

Paging, PA

OPERATIONAL DIRECTIONS



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GENERAL

1.1

PAGING FACILITY

The paging facility enables persons who move about over a wider area out of hearing range of their own extension instrument to be reached from an extension, PBX operator console, or exchange line.

The attention of the person paged is attracted to incoming calls by activating a portable personal radio receiver (staff locator) or signaling with a personal code over an acoustical or optical system installed throughout a building, for example.

The person or group of persons it is desired to reach are paged on the basis of directory numbers. The directory number may be an extension number, extra directory number for paging when there is no extension, or a common directory number for a group of persons who are to be paged simultaneously. Directory numbers can be linked to an arbitrary paging code (for example, a radio receiver number).

A paging mission is executed by the exchange inter-working with the external paging equipment, which in the case of radio paging embraces the radio equipment and the paging receivers.

A paging mission is initiated with procedures or automatically as call transfer. After initiation the paging mission is stored in the exchange and calls are executed to external paging equipment for transmission via radio.

Answers to paging are mainly executed as meet-me. An answer procedure is dialed from an arbitrary extension, by which follows a normal speech connection established between the initiating and the paged parties. External paging equipment is cleared at the same time.

There are three main types of paging:

- paging with meet-me answer only
- paging with voice via radio and facilities for meet-me answering
- paging with transmission of digital information to a display in the radio receiver and facilities for meet-me answering

1.2

STANDARD PAGING

On putting the paging facility into operation in an exchange it should be assumed that the vast majority of users of the exchange need not know about more than one main type of paging. In the exchange this is called standard paging and can be started in several different ways:

- with prefix procedure for tone frequency key sending
- with suffix procedure on no answer and busy

automatically through call diversion On initiation of system data for paging in the exchange the type of paging that shall be standard is selected.

Standard paging alternatives:

Simple paging with meet-me answer

When a person is paged (the staff locator beeps or the person's lamp code is displayed on an optical system) the person goes to the nearest telephone instrument and carries out an answer procedure. The paging party remains with the instrument off hook and

awaits an answer. On receiving an answer the two parties are put into speech connection and the paging equipment is cleared.

Voice paging via radio

In the case of voice paging via radio the paging party can give spoken information which the paged party listens to on his paging receiver. The paging party receives a "start talking" tone from the paging equipment when the radio channel is established and the loudspeaker in the paging receiver is open. The speaking period is limited and a warning is given by the paging equipment shortly before clearing. The paged person can answer with meet-me after clearing of the voice connection if the paging party remains waiting with the instrument off hook. If the paging party replaces the receiver an answer can be executed by the paged person calling.

The voice connection established via radio can also be both ways. In this case the paged person can also answer by voice over the radio connection.

Identification of paging party and answer by calling

Identification of the paging party is carried out by means of automatic directory number transfer. This is possible in the case of internal calls and if the paging receivers are equipped with a digital display. On paging internally in the exchange the A-number is automatically transferred to the display in the receiver. Answering is executed by the paged party calling the number displayed. The paging party must replace the handset shortly after receiving the acknowledgment tone (queue or free).

On paging from trunk line from which no A-number has been received, or if presentation restriction is valid for the A-number, or if paging is requested from an operator's position that has a party connected to it, then a default number consisting of all zero's will be sent to the paging receiver instead of the A-number. In this case an answer should be executed according to the meet-me principle.

When the paging service is assigned to a person and identification of the paging party is desired, the receiver shall be classified for A-number transfer.

1.3

PAGING WITH SPECIAL PROCEDURES

Regardless of the type of paging chosen as standard paging in the exchange, special functions are available by means of special procedures:

a) Voice paging via radio

This function is the same as that described in point 1.2 b) but paging is started with special procedures for voice paging:

- prefix procedure for tone frequency key sending

b) Digital transmission to display receivers

The paging party can by means of a special procedure send optional digital messages to paging receivers with a display. No automatic directory number transfer is performed. If necessary, answers can be executed in the same manner as described in points 1.2a) or 1.2c). special procedures for digital transfer to displays:

- prefix procedure for tone frequency key sending

c) Initiation of alarm to paging receivers

A person wishing to alarm one or more persons carrying a paging display receiver can do this with a special procedure. The alarm group code (6.5.1 Initiate alarm group code on page 12) for the extension where the alarm has been initiated will automatically be transferred to the digital display of the receivers. Special procedure for alarm:

- prefix procedure for tone frequency key sending

- abbreviated number

d) Initiation of alarm acknowledgement towards paging receivers.

A person receiving an alarm via the paging equipment can acknowledge an alarm that has been stored and repeated in the paging equipment. Special procedure for alarm acknowledgement:

- prefix procedure for tone frequency key sending

The alarm, that is to be acknowledged is normally automatically initiated, for example, from security systems.

1.4

QUEUING TO PAGING

Normally it is possible to initiate only one paging mission at the same time to one particular extension, or extra, or common paging number. But, with Market Dependent Parameter (MDP), changeable by the command ASPAC (PARNUM=111), it is also possible to allow several paging requests at the same time to the same object. This function is called as "queuing to paging". The function is not used with speech paging, neither in isolated LIMs.

If queuing to paging is allowed and there are several paging missions activated to the same object (extension, extra, or common paging number) they will be answered so that the oldest one is answered first, then the second oldest and so on.

1.5

SEARCH AREA

A search area is a geographical area covered by the radio transmitter of certain paging equipment or an area in which lamp displays for an optical paging system are installed. An exchange may have several search areas which may be completely separate geographically or arranged so that some of them coincide fully or partially.

A search area is normally built up with paging equipment connected to the exchange via one or more identical channels. If it is desired to use paging equipment with several different types of interfaces it should be connected under several search areas since all channels in a search area must be of the same type and have the same characteristics. For example, one channel may be equipped for speech communication while the others do not have this facility. The channel which can handle speech should in this case form a search area of its own exclusively while the others form another paging area jointly.

When the paging service is assigned to a person the search areas in which this person is to be paged are determined simultaneously. It is possible to assign the person several meet-me areas. Paging starts simultaneously in all these areas when the person is paged with standard paging or special procedures which are not voice paging.

Only one search area can be assigned a person as a voice paging area. Paging is started in the voice search area when the person is paged with standard paging or a special voice paging procedure.

1.6

REPETITION OF CALLS TO PAGING RECEIVER

Repetition of calls to paging is used to attract the attention of the person paged at regular intervals to the fact that the paging party still awaits a meet-me answer. Repe-

tion is an optional function which can be selected separately for each search area. Only meet-me standard paging should be repeated both for internal and external calls. For external calls with display meet-me standard paging will also be repeated. A meet-me answer is possible right up until the total seizure time for a paging mission has elapsed (delayed answer) or the paging party has replaced the handset. This applies regardless of whether repetition is used or not and how many times a call is repeated. Repetition of calls to paging receivers can either be executed by the external paging equipment or in the exchange.

a) external repetition

Repetition in the external equipment is implemented so that the paging channel is seized in the exchange for a call throughout the time the paging party awaits a meet-me answer. The paging equipment is programmed to repeat the calling code at regular intervals via radio to the paging receiver until the exchange clears the channel.

The number of simultaneous paging missions (with ongoing repetition) in this type of system is limited to the number of available channels. The maximum seizure time for the paging channel should be selected so that it is as long as the time desired for repetition to take place on no answer or delayed answer. No repetition shall be executed in the exchange.

b) repetition in the exchange

Repetition in the exchange is implemented so that the paging channel is seized only for the length of time it takes to transfer a call to the external paging equipment and send out the calling code to the paging receiver once. The channel is immediately cleared and marked idle for new calls. The meet-me mission is saved and answering is possible the whole time the paging party remains waiting with hook off.

After a certain period of time which can be selected for each exchange a paging channel is again seized and the call renewed. The total number of repetitions per mission can be limited to paging area by the search area. The maximum seizure time for the channels should be selected so as to be shorter than the repetition interval.

Repetition in the exchange permits effective utilization of the paging channels. The number of repeated paging missions ongoing simultaneously can be many times greater than the number of available channels. (The factor is determined by the repetition interval and the average seizure time for the paging channels).

Repetition in the exchange is recommended:

- if repetition of calls to paging is desired
- if the average seizure time for the paging channel is short compared with the repetition interval desired
- if the external equipment gives a clearing signal when a call is concluded. Otherwise the seizure time for the channel is determined by the exchange (maximum seizure time for the channel)

1.7

INTERFACE TO EXTERNAL PAGING EQUIPMENT

The paging function is implemented by the exchange interworking with the external equipment. On putting paging into service the interface between the exchange and the paging equipment must be defined. Attention should be paid to the following points:

- type of hardware interface and signaling diagram. Hardware of the same type is required in the exchange and the external equipment (for example, serial and parallel interfaces have different hardware).
- Variations in the signaling diagram should be selected in the exchange so that they coincide with the configuration of the external paging equipment.
- Certain paging services make special demands on the external equipment, such as: voice paging display paging alarm and alarm acknowledge to paging repetition of calls to paging.

2 PREREQUISITES

If dial procedures are to be used to initiate or answer paging calls, these procedures must be initiated in the number analysis.

Since the Paging feature is regarded as an optional function, the SW programs PGP1 and PGP3 must be manually loaded before initiating the function.

See the ADMINISTRATOR USER'S GUIDE, and the INSTALLING AND CONFIGURING MIVoice MX-ONE, section Optional programs.

3 TOOLS

External paging equipment and paging receivers (staff locators)

4 REFERENCES

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5 PROCEDURE

In the paging activity the following work routine shall be observed.

1. Check system data for paging
2. Initiate search area
3. Initiate channel
4. Initiate staff locator, extra, or common paging number
5. Initiate alarm group code

6 EXECUTION

6.1 SYSTEM DATA FOR PAGING

6.1.1 CHECK AND ALTER SYSTEM AND TIME SUPERVISION DATA

General

System and time supervision data applies to the whole system. If necessary, they are altered to suitable values, 1.2 Standard paging on page 3 and 1.6 Repetition of calls to paging receiver on page 5.

Prerequisites

-

Execution

Print system and time supervision data for paging with the command *global_traffic_data -p*.

If necessary, alter the system and time supervision data by entering the command *global_traffic_data -c*.

Check the executed alterations with the commands *global_traffic_data -p*.

6.1.2 PRINT SYSTEM AND TIME SUPERVISION DATA

Print system and time supervision data for paging by entering the command *global_traffic_data -p*

6.2 SEARCH AREA

6.2.1 INITIATE SEARCH AREA

General

A search area is a geographical area covered by paging equipment. The exchange is connected to the paging equipment via a number of channels. The characteristics assigned to a search area apply to all channels in the search area.

Prerequisites

-

Execution

Initiate the search area by entering the command *PASAI*.

Check the result with the command *PAEDP*.

6.2.2 REMOVE SEARCH AREA

General

-

Prerequisites

All channels linked to a search area must be removed before the search area is removed.

Further, no staff locator should use the search area since the staff locators cannot be paged in the search area after it has been removed.

Execution

		Measure/Question	Observation/Comment
<p>Flow</p> <pre> graph TD START([START]) --> 1[1] 1 --> 2{2} 2 -- Y --> 3[3] 2 -- N --> 4[4] 3 --> 4 4 --> 5[5] 5 --> STOP([STOP]) </pre>	1	Check that the search area has no channel linked to it with the command <i>PAEDP</i> .	
	2	Is a channel linked to the search area?	
	3	Remove the channel.	See section Remove channel.
	4	Remove the search area by entering the command <i>PASAE</i> .	
	5	Check the removal with the command <i>PAEDP</i> .	

6.2.3

ALTER SEARCH AREA

First the search area must be removed. Execute as described in 6.2.2 Remove search area on page 9. After removal, the search area is initiated afresh as described in chapter 6.2.1 Initiate search area on page 9.

6.2.4

PRINT DATA FOR SEARCH AREA

Print data for the search area by entering the command *PAEDP*.

6.3 CHANNEL

6.3.1 INITIATE CHANNEL

General

A channel is understood to be an input in the paging equipment. The channel is connected to a equipment position in the exchange.

Prerequisites

A paging channel must not be initiated on the same board together with an announcing machine and external line. Channels on the same board should not be linked to different search areas if the interfaces to the external paging equipment differ from each other.

Execution

Select a vacant equipment position with *resource_status*.

Initiate a channel for the search area by entering the command *PACHI*.

After initiation of channels, check the result with the command *PAEDP*.

6.3.2 REMOVE CHANNEL

Block the equipment position where the channel is initiated with the command *block*.

Remove the channel with the command *PACHE*.

Check the result with command *PAEDP*.

6.3.3 PRINTOUT OF DATA FOR CHANNEL

Enter the command *PAEDP*.

6.4 STAFF LOCATOR

6.4.1 INITIATE STAFF LOCATOR

General

Initiate the paging service to an existing extension, as an extra staff locator number, or as a common staff locator number.

An extra staff locator is a staff locator which is not tied to a regular extension number, for example, a staff locator used by persons visiting the company.

A common staff locator number is a number used for paging a number of staff locators simultaneously. The person answering the paging can do so with a procedure followed by the common staff locator number.

Prerequisites

The search area with channels shall be initiated. If an extra or common staff locator number is to be initiated, the number series for staff locators must be initiated in the number analysis.

When classifying paging receivers the type of standard paging that has been selected should be taken into account when selecting system data for paging.

Execution

Initiate staff locator data by entering the command *PAGII*.

Check initiation with the command *PADAP*.

6.4.2 REMOVE STAFF LOCATORS

General

Prerequisites

On removal of the paging service for an extension the extension must not be call-transferred to its own staff locator.

Execution

Remove the staff locator by entering the command *PAGIE*.

Check the result with the command *PADAP*.

6.4.3 ALTER STAFF LOCATOR CATEGORY

Alter the category by entering the command *PACAC*.

Check the result with the command *PADAP*.

6.4.4 PRINT DATA FOR STAFF LOCATORS

Print data for staff locators by entering the command *PADAP*.

6.5 ALARM GROUP CODE

6.5.1 INITIATE ALARM GROUP CODE

General

An alarm group code is an optional function and need to be initiated only if it is desired to execute alarms via the paging equipment.

Initiation of an alarm group code entails linking a code to a group of extensions. When any of the extensions in the group initiates paging by means of a special alarm procedure, the alarm code of the group is included in the call.

Prerequisites

Staff locators that are to be reached by the alarm group code shall have receivers with displays.

Execution

Initiate an alarm group code by entering the command *PAALI*.

Check the result with the command *PAALP*.

6.5.2 REMOVE ALARM GROUP CODE

Remove an alarm group code by entering the command *PAALE*.

Check the result with the command *PAALP*.

6.5.3

PRINT DATA FOR ALARM GROUP CODE

Print data for an alarm group code by entering the command *PAALP*.

6.5.4

ALTER ALARM GROUP CODE

Remove an alarm group code by entering the command *PAALE*.

Initiate a new alarm group code by entering the command *PAALI*.

Check the result with the command *PAALP*.

6.6

VACANT EQUIPMENT POSITION

Select a vacant equipment position with the command *resource_status*.

7

TERMINATION

If exchange data have been altered and no more commands are to be entered a dump to backup media shall be effected.