

# Recorded Voice Announcement, RVA

DESCRIPTION



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# 1 GENERAL

The Recorded Voice Announcement (RVA) feature allows recorded voice announcements to be provided to a calling or connected party to inform of the status of the call in various traffic cases, for example when:

- the call is diverted
- the call is in queue
- the call is parked
- the call is answered by a PBX-operator

The types of calling or connected parties that receive RVAs are, generally speaking, external lines and extensions, with some exceptions.

For example, for diversion, group hunting, Automatic Call Distribution (ACD), call to an operator or to an extension, voice announcement can be provided when the call has originated from an extension, from a public trunk line, or from a tie line.

Vocal guidance is a service that can be provided for analog (ATS), digital (DTS), cordless (CXN), and certain mobile (RXN) extensions, as well as for External Follow Me (ECF) extensions on tie lines or public trunk lines.

Welcome announcement and Music on Wait can be provided for certain call cases towards group hunting and ACD groups.

All cases can be supported either with SIP based streaming RVA functions, or with the legacy HW based RVA functions.

## 1.1

### GLOSSARY

For a complete list of abbreviations and glossary, see the description for **ACRONYMS, ABBREVIATIONS AND GLOSSARY**.

## 2 FACILITIES

### 2.1 GENERAL

#### 2.1.1 TRAFFIC CASES WHERE RVA CAN BE PROVIDED

An RVA can be provided to the calling or connected party for the following call cases:

- Diverted call
- Call to PBX group
- Call parked by PBX-member
- Call to ACD group
- Call parked by ACD agent
- Call in PBX operator queue
- PBX operator answers an incoming call (an answer announcement)
- Call parked by PBX operator
- Call to individual extension
- Call parked by individual extension
- Call encountering a state where vocal guidance is relevant

The RVA feature is set up using the following hardware equipment:

- Media Gateway Unit, MGU
- MX-ONE Classic

The RVA feature can also use the software based Media Server (MS), as an alternative to the HW based media gateways,

**Note:** RVA diversion announcement will not be provided to the calling party if the call is

- Diverted on no answer
- Diverted by Message diversion
- Diverted to a busy emergency extension

A diversion announcement will not be provided to the calling party if the divertee is a voice mail port or a voice mail group.

#### 2.1.2 BASIC CALL RELEASE

If a calling party clears down the call while an announcement is playing, the announcement will be disconnected and a clear down process will be executed.

#### 2.1.3 SERVER REDUNDANCY AND VOICE ANNOUNCEMENTS

If Server Redundancy is used in the system, with standby Service Node(s), and ditto-Media Servers or MGUs, some special considerations apply. Added voice announcements must also be added in the standby MS(s)/MGU(s). Removed voice announcements must also be removed from the standby MS(s)/MGU(s).

## 2.2

## VOICE ANNOUNCEMENTS FOR DIVERTED CALLS

A diversion announcement can be provided to the calling party if the called party has activated diversion to a new answering position.

There are three types of diversion announcements:

- Diversion to a directory number (extension, operator, group)
- Diversion to a paging equipment
- Diversion to an external party (external follow-me)

The diversion announcements for diversion to a directory number, a paging equipment, and diversion to an external party, are assigned by commands.

The diversion announcement will be provided to a calling party if the originating calling party type is selected to be provided with the diversion announcement.

**Note:** ACD group overflow to an internal directory number or to a network directory number is treated in the same way as direct diversion.

ACD group overflow to an external directory number is treated in the same way as external follow-me.

### 2.2.1

### CALLING PARTY TYPES FOR DIVERSION ANNOUNCEMENTS

All diversion announcements can be provided for the following calling party types:

- Extension (excluding ISDN terminal and IP extension)
- Public trunk line
- Tie line

The selection of each calling party type can be activated or deactivated by an I/O command.

### 2.2.2

### CALL CASES

Different diversion announcements can be provided to a calling party, depending on the type of executed diversion.

#### 2.2.2.1

#### *Diverted to an Extension*

The diversion announcement can be provided when one of the following types of diversion is executed:

- Follow-me
- Direct Diversion
- Diversion on Busy

#### 2.2.2.2

#### *Diverted to a PBX Operator*

The PBX-operator can be assigned as a divertee, and the PBX-operator can be a common PBX operator directory number or an individual PBX operator directory number.

The diversion announcement can be provided when one of the following types of diversion is executed:

- Follow-me
- Direct Diversion
- Diversion on Busy

**Note:** Follow-me or diversion to a night mode PBX operator is rejected.

#### 2.2.2.3

##### *Diverted to a common bell group*

The diversion announcement can be provided when one of the following types of diversion is executed:

- Follow-me
- Direct Diversion
- Diversion on Busy

#### 2.2.2.4

##### *Diverted to a PBX Group*

The diversion announcement can be provided when one of the following types of diversion is executed to a group hunt group:

- Follow-me
- Direct Diversion
- Diversion on Busy

**Note:** Diversion on busy to a busy PBX-group is rejected.

#### 2.2.2.5

##### *Diverted to an ACD Group*

The diversion announcement can be provided when one of the following types of diversion is executed to an ACD group:

- Follow-me
- Direct Diversion

**Note:** Diversion on busy or on no-answer to an ACD group is rejected.

#### 2.2.2.6

##### *Diverted to a paging equipment*

The diversion to paging announcement can be provided when one of the following types of diversion is executed:

- Follow-me
- Direct Diversion
- Diversion on Busy
- Diversion on No-answer

#### 2.2.2.7

##### *Diverted to an External Party*

The diversion to external announcement can be provided to the calling party when the called party has activated external follow-me to an answering position which is external to the private network.

## 2.2.3 ANNOUNCEMENT HANDLING FOR DIVERSION ANNOUNCEMENTS

### 2.2.3.1 *Diversion to a Directory Number*

When the diversion announcement is provided, the divertee is put into reserved state, and the divertee is rung when the announcement is completed.

When a call is diverted to a queue, the queue record is activated after the diversion announcement is completed.

- If the divertee lifts the handset and stays off-hook while it is in reserved state, the diversion announcement will not be disconnected.  
For analog extension, the speech connection is established when the diversion announcement is completed.
- If multiple diversion was executed, only one diversion announcement will be provided, and the type of diversion announcement to be provided is based on the last executed type of diversion.
- If a call is diverted to a busy extension, the calling party is first provided with the diversion announcement. When the diversion announcement is completed, a busy tone is provided to the calling party.

### 2.2.3.2 *Diversion to an External Party*

When the diversion to external announcement is provided to a calling party, the external follow-me call can be processed while the diversion to external announcement is playing or it can be processed after the announcement is completed. This is selected by an I/O command.

- If the process to set up external follow-me call is not successful, the diversion announcement will not be disconnected. The calling party is provided with congestion tone when the announcement is completed.

## 2.2.4 DIVERSION ANNOUNCEMENT EXAMPLES

An example of a diversion to a directory number announcement is: Your call is being diverted to another number.

An example of a diversion to paging equipment announcement is: The person you have called is now being paged, please wait.

An example of an external follow me diversion announcement is: Your call is being diverted to an external number, please wait.

## 2.3 VOICE ANNOUNCEMENTS FOR PBX GROUP CALLS

When a call is made to a PBX group, depending on the status of the group, different kinds of announcement can be provided to the calling party.

There are four types of announcement that can be provided to a PBX group call:

- Group welcome announcement
- Group queue announcement
- Group repeat queue announcement

- Group continuous announcement

**Note:** If a call is diverted to a PBX group, the diversion announcement will be provided before the group announcement.

**Note:** If a call is re-queued, e.g. after ring time-out on a generic extension member, no announcements can be played. Neither repeated queue announcements nor continuous announcements. The caller will get queue tone/ring tone from that moment.

**Note:** If voice announcement (welcome or queue announcement) is being played for a call to PBX group, and the selected member is a generic extension, which still has not been alerted, and the member extension in this state makes an outbound new call, and thus suddenly becomes not selectable in the group, the group call will fail with a busy or no-progress message to the caller, instead of rerouting to other destination, or re-queuing towards the group, trying to find another member.

### 2.3.1

### CALLING PARTY TYPES FOR PBX GROUP ANNOUNCEMENTS

All PBX group announcements can be provided to the following calling party types:

- Extension
- Public trunk line
- Tie line

The selection of each calling party type can be activated or deactivated by an I/O command.

### 2.3.2

### CALL CASES

#### 2.3.2.1

#### *Group Welcome Announcement*

A welcome announcement can be provided to the calling party when the call is made to a PBX group.

The call cases where the group welcome announcement can be provided are:

- Direct call to the PBX group
- Follow-me to the PBX group
- Direct diversion to the PBX group
- Diversion on busy to the PBX group
- Diversion on no-answer to the PBX group
- Diversion when no members in a PBX group to another PBX group
- Diversion when queue is full in a PBX group to another PBX group
- Rerouted to the PBX group
- Deflected to the PBX group

#### 2.3.2.2

#### *Group Queue Announcement*

A queue announcement can be provided to the calling party when the preset time in the queue is reached.

The call cases where the group queue announcement can be provided are:

- Direct call to the PBX group
- Follow-me to the PBX group
- Direct diversion to the PBX group
- Diversion on busy to the PBX group
- Rerouted to the PBX group
- Transferred to the PBX group
- Extended to the PBX group
- Deflected to the PBX group

#### 2.3.2.3

##### *Group Repeat Queue Announcement*

A group repeat queue announcement can be provided to the calling party when the preset time in the queue is reached. The timer is started after providing the queue announcement or the repeat queue announcement.

The repeat queue announcement for a PBX-group can be activated or deactivated by using a Recorded Voice Announcement I/O command.

The waiting time in the queue before providing the repeat queue announcement can be assigned by a Recorded Voice Announcement I/O command.

The call cases where the group repeat queue announcement can be provided are:

- Direct call to the PBX group
- Follow-me to the PBX group
- Direct diversion to the PBX group
- Diversion on busy to the PBX group
- Diversion on no-answer to the PBX group
- Rerouted to the PBX group
- Transferred to the PBX group
- Extended to the PBX group
- Deflected to the PBX group
- Deflected to the Group hunting group

#### 2.3.2.4

##### *Group Continuous Announcement*

A group continuous announcement can be provided to the calling party repeatedly till a member of a group becomes free. The continuous announcement is provided after the queue announcement or the repeat queue announcement.

The call cases where the group continuous announcement can be provided are:

- Direct call to the PBX group
- Follow-me to the PBX group
- Direct diversion to the PBX group
- Diversion on busy to the PBX group
- Deflected to the PBX group

- Rerouted to the PBX group
- Transferred to the PBX group
- Extended to the PBX group

### 2.3.3

#### PBX GROUP ANNOUNCEMENT EXAMPLES

An example of a group welcome announcement is: Welcome to the software department.

An example of a group queue announcement is: All lines are busy in the software department, please wait.

An example of group repeat queue announcement is: All lines are still busy, please wait.

A continuous announcement can be a continuously repeated recorded voice message, such as music.

### 2.4

#### VOICE ANNOUNCEMENTS FOR ACD GROUP CALLS

When a call is made to an ACD group, depending on the status of the group, different kinds of announcement can be provided to the calling party.

There are five types of announcement that can be provided to an ACD group call:

- Customer identity (CID) request announcement.
- Group welcome announcement.
- Group queue announcement.
- Group repeat queue announcement.
- Group continuous announcement

The CID request, welcome, queue, continuous, and repeat queue announcements for an ACD-group can be assigned to an ACD-group by using the Recorded Voice Announcement I/O commands.

If a call is diverted to an ACD group, the diversion announcement will be provided before a group announcement.

When an ACD group is assigned with both CID request and ACD group welcome announcements and the call is qualified for the CID request announcement, the CID request announcement is provided first. If the CID request announcement cannot be provided then the group welcome announcement is provided. If a call has been provided with a CID request announcement then the ACD group welcome announcement will not be provided.

### 2.4.1

#### CALLING PARTY TYPES FOR ACD GROUP ANNOUNCEMENTS

The ACD group announcements can be provided to different calling party types, the calling party type is selected with I/O command.

##### 2.4.1.1

###### *Calling Party Types for CID Request Announcement*

Only public trunk lines are allowed to be provided with a CID request announcement. The public trunk types that qualify for the CID request announcement are:

- Manual public external line
- DID public external line

Only direct calls made over the PBX network to an ACD group will be provided with the CID announcement. Otherwise, the CID request announcement will not be provided to the calling party made over the PBX network to an ACD group.

#### 2.4.1.2

#### *Calling Party Types for ACD Group Welcome, Queue, Repeat Queue Announcement and Continuous Announcement*

The ACD group welcome, queue, repeat queue announcements, and continuous announcement can be provided to the following calling party types:

- Extension
- Public trunk line
- Tie line

#### 2.4.2

### CALL CASES

#### 2.4.2.1

#### *CID Request Announcement*

A CID request announcement of an ACD group can be provided to the calling party when the call is made to an ACD group.

CID request announcement can be provided for the following cases:

- Public trunk call to an ACD group

CID request announcement is not provided for the following cases:

- Diverted call
- Transferred call
- Extended call
- Rerouted call
- Deflected call

#### 2.4.2.2

#### *Group Welcome Announcement*

A welcome announcement of an ACD group can be provided to the calling party when the call is made to an ACD group.

The call cases where the ACD group welcome announcement can be provided are:

- Direct call to an ACD group (including calls from manual trunk lines)
- Follow-me to an ACD group
- Direct diversion to an ACD group
- Incoming call diverted to an ACD back-up group

ACD group welcome announcement is not provided for the following cases:

- Diversion on busy (not allowed)
- Diversion on no-answer (not allowed)

- Rerouting to an ACD group

#### 2.4.2.3

##### *Group Queue Announcement*

A queue announcement of an ACD group can be provided to the calling party when the preset time in the queue is reached. The queue announcement can also be based on the estimated waiting time.

The call cases where the ACD group queue announcement can be provided are:

- Direct call to an ACD group
- Follow-me to an ACD group
- Direct diversion to an ACD group
- Deflected to an ACD group
- Transferred to an ACD group
- Extended to an ACD group
- Incoming call diverted to an ACD back-up group

ACD group queue announcement is not provided for the following cases:

- Re-entered queue calls

#### 2.4.2.4

##### *Group Repeat Queue Announcement*

A group repeat queue announcement can be provided to the calling party when the waiting time in the queue is reached. The waiting time is started after providing the queue announcement or the repeat queue announcement.

Activating or deactivating the repeat queue announcement for an ACD-group is done by using the Recorded Voice Announcement I/O commands.

The waiting time in the queue before providing the repeat queue announcement can be assigned by a Recorded Voice Announcement I/O command.

The call cases where the group repeat queue announcement can be provided are:

- Direct call to an ACD group
- Follow-me to an ACD group
- Direct diversion to an ACD group
- Transferred to an ACD group
- Extended to an ACD group

Group repeat queue announcement is not provided for re-entered queue call.

#### 2.4.2.5

##### *Group Continuous Announcement*

A group continuous announcement can be provided to the calling party repeatedly until a member of a group becomes free. The continuous announcement is provided after the queue announcement or the repeat queue announcement.

The call cases where the group continuous announcement can be provided are:

- Direct call to an ACD group
- Follow-me to an ACD group

- Direct diversion to an ACD group
- Deflected to an ACD group
- Transferred to an ACD group
- Extended to an ACD group
- Incoming call diverted to an ACD back-up group

ACD group queue announcement is not provided for the following cases:

- Re-entered queue calls

#### 2.4.3

#### ACD GROUP ANNOUNCEMENT EXAMPLES

An example of a CID request announcement is: Welcome to Mitel's sales department, please enter your identification.

An example of a group welcome announcement is: Welcome to the sales department.

An example of a group queue announcement is: All lines are busy in the sales department, please wait.

An example of a group queue announcement with EWT is: All lines are busy in the sales department, your call should be answered in five minutes.

An example of group repeat queue announcement is: All lines are still busy, please wait.

A continuous announcement can be continuously repeated recorded music or a voice message.

### 2.5

### VOICE ANNOUNCEMENTS FOR PBX OPERATOR GROUP CALLS

When a call is made to a PBX operator, depending on the status of the operator and on the call origin group of the operator, different announcements can be provided to the calling party.

There are five types of announcement that can be provided for a PBX operator call:

- Welcome announcement
- Queue announcement
- Repeat queue announcement
- Continuous announcement

**Note:** Calls to an individual PBX operator can only be provided with the queue and continuous announcement. The queue announcement is assigned system-wide through MDP and the continuous announcement to individual PBX operator directory number using RA commands.

When a call is diverted to a PBX operator, the diversion announcement will be played first to the calling party before a PBX operator group announcement.

#### 2.5.1

#### CALLING PARTY TYPES FOR PBX OPERATOR ANNOUNCEMENTS

All PBX operator announcements can be provided to the following calling party types:

- Extension

- Public trunk line (manual and DID)
- Tie line

The PBX operator announcements can be provided to different calling party types which can be selected by an I/O command.

## 2.5.2 CALL CASES

### 2.5.2.1 *PBX Operator Welcome Announcement*

A welcome announcement can be provided to the calling party when the call is made to a PBX operator.

The call cases where the PBX operator welcome announcement can be provided are:

- Direct call to the PBX operator
- Follow-me to the PBX operator
- Direct diversion to the PBX operator
- Diversion on busy to the PBX operator
- Deflection to the PBX operator

### 2.5.2.2 *PBX Operator Queue Announcement*

A queue announcement can be provided to the calling party when the preset time in queue is reached.

The call cases where the PBX operator group queue announcement can be provided are:

- Direct call to the PBX operator
- Follow-me to the PBX operator
- Direct diversion to the PBX operator
- Diversion on busy to the PBX operator
- Transfer or Extension to the PBX operator
- Deflection to the PBX operator

The Individual operator queue announcement is provided to calling party, when the calling party type is a trunk line.

### 2.5.2.3 *PBX Operator Repeat Queue Announcement*

A repeat queue announcement can be provided to the calling party when the waiting time in the PBX operator's call origin queue is reached. The waiting time is started after providing the queue announcement, or the continuous announcement, or the repeat queue announcement.

The waiting time in the queue before providing the repeat queue announcement can be assigned by an I/O command.

The call cases where the PBX operator repeat queue announcement can be provided are:

- Direct call to the PBX operator

- Follow-me to the PBX operator
- Direct diversion to the PBX operator
- Diversion on busy to the PBX operator
- Transfer or Extending to the PBX operator
- Deflection to the PBX operator

#### 2.5.2.4

##### *PBX Operator Continuous Announcement*

A PBX operator continuous announcement can be provided to the calling party when the call is queued in the PBX operator's call origin group queue, or after the PBX operator queue announcement, or after the PBX operator repeat queue announcement or when call made to the call origin group or individual operator is parked. The continuous announcement is provided to the calling party when the queue time on the PBX operator queue is reached.

The call cases where the continuous announcement can be provided are:

- Direct call to the PBX operator
- Follow-me to the PBX operator
- Direct diversion to the PBX operator
- Diversion on busy to the PBX operator
- Transfer or Extending to the PBX operator
- Deflection to the PBX operator
- Calling party parked when PBX operator announces call to called free party
- PBX operator toggling speech between left and right parties

#### 2.5.3

### PBX OPERATOR ANNOUNCEMENT EXAMPLES

An example of a PBX operator welcome announcement is: Mitel sales department.

An example of a PBX operator queue announcement is: All operators are busy, your call will be handled by the first available operator.

An example of PBX operator repeat queue announcement is: All operators are still busy, please wait.

A continuous announcement can be continuously repeated recorded voice message.

## 2.6

### VOICE ANNOUNCEMENT AT PBX OPERATOR ANSWER

An operator answer announcement can be provided to both the calling party and the operator when a new call is answered.

After the announcement has been played, the connection from the voice announcement equipment to the operator and the calling party is released. Then, the operator and the calling party are interconnected.

The announcement to be played is determined by the identity of the operator and the origin of the call, that is, the type of call to the operator is determined with I/O command. An announcement may be defined for a single operator, for a group of operators, or for all operators.

If this kind of announcement is the only one initiated for the operators, it can be used like a Welcome message.

When a call is diverted to a PBX operator and the diversion announcement is to be provided, the diversion announcement will be played before the PBX operator answer announcement.

When the diversion announcement is completed, the call is routed to PBX operator and the PBX operator answer announcement will be started when call is answered by the PBX operator.

#### 2.6.1 CALLING PARTY TYPE FOR OPERATOR ANSWER ANNOUNCEMENT

The operator answer announcement can be provided to different calling party types based on the call origin group of the caller. The call origin group is selected with I/O commands. Operator answer announcement can be provided to the following calling party types:

- Extension
- Public trunk line
- Tie line

#### 2.6.2 CALL CASES

The call cases that can be provided with the operator answer announcement are:

- Direct incoming call to the PBX operator
- Intercepted call to the PBX operator
- Diverted call to the PBX operator
- Rerouted call to the PBX operator
- Deflection to the PBX operator

Other call cases such as recall to operator or call to individual operator will not get the operator answer announcement.

#### 2.6.3 PBX OPERATOR ANSWER ANNOUNCEMENT EXAMPLE

An example of an operator answer announcement is: N N (the name of the answering person).

An example of an operator answer announcement if no other announcements are used is: Welcome to Mitel.

### 2.7 VOICE ANNOUNCEMENTS FOR INDIVIDUAL PBX OPERATOR CALLS

When a call is made to an individual PBX operator, announcements can be provided to the calling party.

There is one type of announcement that can be provided for an individual PBX operator call:

- Queue announcement

The operator queue announcement and queue time before queue announcement can be assigned with I/O commands.

### 2.7.1 CALLING PARTY TYPES FOR INDIVIDUAL PBX OPERATOR ANNOUNCEMENTS

Individual PBX operator announcements can be provided to the following calling party types:

- Public trunk line
- Tie line

### 2.7.2 CALL CASES

#### 2.7.2.1 *PBX Operator Queue Announcement*

A queue announcement can be provided to the calling party when the preset time in queue is reached.

The call cases where the PBX operator group queue announcement can be provided are:

- Direct call to the PBX operator
- Follow-me to the PBX operator
- Direct diversion to the PBX operator
- Diversion on busy to the PBX operator
- Transfer or Extending to the PBX operator
- Deflection to the PBX operator

**Note:** No individual operator queue announcements are provided for recalls.

### 2.7.3 PBX OPERATOR ANNOUNCEMENT EXAMPLES

An example of a PBX operator queue announcement is: The operator is busy, your call will be handled as soon as the operator is available.

## 2.8 VOICE ANNOUNCEMENT FOR INDIVIDUAL EXTENSION CALLS

When a call is made to an individual extension, depending on the status of the extension, different announcements can be provided.

There are two types of announcement that can be provided for an extension call:

- Welcome announcement
- Continuous announcement

### 2.8.1 CALLING PARTY TYPES FOR EXTENSION ANNOUNCEMENT

Announcement is provided to the following party types:

- Extension \*)
- Public trunk line
- Tie line

**Note:** \*) IP extension as involved party does not support continuous announcements in parked on Inquiry or Refer back situations. This means that Music on Hold is not supported for IP extension, but Music on Wait is supported.

## 2.8.2 CALL CASES

### 2.8.2.1 *Welcome Announcement*

A welcome announcement of an extension can be provided to the calling party based on called party's directory number, when the call is made to an extension.

The welcome announcement can be assigned to a directory number by using the Recorded Voice Announcement I/O commands.

When a call is diverted to an individual, the diversion announcement will be played first to the calling party before a welcome announcement.

Call cases where individual welcome announcement can be provided:

- Direct call to the individual (including calls from manual external lines)
- Follow-me to the individual
- Direct diversion to the individual

### 2.8.2.2 *Continuous Announcement*

A continuous announcement is provided depending on the parked parties directory number when a call is parked.

The continuous announcement can be assigned to a directory number by using the Recorded Voice Announcement I/O commands.

Continuous announcement is not provided to IP extensions.

The call cases where the extension continuous announcement can be provided are:

- Parked on Inquiry or Refer back
 

When an extension parks the other extension, announcement is provided to parked party based on the parking party's directory number.
- Parked on busy extension
 

Operator does not have Call Waiting, it only has Camp on Busy Extension. When an extension or trunk line is extended to a busy extension by the operator, announcement is provided based on directory number of busy extension. This is for internal calls.

## 2.8.3 ANNOUNCEMENT EXAMPLES

An example of the welcome announcement is: Mitel sales manager (plus the name of the extension user).

Another example of the welcome announcement is: Welcome to Mitel. The called user is a mobile extension who will be located, please wait.

An example of the continuous announcement is: Your call is parked, please wait.

Another example, for a Personal Number call is: Called party will be searched, please wait.

## 2.9

## VOCAL GUIDANCE

Some of the traffic cases are identified and are considered as Vocal Guidance traffic cases for which a vocal guidance or a recorded voice announcement can be played to the user. With this feature, the user receives a recorded voice announcement in addition to the tone messages when he encounters the vocal guidance traffic cases. Vocal guidance can also be made customer specific by assigning customer numbers to the traffic cases and its announcements.

**Note:** The traffic cases that are considered for vocal guidance will from now be referred to as vocal guidance traffic cases and are described in the sections that follow.

Except for call to ECF activated extension and call from P-RXN with R2 access, vocal guidance is provided only for the traffic cases within the exchange (only for internal traffic).

### 2.9.1

### CALLING PARTY TYPES FOR VOCAL GUIDANCE

Vocal guidance can be provided to the following calling party types:

- Extension - ATS, DTS, and CXN
- Remote extension - only for call from P-RXN with R2 access
- Tie-line and Public trunk - only for call towards ECF activated extension

### 2.9.2

### ANNOUNCEMENT HANDLING FOR CALLS TO VOCAL GUIDANCE

- After voice announcement is disconnected, an appropriate tone message for the traffic case is provided.
- When the recorded voice announcement is not available, an appropriate tone message for the traffic case is provided.

Announcements are determined by RVA I/O commands.

### 2.9.3

### VOCAL GUIDANCE TRAFFIC CHART

| Vocal Guidance Traffic number | Vocal Guidance description |
|-------------------------------|----------------------------|
| 1                             | Vacant number              |
| 2                             | Line lock-out              |
| 3                             | Blocked                    |
| 4                             | Busy                       |

|    |   |
|----|---|
| 5  | Time out  |
| 6  | Successful activation/deactivation of service   |
| 7  | Unsuccessful activation/deactivation of service |
| 8  | Diversion active                                |
| 9  | DND active                                      |
| 10 | Message waiting/MMW active                      |
| 11 | Locking successful                              |
| 12 | Unlocking successful                            |
| 13 | Locked extension                                |
| 14 | Category barred                                 |
| 15 | Not available terminator                        |
| 16 | Prompt to dial R2 pin                           |
| 17 | Maximum charging cost reached                   |
| 18 | Caller is blacklisted                           |

## 2.9.4

### TRAFFIC CASES AND ANNOUNCEMENTS

**Note:** Sections where the vocal guidance announcement is not applicable to a certain type of extension are provided in the form of a table. The traffic cases that are applicable for each extension are indicated in the table with entries as shown below:

- YES if supported or vocal guidance is provided
- (hyphen) if not supported or no vocal guidance

#### 2.9.4.1

##### *Vocal Guidance Announcement 1 - Vacant Number*

Traffic cases applicable for ATSs, DTSs, CXNs:

- Vacant number or vacant service code.
- Attempt to use non-programmed individual abbreviated number

#### 2.9.4.2

##### *Vocal Guidance Announcement 2 - Line Lock-Out*

Traffic cases applicable for ATSs, DTSs, and CXNs:

- Terminator is in line-locked-out state

#### 2.9.4.3

##### *Vocal Guidance Announcement 3 - Blocked*

Traffic cases applicable for ATSs, DTSs, and CXNs:

- Terminator line is blocked.

## 2.9.4.4

*Vocal Guidance Announcement 4 - Busy*

Traffic cases applicable for ATSs, DTSs, and CXNs:

- Terminator is busy.
- Call to common bell group with full queue.
- Congestion at seizure of external trunk line.
- Congestion on route, call back allowed without procedure, no more digits required to complete the external number.
- Congestion on route, call back allowed without procedure, more digits required to complete the external number.
- Terminator is busy and suffix usage is not permitted.

## 2.9.4.5

*Vocal Guidance Announcement 5 - Timeout*

Traffic cases applicable for ATSs, DTSs, and CXNs:

- Time out when waiting for internal digit in register state.
- Time out when waiting for external digit in outgoing call state and the dialled external number is incomplete.
- Time out in call originating state.
- Time out in call busy state.

## 2.9.4.6

*Vocal Guidance Announcement 6 - Successful Activation or Deactivation of Service*

| TRAFFIC CASES   | ATS | DTS | CXN |
|---|-----|-----|-----|
| Successful execution of general cancellation  | YES | YES | YES |
| Successful activation of follow me  | YES | YES | YES |
| Successful deactivation of follow me  | YES | YES | YES |
| Successful activation of follow me to pager   | YES | YES | YES |
| Successful deactivation of follow me to pager   | YES | YES | YES |
| Successful activation of ECF  | YES | YES | YES |
| Successful deactivation of ECF  | YES | YES | YES |
| Successful activation of ICS-Diversion  | YES | YES | YES |
| Successful deactivation of ICS-Diversion  | YES | YES | YES |
| Successful activation of ICS-Diversion from a secondary or previous follow- me number | YES | YES | YES |

|  |     |     |     |
|--|-----|-----|-----|
| Successful deactivation of ICS-Diversion from a secondary or previous follow-me number | YES | YES | YES |
| Successful cancellation of internal call back  | YES | YES | YES |
| Successful cancellation of network call back   | YES | YES | YES |
| Successful activation of personal number   | YES | YES | YES |
| Successful deactivation of personal number   | YES | YES | YES |
| Successful activation of free seating  | YES | YES | YES |
| Successful deactivation of free seating  | YES | YES | YES |
| Requested malicious call tracing has been initiated                                    | YES | YES | YES |
| Successful activation of direct diversion  | YES | YES | -   |
| Successful deactivation of direct diversion  | YES | YES | -   |
| Successful activation of diversion on no reply   | YES | YES | -   |
| Successful deactivation of diversion on no reply                                       | YES | YES | -   |
| Successful activation of diversion on busy   | YES | YES | -   |
| Successful deactivation of diversion on busy   | YES | YES | -   |
| Successful activation of do not disturb  | YES | YES | -   |
| Successful deactivation of do not disturb  | YES | YES | -   |
| Successful programming of individual abbreviated number                                | YES | YES | -   |
| Successful programming of choice of language   | -   | YES | YES |

## 2.9.4.7

*Vocal Guidance Announcement 7 - Unsuccessful Activation or Deactivation of Service*

| TRAFFIC CASES  | ATS | DTS | CXN |
|--|-----|-----|-----|
| Attempt to use facility for last number redial on external calls without any number being stored | YES | YES | YES |
| Invalid account code has been dialled  | YES | YES | YES |
| Unsuccessful activation of personal number   | YES | YES | YES |
| Unsuccessful activation of free seating  | YES | YES | YES |
| Unsuccessful activation of follow me   | YES | YES | YES |
| Unsuccessful activation of follow me to pager  | YES | YES | YES |

|  |     |     |     |
|--|-----|-----|-----|
| Unsuccessful activation of ECF   | YES | YES | YES |
| Unsuccessful activation of ICS-Diversion   | YES | YES | YES |
| Unsuccessful activation of ICS-Diversion from a secondary or previous follow me number | YES | YES | YES |
| By-pass of diversion not allowed   | YES | YES | YES |
| Unsuccessful activation of Calling Line Identification Restriction (CLIR) per call     | YES | YES | YES |
| Attempt to answer common bell call without being member of the group                   | YES | YES | YES |
| Unsuccessful attempt to answer common bell call without any waiting call               | YES | YES | YES |
| Attempt to answer group call pick up call without being member of the group            | YES | YES | YES |
| Unsuccessful attempt to answer group call pick up call without any waiting call        | YES | YES | YES |
| Unsuccessful attempt to answer a paging request without any waiting call               | YES | YES | YES |
| Unsuccessful paging request due to lack of equipment                                   | YES | YES | YES |
| Unsuccessful paging request due to paging receiver not initiated                       | YES | YES | YES |
| Unsuccessful paging request due to paging receiver busy                                | YES | YES | YES |
| Wrong service requested due to paging receiver   | YES | YES | YES |
| Paging request not allowed due to categories   | YES | YES | YES |
| Unsuccessful ordering of paging with post-dialling procedure when ringing to extension | YES | YES | YES |
| Invalid account code has been dialled when class of service is forced account code     | YES | YES | YES |
| Invalid authorization code has been dialled  | YES | YES | YES |
| Extension user has failed to lock the own extension                                    | YES | YES | YES |
| Extension user has failed to unlock the own extension                                  | YES | YES | YES |
| Requested malicious call tracing is rejected   | YES | YES | YES |
| Service unavailable, nominated extension does not accept diverted calls                | YES | YES | YES |
| Unsuccessful attempt to unlock an extension that is already unlocked                   | YES | YES | YES |

|  |     |     |     |
|--|-----|-----|-----|
| Unsuccessful attempt to lock an extension that is already locked | YES | YES | YES |
| Unsuccessful initiation of call waiting with suffix digit        | YES | YES | -   |
| Unsuccessful initiation of intrusion                             | YES | YES | -   |
| Unsuccessful activation of direct diversion                      | YES | YES | -   |
| Unsuccessful activation of diversion on no reply                 | YES | YES | -   |
| Unsuccessful activation of diversion on busy                     | YES | YES | -   |
| Unsuccessful activation of do not disturb                        | YES | YES | -   |
| Successful deactivation of do not disturb                        | YES | YES | -   |
| Unsuccessful programming of individual abbreviated number        | YES | YES | -   |

## 2.9.4.8

*Vocal Guidance Announcement 8 - Diversion Active*

Traffic cases applicable for ATSs, DTSs, and CXNs:

- Extension goes off-hook with diversion active.

## 2.9.4.9

*Vocal Guidance Announcement 9 - Do Not Disturb Active*

Traffic cases applicable for ATSs, DTSs, and CXNs:

- Extension goes off-hook with DND active

## 2.9.4.10

*Vocal Guidance Announcement 10 - Message Waiting and Manual Message Waiting Active*

Traffic cases applicable for ATSs, DTSs, and CXNs:

- Extension goes off hook with message waiting active.
- Extension goes off hook with manual message waiting active.

## 2.9.4.11

*Vocal Guidance Announcement 11 - Locking Successful*

Traffic cases applicable for ATSs, DTSs, and CXNs:

- Extension has successfully locked the own extension.

## 2.9.4.12

*Vocal Guidance Announcement 12 - Unlocking Successful*

Traffic cases applicable for ATSs, DTSs, and CXNs:

- Extension has successfully unlocked the own extension.

2.9.4.13

*Vocal Guidance Announcement 13 - Locked Extension*

Traffic cases applicable for ATSs, DTSs, and CXNs:

- Extension goes off hook in locked state.

2.9.4.14

*Vocal Guidance Announcement 14 - Category Barred*

Traffic cases applicable for ATSs, DTSs, and CXNs:

| TRAFFIC CASES   | ATS | DTS | CXN |
|---|-----|-----|-----|
| Originator is barred for connection to terminator due to categories                               | YES | YES | YES |
| Originator is barred to use CLIR per call service   | YES | YES | YES |
| Dialled internal or external number is barred   | YES | YES | YES |
| Attempt to use a common abbreviated number which is not permitted due to class of service         | YES | YES | YES |
| Originator's Facility Restriction Level (FRL) is not accepted for routing the call forward        | YES | YES | YES |
| Originator's Call Service Information (CSI) category is not accepted for routing the call forward | YES | YES | YES |
| Unauthorized party attempting to use individual abbreviated number                                | YES | YES | -   |

2.9.4.15

*Vocal Guidance Announcement 15 - Not Available Terminator*

Traffic cases applicable for ATSs, DTSs, and CXNs:

- Call to a non-available generic extension
- Terminator not available for deflection service.

2.9.4.16

*Vocal Guidance Announcement 16 - Prompt to Dial R2 Pin*

Traffic cases applicable for RXN (over ISDN trunk):

- Call from mobile RXN, request for R2 pin code.

## 2.9.4.17

*Vocal Guidance Announcement 17 - Maximum Charging Cost Reached*

Traffic cases applicable for ATSS, DTSS, and CXNs:

| TRAFFIC CASE                                       | ATS | DTSS | CXN |
|--|-----|------|-----|
| Maximum allowed cost for the call has been reached | YES | -    | YES |

## 2.9.4.18

*Vocal Guidance Announcement - ECF Active (MDP)*

Traffic cases applicable for ATSS, DTSS, and CXNs:

- Extension goes off hook with ECF active.

Traffic cases applicable for ATSS, DTSS, CXNs, and trunk line (ISDN):

- Call to an extension which has ECF active.

## 2.9.4.19

*Vocal Guidance Announcement 18 - Caller is blacklisted*

Traffic cases applicable for calls from public ISDN and public SIP trunk:

- The caller in a public trunk call is blacklisted, i.e. not allowed to make calls into the PBX.

## 2.9.5

## ANNOUNCEMENT EXAMPLES FOR VOCAL GUIDANCE

An example of announcement when extension dials a vacant number is: "The number you have dialed is vacant".

An example of announcement when extension dials an extension in line lockout state is: "Line lockout".

An example of announcement when calling a busy extension is: "The extension you are trying is busy".

An example of announcement when extension dials another extension that is blocked is: "Blocked extension".

An example of announcement when handset is off-hook for a long time or when time-out state is reached: "Off-hook for long time".

An example of announcement on service activation is: "Activation of service successful".

An example of announcement on service deactivation is: "Deactivation of service failed".

## 2.10

## MUSIC ON WAIT FOR GROUP HUNTING AND ACD GROUP CALLS

Each Group hunting group or ACD group can provide music to the calling party while the calling party is waiting in queue. The option to provide music for queued calls is selected with an I/O command.

The calling party can have three options:

- No music to be provided
- Music will be provided
- Music will be provided if a recorded voice announcement has been provided. For example, MoW is played after a welcome or queue announcement.

For Service Nodes (LIMs) with Media Gateway Unit, MGU, or with Media Server, MS: The music must be stored as Recorded Voice Announcements in resources allocated for RVA. It is selected with I/O command.

## 2.10.1

### CALL CASES

The call cases that can be provided with music are:

- Direct call to busy Group hunting group or ACD group
- Follow me to busy Group hunting group or ACD group
- Direct Diversion to busy Group hunting group or ACD group
- Rerouted to busy Group hunting group
- Transferred to busy Group hunting group or ACD group
- Extended to busy Group hunting group or ACD group
- Incoming call diverted to an ACD back-up group
- Delayed call deflected to an ACD back-up group

After a call is transferred or extended, it is considered as that a call announcement has been provided to the calling party. If the music on-wait option is selected to provide music after an announcement, then music will always be provided to the transferred or extended party.

**Note:**

1. Diversion on busy or on no-answer to a busy Group hunting group is rejected.
2. Diversion on busy on no-answer or rerouting to an ACD group is rejected.
3. Re-entered queue call will not be provided with music on wait.
4. When a continuous announcement is selected, music for queued call is not provided.

## 2.11

### INTERACTIONS WITH OTHER FEATURES

If a call is deflected, the deflection type can be one of the following:

- Personal Number deflection.
- Overflow from PBX group, from ACD group or from PBX Operator Call ORigin Group (CORG).
- CSTA controlled deflection.

## 3 CONFIGURATION

### 3.1 GENERAL

The recorded voice announcement is an optional feature. It can be provided either by a software (MX-ONE Media Server) or by three types of hardware, either by Media Gateway plus a server, or by the TMU board (from external source), in the MX-ONE Lite or MX-ONE Classic.

The Media Gateways have voice announcement handling. All types of equipment can be used in the same system (in different LIMs), but it is recommended to use only one, because of the different message formats and additional management complexity.

The voice announcements, are identified with message numbers. The announcement number points to a message stored either in an MGU or MS. The message is stored in a standard file format on MGU/MS.

With the MS, there is also a streaming option available; wherein, you can use locally stored files and URL addresses to identify the voice announcement sources.

When an announcement is to be played, the message number will be used as a pointer to identify the wanted voice message.

For IP extensions or other IP entities, which are associated to a specific IP domain, the announcement resources will primarily be seized within that party's domain, i.e. in a media gateway in that domain, where the party that shall get the announcement played, has seized RTP resources.

### 3.2 MITEL MEDIA GATEWAY

#### 3.2.1 MITEL MEDIA GATEWAY VOICE MESSAGE

The Media Gateway Unit, MGU or the Media Server, MS, will at configuration time get all announcements from the server, and store and cache them locally, for use when the announcements shall be played. A voice announcement is handled similarly to sending a call progress tone.

#### 3.2.2 RVA SYSTEM EQUIPMENT CAPACITY

The voice announcement capacity is determined by the Media Gateway capacity for simultaneous playing of voice messages. Thus there is no dimensioning.

The same voice announcement number can be assigned to any group announcement for any number of PBX groups or ACD groups.

### 3.3 MITEL MX-ONE STREAMING SERVER

#### 3.3.1 MEDIA SERVER CONFIGURED FOR STREAMING

The Media Server, MS, has an alternative configuration for acting as a "streaming server", which can forward a number of streaming sources to selected extensions. The

MS will with that configuration use a SIP/MSCML based interface, and will at configuration time get the addresses to all relevant RVA announcements from the Service Node, either as URL addresses or as wav-file names. The MS can either be co-located with the Service Node, or located on a separate server if more capacity is wanted.

See the description STREAMING ON EXTENSION for details.

### 3.3.2 MS CAPACITY FOR RVA, MOH, AND VOCAL GUIDANCE

The same use cases for Recorded Voice Announcements, Music on Hold/Wait, and Vocal Guidance, supported with MGU, are also supported with MS and media streaming. The voice announcement capacity is determined by the Media Server's capacity for simultaneous playing of streamed voice messages, but generally the same RVA capacity limitations are valid.

There is no dimensioning for IP based users. For TDM end points additional MGUs are needed, but then also the TDM end points can get the streaming functionality, i.e. listen to the streamed announcements.

## 4

## CAPACITY AND LIMITATIONS

For further capacity values, see the description for *MIVOICE MX-ONE FEATURE MATRIX*.

- Peripheral RVA equipment cannot be initiated in the system.
- Number of diversion announcements
  - One internal diversion announcement per system
  - One external follow-me announcement per system
- Number of welcome announcements
  - One announcement per ACD group.
  - One announcement per PBX group.
  - One announcement per PBX operator Call origin group.
  - One announcement per extension directory number.
- Number of queue announcements
  - One announcement per ACD group.
  - One announcement per PBX group.
  - One announcement per PBX operator Call origin group.
  - One announcement per system for individual operator.
- Number of repeat queue announcements
  - One announcement per ACD group.
  - One announcement per PBX group.
  - One announcement per PBX operator Call origin group.
- Number of continuous announcements
  - One announcement per ACD group.
  - One announcement per PBX group.
  - One announcement per PBX operator Call origin group.
  - One announcement per extension directory number.
- Number of CID request announcements
  - One announcement per ACD group.
- Number of vocal guidance announcements
  - One announcement per vocal guidance traffic case and per Customer.
- Number of estimated waiting times and their associated messages
  - Fifteen estimated waiting times and their associated messages per ACD group.

Mixing MGU/MS in the same Media Gateway is **not** supported, but having them in different gateways is supported.

Overflow to MGU/MS is supported, or no RVA resources at all.