

MD110 AND THE MX-ONE™ TELEPHONY SYSTEM – TELEPHONY SWITCH Call Center



MD110 PBX, as well as the MX-ONE™ Telephony System – Telephony Switch, offers an integrated call distribution package, that provides a flexible, modular and distributed call-handling system to increase business revenue and improve efficiency. The package includes:

- ACD (Automatic Call Distribution) – A fully integrated call distributor for use with the MD110 PBX and the MX-ONE™ Telephony System – Telephony Switch
- ANCD (Automatic Network Call Distribution) – A powerful add-on package to the MD110 ACD as well as the MX-ONE™ Telephony System – Telephony Switch ACD for enhanced call distribution functionality, such as predictive and conditional routing and intelligent networking of multiple ACD systems
- CCM (Call Center Manager) – A management tool used for administrating and maintaining the call center operation
- CCA (Call Center Assistant) – A call control and feature-rich desktop application for the MD110 call center agents as well as the MX-ONE™ Telephony System – Telephony Switch call center agents
- ApplicationLink – An interface for integrating the MD110 PBX, as well as the MX-ONE™ Telephony System – Telephony Switch call center agents, with various computer systems. It enables the computer to control calls by answering, transferring, etc.
- Wall Display Unit – Used to distribute information quickly and efficiently to call center agents and supervisors, allowing them to provide better service and faster customer response



Products

Automatic Call Distribution (ACD)

Automatic Call Distribution (ACD) is a fully integrated call distributor for use with Ericsson's MD110 Business Communications System and the MX-ONE™ Telephony System – Telephony Switch, which means that it can be distributed throughout the MD110 PBX as well as the MX-ONE™ Telephony System – Telephony Switch. Agents can be easily relocated geographically as well as reassigned to new groups. Traffic is distributed efficiently to the agent with the highest priority level based on which agent has been free the longest. The ACD offers multiple ACD Groups for different types of calls. This allows call center agents to control multiple queues simultaneously. If some queues are considered more important than others, different Priority Queuing Options can be used.

Incoming Call Handling

- **Multi Queue Function**
Up to 250 ACD groups can be configured. This applies to both the MD110 PBX as well as the MX-ONE™ Telephony System – Telephony Switch. This enables users to maintain a large number of different queues simultaneously.
- **Priority Queuing Options**
Enables the call center manager to set different priorities for the different ACD queues. Exclusive or timed priority can be used.
- **Dynamic Queue Length**
If the number of calls in a queue exceeds the programmed queue length, new calls are overflowed to a predefined answering position.
The Dynamic Queue Length automatically adjusts the length of an ACD Group queue based on the number of agents available.
- **Estimated Waiting Time Announcement and Recorded Voice Announcement**
The Estimated Waiting Time (EWT) Announcement feature for ACD works in conjunction with the Recorded Voice Announcement (RVA) feature.
When a call to a busy ACD group is put in the ACD queue, the RVA announcement can be replaced by different announcements based on an estimation of the time the calling party is likely to wait before the call is answered. Appropriate messages can be assigned to various EWT ranges.
- **While waiting**
Music can be played or recorded information given between Voice Announcements.

- **Overflow of calls**
If a queue is full or all agents belonging to the associated ACD group are marked absent, the call is overflowed to an alternative destination.
- **Customer Identity**
A calling party can be asked to enter a Customer Identity (CID) of up to 10 digits. If entered, this number will be presented instead of the Calling Line Identity on the agent's display.
- **False B-Answer**
False B-Answers can be sent to external calls that are queuing for an ACD group. It will prevent a time-out condition and disconnection by the cooperating exchange while the call is waiting.
- **Back-up groups**
An ACD group can use another ACD group as a back up group to prevent losses of calls. Any ACD group can be a back-up for another ACD group, provided the two groups are in different LIMs.

Call Distribution Features

- **Flexible Call Routing**
Call routing for each ACD group is determined by the call center administrator according to the requirements for the individual group. When selecting the agent to answer an incoming call, different selection patterns can be used. If Agent Priority is used, the selection will depend on the priority of the agent plus waiting time. If no Agent Priority is used, the system will select any free (but qualified) agent with the longest waiting time since the last call. A third option is to search for free agents in a predefined order.
- **No-Answer Handling**
If an agent does not answer a call within a specified time, the agent's telephone will either be marked absent and the call will be distributed to another free agent or be placed first in the queue.
- **Agent Automatic Answer**
Agent Automatic Answer enables the system to automatically connect a new call to an agent after the previous call has been completed, without pressing any keys.

Agent Features

- **Multi-Member Agents and Multi-Member Busy**
An agent can be a member of eight ACD groups simultaneously. By using Multi-Member Busy, only one call at a time is presented to the agent.
- **Clerical Time**
Individual clerical time can be set for each agent prior to handling the next call. The clerical time can easily be terminated at any time simply by pressing a key.



- **Telephone Display Information**
The agents receive queue and member information via the telephone display. The display shows the queue and agent situations for the groups that can be handled by the position.
- **Line Status Information**
For quick information access, the LED indicators next to the incoming call buttons use different flashes depending on status – absent or present, ringing, call on the line or call put on hold.
- **Queue Information**
Since an agent can handle calls from more than one queue, it is important that the agent know what type of call is being presented. To facilitate this, different queues are distributed to separate buttons on the agent's consoles. In addition to the Dialed Queue Identification, the agent receives information on the display when receiving an ACD call.
- **Dialed Number Information**
Dialed Number Information Service (DNIS) is a service that provides the ACD agents with the capability to identify different customers based on the number the customer is dialing.
- **Customer Identity Storage**
This feature allows a Customer Identity (CID) to be associated with an external caller (customer). The feature is used mostly in connection with Computer Supported Telecommunications Applications (CSTA), the calling party's identity is needed when the call is presented to the agent.

The identity may be received automatically, or manually entered by the calling party using the DTMF keypad. If the call is transferred via a voice server, the CID is transferred with the call.
- **Call Qualification Codes**
The Call Qualification Codes enable the agent to classify calls via a key entry on the agent console.
- **Agent's Help Line**
A Help Line to reach the supervisor can be programmed on the agent's telephone.
- **Agent's Personal Identification Number (PIN)**
By entering a PIN-code, the agent can be identified regardless of the telephone set used.
- **Agent Temporarily Away**
When leaving for a short break the agent can, with a single keystroke, mark the position absent to all ACD groups.
- **Calling Time Measurement**
The timer feature on the telephone set allows agents to measure and read elapsed time.

Supervisor Features

- **Supervisor Listen-In**
The supervisor can listen in to agents' conversations, with or without a warning signal.
- **ACD group follow-me (night switch)**
The call center manager/supervisor can change the answering position for an ACD group using the Follow-me procedure, e.g. all calls for ACD groups can be diverted to another answering position, internal or external.
- **ACD group do-not-disturb**
The call center manager/supervisor can prevent agents from receiving any new calls from a particular ACD group by using the Do Not Disturb procedure.
- **Traffic distribution**
A supervisor can open or close traffic distribution from ANCD groups to the ACD groups that he is supervising. Traffic routed directly to the ACD group will not be affected.

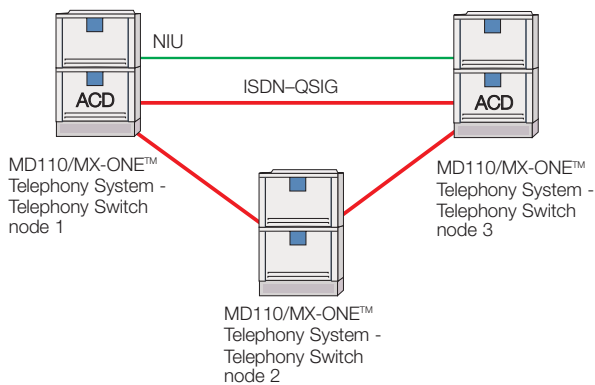
Automatic Network Call Distribution (ANCD)

The ANCD package offers an additional call group – the ANCD group – for both the MD110 Business Communications System and the MX-ONE™ Telephony System – Telephony Switch. The ANCD group differs 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.

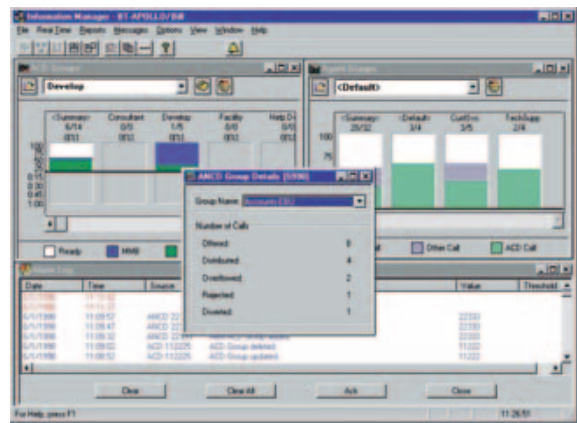
Different ACD groups can be members of a common ANCD group, which at the same time, can be a member of another ANCD group. Calls can be accepted at any level of the distribution tree, and at any ANCD or ACD group.

Call distribution and redistribution within the call service network is based on the following information from the relevant ACD groups:

- Whether the ACD group is open or closed for distribution/redistribution
- Whether there are available agents within the ACD group
- Whether there are available queue positions for the ACD group
- Estimated Waiting Time for the ACD group (EWT)



By using ISDN networking, the ANCD provides intelligent ACD networking between multiple MD110/MX-ONE™ Telephony System - Telephony Switch ACD nodes.



The ACD Groups window displays current status of either all groups or specified groups.

Conditional Routing

A distribution tree allows the system to search only for available resources. If the search conditions are not met, then the call can climb in the distribution hierarchy and search for more available resources. If the call is not expected to be answered at the original answering location within a predefined time, it is intelligently handled elsewhere using the look-ahead overflow capability.

With ANCD, the administrator can define at any ACD and ANCD group level a condition known as Maximum Waiting Time (MWT).

If the Estimated Waiting Time (EWT) exceeds the MWT, then the call will request the ANCD group on the next level to handle the call. The ANCD group will check all its members and include the original ACD group.

The ANCD group will use the intelligent look-ahead functionality and send the call to the member group with the shortest Estimated Waiting Time, as long as it is shorter than the ANCD group's predefined MWT. If conditions are not met, then the call will be sent on further into the system until it is handled. Different MWTs can be set for the different ACD and ANCD groups.

Predictive Routing

The system always routes the calls based on the Estimated Waiting Time (EWT). The major benefit of routing and rerouting calls based on EWT is that it saves network costs. Many call centers use free phone telephone numbers and unnecessary queuing time can be costly. By analyzing the queue time before queuing the call and then immediately routing the call to where it is best handled, the call center saves money.

The ANCD groups do not queue calls, they simply act as distribution points. Calls are only queued in ACD groups. In order to avoid confusion for the supervisors, the system does not allow for multiple queuing.

Intelligent Networking of Multiple ACD Systems

The distribution tree network can be configured within either one or several ACD systems independent of geographical distribution. Different ACD groups in different MD110 systems, or different MX-ONE™ Telephony System - Telephony Switches, can thus be members of the same ANCD group. In this way, the call center manager can build a single, virtual call center from a multi-site MD110, or MX-ONE™ Telephony System - Telephony Switch, ACD system.

All software resides within the system, so no add-on servers are needed to provide the intelligent ACD networking. The MD110, or MX-ONE™ Telephony System - Telephony Switch, systems are connected using ISDN link plus data signaling via the network interface.

Furthermore, by simply using the telephone set, the supervisor can open or close traffic distribution from ANCD groups to the ACD groups that he is supervising. Traffic routed directly to the ACD group will not be affected.

Call Center Manager 4.0

Call Center Manager (CCM) is the heart of the Call Center management system for both the MD110 and the MX-ONE™ Telephony System - Telephony Switch. It presents and stores information about call distribution resources and services provided by the call center. CCM provides the call center manager and supervisor with a sophisticated tool to insure that call center resources are optimized. It monitors and maintains call center efficiency and thereby enhances customer service.

CCM offers full control of daily call center operations by closely monitoring all activities. Call center performance statistics, presented in report format; provide valuable input for short and long term planning. Business plans based on reliable and accurate information result in better planning, better control and better business.

CCM is designed with true client/server architecture. The CCM server is connected to the MD110 PBX to receive call information events. CCM client computers can be connected to the server via a standard LAN.

Multiple MD110 PBX networks can be monitored by one CCM server, providing a comprehensive view of call center activity.

CCM runs on the Microsoft Windows operating system and uses a Microsoft SQL Server to store data in an open relational database.

Real-time Presentation

Real-time information of ACD Groups, ANCD Groups, Agent Groups and individual Agents is presented in a Windows environment. Summary information can be displayed as the combined information for all ACD/ANCD and agent groups the user has read access to.

- ACD Groups - information on current status of members - available (ready, MMB or busy), unavailable, unmanned - and queues - current, maximum, occupancy is presented. Performance information is also available for specific intervals on the service level, number of calls - offered, lost and answered - and average times for waiting, handling and time to abandon.



Call Center Manager provides two ways of creating reports scheduled reports and one-time reports.



Call Center Assistant Toolbar

- ANCD Groups – All real time information available for ACD groups is also available for ANCD groups. The equivalent to members in ACD groups is satellite members.
- Agent Group – Real-time information on logged-on agents and current status for available members is shown along with the current number of calls.
- Agents – Extension number is presented along with information on current status, log-on time and total unavailable time.
- Alarm – CCM allows users to define thresholds and set alarms to signal when these thresholds have been exceeded. The call center manager will be alerted by a change in color of the threshold value on the real-time display, a written message and optionally, an alarm will sound and a red bell icon will flash.

Customized Environment

CCM allows for each user to customize the working environment by defining the real-time screen layouts to display the information most relevant to the individual. Each layout can be saved and easily retrieved from any computer in the network.

Report Generation

Reports can be generated for ACD Groups, ANCD Groups, Agent Groups, Agents, dialed numbers and call qualification codes for specified times and date intervals. The collected data can be printed immediately or sent to a file. CCM also supports scheduling of reports that can be printed or saved at a later time. Furthermore, scheduled reports that have been saved can be sent to a destination directory or one or more e-mail addresses specified times.

Reports saved as files will be stored in (a) Comma Separated Value (CSV) format, which allows the files to be further processed in external spread sheet applications or (b) HyperText Mark Language (HTML) format, which allows the files to be viewed in any web browser. All CCM data is stored in an open relational database making it easily accessible by any ODBC compliant tool for further processing.

Wall Display

Text messages, combined with real-time information about the call center, can be sent to external wall displays, giving the call center manager or supervisor a means of broadcasting messages to all agents in the call center. The messages can be displayed immediately, scheduled for a



ACD Statistics



Call Window

later time, or scheduled to be displayed daily. CCM supports up to three different colors when presenting the message on any of the single- or two-line wall displays.

System Administration

Each individual CCM user account can be authorized to monitor and control subsets of the complete call center, down to the level of specific Agent Groups and/or ACD Groups.

CCM also allows users to perform database maintenance, including backing up, deleting and loading report data, as well as backing up and restoring configuration data, and database expansion through a user-friendly graphical interface.

Call Center Assistant 3.0

Call Center Assistant is a Computer Telephony Integration (CTI) application that combines telephony functionality with the computer on user desktops. It provides advanced call management including directory dialing, real-time information, supervisor features, messaging, recording and screen-pop. Call Center Assistant helps call center agents and supervisors in their daily tasks by simplifying their call handling procedures and by offering several new and useful call center features. By improving the efficiency and flow of information within the call center, Call Center Assistant can contribute to:

- Increased income because more calls are handled
- Improved customer service because of more efficient and better-informed agents.
- Decreased staffing costs because the existing work load can be handled by fewer agents.

Call Center Assistant is well-integrated into the Call Center system using the MD110 PBX, as well as the MX-ONE™ Telephony System – Telephony Switch, and ApplicationLink 4.0. Call Center Assistant also has interfaces to Call Center Manager 4.0 and the corporate directory maintained by D.N.A. Directory Manager. All of these products are optional.

Call Center Assistant has client-server architecture and operates under Windows NT/XP/2000/98 (CCA clients only) as a Win32 (32-bit) application.



Dialog 4223 Professional



Binaural Dialog 200 headset

Features

The strength of Call Center Assistant is the flexibility of the application. By employing feature-based licensing, groups of features are available as optional components to the standard version of Call Center Assistant. The optional licenses are for supervision features, real-time information, screen-pop, desktop messaging, recording and D.N.A. Directory Access.

Standard Version

- Free ACD seating – the PC and the Digital Telephone Set (DTS) for the MD110 and the MX-ONE™ Telephony System – Telephony Switch are not tied to a specific agent. Free seating enables agents in a flexible office to easily change desks.
- Agents working during different shifts can share desks even if they handle different ACD groups. Savings are attained through reduced needs for workplaces, office space and equipment.
- Because all main DTS functions are accessible from computers, including ACD log on/off and ACD available/unavailable, the call center agent has just one interface to work with. This eliminates the frustration caused by jumping back and forth between phones and computers.
- Simplified call handling with an easy to use graphical user interface means that new agents need less training and become productive quicker.
- Validation and enhanced entering of call qualification codes by selecting a name or number from a list. This means more reliable call qualification code statistics in Call Center Manager as well as an easier way of entering call qualification codes.

Supervisor Feature

This feature combines functionality useful for call center supervisors or team leaders.

- Forced Log-Off/Ready/Not Ready
- Continuous monitoring
- Immediate and scheduled service divert for easily setting forwarding destinations for ACD Groups. This can be done immediately or scheduled, either on a one-time or regular basis.

Real-time Information

If Call Center Manager 4.0 is present, Call Center Assistant provides call distribution statistics. Both ACD/ANCD Group and agent statistics may be displayed in separate windows in graphical or tabular format.

- ACD/ANCD statistics on an agent's computer provide feedback to the agent on the current workload and performance. Agents who cannot easily see the wall displays can view the statistics on their computers.

Screen-pop

The screen-pop feature is the Dynamic Data Exchange (DDE) feature that enables integration and data sharing between Call Center Assistant and compatible business applications. The Call Center Assistant screen-pop feature offers traditional call control and basic Computer Telephony Integration (CTI) with customer applications. DDE allows Call Center Assistant to enter data into Windows-based applications for faster data access, improved productivity and advanced real-time data sharing capabilities to bring advanced technology to call center desktops.

Desktop Messaging

- Broadcasting of text messages provides another means of efficient information flow by giving selected supervisors and agents the possibility to quickly send and reply to messages throughout the call center.
- Ability to easily request and provide assistance. The Assist function improves agents with the capability to quickly resolve issues during calls without putting callers on hold. This means shorter calls and fewer call-backs.

D.N.A. Directory Access

- If D.N.A. Directory Manager is present, Call Center Assistant provides directory dialing using the common D.N.A. corporate directory for internal as well as external telephone numbers. Through an easy-to-use GUI dialog box, users can search and select telephone numbers from the common, corporate directory as well as privately entered numbers.

ApplicationLink 4.0

ApplicationLink for the MD110 and the MX-ONE™ Telephony System – Telephony Switch offers functional integration of telephone and computer systems for better customer service, cost saving and increased revenue. It is based on the ECMA-CSTA open standard interface, which allows the MD110 as well as the MX-ONE™ Telephony System – Telephony Switch to support any CSTA compliant application or API, and supports Microsoft's proprietary TAPI interface.

ApplicationLink permits computers to route calls, ensuring that the most appropriate agent is selected. With ApplicationLink, calls can be handled more efficiently by allowing agents to perform call-handling services, such as making calls, answering calls and transferring calls from computer terminals.

Wall Display Unit

Wall Display Units are used to distribute information quickly and efficiently to call center agents and supervisors, allowing them to provide better service and faster customer response.

Data thresholds can be set for a variety of statistics, such as service level, number of calls waiting and longest wait time.



When a threshold has been exceeded, the color on the wall display will automatically change to alert agents and supervisors. This makes it easy to target problem areas and take immediate, decisive action for speedy customer service.

Product Specifications

Product	Specifications
ACD System Guidelines	Maximum 1,000 agent positions per system/node
ACD/CTI Groups	32 per LIM, 250 per system, 250 calls in queue per ACD group, 1,000 calls in queue per LIM, 32 queue priorities per system, 10,000 DNIS numbers can be defined
Agent positions	75 agents per LIM, 1,000 agents per system, 8 ACD groups per agent position
ANCD groups	4 ANCD groups per LIM, 64 ANCD groups per system, 16 members per ANCD group, 64 members per LIM, 1,024 members per system
Call Center Manager 4.0	<p>Minimum Hardware: Client: Windows NT compatible PC, Pentium 133 MHz minimum, 150 MB HD, 32 MB RAM, network interface card</p> <p>Minimum Software:</p> <ul style="list-style-type: none"> • Server: Microsoft Windows NT 4.0 Server with Microsoft Server 2003, Microsoft Windows 2000 Server with Service Pack 4, Microsoft Windows 2003 • Client: Microsoft Windows NT workstation version 4.0 Service Pack 6a, Microsoft Windows 2000 with Service Pack 4, Microsoft Windows XP with Service Pack 1a • Simplified Chinese Client: Simplified Chinese operating system, RichWin IME with English operating system <p>Microsoft SQL Server: Version 7.0 Service Pack 4, Version 2000 Service Pack 3 Microsoft Data Access Component: Version 2.6 MD110: BC9, BC10, BC11, BC12 (up to and including SP3 & BC12.1) MX-ONE™ Telephony System – Telephony Switch</p>
Call Center Assistant 3.0	<p>Minimum Hardware:</p> <p>Server: Windows NT compatible PC, Pentium 133 MHz or better, 1 GB HD with 20 MB of free disk space, 64 MB RAM, network interface card, free serial port for I/O connection to MD110 (if serial connection to be used)</p> <p>Client: Windows NT compatible PC, Pentium 133 MHz minimum, 10 MB of free disk space, 32 MB RAM, network interface card</p> <p>Minimum Software:</p> <ul style="list-style-type: none"> • Server: Microsoft Windows NT 4.0 Server with Microsoft Server 2003, Microsoft Windows 2000 Server with Service Pack 4, Microsoft Windows 2003 • Client: Microsoft Windows NT workstation version 4.0 Service Pack 6a, Microsoft Windows 2000 with Service Pack 4, Microsoft Windows XP with Service Pack 1a, Microsoft Windows 98 with Service Pack 1 • Simplified Chinese Client: Simplified Chinese operating system, RichWin IME with English operating system <p>Microsoft SQL Server: Version 7.0 Service Pack 4, Version 2000 Service Pack 3a Microsoft Data Access Component: Version 2.6 MD110: BC9, BC10, BC11, BC12 (up to and including SP3 & BC12.1) MX-ONE™ Telephony System – Telephony Switch</p>