP/OMM console.

Install the SSH client software on your PC and start an SSH session as described for Windows/PuTTY in the following steps. Under Linux, start a terminal program and execute the “ssh omm@your-omm-address” command.

1. Start the “PuTTY” SSH client program. The **PuTTY Configuration** window opens.
2. Enter the IP address or DNS-Name of the RFP running the OMM in the **Host Name** field. Do not change the default **Port** (22) and **Connection type** (SSH) settings.



3. Switch to the **Connection/Data** category available in the navigation tree on the left side of the **PuTTY Configuration** window. In the **Auto-login username** field, enter the

user name that is configured at the OMM's web console for the "Full access" account type. This is "omm" by default.

4. Switch back to the **Session** category of the **PuTTY Configuration** window. Enter a descriptive name in the **Saved Sessions** field and click **Save**.

5. To open a saved session, select the desired entry in the **Saved Sessions** list of the **PuTTY Configuration** window and click **Open**.

   For any initial SSH session, an alert dialog informs you about the SSH server's key fingerprint. Proceed by clicking the **Yes** button.

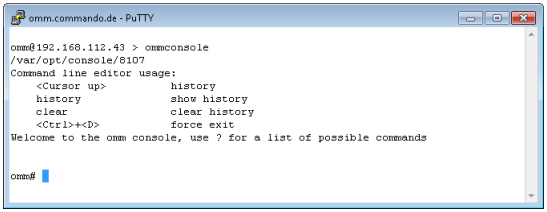
6. At the username prompt, enter the OMM username for the "Full access" account and press [Enter].

7. At the password prompt, enter the OMM password for the "Full access" account and press [Enter].

   The RFP's console prompt is displayed, offering several commands ready to be executed. For example, you can type in the "help" command and confirm with the [Enter] key. This will display a list of available commands.

8. Enter the "setconsole" command. This redirects the OMM's syslog messages to the current SSH session. For example, you will see a syslog message if you log in to the Web console of the OMM concurrently. Note that the syslog message redirection is automatically cancelled when you close the SSH session.

9. Enter the “ommconsole” command. This invokes a separate command line for the current OMM service program. The command prompt changes to “omm” and a different set of commands is available.



10. Enter the “ima” command to display a list of available options. Refer to the OMM Console: IMA Command Reference table below.

11. To close the OMM console, enter the “exit” command. To close the RFP console and close the SSH session enter a second “exit” command.

    Alternatively, close the PuTTY terminal window.

USING THE OMM CONSOLE

The OMM console accepts only a single internal telnet connection. You cannot open another SSH session to display a second OMM console. If you do not enter a command while the OMM console is opened, the internal telnet session is closed after some time. This closes the OMM console automatically and in turn the RFP’s console prompt is displayed. For this reason, you may need to re-enter the “ommconsole” command.

During a typical configuration cycle, you proceed as follows:

1. Change the configuration file located on your (FTP/HTTP/TFTP) server.

2. Start the SSH session towards the RFP. Enter the “setconsole” command.

3. Enter the “ommconsole” and “ima conf” commands. If no error message is displayed, the configuration file has no syntax errors and is accepted.
4. Test the desired message/alarm functions. Repeat from Step 1 as needed.
5. When finished, enter the “exit” command twice or close the SSH session.

Tip: In PuTTY, you can switch to a more readable black-on-white display. In the **PuTTY Configuration** window, load the desired session configuration. Navigate to the **Window/Colours** category. Activate the **Use system colours** switch. Save the session configuration.

OMM CONSOLE REFERENCE

The following table provides a brief description of the IMA commands available in the OMM console.

COMMAND	PURPOSE
ima start	Enables message routing between DECT phones. (The OM IMA service is always active).
ima stop	Disables message routing between DECT phones. (The OM IMA service is always active).
ima conn	Displays the network connection status of the OM IMA service program. Display the next prompt line by pressing the [Return] key.
ima dump	Displays the status of messages and alarms currently in the transmission queue. Optionally, the registered backtrace subscriptions are displayed also. You can use this command to check for and view undelivered messages. Display the next prompt line by pressing the [Return] key.

COMMAND	PURPOSE
ima conf	Reloads the OM IMA configuration from the server address which you configured in the OMM's web console. Note that an unchanged OM IMA configuration file is ignored; only a changed OM IMA configuration file triggers the reconfiguration of the OM IMA service program.
ima send_msg	Sends a text message directly to the addressed device. You need to add the receivers address (URI) and the message content. Example: ima send_msg tel:1001 this-is-a-message The command accepts any valid URI and a single word without spaces as message content. The word is converted from ISO-8859-1 (Windows ANSI), so if your SSH client uses for example UTF-8, all characters expect ASCII-32 to ASCII-127 will show up as double characters on the receiving DECT phone.

Appendix A

REFERENCE

ABBREVIATIONS

OM	OpenMobility
OM AXI	OM Application XML Interface
OMC	OM Configurator
OM IMA	OM Integrated Messaging & Alerting service
OML	OM Locating
OMM	OpenMobility Manager
OMP	OM Management Portal
RFP	Radio Fixed Part; also called DECsT base station
SIP	Session Initiation Protocol
URL	Uniform Resource Locator

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