

# Automatic Network Call Distribution, NC

## DESCRIPTION



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## 1

## GENERAL

## 1.1

## DESCRIPTION

Automatic Network Call Distribution (ANCD) provides possibilities to intelligently distribute calls to ACD groups located in the same or different nodes of an MX-ONE ISDN or H.323 network. ANCD is a powerful complement to the basic ACD feature.

The ANCD makes it possible to distribute incoming calls to different ACD groups based on the status of the ACD groups that are handling the required services. The involved ACD groups can be located in the same or different nodes. The distribution functionality can be used to distribute calls to the ACD group which provides the best answer capability for the moment, and it can also be used to redistribute calls from one ACD group to another at overflow situations. It includes additional functions like:

- Multilayer architecture
- Predictive Routing
- Conditional Routing
- Intelligent Networking of Multi-site MX-ONE ACD system
- Open and close gate of ANCD traffic
- One or two way participation

## 1.1.1

## MULTI LAYER ARCHITECTURE

The ANCD group differs from the ACD group in that its members are only other ANCD or ACD groups and not ACD agents. This means that it is possible to configure a distribution tree of ANCD and ACD groups that are used to either distribute or redistribute calls to the ACD group that can best handle the call. The ANCD group will always know the current status of the ANCD and ACD groups that are configured as its members. Different ACD groups can be member of a common ANCD group, which at the same time, can be a member of another ANCD group.

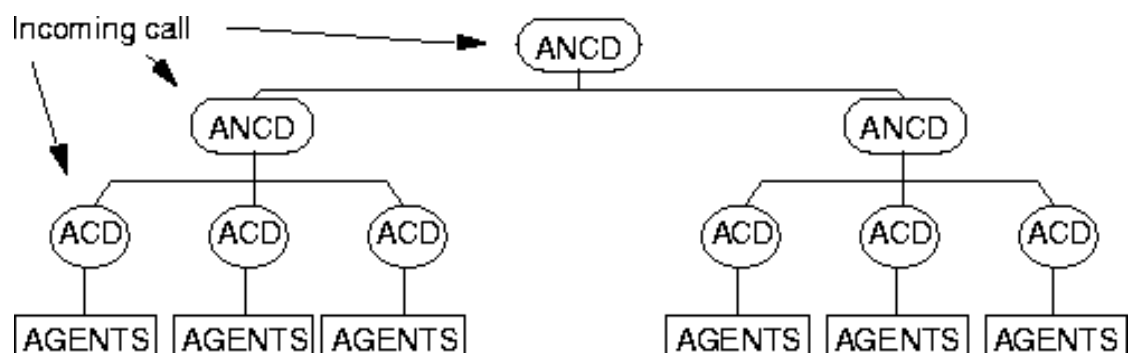


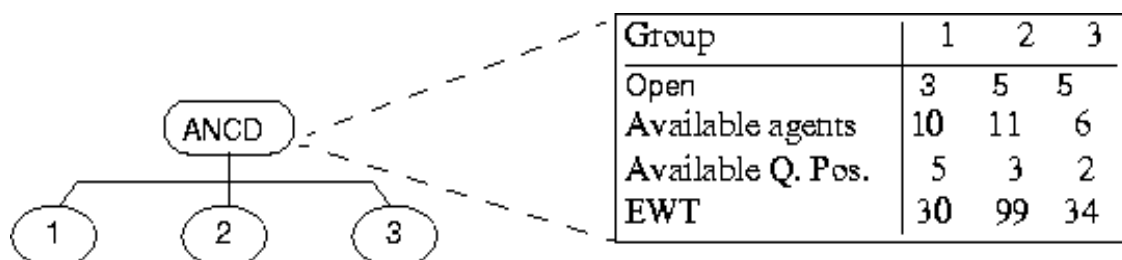
Figure 1:

## 1.1.2

## PREDICTIVE ROUTING

The system always routes the calls based on resources and predictions. The major benefit is saved network costs. The ANCD groups do not by themselves, queue calls. They simply act as distribution points. Calls are only queued in ACD groups. Call distribution and redistribution within the call service network are based on the following infor-

mation from the relevant ACD groups: whether the ACD groups are open or closed for traffic distribution/redistribution, whether there are any available agents within the ACD group, whether there are any available queue positions for the ACD groups and whether the Estimated Waiting Time (EWT) is exceeded.

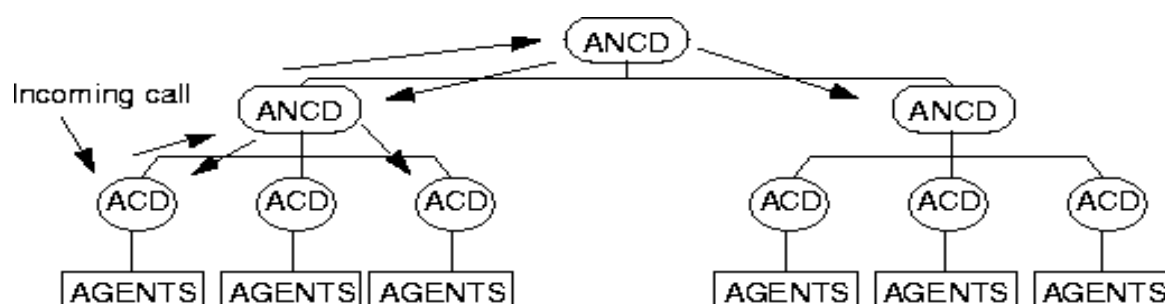


**Figure 2:**

### 1.1.3

## CONDITIONAL ROUTING

A distribution tree allows the system to only search for known, available resources. If the searching conditions are not met i.e. the call can climb in the distribution tree and search for more available resources, e.g. EWT is exceeded.



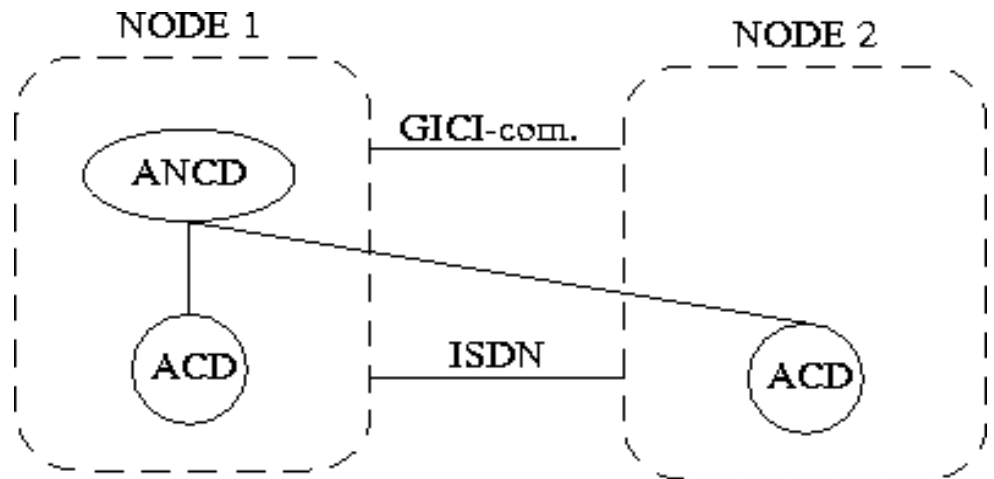
**Figure 3:**

### 1.1.4

## INTELLIGENT NETWORKING OF MULTIPLE MX-ONE SYSTEMS

The distribution tree network can be configured within either one or several MX-ONE ACD systems independent of the geographical distribution. Different ACD groups in different MX-ONE systems can then be members of the same ANCD group. The MX-ONE systems are connected by using ISDN or H.323 links, plus a data communication channel via GICI. The communication channel is used when an ANCD group needs to establish a relation with a satellite group in another node. The communication is also used by the ANCD group to periodically send a notification to the satellite group. The communication is furthermore used by the satellite group to send necessary status information for the group to the superior ANCD group. The ISDN/H.323 network can be either a leased line company network or a Virtual Private Network. In the case of VPN a semi permanent data channel still need to be set up between the different nodes.

ANCD interworking between MX-ONE and ASB 501 04 systems is supported.



**Figure 4:**

### 1.1.5 OPEN AND CLOSE GATE OF ANCD TRAFFIC

An ACD supervisor can open and close a membership of an ANCD group. It is possible for an ACD supervisor to open or close the traffic distribution from an ANCD group to the ACD group that is supervised.

### 1.1.6 ONE OR TWO WAY PARTICIPATION

It is possible to have an ACD group, which is a member of an ANCD group, to work as back up for another ACD group. This is done by receiving calls from the ANCD group but not allowing them to overflow their own calls to other ACD groups via the ANCD group. Participation can also be set in the opposite direction. The ACD group can send calls to the superior ANCD group but not accept incoming calls sent from the superior ANCD group.

## 1.2 GLOSSARY AND ACRONYMS

### **ACD**

Automatic Call Distribution

### **ANCD**

Automatic Network Call Distribution

### **GICI**

General Information Computer Interface

### **ISDN**

Integrated Services Digital Network

## 1.3 DEFINITIONS

### 1.3.1 ANCD GROUP

An ANCD group consists of a number of ANCD members.

### 1.3.2 ANCD LEVEL

Where an ANCD group is either a superior ANCD group and/or a satellite group.

### 1.3.3 ANCD NETWORK

An ANCD network makes it possible to distribute incoming calls to different ACD groups based on the status of the ACD groups that are handling the required services. The involved ACD groups can be located in the same or different nodes.

### 1.3.4 ANCD MEMBER

An ANCD member is an ANCD group or an ACD group in own or other node within the network.

### 1.3.5 SATELLITE GROUP

An ACD group or ANCD group that is defined as an ANCD group member is called satellite group. The satellite group can be placed in the same or in another node than the superior ANCD group.

### 1.3.6 SUPERVISOR POSITION

Supervisor position is any digital extension with ACD supervisor class of service. It allows the supervisor to open or close the traffic distribution between an ANCD group and a satellite ACD group.

### 1.3.7 DISTRIBUTION NUMBER

The group number that will be used to distribute a call from the superior ANCD group to the satellite group, that is the complete number to the satellite group.

### 1.3.8 OVERFLOW NUMBER

The group number that will be used to overflow a call from the satellite group to the superior ANCD group, that is the complete number to the superior ANCD group.

### 1.3.9 AVERAGE CONVERSATION TIME

Conversation time for the satellite group calculated based on the call duration time for each answered call to the ACD group.

## 2 FACILITIES

### 2.1 SELECTION OF SATELLITE GROUP WITH FREE MEMBERS

A superior ANCD group can distribute calls to satellite groups with the following selection criteria:

- Initiation order. Search for a satellite group with free members starting from the first initiated satellite group.
- Rotating order. Search for a satellite group with free members in rotating order.
- Most free members. Search for the satellite group with most free agents.
- Load sharing. Selection of a satellite group with free members is based on percentage load sharing, i.e. every satellite group within the ANCD group will have a corresponding distribution of calls as there are available agents in respective satellite group.

### 2.2 OVERFLOW OF CALLS

**ACD-group:** When a satellite group is not able to handle a call or if it cannot distribute a call to a member, the call will be overflowed to the superior ANCD group.

**ACND-group:** When a satellite group is not able to handle a call or if it cannot distribute a call to a member, the call will be overflowed to the superior ANCD group.

If there is no reachable superior ANCD group, the calls will be diverted to an individual diverttee position. If there is no individual diverttee position defined, the call will be rejected.

### 2.3 UPDATING OF STATUS INFORMATION

The status information for the satellite group will be sent to the superior ANCD group. When the superior ANCD group and the satellite group are located in different nodes the status information will be sent via the GICI-channel.

### 2.4 GROUP NAME DISPLAY

String names can be assigned to ANCD groups (initiated by I/O command for Name Identity) which are displayed on digital telephone instruments together with the ANCD group directory numbers. The ANCD group names are shown at calling and connected parties.

### 2.5 ALARM HANDLING

When communication fault appears, an alarm will be generated.

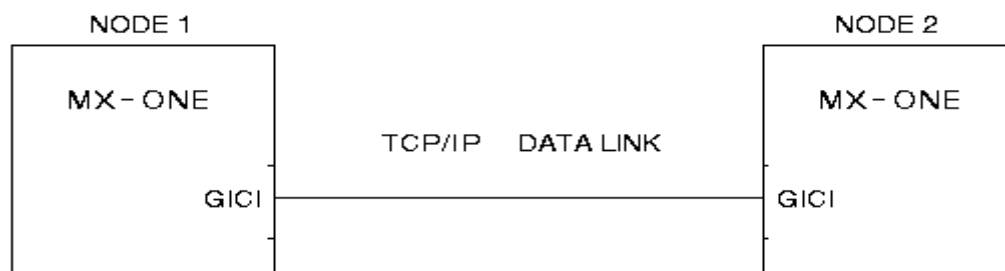
## 3 HARDWARE

### 3.1 COMMUNICATION INTERFACE

The PBX utilizes GICI TCP/IP communication channel to communicate with other PBXes in an MX-ONE ISDN or H.323 network.

### 3.2 INTERWORKING WITH OTHER EQUIPMENT

This figure illustrates the connection between the GICI channels in two different nodes.



**Figure 5: Configuration of the GICI communication channel over TCP/IP.**