
Meridian Administration Tools

Call Accounting

User Guide

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Contents

Introduction	15
Overview	15
CDR buffer units	16
Schematic of menus & functions	16
About this user guide	18
Conventions used in this user guide	18
Help	18
Getting Started	21
Anatomy of a call record	22
Meridian 1 outputs call records	22
Call Accounting collects and stores call records	23
Call Accounting processes call records	23
Setting up Call Accounting: Summary	26
Step 1: Ensure that Meridian 1 is set up properly	26
Select CDR output format	27
Auxiliary Identification output in CDR record	27
Configure routes for CDR output	27
Step 2: Install and set up buffer unit	27
Security precautions	28
Connect MDR-2000 to Meridian 1 and PC	28
Changing communications parameters	32
Step 3: Install Rate Tables	34
Step 4: Run Call Accounting so it can be configured	34
Step 5: Set up and test data collection	37

Enter data collection parameters	38
Test data collection	38
Step 6: Obtain LTM from Meridian 1	41
Step 7: Set up telephone configuration	42
Summary of Steps	42
Enter Reporting Options	43
Update Carrier Pricing Templates	44
Enter Telephone Configuration	48
Enter System Call Digit Translations	56
Update Call Type Definitions	57
Step 8: Test telephone configuration	59
Configuration/Diagnostic Report	59
Exception/Chronological Report	59
Update Directories	60
Conclusion	61
Operating Procedures	63
Data Collection	64
Data collection troubleshooting	65
Report generation	65
Step 1: Select Output Device	65
Step 2: Select Report Filters	66
Step 3: Generate reports	66
Directory updates & data management	67
Directory updates	68
Summary of steps for directory updates	73
Data management	75
Call Database maintenance	79
Summary of tasks	81
Daily tasks	81
Ongoing tasks (recommended weekly)	82
Monthly tasks	82

User's Reference	83
File menu	83
Report menu	83
Select Report Filters	85
Cost allocation reports	85
Trunk analysis reports	86
Directory/Configuration reports	86
Frequency reports	87
Export Detail Definition	87
Graphs	88
Database menu	88
Customer Directory	89
Billing Database	89
Backup All Databases	90
Restore All Databases	90
Telephone Configuration Database	91
System Call Digit Translation	93
Utilities	93
Account Code Editor	94
Text File Editor	94
Reporting Options	94
Other Billable Items	95
System Options	96
Location Books & Rate Tables	96
Communications menu	100
Communications Database	100
Data Collection	101
Schedule Data Collection	101
Advanced Network Setup	103
Scenario	104
Summary of Steps	105
Step 1: Install CDR buffer unit	106
Step 2: Open Site & System	107
Step 3: Install Rate Tables	108

Step 4: Run Call Accounting	108
Step 5: Test data collection	108
Enter communications parameters	108
Test data collection	109
Step 6: Enter Telephone Configuration	110
Create Location Book for VPN	111
Enter Reporting Options	114
Update Call Type Definitions	116
Update Carrier Pricing Templates	116
Enter Telephone Configuration	120
Step 7: Test Telephone Configuration	131
Configuration/Diagnostic Report	131
Exception/Chronological Report	132
Appendix A: LAN Information	133
File descriptions	133
Shared files	134
Non-shared files	134
File access limitations	135
File locked access	135
Simultaneous access	136
Report generation restrictions	137
Appendix B: Additional Printer Commands	139
Appendix C: Troubleshooting	141
Appendix D: Error Messages	143
Appendix E: Database, File & Report Specifications	147
Appendix F: List of Terms	151

List of figures

Figure 1	
Schematic of menus & functions	17
Figure 2	
System block diagram	23
Figure 3	
Sample call record allocation	24
Figure 4	
Call record costing process	25
Figure 5	
Meridian 1 to MDR-2000	29
Figure 6	
MDR-2000 to modems to PC	30
Figure 7	
MDR-2000 status	33
Figure 8	
Common Services Communications tab	35
Figure 9	
MAT Navigator	36
Figure 10	
Call Accounting main window	37
Figure 11	
Data collection status	40
Figure 12	
Call Database	41

Figure 13	
Carrier Pricing Template	45
Figure 14	
Pricing Definition	47
Figure 15	
Telephone Configuration Database map of menus	49
Figure 16	
Main node definition	50
Figure 17	
Trunk Group Service Definition	52
Figure 18	
Outgoing Calls Costing	55
Figure 19	
Call Type Definition	58
Figure 20	
Report generation data flow	67
Figure 21	
Sample Billing Database	69
Figure 22	
Toolbar summary	70
Figure 23	
Customer Directory	89
Figure 24	
Billing Database	90
Figure 25	
Schematic of Telephone Configuration Database	91
Figure 26	
Node Information	92
Figure 27	
Reporting Options	95
Figure 28	
Location Book Registry	97

Figure 29	
Carrier Pricing Templates Definition	98
Figure 30	
Rate Interface Editor	99
Figure 31	
Communications Database	100
Figure 32	
Sample Setup schematic	105
Figure 33	
Trunk configuration schematic	111
Figure 34	
Create Location Book	112
Figure 35	
Virtual Private Network grid	113
Figure 36	
Location Book Registry	114

List of tables

Table 1	
Extension Detail Report	84
Table A-1	
Shared files	134
Table A-2	
Non-shared files	135
Table A-3	
Shared files with locked access	136
Table A-4	
Shared files with simultaneous access	137
Table B-1	
Printer commands	139
Table E-1	
Database specifications	147
Table E-2	
Report layout	149

Introduction

Welcome to Call Accounting—the comprehensive tool for allocating, analyzing and controlling your corporate telecommunications costs. Use this application to collect call records from a Meridian 1 telephone switch and cost this call information to provide meaningful reports. These reports assign calls to specific groups or departments for individual billing purposes and other types of cost allocation. These reports will provide details on the actual usage of your telephone system and will help assess the effectiveness of your telephone services.

This user guide provides basic information on setting up and running Call Accounting. Along with a brief outline of its main functions, this user guide also contains examples and procedures to assist you in setting up Call Accounting for your system. This user guide assumes that you have a user level knowledge of the Windows™ 95 and Windows™ NT V4.0 operating systems. In order to ensure optimum operation of this application, read the material in this user guide before attempting to run Call Accounting.

Overview

Call Accounting supports the Meridian line of telephone switches. The Meridian 1 must be equipped with a suitable CDR port for proper connection to the CDR buffer unit.

Once you collect the call records either directly from the Meridian 1 or from the CDR buffer unit, the records must be costed, collated, sorted and printed on a report. This call detail information will help you achieve the following goals.

- The system provides details on the actual telephone usage. Management can isolate individual users and departments which are not properly utilizing the telephone system through misuse or neglect.

- It provides usage details for cost allocation within the organization or for client billing purposes.
- Management can use the information to determine which telephone company services are not being utilized. This analysis will allow you to adjust your telephone services to suit your needs resulting in a savings to your organization.

CDR buffer units

Call Accounting can either collect CDR data directly from the Meridian 1 or through a buffer unit. The buffer unit is used to continuously collect data from the Meridian 1 and store it for later collection and processing by Call Accounting. Buffer units provide an effective method of collecting CDR data quickly and accurately.

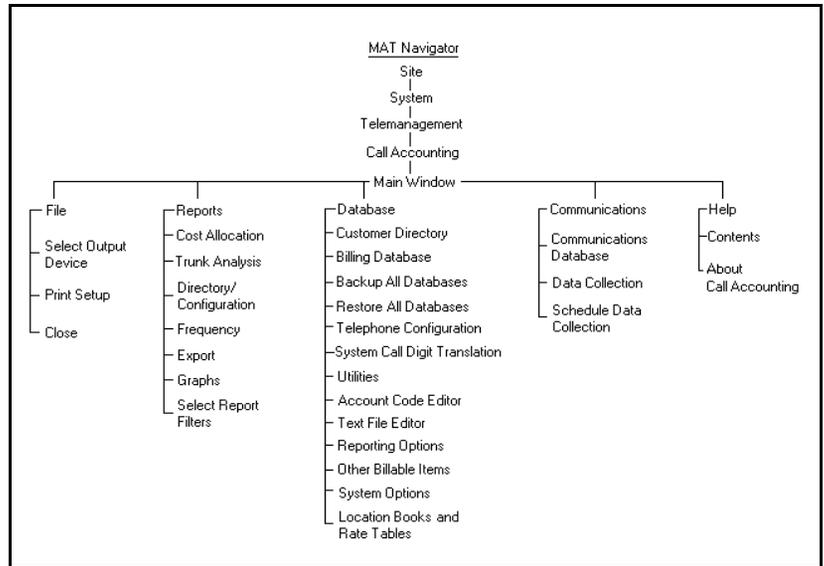
CDR data is saved to system specific files so that multiple buffer units (multiple Meridian 1 switches) can be supported concurrently by Call Accounting. Where required, the collection devices can connect to the Meridian 1 via its RS-232 port and connect to the PC using a supported modem. It is recommended that the buffer unit contains battery backup power in the event of a power failure. Refer to the buffer unit's reference user guide for more information.

Note: It is recommended that a buffer box be used for CDR data collection from the Meridian 1. When a buffer box is used, the CDR data is continuously sent and stored on the buffer box. Periodically, the data will be collected from the buffer box to the PC, usually on a daily basis. A buffer box is not required to use Call Accounting, however, if you choose to collect the data directly to the PC without the buffer box, there is a potential for losing CDR data if the PC is rebooted or shut down.

Schematic of menus & functions

The following is a schematic of the Call Accounting menus as they are accessed from the main window.

Figure 1
Schematic of menus & functions



File: This drop-down menu contains commands used to specify your output device and printer configuration and close Call Accounting.

Reports: This drop-down menu contains commands used to select report filters and generate reports and graphs to the selected output device.

Database: This drop-down menu contains commands used to edit and maintain the Call Accounting databases and directories, manage call records and access location books and rate tables.

Communications: This drop-down menu contains commands used to set up and perform data collection.

Help: This drop-down menu contains commands to access the Windows Help function listing the Call Accounting help topics.

About this user guide

This user guide is intended to provide you with an introduction to the MAT Call Accounting application as well as an overview of its major functions. It discusses how you can best use it to easily manage CDR data, update its databases and generate meaningful reports. It includes a schedule of routine operations and a sample setup to assist you in configuring your version of Call Accounting.

Conventions used in this user guide

This user guide uses the following terms:

- *Computer system* refers to the hardware and software of an IBM-PC™ or 100% compatible PC.
- *Windows*—Refers to Microsoft Windows 95, Windows 98, and Windows NT Workstation V4.0.
- *Mouse* refers to any standard PC pointing device. Common mouse actions include *point*, *click*, *right-click* and *double-click*.
- Standard Windows terminology includes: *icon*, *window*, *dialog box* (or *dialog*) and *menu*.
- Angle brackets denote a single keyboard key. For example, <Esc> denotes the Escape key, labeled Esc on PC keyboards. Angle brackets with multiple keys denote keyboard keys to use simultaneously. For example, <Ctrl-Alt-Del> denotes the key sequence for rebooting a PC.
- **This font** is used to designate buttons, menu choices and information you are to enter.

Help

This user guide does not discuss each Call Accounting function and command in detail. It only discusses the major functions and how they are accessed. For detailed information on each Call Accounting function, use the on-line Help function. You can use the Help function to obtain help for topics either directly or via its index and word-search functions. While running Call Accounting, you can obtain context-sensitive help on any topic you require by simply clicking **Help** from a specific dialog or window.

To obtain help for a topic, click **Help** from the currently selected dialog or window. This will access the Windows Help function and display context sensitive help information on the current topic.

Once you have accessed Help, use it to scroll through the other Call Accounting help topics, search for a specific topic or print the help information.

To view a list of Help topics for Call Accounting, click **Contents** from the Help drop-down menu. Choose from one of the items in this list to load the Help file and display its information.

Getting Started

This chapter describes how to access Call Accounting and set it up for initial use. Using the instructions and examples in this chapter, you will be able to configure Call Accounting to collect and process the call detail recording (CDR) call records which are output from your Meridian 1.

This chapter includes:

- An overview of a call record and how Call Accounting applies costs to it,
- The options which you must activate in the Meridian 1 switch to allow for CDR data collection,
- How to connect and set up a CDR buffer unit, specifically the MDR-2000,
- How to run Call Accounting for a system and a site,
- How to set up and start data collection for Call Accounting and
- How to set up the Call Accounting telephone configuration (including entering node information, rate tables and location books).

The instructions and examples in this chapter are intended to assist you in setting up Call Accounting for your own configuration. Since each telephone system is configured differently and each MAT installation is different, these examples cannot predict every scenario. You should therefore use these examples to teach yourself how to set up your hardware, and configure the Call Accounting software to work with this hardware. These examples were designed to account for the majority of cases and will provide you with valuable assistance in getting started.

Before using Call Accounting, you must install and configure it as part of Meridian Administration Tools (MAT). Refer to Getting Started in the *Common Services User Guide* for complete details on installing Call Accounting as part of MAT and assigning it to a site and a system.

Anatomy of a call record

Before you enter your system configuration and update your Call Accounting databases, you should first understand the nature of the data which is output from the Meridian 1. This will help you to construct your system configuration databases to match your system. This section describes the components of a call record as well as how it is processed and costed by Call Accounting.

CDR call records which are output from the Meridian 1 and are collected by Call Accounting contain the key information to producing costing reports. The following is a summary of what happens to a call record.

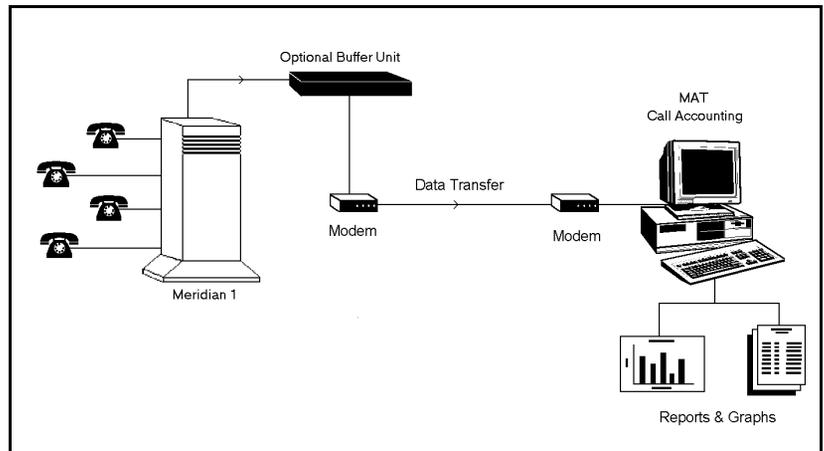
Meridian 1 outputs call records

When a user places or receives a telephone call, the Meridian 1 records its information as a CDR record (call record). This record contains such information as the call's start date and time, its duration, the trunk it went out on, its associated line and the digits dialed. This data is sent to the Meridian 1 CDR port. From here, an application or hardware device must record it so it can be later processed. This could be a buffer unit which is connected to the Meridian 1's CDR port (recommended) or even a PC running Call Accounting for a direct connection.

As call records are output from the Meridian 1, Call Accounting collects this data either through a buffer unit such as the MDR-2000 or directly to the PC. Buffer units are recommended for collecting CDR data since they can continuously collect and safely store these call records. A buffer unit is portable enough to be located close to the Meridian 1, and some may also have security features to allow for safe data storage (e.g., battery backups). Whichever way you decide to collect the call records, remember that unless something is collecting the call records output from the Meridian 1, they will be lost.

The following schematic displays the movement of a call record from the Meridian 1 through a buffer unit to the Call Accounting application. Notice that optional modems can be used to communicate with the Meridian 1 and buffer units from distant locations.

Figure 2
System block diagram



Call Accounting collects and stores call records

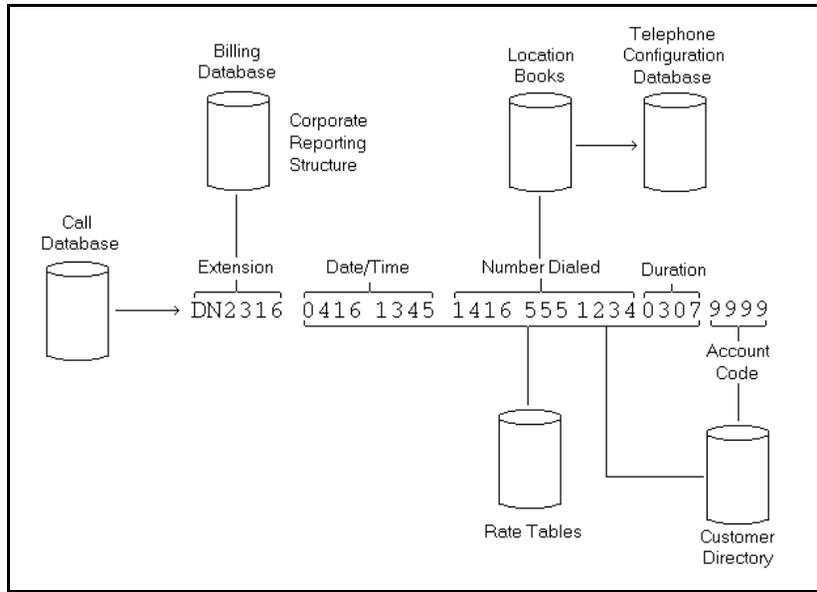
Call Accounting collects the call records using a two-step process. It first collects the call records to a temporary raw data file. It then formats and appends the call records to the end of the Call Database. This Call Database contains a record by record listing of all of the calling activity from the Meridian 1. It is indexed to allow for easy processing by the Call Accounting configuration and costing databases.

The following is a breakdown of the information found in each call record contained in the Call Database. Notice how each component of the call record is used by the Call Accounting databases.

Call Accounting processes call records

Once Call Accounting collects and stores the call records, it runs them through a series of calculations and processes before it outputs them on the reports. Each process uses the parameters stored in the configuration databases (you will see how to configure these later in this chapter).

Figure 3
Sample call record allocation



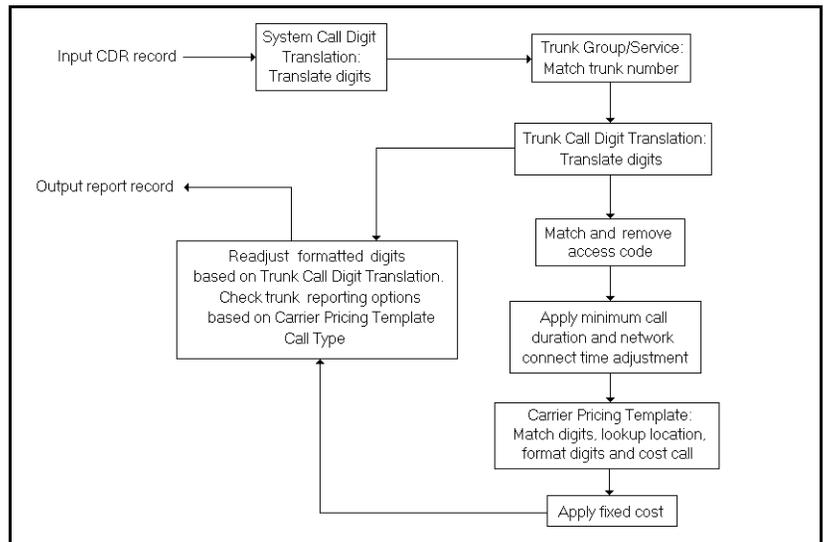
The following is a summary of how the call records are processed.

- 1 The System Call Digit Translation function translates the digits dialed to remove or edit the digits in the call record (e.g., remove or edit any access codes).
- 2 The system looks up the trunk the call went out on (in the Telephone Configuration Database Trunk Group Definition function) to see which trunk group definition to check.
- 3 It applies any additional digit translations for each trunk group and matches and removes any access codes.
- 4 It applies any minimum call durations and network connect time adjustments to the call.
- 5 It identifies the Carrier Pricing Template assigned to the trunk to see what type of call it is, how the number should be formatted on the report and which rate table/cost per call should be used to cost the call.

- 6 It applies any fixed costs to the call.
- 7 It looks at the trunk Call Reporting Options to see if this call type is handled in a certain way. If not, the call will appear on the report without a Route Used name. If it appears on the report, it will follow the rules regarding: Detail, Summary or Suppress. It will also use the Route DES in the Route Used field on the reports and place the call to the selected Cost Field under the Totals section of the report.

The following schematic outlines how a call record is processed.

Figure 4
Call record costing process



This completes the overview of how Call Accounting processes a call record.

Setting up Call Accounting: Summary

The following is a summary of the steps required to set up and configure Call Accounting to process call records. You will only need to perform these steps when you first install and use Call Accounting or if your configuration or hardware changes.

- 1 Ensure that Meridian 1 is set up to properly output CDR data
- 2 Install and set up buffer unit
- 3 Install any rate tables purchased for dialing plan
- 4 Run Call Accounting so it can be configured
- 5 Set up and test data collection
- 6 Obtain List Trunk and Member (LTM) values from Meridian 1
- 7 Set up telephone configuration
- 8 Test telephone configuration

For more details on each of the Call Accounting functions and features described in the following sections, refer to the on-line Help included with Call Accounting. For more details on the hardware components included with your MAT Call Accounting kit (e.g., buffer units, modems), refer to their associated documentation.

Step 1: Ensure that Meridian 1 is set up properly

In order for Call Accounting to collect and process CDR data, the Meridian 1 must output the data in the proper format. You must therefore enable the required features and options in the Meridian 1 overlays. This section describes the options which are required for Call Accounting to process the CDR data.

Note: This document is not intended to describe all options related to CDR data. For complete details on the available CDR options and information on configuring CDR, refer to the appropriate documentation (e.g., *Call Detail Recording Description and Formats*).

Select CDR output format

In Overlay 17 select either NEW or OLD format CDR output (**FCDR=NEW**). Call Accounting contains script files for supported buffer units, and the MDR-2000 can be configured, to support both NEW and OLD CDR formats.

Auxiliary Identification output in CDR record

In Overlay 15 configure the Auxiliary Identification to be output in CDR (**AXID=Yes**). The AXID field is not captured by Call Accounting but is required to ensure that data fields output in the CDR record appear in the expected positions.

Configure routes for CDR output

In Overlay 16, configure the routes that will output CDR data (**CDR=Yes**) and determine the type of CDR data to output. For example, you may wish to record all incoming calls and only outgoing Toll calls.

Ensure that the SDI port for your system is configured to match the settings on the buffer unit. If you plan to collect data at a higher baud rate, you may need to change both the SDI port and the buffer unit settings. The default settings for the MDR-2000 are: Baud=1200; Data Bits=8; Parity=N and Stop Bits=1. If you plan to use the default values for the MDR-2000, you must use the same values for the SDI port.

Step 2: Install and set up buffer unit

Call Accounting collects CDR data from the Meridian 1 either directly or through one of several types of buffer units. Depending on your configuration, you may need to collect the CDR data from a buffer unit in a specific format and share it between different applications. For example, you may have the Call Accounting, Call Tracking, and Traffic Analysis applications all process CDR data. Refer to the *Common Services User Guide* for details on how to handle data between different applications.

For this setup, assume that Call Accounting is collecting CDR data from the MDR-2000 buffer unit. This section describes how to connect the MDR-2000 buffer unit to the Meridian 1 and the PC via a modem connection. This will provide you with an example by which you can learn how to set up the other MAT-supported buffer units. Since other buffer units have different connection and communications requirements, you should refer to their documentation for more details on setting them up.

Security precautions

The MDR-2000 is a precision electronic product. Remember to review all of the documentation included with the MDR-2000 before attempting to install and use it. Failure to observe the precautions and guidelines outlined in the documentation may lead to product failure, damage and invalidation of all warranties.

Before handling the MDR-2000, take all proper electrostatic discharge (ESD) precautions, including personnel and equipment grounding.

- Do not rest the MDR-2000 on the power cord. A damaged power cord can cause fires or electrical shocks.
- Do not use the MDR-2000 in damp, dusty or dirty places.
- Store spare components in proper anti-static material.
- Make sure equipment is turned off before handling or changing components.

WARNING

ESD damage is not always immediate and can result in failures after months of operation.

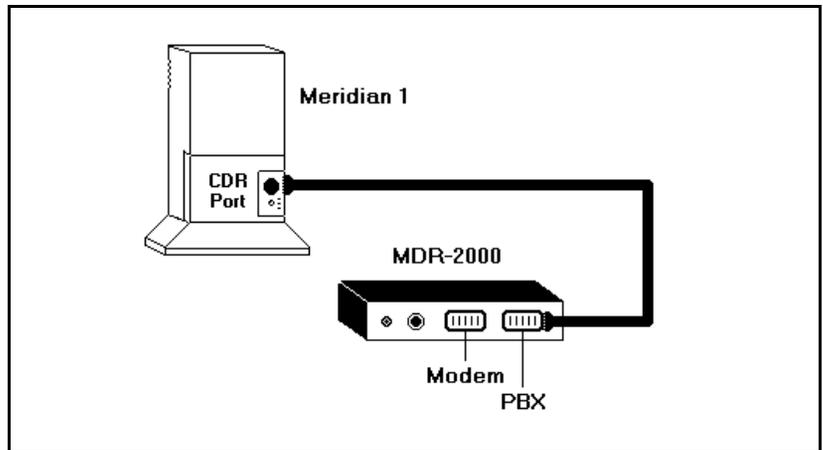
Connect MDR-2000 to Meridian 1 and PC

The first step is to connect and install the MDR-2000 onto the Meridian 1. It can then collect and store call records as they are output from the Meridian 1. You must then connect the PC to the MDR-2000 so Call Accounting can collect the call records from its database files. For this example, you would configure and connect modems to the MDR-2000 and to the PC.

Perform the following steps to connect the MDR-2000 buffer unit to the Meridian 1 and then to the PC via a modem connection.

- 1 Locate the CDR port on the Meridian 1.
- 2 Connect the MDR-2000 to the Meridian 1 CDR port using an RS232C cable:
 - a Connect one end of the RS232C cable to the PBX port on the MDR-2000 and the other end to the CDR output port on the Meridian 1.
 - b Use a male DB-25 connector when connecting to the PBX port of the MDR-2000.

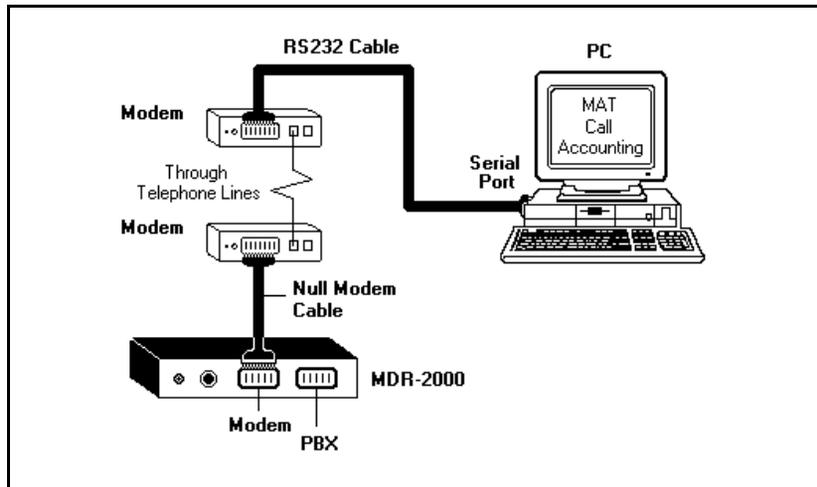
Figure 5
Meridian 1 to MDR-2000



- 3 Connect the MDR-2000 to the first modem:
 - a Connect the null modem cable which is provided with the MDR-2000 from the Modem port of the MDR-2000 to the serial port of the modem.
 - b Connect a telephone line cord from the "To Line" output jack of the first modem to the telephone jack.

- 4 Connect the PC to the second modem:
 - a Connect a modem cable from an available communications port (e.g., COM 1) on the PC to the serial port of the second modem. If you have an internal modem attached to your PC, ignore this step.
 - b Connect a telephone line cord from the “To Line” output jack of the second modem to the telephone jack.

Figure 6
MDR-2000 to modems to PC



- 5 Plug in and turn on the MDR-2000 CDR buffer unit:
 - a Plug in the MDR-2000's AC adapter into the electrical outlet.
 - b Insert the AC power supply connector into the 9 VDC jack of the MDR-2000.

- 6 Plug in and turn on the modems:
 - a Plug in the modems' AC adapters into the electrical outlets.
 - b Insert the AC power supply connector into the Power jack of the modem.
- 7 Test the MDR-2000 buffer unit to ensure that it is collecting data. Once you have turned on the MDR-2000, all the lights will flash briefly and the RUN and BMT indicators will remain on. After the second valid call record is obtained, only the RUN indicator will remain on. The first valid call is used to populate the buffer registries when the buffer unit has been turned off and on.

The PBX indicator will flash as the MDR-2000 receives data. This indicates that the data stream is being received. If the PBX light does not flash and you are sure that a call has been made, check the following.

- If you require a null modem adapter between the Meridian 1 and the buffer unit, then ensure that it is connected between the CDR port of the Meridian 1 and the PBX port of the buffer.
- Ensure that CDR is turned on for the trunk route you are using.

Verify that the MDR-2000 is collecting data

Access the MDR-2000 to view and verify that the incoming data stream is valid. To access the MDR-2000, perform the following steps.

- 1 Run a terminal program such as Windows HyperTerminal.
- 2 Dial up the telephone number of the MDR-2000. This is the number where the MDR-2000 was connected via its modem. If the PC is connected directly to the MDR-2000, then you can simply start typing the commands to edit the parameters.
- 3 Type: **<Ctrl-V> I D <Enter>**. This will verify that you are communicating with the MDR-2000. The response will be the serial number of the MDR-2000 buffer unit.
- 4 To view the data, type: **<Ctrl-V> D U <Enter>** (you may need to type this twice). If the data appears incorrect (e.g., it contains random characters), then there is probably a communications problem.

Changing communications parameters

The MDR-2000 default communications parameters may be different from the Meridian 1. For example, the MDR-2000 baud rate defaults to 1200 and the Meridian 1 may be 9600. If they are different, you must change the communications parameters of one or the other.

The following example demonstrates how to change the communications parameters of the MDR-2000 and also set it for NEW CDR format. If you wish to change the communications parameters on the Meridian 1, refer to the documentation provided with it.

To change the MDR-2000's communications parameters, access the MDR-2000 interface using any terminal program running directly from your PC. The following example demonstrates this process.

- 1 Run a terminal program such as Windows HyperTerminal.
- 2 Dial up the telephone number of the MDR-2000. This is the number where the MDR-2000 was connected via its modem. If the PC is connected directly to the MDR-2000, then you can simply start typing the commands to edit the parameters.
- 3 Access the MDR-2000 interface by typing: **<Ctrl-V> I M <Enter>**. The **M2K>** prompt will appear.
- 4 Check the status of the MDR-2000 by typing: **ST <Enter>**. The status will appear similar to the following.

Figure 7
MDR-2000 status

```

M2K> Status (Enter)

Date/Time (mm/dd hh:mm): 01/01 00:00           AutoDate: No
Number of Records Stored: 0                     Records to be Collected: 0
Access Codes: Yes                             Leap Year Selection: No
Port Config (PBX/Modem): 1200-8-N/1200-8-N    Minimum Duration: 0
Incoming Calls: Yes                           Minimum Digits: 0

CDR Collection: Yes                           Image Collection: No
Meter Pulse Detection: No                     Multi Tenant Detection: No
Tandem Conversion Option: No                 Internal Calls (Ext->Ext): No
Last Scan Error Position: 0                  Alarm Threshold: 0
Port Reset Timer: 15                         Idle PBX Alarm Threshold: 0

Logical Error Count: 0                       Alarm Enabled: No
Buffer Memory Size: 128K                     I/O Interrupt Status: Clear
Site Name:                                    Site #:
Primary Alarm Phone No:
Secondary Alarm Phone No:

M2K> _

```

- 5 To change the baud rate for the modem port on the MDR-2000 to 9600, type: **SE BA <Enter> 9600 <Enter>**. This will respond as: **SE (Set Options) BA (Baud) PBX (PBX default) 9600**. The first **<Enter>** in this line selects the default baud rate for the PBX port on the MDR-2000.
- 6 To quit and exit from this interface, enter: **Q** (quit).

Note 1: If you are changing the baud rate for the modem, ensure that the modem answers at the desired speed first. For example, if you are using the Windows HyperTerminal program to access the modem, it will prompt: **Connect 9600** when you are connected.

Note 2: Once you have completed accessing the MDR-2000, remember to exit from it by entering: **Q** (quit). If your communications session is interrupted (e.g., by a disconnected line or a power failure), then you will lose your edits.

Notes for customization strings

In certain cases, you may need to change the customization strings of the MDR-2000 to match the output of the Meridian 1. If you need to change the customization strings, use the CU (Customize) command in the MDR-2000 interface and change the strings as necessary. Refer to the documentation provided with the MDR-2000 for more details on what the customization strings represent.

Step 3: Install Rate Tables

Before you configure Call Accounting, you must install the rate tables which reflect your telecom provider's rates. These provide such rates as long distance rates for direct dialed calls to North America as well as international long distance rates. Call Accounting requires these rate tables to accurately apply costs to your long distance calls. You can obtain rate tables from a rate service or from your dealer. Remember that the rate table files must be compatible with the Call Accounting software. If in doubt, check with your supplier before purchasing any rate tables.

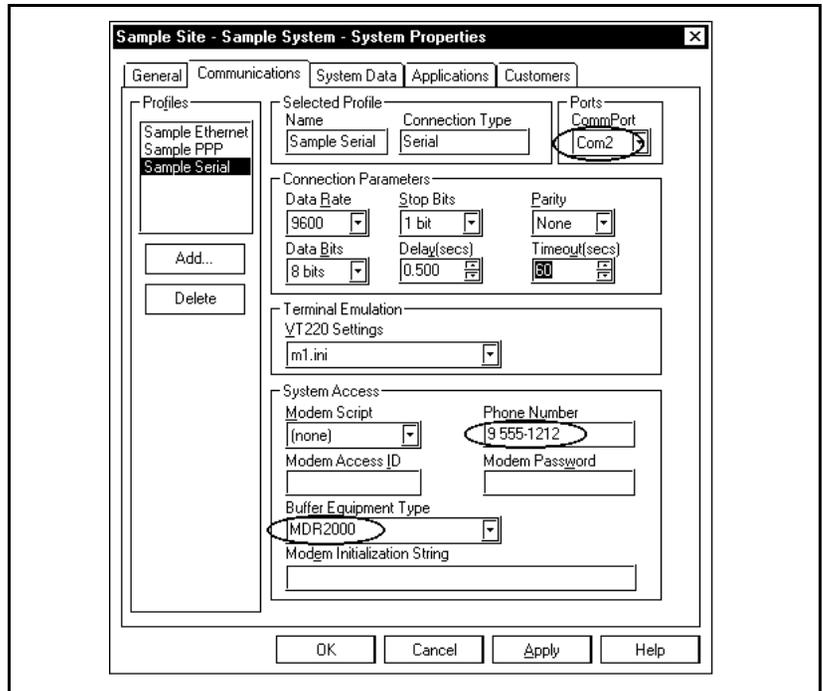
To install the rate table files, simply follow the instructions included with them. Remember to install the rate table files onto your MAT Call Accounting directory so you can select the appropriate rate table files when you are defining your carrier pricing templates.

Step 4: Run Call Accounting so it can be configured

If MAT is not already running, click MAT from the StartUp program group. In the MAT Navigator, open a predefined site and system (e.g., Site=Acme Company, System=Head Office).

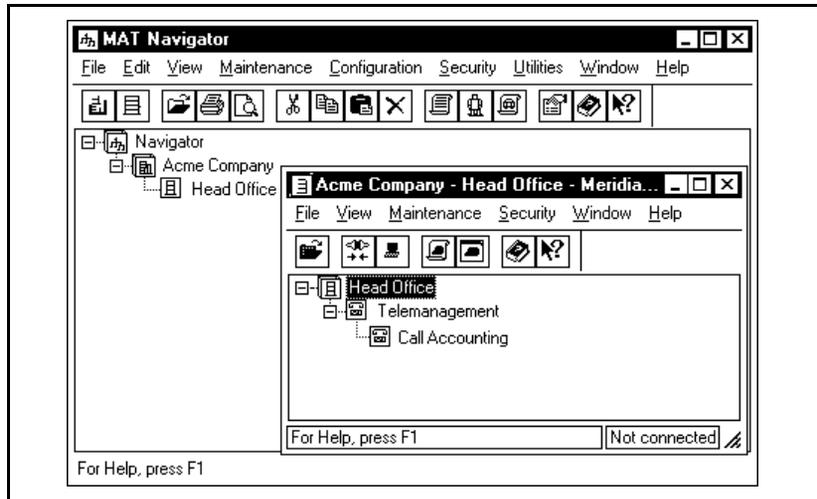
It is assumed that you have already defined these in the Common Services Communications tab. The following is an example of the communications setup for a sample site and system.

Figure 8
Common Services Communications tab



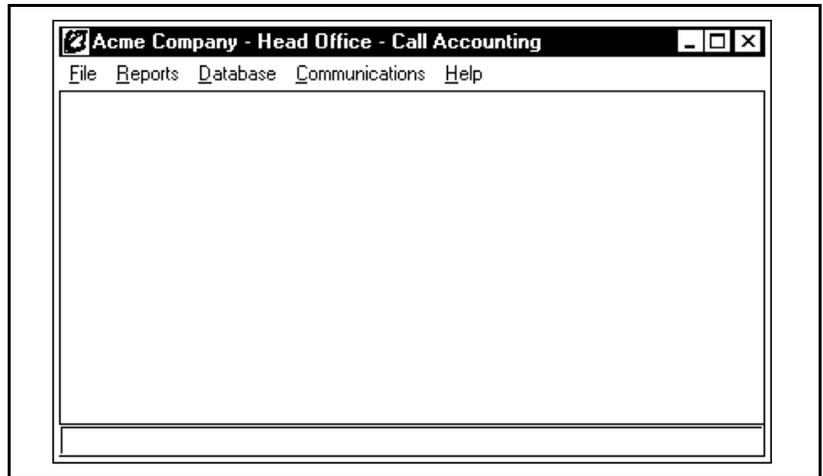
Once you opened the site and system, the following windows will appear.

Figure 9
MAT Navigator



From the selected site and system in the MAT Navigator, click **Telemanagement** and click **Call Accounting**. This will access the Call Accounting application main window from which you can set up the communications, telephone configuration and rate table databases for initial use. You will also need to test the data collection and run reports to see if the data was collected and costed properly.

Figure 10
Call Accounting main window



When you access Call Accounting in future sessions, it may prompt you to update its files. For example, if you access Call Accounting after changes have been made to the Station File, then it will prompt you with the message: **Changes have been made to the Station File. Do you want to resynchronize Billing Database?** In this case, click **Yes** to update the Billing Database with the Station File and start Call Accounting; or click **No** to continue without updating the database.

Step 5: Set up and test data collection

Before you enter your telephone configuration, you should verify that Call Accounting is collecting data from the Meridian 1 in the correct format. This way, you can test the configuration against actual calls. To test the data collection, simply enter the data collection parameters, collect the call records from the Meridian 1 and view them in the Call Database.

Enter data collection parameters

Before you attempt to run a data collection, you must enter the data collection parameters for the site and system. You should have already connected and configured your hardware (previous sections entitled: *Step 1: Ensure that Meridian 1 is set up properly* and *Step 2: Install and set up buffer unit*). As well, you should have already set up the communications parameters for this site and system in the System|Properties tab. You would just need to access the Communications Database to select the data collection parameters.

To enter the data collection parameters for Call Accounting, perform the following steps.

- 1 From the Call Accounting main window, click **Communications** and click **Communications Database**. The Communications Database dialog will appear.
- 2 Turn on the **Collect** check box to enable data collection once it is invoked.
- 3 Turn on the **Index** check box to index the data and create the Call Database file during data collection. This will allow Call Accounting to populate the Call Database once the calls are collected.
- 4 From the **Script Name** drop-down list box, select the script filename which contains the commands used to perform the data collection (e.g., COLLECT.SCR). The script name you select depends on the type of buffer unit and the format of the data being collected. For example, if you are collecting data from an MDR-2000 CDR buffer unit, then you would select **COLLECT.SCR**.
- 5 Click **OK** to select these options and return to the Call Accounting main window.

Test data collection

Now that you have configured your hardware and entered the required communications parameters, you are now ready to test the data collection. At this stage, you should just run a data collection as a test. Later, you can set up and invoke data collection once you have entered all of your system information and you are ready to run it live.

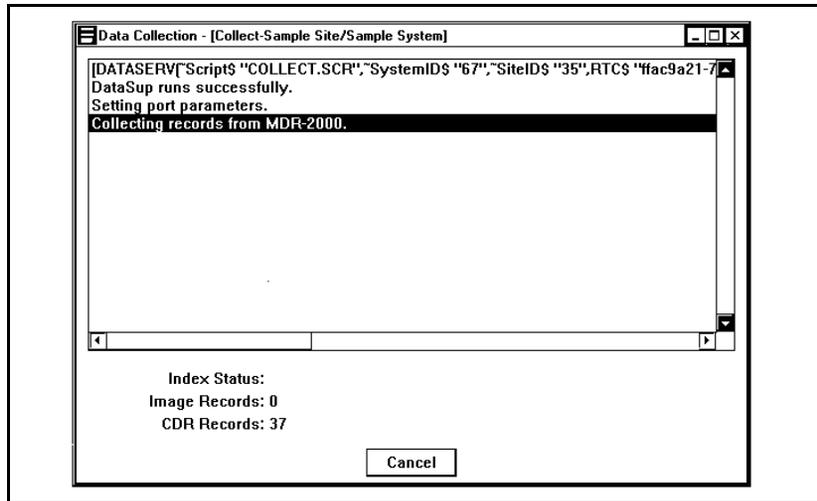
The following is an example to demonstrate how to test the data collection process. This example assumes the following:

- The Meridian 1 is outputting CDR data to the CDR port.
- The MDR-2000 CDR buffer unit is directly connected to the Meridian 1 and is continuously collecting and storing the raw CDR data (call records) as they are output from the Meridian 1.
- Call Accounting will collect this CDR data from the MDR-2000 and index (store) them in the Call Database.

To test the data collection for this scenario, perform the following steps.

- 1** Wait for some calls to be recorded by the Meridian 1. Either wait for some calling activity on the Meridian 1 or make a few telephone calls. If the MDR-2000 CDR buffer unit is properly connected to the Meridian 1, it will collect and store these call records as they are recorded by the Meridian 1 (note that the BMT light will be out).
- 2** Start the data collection by clicking **Data Collection** from the Communications drop-down menu. Call Accounting will start collecting the call records from the MDR-2000 CDR buffer unit to the Detail file (DETAIL1.DAT) and index them to the Call Database (MDR1.DAT).
- 3** During the data collection process, Call Accounting will display a window with the status of the data collection. This will show the data collection activity including any errors.

Figure 11
Data collection status



- 4 Once this data collection is complete, view the Call Database (MDR1.DAT) to verify that these call records are in the correct format. To view the Call Database, click **Utilities** from the Database drop-down menu and click **Call Database**. The Call Database window will appear listing the call records which were just collected.
- 5 Review the call records for any invalid fields. For example, check the trunks, access codes and digits dialed for invalid values. As well, check the call records' dates and times to ensure that they match the date and time on the Meridian 1.

Figure 12
Call Database

	Orig. ID	Term. ID	Date (MM/DD)	Time (HH:MM)	Duration (HH:MM:SS)	
1	D0004001	T0009002	06/01	09:21	00000:00:42	4918
2	T0007001	D0002229	06/01	09:43	00000:10:04	
3	D0004000	T0008001	06/01	09:53	00000:00:53	9968
4	D0005871	T0008002	06/01	09:59	00000:01:14	9190
5	T0007001	D0005809	06/01	10:05	00000:02:59	
6	D0002229	T0008005	06/01	10:07	00000:00:29	9905
7	D0002229	T0009001	06/01	10:23	00000:00:18	4990
8	D0002285	T0008001	06/01	10:24	00000:00:11	9180
9	D0005823	T0008002	06/01	10:37	00000:01:37	9905
10	D0004000	T0008003	06/01	10:42	00000:00:51	9968
11	D0002229	T0009002	06/01	12:12	00000:00:27	4814

Record : 6 Total : 206

- 6 If the data appears invalid, then repeat the previous steps checking to ensure that your hardware is connected properly and that you have the correct settings. Check the parameters on your Meridian 1 and the MDR-2000.

This completes the steps required to initiate a data collection and verify the call records.

Step 6: Obtain LTM from Meridian 1

Before you start entering the telephone configuration, you must first obtain the List Trunk and Member (LTM) report from the Meridian 1. This will provide you with invaluable information on how to set up your configuration.

Note: If you have ISA, the LTM will not show any members for the service routes. You should print the Route Data Block (RDB) to determine the service routes associated with the ISA routes. All members indicated in the ISA route must be added to the associated service routes.

To obtain the LTM and RDB information for your configuration, access the Meridian 1 and print the associated LTM and RDB reports.

Step 7: Set up telephone configuration

The next step in setting up Call Accounting is to define the telephone configuration. This identifies how Call Accounting processes the call records. It involves: assigning the appropriate rate tables and carrier pricing templates to your system's trunk groups; entering any call digit translations; and setting any reporting options.

Since defining the telephone configuration is a complex task, it will be helpful to demonstrate how to define one using an example configuration. This example represents a typical configuration and will help you to set up your own configuration. For a more advanced configuration, refer to the chapter entitled: *Advanced Network Setup* in this guide. It includes such items as tie lines and virtual private networks.

Note: This telephone configuration is only an example. When setting up your own configuration, you must enter your own company's configuration and rate information. You should review all of the documentation provided with your Meridian 1 and by your service provider to obtain all of the information needed to enter your own configuration. This includes trunk route and member numbers, output format, and rate table names.

Summary of Steps

The following summary outlines the steps which you must perform to define the telephone configuration for this example.

- 1 Enter Reporting Options
- 2 Update Carrier Pricing Templates
- 3 Enter Telephone Configuration
 - a Define Internal Calls
 - b Add Main Node
 - c Add DDD service definition to main node
- 4 Enter System Call Digit Translations
- 5 Update Call Type Definitions

Enter Reporting Options

Before you enter your telephone configuration, first define the cost fields which will appear on your reports. These cost fields directly link the reported summary fields to the defined services in the Telephone Configuration Database (defined later).

Review the LTM report from the Meridian 1 to identify the call types for reporting. For example, you can set up the call types: CO, DID, 800 and TIE. With this information, you can set up columns of costing details or cost summaries for these call types.

To enter the reporting options for this system, perform the following steps.

- 1 Click **Reporting Options** from the Database drop-down menu.
- 2 Ensure that the following options are enabled:
 - Include Account Calls
 - Export Other Billable Items
 - Include Auth. Code Calls
 - Banner Page on Reports
 - Tax Summary on Reports

Even though these do not apply to the telephone configuration, they provide the basic reporting features of your detail and summary reports.

Note: If you are using authorization codes in your system, then enable the “Reports by Auth. Code” option. If you do not enable this option, then the Department, Division, and Corporate Summary Reports will be grouped by extension numbers rather than authorization codes.

- 3 To list the totals in the summary fields of the detail reports, enter the information that you determined from the LTM in the Cost Summary Fields. For example, enter the following:

Field 1: CO	Field 2: DID	Field 3: 800
Field 4: TIE	Field 5: [blank]	Field 6: [blank]

- 4 Leave the **Bottom Line Message on Reports** fields set to their default values (i.e., **Reviewed By:** _____ **Approved By:** _____).
- 5 Click **OK** to save this information.

Update Carrier Pricing Templates

The Carrier Pricing Templates contain the criteria which determine the type and cost of a call. This information is based on the digits dialed after the call digit translation (e.g., 1 214 655-1111). The Telephone Configuration Database uses these templates to assign costs to the calls based on which trunks they used.

Define each template using the Carrier Pricing Templates editor. For this example, you will need to define a template for regular long distance service with multiple pricing definitions.

For each trunk that represents a billable call, you will assign either the rate filename and interface from this template or a per minute/call charge. The per call fields are added to the cost assigned by the rate filename.

Carrier Pricing Template—Sample Rates

To edit the pricing definitions for the first Carrier Pricing Template, perform the following steps.

- 1 Click **Location Books and Rate Tables** from the Database drop-down menu and click **Carrier Pricing Templates** from its cascading menu.
- 2 Enter the pricing definitions by clicking **Add**. The Carrier Pricing Template Definition editor will appear with a default template containing a set of templates for North America. You will only need to edit these default templates to insert your rate tables.
- 3 In the Description field, enter a name to describe the rate in this table. For example: **Sample Rates**.

Figure 13
Carrier Pricing Template

Carrier Pricing Template Definition

Description

Sample Rates

Add Insert Edit Delete

	Digits	Comments	Rate Filename	Rate Table
1	[1]@800@???-???	Toll Free		
2	[1]@???@555-121	LD Directory Assisted		
3	[1]@???@???-???	NATIONAL		
4	[011]@??????*	INTERNATIONAL		
5	[01]@??????*	International Operator Assist		
6	[0]@???@???-???	Operator Assisted		

OK Cancel Help

Edit pricing definitions

The following steps describe how to edit the pricing definitions for this service. These pricing definitions allow the template to interpret any type of call containing identifiable digit patterns and then cost them accordingly.

For this example, you will only edit the pricing definitions for international and North American long distance calls to include the rate tables for your configuration. These default pricing definitions have already been created to provide you with standard pricing values. You just need to select the rate tables for them. For example, **National** will have the rate filename for your carrier (e.g., **SAMPRATE**) and **DDD** for the rate table interface; **International** would have the rate filename **SAMPRATE** and **INT** for the rate table interface. In certain cases, you may need to add new pricing definitions to match your own configuration.

Note: The order in which these pricing definitions are entered is importation. The calls are compared to the first definition at the top of the list. They then proceed down the list until there is a match in the Digits field and, if used, the rate table. The call will proceed to the next line (definition) if the rate table cannot cost the call even if the digit patterns are matched.

When you enter digit patterns for the pricing definitions, you can use certain wild card and function characters as digit place holders. Use the asterisk (*) or question mark (?) as wildcards for selecting common digit patterns. Use the optional flags { } (curled brackets) to select optional digits to be included in the digits dialed. Use the delete flags [] (square brackets) to select any digits which need to be suppressed during rate table lookups but displayed on reports. Refer to the on-line Help under Pricing Definition for more details on using wild card characters.

You can modify each pricing definition in this carrier pricing template by selecting the definition from the list and clicking **Edit**. For example, to edit the International pricing definition, click the record which contains **International** in the Comments field and click **Edit**. In the Pricing Definition dialog which appears, simply enter the desired rate table and rate table interface and click **OK** to save the change and exit to the Carrier Pricing Template Definition dialog.

Perform the following steps to modify these pricing definitions.

- 1 For international calls, click the International definition to highlight it, click **Edit** from the template dialog and enter the following information:

Rate Filename: **NNNRATE** (where NNN represents the carrier for these calls)

Rate Table Interface: **INT-1**

Leave the remaining fields with their defaults and click **OK**.

Figure 14
Pricing Definition

The screenshot shows a 'Pricing Definition' dialog box with the following fields and values:

- Digit Patterns:
- Comments:
- Location Book:
- Rate Filename:
- Rate Table Interface:
- Rate Table Comments:
- VDP Comments:
- Cost per Minute:
- Call Type:
- Cost per Pulse:
- Duration Rounding (Seconds):
- Cost per Call:
- Additional:
- Cost Adjustment (%):

Buttons at the bottom:

- For long distance calls, click the Long Distance (DDD) definition to highlight it, click **Edit** from the template dialog and enter the following information:

Rate Filename: **NNNRATE** (where NNN represents the carrier for these calls)

Rate Table Interface: **DDD**

Leave the remaining fields with their defaults and click **OK**.

- Click **OK** from the Carrier Pricing Template Definition dialog to save this information and exit to the Carrier Pricing Templates grid.

This completes the entries for this template's pricing definitions.

Delete 10 digit local calls

The default carrier pricing template may contain a definition for 10 digit local calls. 10 digit local calls are calls which are treated as local calls (and usually have no charges) but which require the area code when dialing. If you do not have 10 digit local calls in your area, then delete this pricing definition by clicking this record in the template and clicking **Delete**.

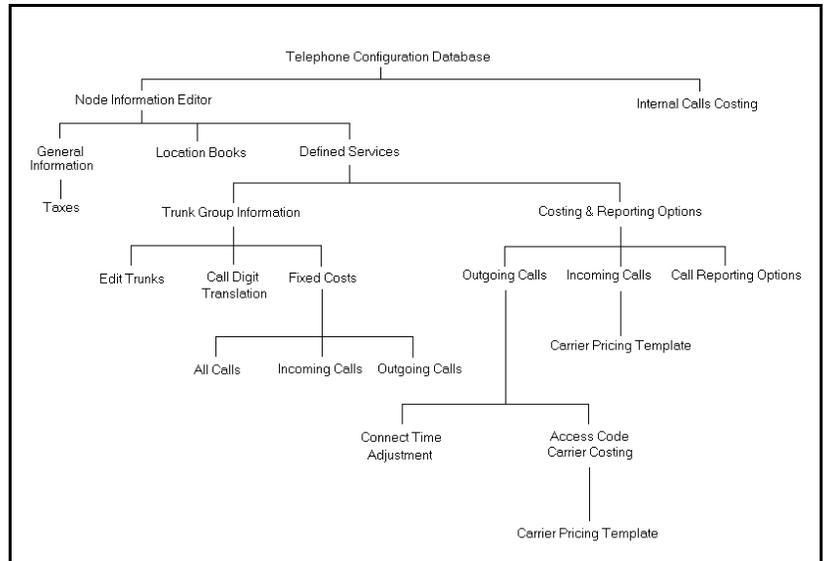
Enter Telephone Configuration

The Call Accounting Telephone Configuration Database is your key to pricing calls and tracing them to their destinations. It defines the type of costing used through each defined service and includes any additional costs defined for your system and location. Each defined service uses predefined location books and rate tables based on the offerings of your telecommunications carrier. Call Accounting uses this configuration information to cost the call records which are collected from the Meridian 1 and report on them.

To access the Telephone Configuration Database, select **Telephone Configuration** from the Database drop-down menu. The Telephone Configuration dialog will appear allowing you enter the node information for your configuration.

The following is an overview of the Call Accounting Telephone Configuration Database menus as they are accessed from the Telephone Configuration dialog.

Figure 15
Telephone Configuration Database map of menus



The following sections describe how to enter your telephone configuration.

Define Internal Calls (Internal Calls Costing)

If your Meridian 1 outputs CDR for internal calls (i.e., calls made between extensions within the Meridian 1 system), then you can enter these costs in the Internal Calls Costing section of the Telephone Configuration Database. To enter this information, click **Internal Calls Costing** from the Telephone Configuration dialog and enter the costs in the available fields.

Add Main Node (Node Information editor)

The next step in entering this telephone configuration is to define the main node. From the Telephone Configuration grid, click **Add** and enter the following information.

- 1 In the Company Name field, enter your company name. For example, enter: **Acme Company**.
- 2 In the Company Location field, enter the city and province/state for your company. For example, enter: **Dallas, Texas**.

- 3 Turn on the Main Node check box. Only one node can have this checked.
- 4 From the Location Book Name drop-down list box, select: **North American VH Table**.
- 5 In the Dial Code/NPANXX field, enter the NPANXX (area code and exchange) for the location of your company. For example, if your company is located in Dallas, then enter: **214655** (this represents an example area code and exchange in Dallas).
- 6 Click **OK** to save this information and exit to the Telephone Configuration dialog.

Note: Frequently, the **OK** command button will appear at the bottom of a data entry grid when you initially add data. As well, you may encounter the **Close** command button in the same grid when editing data. You can use both the **OK** and **Close** command buttons to enter the added or updated data and exit from the data entry grid.

Figure 16
Main node definition

The screenshot shows a dialog box titled "Node Information" with a close button (X) in the top right corner. The dialog is divided into three main sections:

- General Information:** Contains two text input fields: "Company Name" with the value "Acme Company Ltd." and "Company Location" with the value "Dallas, TX". Below these is a checked checkbox for "Main Node", a "+/- Time Zone" field, a "Currency Exchange" field, and an "Iaxes" button.
- Location Book:** Contains a "Location Book Name" dropdown menu showing "North American VH table" and a "Dial Code/NPANXX" text input field containing "214655".
- Defined Services:** Contains three buttons: "Edit", "Add", and "Delete". Below these is a table with two columns: "Trunk Group/Service ID" and "Description". The table is currently empty.

At the bottom of the dialog are "Close" and "Help" buttons.

This completes the general definition for this node.

Add DDD service definition to main node (Defined Services)

Add the first service definition to the main node by performing the following steps.

- 1** From the Telephone Configuration grid, edit the Main Node record by highlighting its record line in the grid and by clicking **Edit**.
- 2** In the Defined Services grid, click **Add** to add the main node's service definition information. The Trunk Group Service Definition dialog will appear.
- 3** In the Trunk Group/Service ID field, enter the first group that you determined when you examined the LTM. For example, enter: **CO**.
- 4** Enter the trunk range determined for the Meridian 1. For example, enter: **0001** to **0005**. Trunk range data are entered as the route number immediately followed by the three digit member number. For the low range trunk entry, this would be "0" + "001" (or "0001"). For the high range trunk entry, this would be "0" + "005" (or "0005"). Since leading zeros can be ignored, you can also simply enter **1** to **5**.

Note: When entering trunk numbers for your own configuration, you must review the trunking information output from your Meridian 1. You can do so by reviewing the List Trunk and Member (LTM) report from the Meridian 1.

For example, to enter this trunk range, click **Edit Trunks** and then **Add** and enter the following information:

Low Range: **0001**

High Range: **0005**

Line/Description: **CO Trunks**

This will add the route "0" members "001" to "005" to this node.

Click **OK** to save this information and click **Cancel** to exit to the Trunk Numbers grid. Click **Close** to exit to the Trunk Group Service Definition dialog.

- 5** In the Description field, enter the type of trunks you are using. For example, enter: **Long Distance Trunks**.

Figure 17
Trunk Group Service Definition

The screenshot shows a dialog box titled "Trunk Group Service Definition - Acme Company Ltd." with a close button (X) in the top right corner. The dialog is organized into two main sections:

- Trunk Group Information:**
 - Trunk Group/Service ID: A text box containing "CO".
 - Edit Trunks: A button.
 - Call Digit Translation: A button.
 - Description: A text box containing "Long Distance Trunks".
 - Fixed Costs: A button.
- Costing and Reporting Options:**
 - Outgoing Calls: A button.
 - Incoming Calls: A button.
 - Call Reporting Options: A button.

At the bottom of the dialog, there are three buttons: OK, Cancel, and Help.

- 6 Define the costing for outgoing calls by clicking **Outgoing Calls**.

- 7 For certain types of calls (e.g., international calls), you may need to enter a time adjustment or a minimum call duration to allow for a delayed connection.
- a Enter the connect time adjustment (the call's connection time to the trunk) by clicking **Add** from the Connect Time Adjustment grid.
 - b In the Digits field, enter: **011***. The system will interpret all calls starting with the digits 011 (International Calls) and apply the appropriate connect time adjustments.
 - c In the Comments field, enter: **International Calls**.
 - d In the Minimum Call Duration field, enter: **10**. This is the minimum amount of time (in seconds) which the call must register for it to be costed.
 - e In the Connect Time field, enter: **5**. This is the time (in seconds) which the system allows for a connection. This will be subtracted from the call duration.
 - f Click **OK** to add this record to the grid.

Note: If these trunks have answer supervision, then you do not need to enter a connect time adjustment value. You can therefore ignore steps 7a to 7f.

- 8 Select the carrier pricing template used for this service by clicking **Add** from the Access Code Carrier Costing grid. The Access Code Carrier Costing dialog will appear.
 - a Select the access code for this template only if you are not going to remove access codes from the digit stream in the System Call Digit Translation function. For example, if the access code for this service is “9” and if you have not already removed it from the digit stream, then enter: **9** in the Access Code field.

Note: It is suggested that you remove the access codes from the digit stream in the System Call Digit Translation function and leave the Access Code field blank. Otherwise, the calls will not be costed correctly.
 - b Leave the Cost Adjustment (%) field blank.
 - c Select the option **Direct**. Only select the **Tie/FX Line** option if this trunk group represents a tie or FX line to another location.
 - d Click the Carrier Pricing Template drop-down command and select from the predefined rate table templates. For example, select: **SAMPRATE**.
 - e Click **OK** to save these settings and return to the Outgoing Calls Costing dialog.

Figure 18
Outgoing Calls Costing

Outgoing Calls Costing - Acme Company Ltd.

Connect Time Adjustment

Add Insert Edit Delete

	Digits	Comments	Minimum Call Duration	Connect Time
1	011*	International Calls	10	5

Access Code Carrier Costing

Add Insert Edit Delete

	Access Code	Carrier Pricing Template	Cost Adjustment (%)
1		SAMPRATE	

Close Help

- 9 Click **Close** to save this information. Click **Close** again to exit to the Trunk Group Service Definition dialog.
- 10 Enter the call reporting options for this trunk service by clicking **Call Reporting Options**. To add a record, click **Add** and enter the reporting options in the available fields. For example, to enter the call reporting options for All Calls, enter the following information (note that All Calls must be the last entry in the grid to allow for reporting of other types of calls first).

Call Type: **All Calls** (this must be the last entry in the grid).

Print Option: **Detail** (this determines how it appears on the reports).

Cost Field: **DDD** (this is 1 of 6 cost fields which were predefined in the Report Options function).

Route DES: **DDD** (this is the route used on detail reports for this call).

Digits Mask: **0**.

Note: The Call Reporting Options function behaves similarly to the Carrier Pricing Template function where it processes calls against the records in this grid from the first to the last record. As a general rule, you should define All Calls as the last record in the Call Report Options grid. If the All Calls value is entered before another type of call in this grid, then a call that matches that other specific call type will not be processed as such. You will therefore not know if there are any errors in your configuration.

- 11 Click **OK** to save this information and click **Cancel** to exit to the Call Reporting Options grid. The grid will automatically be updated with this information. Click **Close** to exit to the Trunk Group Service Definition dialog.

This completes the defined service for the main node. Click **Close** from the Trunk Group Service Definition dialog to save this information and exit to the Node Information dialog. Click **Close** to save the node information and exit to the Telephone Configuration dialog. Click **OK** from the Telephone Configuration dialog to save this information and exit.

Enter System Call Digit Translations

The System Call Digit Translation function translates the digits dialed on call records for all trunk groups in the system. This allows Call Accounting to process and print a different pattern from the one that is actually dialed.

Note: Call Digit Translation does not affect CLID/ANI digit patterns on incoming calls.

For this example, use the System Call Digit Translation function to translate the digit patterns to remove the access code (e.g., 9) from the call records. This way, each call record will appear correctly on the reports. This access code is the digit that is used to access a trunk on the Meridian 1 to initiate a call. For example, your Meridian 1 may require that you enter “9” to select a trunk to make an outside call. Each call record contains the access code digits which are entered as part of the digit stream.

To translate the digit patterns for all calls, perform the following steps.

- 1 Select **System Call Digit Translation** from the Database drop-down menu. The System Call Digit Translation dialog will appear containing a grid of records in which you can specify the translation criteria.
- 2 Click **Add** to add a translation.
- 3 In the System Call Digit Translation - Add(Repeat) dialog which appears, enter the following:
Search: **9**
Replace: -
- 4 Click **OK** to add this to the list and click **Cancel** to exit to the previous dialog.
- 5 From the System Call Digit Translation dialog, click **OK** to save this information and exit.

If you are not sure what your access codes are, simply review the collected call records. Access the Call Database by clicking **Utilities** from the Database drop-down menu and clicking **Call Database**. In the Call Database window which appears, check the Digits field for any of the outgoing call records. If the system inserts an access code in the digit stream, it will appear here.

This completes the steps for entering the call digit translation.

Update Call Type Definitions

The Call Type Definition function contains a list of the types of calls used in the Telephone Configuration Database (e.g., International). You will select these types of calls when you are defining the trunk usage of calls in the Carrier Pricing Template and Call Reporting Options. Simply select these predefined call types when entering your costing and reporting options.

This function already includes a set of default call types which you will select when entering your costing and reporting options. In this step, you will add any additional call types which you may require for your configuration (e.g., Emergency calls). If you do not require any additional call types, then you can skip this step.

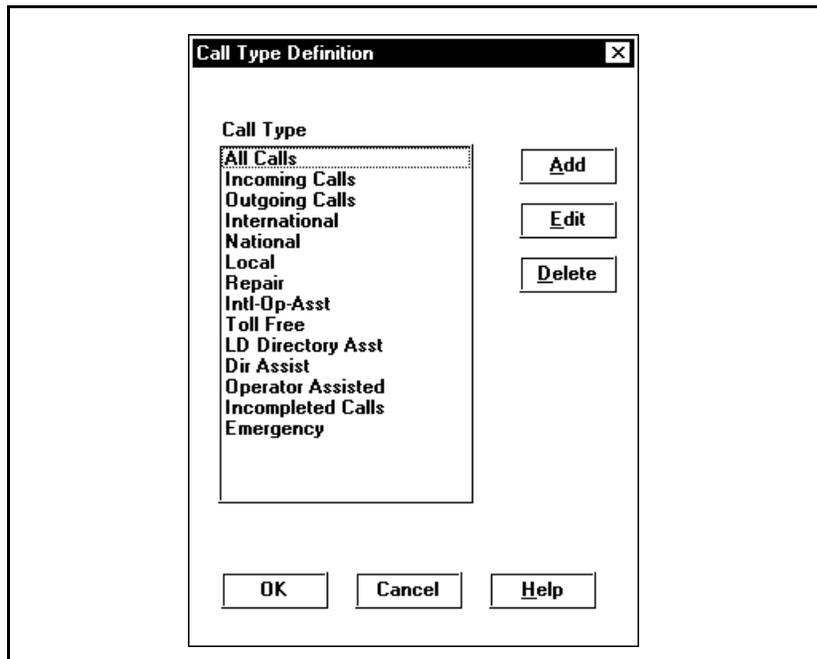
The following steps demonstrate how to enter a call type. For this example, you will enter the call type: **Emergency** for Emergency 911 calls (these are sometimes costed differently).

To enter the call type Emergency, perform the following steps.

- 1 From the Database drop-down menu, click **Location Books and Rate Tables** and click **Call Type Definition** from its cascading menu.
- 2 Click **Add** and, in the Call Type field, enter: **Emergency**.
- 3 Click **OK** to add this new call type to the list of defaults.
- 4 Click **OK** from the Call Type Definition dialog to save this addition and exit to the main window.

The following diagram lists the default call types plus the new one you just entered.

Figure 19
Call Type Definition



You have now told MAT that calls from this trunk should be costed according to the template you created.

Step 8: Test telephone configuration

Now that you have completed entering your system's costing model and configuration, you should print some reports to test their accuracy. The following is a description of these reports.

Configuration/Diagnostic Report

The Configuration/Diagnostic Report displays your telephone configuration information. Review this report to check the accuracy of your telephone configuration. Look specifically for omitted trunks. These are trunks which you did not enter in the configuration but had calls made on them. If you find a whole route inactive, this might indicate that the route was not activated for CDR.

To print this report, perform the following steps.

- 1 Click **Directory/Configuration** from the Reports drop-down menu and click **Configuration/Diagnostic Report** from its cascading menu.
- 2 At the Configuration Diagnostic Report dialog, turn on the following check boxes:
 - Print Configuration File Contents
 - Print Diagnostic Report
- 3 Click **OK** to print this report.

Exception/Chronological Report

The Exception/Chronological Report lists in chronological order all of the calls that were made and collected by Call Accounting. Review this report to verify that the calls were processed and costed correctly. Look for calls that have no location (except toll free calls). Check that the long distance calls have costs assigned to them and that local calls do not. Some common errors in the Telephone Configuration include incorrect access codes and missing trunks.

To print this report, perform the following steps.

- 1 Click **Cost Allocation** from the Reports drop-down menu and click **Exception/Chronological Report** from its cascading menu.
- 2 At the Exception/Chronological Report dialog, turn on the **Recalculate line usage for report** check box.
- 3 Click **OK** to print this report.

If either of these reports appears inaccurate, then review your input and repeat these setup steps again.

Update Directories

In order for your call records to accurately link to the proper employees and their extensions as well as your company's customers, you should update the Billing Database and Customer Directory with the latest employee and customer information.

Billing Database: The Billing Database contains a list of employees linked to specific extensions on the Meridian 1. When a call record is generated, it needs to be associated with a specific extension. The Billing Database contains this information as well as the department and division to which this employee belongs. If you have installed the MAT Station Administration application, then this is populated from the Set Database.

To view this database and add any additional records, click **Billing Database** from the Database drop-down menu and select the records from its grid.

Customer Directory: The Customer Directory contains a list of your company's customers and provides additional information for your reports. For example, this customer list can consist of frequently called numbers to further highlight detail reports. Call Accounting can identify customers by their account code or telephone number.

To view this database and add any additional records, click **Customer Directory** from the Database drop-down menu and select the records from its grid.

Conclusion

This completes the instructions for getting started with Call Accounting. Refer to the on-line Help included with Call Accounting for complete details on all of the commands and functions described in this chapter.

Operating Procedures

Once you have initially updated the main databases and directories with your company's information, all that you need to do is to collect data and generate reports regularly. Since Call Accounting can perform these activities based on a routine schedule, you should establish your own schedule of activities to allow for regular data collection and reporting. As well, there is a series of database maintenance functions which you should include in this schedule to keep your databases and reports accurate.

This chapter outlines the standard procedures which you should incorporate into your regular operational routines. It provides a model for you to follow during the operation of Call Accounting.

Use the following schedule as an outline for your own routines.

Task	Frequency
Data Collection	Daily
Report Generation	Monthly
Directory Updates	
— Billing Database	Weekly
— Customer Directory	Weekly
— Telephone Configuration	Monthly
Data Management	
— Backup All Databases	Weekly
— Restore All Databases	When recovering lost data
Database Maintenance	
— Archive Call Database	Monthly
— Purge Call Database	Monthly
— Restore Call Database	When recovering lost data

Data Collection

The collection of call records (data) from the Meridian 1 or optional Call Detail Recording (CDR) buffer unit to the computer is an important task of your Call Accounting operations. Without this detailed calling information, Call Accounting cannot produce detail reports.

Run the Data Collection procedure on a daily basis. If there is a problem with the flow of data from the Meridian 1, the system will warn you of the malfunction within a short time period. This early detection can provide for quick corrective action and minimal data loss.

To collect data for a system, click **Data Collection** from the Communications drop-down menu. It will invoke the Data Supervisor to communicate with the Meridian 1 (or buffer unit) and initiate the data collection.

During the data collection process, Call Accounting collects data from the switch or optional CDR buffer unit and builds that data into a non-formatted Call Detail file called DETAIL1.DAT. It then merges the Call Detail file into the Call Database MDR1.DAT through a process called Indexing. Depending on the size of the buffer unit, communications would usually take place nightly when the system adds data to the Call Detail file. Less frequent collection is possible, provided the buffer units do not reach capacity.

Note: If the buffers do reach capacity and data collection has not been initiated, the system may lose valuable call records. Remember to collect data regularly.

The status of each data collection procedure is tracked through a file called the Communications Log REPROG1.LOG. This log can provide a history which may be useful in solving a data collection problem.

Once CDR data has been collected from the Meridian 1, you are ready to generate reports based on this information.

Data collection troubleshooting

During data collection, Call Accounting will display the number of call records it has collected. If this number fails to increment or remains at zero, then Call Accounting has not been able to communicate with the buffer unit. In this case take the following actions.

- Ensure that the modem's **AA** (auto-answer) light is on.
- Make sure that the communications port which you specified in the Communications Database is the same as the connection on the back of your PC (the port on which you connected your cable).

The following is a list of common data collection problems.

- Data files are in use by another network workstation or the Call Database editor is opened.
- Communications parameters are not set up properly for the system using the System Properties function of the MAT Navigator.
- Data collection parameters are not set up properly in the Communications Database.
- The PC has insufficient disk space for both the Call Detail file and the Call Database.

Report generation

The Call Accounting reports provide information on the details of the call records which were collected from the Meridian 1. They also include information on your system databases and configurations. Once you have collected the call records from the Meridian 1, you should then generate your detail and summary reports to cost and display their information.

Step 1: Select Output Device

Call Accounting can send reports to a selected output device such as printer, screen or file. To select the output device, click **Select Output Device** from the File drop-down menu and click the desired option button.

Step 2: Select Report Filters

Before you generate your reports, you should select the parameters (filters) which determine the data ranges on which the reports are run. This will include only the desired range of data. To enter your reporting filters, click **Select Report Filters** from the Reports drop-down menu. The Select Report Filters dialog will appear listing all the available filters which you can select.

To select the reporting filters, click the command button labeled with the filter name. Another dialog for that filter will appear containing open fields in which you can enter your minimum and maximum ranges. You can include or exclude a filter range. To select a filter range and have the system include its range, click the desired command button, enter the filter range and click **OK** from the range dialog. The Include check box will be turned on next to that filter command button. If you wish to exclude this range, click the **Exclude** check box for the filter.

To save these filters, click **Close** from the Select Report Filters dialog. At the prompt: **Save Changes Before Closing?** click **Yes** and exit to the main window. To exit from this dialog without saving the filters, click **No** when prompted. If you wish to copy this filter file to another file, click **Save As** and enter the new filename in the dialog which appears.

Step 3: Generate reports

Once you have selected your parameters, return to the main menu and click the report type heading (e.g., **Cost Allocation**) from the Reports drop-down menu. From this cascading menu, click the report you wish to print (e.g., **Extension Detail Report**).

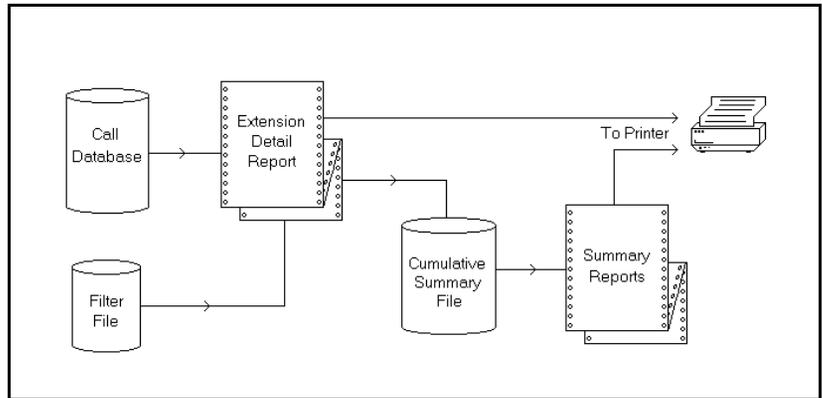
If you wish to schedule a report to run at a specific date and time, click **Schedule**. This will invoke the Scheduler application from MAT Common Services. Use this function to enter the date and time that you wish to run the report. It will then generate it at the selected date and time.

To run a 'month-end' report including the Extension Detail, Department and Division Summary reports, you would run the Extension Detail Report first and initialize the Summary file. This reduces the run time for the summary reports.

Note: If you are not generating the Extension Detail Report, be sure to initialize the Summary file when you run the first report. This will ensure that the system will compile the appropriate summary data prior to printing the report.

The following schematic displays the interaction of the major data files during report generation.

Figure 20
Report generation data flow



Directory updates & data management

Call Accounting contains a set of functions to assist you in managing your system's databases. Proper management of data will ensure that your reports contain timely and accurate information. If the Call Accounting databases and directories contain outdated information (e.g., the Billing Database contains employees who are no longer with the company), then the reports will be inaccurate. You should therefore regularly update your databases.

As well, it is important to make backup copies of the main Call Accounting database files for recovery purposes. This way, if your PC loses data (e.g., in case of hardware or disk failure), you can more easily recover the lost data.

The following sections describe the database editing functions as well as the Backup and Restore commands used for the main databases and directories. Since the Call Database requires different maintenance commands, the Archive, Purge and Restore Call Database functions will be discussed in the next section.

You must decide on the frequency of the backup and archive procedures. Base this frequency on the size of your data records and your system capacity. As a rule, you should back up your data once a month.

Directory updates

In order for your Call Database records to be costed and applied correctly, you must periodically update and manage user-definable databases. These include the following:

- Billing Database
- Customer Directory
- Telephone Configuration Database
- Communications Database
- Other Billable Items

Each database contains an editor with standard features which you can use to edit, insert and delete records. The following sections will describe the common components and features of these database dialogs.

To enter the database information, click the directory name from its appropriate drop-down menu. The database dialog will appear containing a grid in which you can enter the records for that database. It will also contain function tools which you can use to manage these records.

Some directory dialogs will list the position of the current record in the database in relation to the total number of records in the database.

Figure 21
Sample Billing Database

	Set	Last Name	First Name	ID	Extension	Department
1	■	Choh	Andy		234	Sales
2	■	Collins	Sandra		221	Sales
3	■	Hoffman	Sherry		215	Support
4	■	Ingram	Oliver		233	R&D
5	□	Martin	Mick		112	R&D
6	■	Novelli	Sam		265	Support
7	■	Peters	Bernie		222	Sales
8	■	Rice	Matt		255	Production
9	■	Unger	Jack		155	Sales

Record : 5 Total : 10

Grids

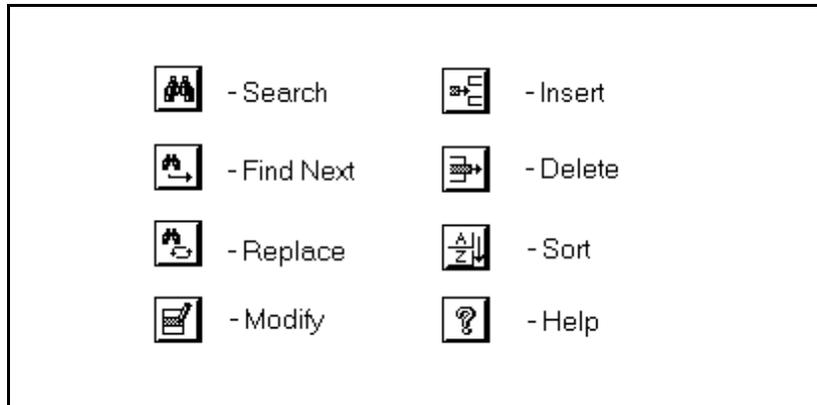
A database record is displayed in the grid of its dialog. A grid is comprised of rows (records) and columns (fields). To scroll through a grid, click its horizontal and vertical scroll bars.

Field Sizes: If you wish to change the grid's proportions, click the row and/or column border and drag it to the new position. Notice that the row (or column) will change size.

Field Positions: If you wish to rearrange the column sequence in a grid, highlight the column by clicking its field header. Next, click the column and drag it while simultaneously pressing the <Ctrl-Shift> keys. The column border will move as you drag the cursor across the grid. Release the cursor to place the column in its new position.

Tools: Each grid contains a toolbar that contains standard editing features such as Search, Replace, Modify, Insert and Delete. These tools can be used instead of selecting a specific function from the grid's menu bars.

Figure 22
Toolbar summary



Insert

To enter a record in a grid, click **Insert** from the Edit drop-down menu. An editor dialog will appear prompting you to enter the record's information. Type in the information in this editor's fields. To save this information and exit from this dialog, click **OK**. This will insert the information into the first available record in the grid. If you highlighted a specific row of the grid, then the system will insert this record above the specified row.

Certain databases will distinguish between adding a record or inserting a record to the database grid.

Add: To enter a record at the end of the database, click **Add** from the editor dialog. To enter a record immediately after a specific record, highlight that record and click **Add**.

Insert: To enter a record at the beginning of the database, click **Insert** from the editor dialog. To enter a record immediately before a specific record, highlight that record and click **Insert**.

Once you insert or add a record, an editor dialog will appear allowing you to enter data into the record's fields. Enter this information as required and click **OK** to save the record. The system will display another blank dialog allowing you to add another record. Once you have added the required records, click **Close** to save this information and exit to the grid dialog. Notice that the record lines in this grid will appear updated.

Modify

To modify a record in the grid, highlight the record by clicking it and clicking **Modify** from the Edit drop-down menu. An editor dialog will appear prompting you to edit the record's information. Click the fields of that record to edit its information and type the new text over the old. To save this information and exit from this editor dialog, click **OK**. The new information will appear in the record of the grid.

Delete

To delete a record from the database grid, click the record row header to highlight it and click **Delete** from the Edit drop-down menu. You can also use the **Delete** icon from the toolbar to delete the highlighted record.

Sort

Use the Sort command to sort the records in the database according to specific criteria. These are based on the database fields. To sort the database, click **Sort** from the Edit drop-down menu. This will access the Sorting Priority dialog in which you can enter the sort criteria for the records (e.g., alphabetically by surname).

To enter the sorting criteria for the database records, highlight the specific criterion from the Available Sorting Fields list box and click the double right arrow (>>) command button. You can also select this criterion by double-clicking the record line. The selected sorting criteria will appear in the **Fields to Sort By** list box. Once you have selected the criteria, click **OK** to initiate the sorting procedure.

Search (Find)

To search for a specific record in the database, click **Find** from the Search drop-down menu. This will access a dialog in which you can enter the search criteria for the desired record. Enter these criteria in the Search For fields and click the **Include** check box for each field to turn it on. Click **OK** to search for the first record matching these criteria. If the system reaches the end of the database without finding a record matching these criteria, it will prompt you with a message: **Search field(s) not found.**

You can also search for records based on minimum criteria. Use the wild-cards (asterisk '*' and question mark '?') to fill in the remaining values for more specific search criteria.

The following example will demonstrate the use of this function.

To search for employees in departments beginning with 'L', click the **Search** icon and perform the following steps.

- 1 Enter: **L*** in the Department field and click **OK** to start the search procedure. The system will search for the first record containing the 'L' as the first letter in the Department field.
- 2 Click the **Find Next** icon, to find the next instance of the record matching the current search criteria.

Replace

Use the Replace function to search for a specific record matching a defined search criteria and replace it with another value. To access this function, click **Replace** from the Search drop-down menu tool to access this database's editor dialog. Next, enter the search criteria in each 'Search For' field and enter the values with which you wish to replace them in the adjacent 'Replace By' field. Click the **Include** check box to turn it on and click **OK** to start this procedure.

The following example demonstrates this function.

To change all the records containing the 'Programming' department to 'Development', click the **Replace** icon in the Billing Database dialog and perform the following steps.

- 1 In the Department Search For field, enter: **PROGRAMMING**. In its Replace By field, enter: **DEVELOPMENT**.
- 2 Click its **Include** check box to turn it on.
- 3 Click **OK** to start this function. The system will search for the first record containing 'Programming' in the Department field and replace it with 'Development'.

Replace All: If you wish to replace all records which match certain criteria, click **Replace All** in the Replace dialog. This function will replace every record containing the search criteria without displaying the records on the screen for confirmation.

Prompt On Replace: Click this check box in order for the system to display the records on screen for confirmation. To confirm the replace action, click **Yes**.

Once you have entered the information in the database editor dialog, click **OK** to save it and exit to the previous window.

Summary of steps for directory updates

This section summarizes the steps required to update the three main database files. They are the Billing Database, the Customer Directory and the Telephone Configuration Database. Update these databases on a regular basis in order to keep your reports accurate.

Billing Database

The Billing Database controls the distribution of costs to the different cost centers within the company or organization. It is extremely important to have each extension's charges allocated to the appropriate department or division. Update this directory on a weekly or monthly basis depending on the size of the directory and the frequency of changes.

To avoid any problems, follow these guidelines during your Billing Database updates.

- 1 From the Reports drop-down menu click **Directory/Configuration** and then click **Billing Database Report**. Choose the desired sort order from the Billing Database Report dialog and choose whether or not authorization codes are to be printed.
- 2 Print the Billing Database Report.
- 3 On the hard copy printout of this report, enter the changes that have occurred over the past month (e.g., new department, staff moving to another department, new extensions, etc.).
- 4 Enter the new changes into the Billing Database.
- 5 Print the Billing Database Report again and verify your changes. Save this hard copy printout to track changes over a long time frame without having to repeatedly access the system.

Customer Directory

The Customer Directory uses a format similar to the Billing Database. To avoid errors in this directory, print a copy of the directory and check it for errors. Remember to update this directory weekly or monthly depending on its size.

- 1 Click **Reports** and click **Directory/Configuration**. From this cascading menu, click **Customer Directory Report**.
- 2 Choose your sort order and print the report.
- 3 Check the validity of the data and make appropriate changes.
- 4 Enter these changes in the database (click **Customer Directory** from the Database drop-down menu).
- 5 Print the new report and save it for future reference.

Telephone Configuration Database

The Telephone Configuration Database contains the information needed to cost services such as DDD and tie lines. Periodically, you may be required to enter changes to ensure the accuracy of your pricing system. These changes may involve edits to the rate tables, carrier pricing templates or to the trunk tables.

The following suggested procedure is similar to that outlined in the Billing Database editor.

- 1 From the Reports drop-down menu, click **Directory/Configuration** and then click **Configuration Diagnostic Report** to print the Telephone Configuration settings. Ensure that the Print Configuration File Contents and the Print Diagnostic Report check boxes are turned on. Click **OK** to print the report.
- 2 Check that the information on this report is complete (including the diagnostics at the end of the report).
- 3 Review the information for accuracy with the appropriate personnel.
- 4 Make the appropriate changes to the Telephone Configuration Database.

Data management

Call Accounting provides you with tools to back up and restore your main databases. It is important to maintain backup files of these databases on floppy diskettes for security purposes. If your disk drive fails or you erase valuable database files, you can recover this data from your backup diskettes. Storing alternate copies off-site is also beneficial for disaster recovery.

Backup All Databases

If you need to make a backup copy of some or all of the Call Accounting database files, use the Backup All Databases function. The backup command will save the data files specified for the current system.

Note: This will only make a backup copy of the Call Accounting database files. If you wish to backup other MAT system files, then use the application to which the database files belong or use the MAT Site Configuration application.

To run the Backup procedure, click **Backup All Databases** from the Database drop-down menu. Select the drive and directory by typing them into the Destination Directories field of the dialog which appears and click **OK**. The Backup All Databases dialog will appear listing the database descriptions, source filenames and backup filenames for the current system. Choose from the following list of databases to back up.

System Options	General system parameters
Telephone Configuration	Telephone configuration information
Location Book Registry	Defined location books
Carrier Pricing Template	Carrier pricing definitions
Communications Database	Communications Database file
Billing Database	Employee and extension information
Customer Directory	Customer name and account information
Call Detail File	CDR detail data, if any
Call Database	Indexed CDR data using Index file
Index file	Used to index and trace through Call Database
Select Report Filters	Report filter information
Summary File	CDR summary information
Auto Backup	Used if auto backup is activated
Other Billable Items	Additional costs not associated with calls
Report File	Output sent to disk

To make a backup copy of a specific file, turn on the Include check box for that site file. If you wish to make backup copies of all of the files, click **Include All**. If you wish to exclude all the files, then click **Exclude All**.

Confirm Overwrites: Turn this check box on if you wish a confirmation prompt to appear before the system replaces any files existing on the diskette with the same filename as those you are backing up.

Variable Rates File: To make backup copies of any Variable Rate Files, Dial Codes, Charge Bands or Time Bands, click **Variable Rates File**. A dialog will appear listing the various rate filenames. To make a backup copy of a specific file, turn on the Include check box for that site.

International Rates: Click International Rates to make backup copies of any International Rates files.

Holiday File: Click Holiday File to make backup copies of any Holiday Files.

Click **Close** to initiate the backup procedure for these files and exit to the Backup All Databases dialog.

Location Books: To make backup copies of any Location Book files, click **Location Books**. A dialog will appear listing the various Location Book filenames. To make a backup copy of a specific file, turn on the Include check box for that site. Click **Close** to initiate the backup procedure and return to the Backup All Databases dialog.

Backing up to floppy diskettes

If you are backing up to a floppy drive, insert the diskettes as the system prompts you. The Backup All Databases function provides you with two additional options when backing up to a floppy drive:

- Delete Existing Files On Floppy
- Confirm Deletes

Delete Existing Files On Floppy: Turn this check box on if you wish to delete all the files from the current disk onto which you are backing up your files.

Confirm Deletes: If the Delete Existing Files On Floppy check box is turned off, then turn this check box on if you wish the system to prompt you before deleting any files located on the diskette.

Note: Ensure that you label the destination diskettes correctly. When you restore the files, the system will not allow you to restore the files if the diskettes are out of order.

When you are ready to make backup copies of your files, click **OK**.

Restore All Databases

The Restore function allows you to restore any data you may have lost by copying the Call Accounting database files you have previously backed up using the Backup All Databases function.

To restore the files you saved using the Backup function, click **Restore All Databases** from the Database drop-down menu. The Restore All Databases dialog will appear prompting you to enter the drive and directory from which you wish to restore the files (e.g., A:). Enter this information and click **OK**.

To restore a specific file, turn on the Include check box for that site. If you wish to restore all of the files, click **Include All**. If you wish to exclude all the files, then click **Exclude All**.

If you are restoring files from a floppy drive, insert the first diskette in the drive. This contains the directory for these database files. Place the proper diskettes in the drive as the system prompts you.

Confirm Overwrites: Turn this check box on if you wish a confirmation prompt to appear before the system replaces any files existing on the diskette with the same filename as those you are restoring.

Variable Rates File: To restore any Variable Rate Files, Dial Codes, Charge Bands or Time Bands, click **Variable Rates File**. A dialog will appear listing the various rate filenames. To restore a specific file, turn on the Include check box for that site.

International Rates: Click this command button to restore any International Rates Files.

Holiday File: Click **Holiday File** to restore any Holiday Files.

Click **Close** to initiate the restore procedure and return to the Restore All Databases dialog.

Location Books: To restore any Location Book files, click **Location Books**. A dialog will appear listing the various Location Book filenames. Click **Close** to initiate the restore procedure and return you to the Restore All Databases dialog.

When you are ready to restore your files, click **OK**.

Call Database maintenance

The Call Database requires special attention because it contains the call data collected from the Meridian 1 which can potentially become too large to manage easily. Failure to manage this file properly will result in longer processing times and a waste of hard disk space. Since the Call Database records contain specific calling information including their date and time, you can use date and time filters when using the Archive, Purge and Restore functions.

To manage the Call Database file, click **Utilities** from the Database drop-down menu and click **Call Database** from its cascading menu. The following sections describe the Call Database maintenance functions: Archive, Purge and Restore.

Archive Call Database

The Archive function stores your old data to a separate medium providing you with more working memory on your disk.

To archive the Call Database, click **Archive** from the Maintenance drop-down menu of the Call Database dialog. In the Filter fields, enter the minimum and maximum filter ranges. To include a range, click the filter's command button (e.g., **Time**), enter the range and turn on the Include check box for this filter. Repeat this step for all the filters you wish to include.

Note: If you wish to erase the data from your working directory when you archive it (essential if you have limited disk space), turn on the **Purge selected records** check box. This will move the records from the working drive and directory to the archive drive.

To save this filter file, click **Save Filter**. A dialog will appear prompting you to enter the destination drive, directory and filename where you wish to save this filter. Enter the drive and directory in its fields and click **OK** to save the file.

To reuse an existing filter file, click **Load Filter**. A dialog will appear prompting you to enter the filter name. Enter this information in the appropriate fields and click **OK** to load the file.

If you are archiving to a floppy drive, ensure that you place the diskettes in the drive as the system prompts you. Number each disk so you can maintain the proper order of data when restoring.

If you wish to schedule the Archive function at a specific date and time, click **Schedule**. This will invoke the Scheduler application from MAT Common Services. Enter the date and time on which you wish to archive the data. The Scheduler will then perform this activity at the selected date and time.

Note: Remember to run your reports before archiving your data. You may inadvertently archive and remove data needed for a monthly report.

Purge Call Database

If you do not wish to retain past data, use the Purge Call Database function to erase the data and thus reduce the size of the Call Database. The Purge function permanently removes data from the system.

To purge call records from the Call Database, click **Purge** from the Maintenance drop-down menu of the Call Database dialog. A filter dialog will appear containing the specific filters you can define for the call records you wish to delete. In these fields, enter the minimum and maximum ranges. To include a range, select your option, enter your range and turn on the Include check box for this filter. Repeat this step for all the filters you wish to include.

To save this filter file, click **Save Filter**. A dialog will appear prompting you to enter the destination drive, directory and filename where you wish to save this filter. Enter the drive and optional directory in its fields and click **OK** to save the file.

To reuse an existing filter file, click **Load Filter**. A dialog will appear prompting you to enter the filter name. Enter this information in the appropriate fields and click **OK** to load the file.

If you wish to schedule purging at a specific date and time, click **Schedule**. This will invoke the Scheduler application from MAT Common Services. Enter the date and time that you wish to purge the data.

Restore Call Database

During the Restore operation, Call Accounting appends the restored data to the end of the current Call Database file. Therefore, it is important to manage the Archive and Restore procedures so that the data in the Call Database is always in chronological order. This is especially important for report generation.

Note: Do not restore the data from the archive diskettes to the working directory unless you are sure that the data from the working directory was previously purged. Otherwise, the data records will be added to the existing data and data records could become duplicated, thus reducing their validity.

To restore data, click **Restore** from the Maintenance drop-down menu of the Call Database dialog. Another dialog will appear prompting you to specify the drive, directory and filename of the data to be restored. Verify that this information is correct and click **OK** to restore the data.

Summary of tasks

The following is a summary of the major tasks described in this chapter as they are run by time period.

Daily tasks

- 1 Collect CDR data from your buffer box (it is recommended that you use a buffer box to store CDR data). Collections can be scheduled to occur automatically every day or they can be manually invoked each day. If you are not using a buffer box, a dedicated PC Com Port will continuously collect the CDR data as it is output from the Meridian 1.
- 2 View the log daily to ensure that your scheduled collection was successful. A list of the number of records collected by date can be found in the Database drop-down menu, under Utilities-List Call Database Dates.

Ongoing tasks (recommended weekly)

- 1 Synchronize Billing Database with Station Administration. If the Billing Database is not in synch with the Station Database (one or more changes have been made in Station), a dialog will prompt to ask you if you wish to synchronize the database when you access the Billing Database. If you click **Yes**, the Call Accounting Billing Database will automatically update to accommodate any changes you made in Station Administration.

If you are not using the Station Administration application, you will need to perform your Call Accounting Billing Database updates manually.

- 2 Update Customer Directory. The Customer Directory assigns customer names to digits dialed. The reports can then include not just the dialed number but also the customer name. If you use the Customer Directory, it should be updated periodically.
- 3 Perform database backups. As with any database, you should perform a regular backup of your data to disk or hard drive.

Monthly tasks

- 1 Select your reporting filters to ensure that you are reporting on the correct subset of the collected data. Typically this will include setting the date for your reporting period.
- 2 Run your monthly reports.
- 3 Purge or archive your data. The Purge Call Database function will delete the data from your hard drive completely. The Archive Call Database function will store the call records to a disk or hard drive.

User's Reference

This chapter contains a general overview of the main Call Accounting functions as they are accessed from its main window. It briefly describes their main function and purpose. For complete details on each of these functions and their operation, refer to the on-line Help included with Call Accounting.

File menu

This menu contains functions used to select an output device, set up a printer and exit from Call Accounting.

To access these functions, click **File** from the main window and select from the following menu items:

- Select Output Device
- Print Setup
- Close

Report menu

The Call Accounting reports provide information on the details of the call records which were collected from the Meridian 1. They also include information on your system databases and configurations. Each report appears in the Reports drop-down menu under its specific cascading menu.

To set up and run your reports, first select your output device and then select your reporting filters (or parameters). Each report begins with a banner page indicating the reporting filters for that report. Keep this information attached to the report for reference purposes.

The following is an example report which is generated from Call Accounting.

Table 1
Extension Detail Report

Acme Limited Dallas, TX									
Extension Detail Report									
Extension: 216 - Smith, J.							Page: 1		
Department: MARKETING							Date: 05/18/95		
Division: SALES									
Digits Dialed	Location	Date	Time	Duration	Cost	Route Used	Comments		
9 1 214 555-5692	DALLAS TX	05/17	11:16	45:00	23.29	DDD	TTL INC.		
9 1 713 555-5777	HOUSTON TX	05/17	11:31	12:00	4.42	DDD			
9 1 214 665-5430	HOUSTON TX	05/17	11:37	7:00	2.58	DDD			
9 1 214 555-2837	HOUSTON TX	05/17	11:37	16:00	9.02	DDD			
9 1 713 555-9275	DALLAS TX	05/17	11:40	1:00	0.39	DDD			
9 1 214 555-5111	DALLAS TX	05/17	11:42	2:00	0.74	DDD			
9 1 212 555-6419	NEW YORK NY	05/17	11:43	1:00	0.39	DDD			
9 1 212 555-0211	NEW YORK NY	05/17	11:43	33:00	18.60	DDD			
9 1 212 555-9275	NEW YORK NY	05/17	11:44	1:00	0.39	DDD			
9 1 713 555-5347	HOUSTON TX	05/17	11:46	1:00	0.39	DDD			
9 1 719 555-1000	PUEBLO CO	05/17	11:47	15:00	8.45	DDD			
Report Totals:	# Calls	Minutes		Min/Call		Cost		Cost/Call	
	In Out	In Out	In Out	In Out	In Out	In Out	In Out	In Out	
DDD	0 11	0:00 134:00	0:00 12:11	0.00 68.64	0.00 6.24				
Total:	0 11	0:00 134:00	0:00 12:11	0.00 68.64	0.00 6.24				
Reviewed By: _____ Approved By: _____									

The following paragraphs describe the common options which are presented before running a report.

Sort Order: This option allows you to select the order in which the directories are first sorted. By sorting this file in the appropriate order, the system organizes the report data in a way that best suits your needs.

Initialize Summary File: This option allows you to reset or clear the Summary file. This is necessary when the system generates a new set of results. Turn the **initialize summary file** check box on if changes were made to the report filters since the Summary file was first created.

Produce Summary Data: This option causes the system to save the extension detail totals in the Summary file. The system then uses this file in the production of other reports. If you run the report again using different filters, you should regenerate this file to ensure that the extension totals are consistent with the newly selected data. However, you may decide not to initialize the Summary file if the new totals are to be added to the existing summary data.

Schedule: If you wish to schedule each of these reports to run at a specific date and time, click **Schedule** from their respective report setup dialogs. This will invoke the MAT Common Services Scheduler application where you can select the date and time for later reporting. The Scheduler will then generate the selected report at the predefined date and time.

When you schedule a report to run using the MAT Scheduler, the output device of the scheduled report is determined by the Select Output Device option which was selected at the time when the report is scheduled.

Select Report Filters

The Select Report Filters function allows you to generate reports based on data which meets a variety of report criteria. If you do not set report filters, the reports will include all the CDR data in the Call Database (e.g., every department instead of a particular one).

Cost allocation reports

The cost allocation reports provide costing details and summaries for the calls collected from the Meridian 1. These include accumulated summary reports based on department, division or corporate totals. To access these reports, click **Cost Allocation** from the Reports drop-down menu and then select the appropriate report from its cascading menu.

The following is a list of these reports:

- Exception/Chronological Report
- Extension Detail Report
- Department Summary Report
- Division Summary Report
- Corporate Summary Report

- Account Code Report
- Account Code Summary Report
- Account Code Summary by Extension Report
- Undisbursed Verification Report
- Undisbursed Summary Report
- Authorization Code Report

Trunk analysis reports

The trunk analysis reports list information for your telephone system's trunks. To access this list of reports, click **Trunk Analysis** from the Reports drop-down menu. Select the appropriate report from the Trunk Analysis cascading menu.

The following is a list of these reports:

- Trunk Utilization Report
- Trunk Detail Report
- Trunk Graph
- Tandem Tie Report

Directory/Configuration reports

The directory/configuration reports list information on your Call Accounting directories and Telephone Configuration Database. This includes a diagnostic for your Configuration File. To access these reports, click **Directory/Configuration** from the Reports drop-down menu and select the desired report from its cascading menu.

The following is a list of these reports:

- Billing Database Report
- Customer Directory Report
- Configuration Diagnostic Report

Frequency reports

The frequency reports provide details and summaries on calls based on calling line ID, ring time, call duration, hold time (if supported) or unanswered calls. To access these reports, click **Frequency** from the Reports drop-down menu and select the appropriate report from its cascading menu.

The following is a list of these reports:

- Customer Summary Report
- Frequently Called Numbers Report
- Digits Detail Report
- Calling Line Frequency Report
- Calling Line Summary Report
- Ring Time Summary Report
- Call Duration Summary Report
- Hold Time Detail Report
- Hold Time Summary Report
- Unanswered Call Detail Report
- Unanswered Call Summary Report
- Location Summary Report
- Area Code Summary Report

Export Detail Definition

The Export Detail Definition function is used to define and generate a report to disk so it can be used by other database and spreadsheet programs. This is useful in cases where you wish to output information obtained from the CDR data and format it to suit your needs.

With this function, you can export CDR data to such formats as: fixed field, comma delimited and dBase III. With the dBase III format, call record data can be directly exported to formats used by today's more popular spreadsheet and database programs such as: MS Excel™ and Access™, Lotus 123™ and dBase™.

To define and generate an export report, click **Export Detail Definition** from the Reports drop-down menu. From the Export Detail Report dialog, you can create and edit the parameters for the export report.

Graphs

When you select the Graphs function, the system will display a graph of its data. You can then edit the attributes of the graph and then save it as a bitmap file. You can also print a graph directly from the screen to the desired output. In addition, when you print a graph from the screen, you can reset the scaling and print layout of the graph.

To access this function, click **Graphs** from the Reports drop-down menu. This function allows you to select the display parameters of a graph. This dialog contains standard editing features such as: Open, Save and Save As. In addition, you can specify parameters for this graph by clicking **Filters**.

Graphics Services module

The Graphics Services module provides graph generating functions for supported MAT applications. Use this module to edit the attributes of a graph which is generated from another MAT application and then print it or save it as a bitmap file.

Database menu

Call Accounting uses a number of databases and directories which provide costing and maintenance support for its call records. It relies on the proper maintenance of its databases to operate efficiently. Improper data management can often lead to the following:

- Lost data in the event of a disk crash when no backups have been performed
- Missing historical data because data was not archived
- Long processing times due to outdated data
- Hard disk drives filled to capacity at which point you must remove and purge data before proceeding with normal operations

The following is a summary of the databases and functions which you can select from the Database drop-down menu.

Customer Directory

The Customer Directory is used to identify commonly called telephone numbers on the reports that are generated. It can also maintain a listing of your frequently called customers or clients. When the system matches an account code when you generate account code reports, it prints the name corresponding to that telephone number in the Customer Name field on the report.

The following is an example Customer Directory.

Figure 23
Customer Directory

	Customer Name	Phone Number	Account Code	Comments
1	Alice Munro	214 555 9256		
2	Jan Bradel	214 555 1234	333	
3	Sindy Rawlings	214 555 5467	342	
4	Robert James	214 555 3278	344	
5	Peter Mac	214 555 3290		
6	Mike Maloney	214 555 7868		Distributor
7	Carol Robertson	214 555 6789	367	
8	Greg Homes	214 555 6991	383	

Record : 4 Total : 8

Billing Database

The Billing Database contains information which is generated from the Set Database and Custom Database of MAT Station Administration and provides information to the system for organizational purposes. Call Accounting uses the data entered in this database to accumulate and assign costs by extension, department, division and for the organization as a whole.

When you access the Billing Database, Call Accounting will index the database to build the department and division files. It will not index these files after this initial access unless the department and division files change.

Figure 24
Billing Database

Set	Last Name	First Name	ID	Extension	Department
1	Choh	Andy		234	Sales
2	Collins	Sandra		221	Sales
3	Hoffman	Sherry		215	Support
4	Ingram	Oliver		233	R&D
5	Martin	Mick		112	R&D
6	Novelli	Sam		265	Support
7	Peters	Bernie		222	Sales
8	Rice	Matt		255	Production
9	Unger	Jack		155	Sales
10

Record : 5 Total : 10

Backup All Databases

If you need to make a backup copy of some or all of the database files, use the Backup All Databases function. The backup command will save the data files specified for the current system.

Note: This will only make a backup copy of the Call Accounting database files. If you wish to backup other MAT system files, then use the application to which the database files belong or use the MAT Site Configuration application.

Restore All Databases

The Restore function allows you to restore any backup data by copying the Call Accounting database files you had previously backed up to the current databases.

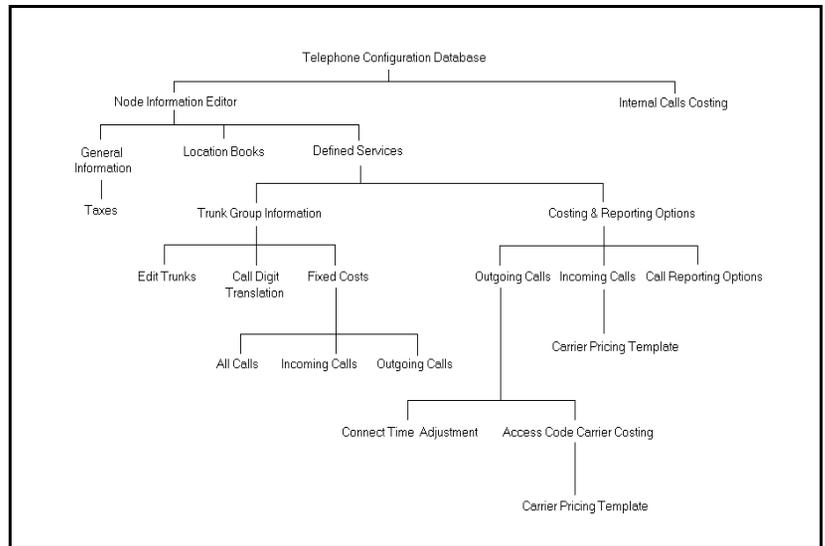
Telephone Configuration Database

The Telephone Configuration Database is the key to pricing calls and tracing them to their destinations. It defines the type of costing used through each trunk (e.g., DDD, DID, Tie Line) and includes any additional costs defined for your system and location. Each defined service uses predefined location books and rate tables based on the offerings of your telecommunications carrier. Call Accounting can then use this telephone configuration information to properly cost the call records collected from the Meridian 1 and generate reports.

It is critical that you keep the Telephone Configuration Database up-to-date as changes occur in your telephone system. Pay particular attention to the number of trunk lines used in your system and the free local calling areas. If these free local calling exchanges are not updated, then local calls may be priced as long distance calls.

The following is a schematic of the Telephone Configuration Database menus as they are accessed from the main window.

Figure 25
Schematic of Telephone Configuration Database



To access the Telephone Configuration Database, click **Telephone Configuration** from the Database drop-down menu.

Node Information Editor

You must define the costing for each node on your network. Each line in this grid represents an individual node. If you have only one system, then you only need to define one node. Otherwise, you must define each node's configuration (e.g., home, office, plants, etc.). For each node that is added to this list, you can enter its general description, location book, name, dial code and trunks.

Figure 26
Node Information

Node Information

General Information

Company Name:

Company Location:

Main Node +/- Time Zone: Currency Exchange:

Location Book

Location Book Name: Dial Code/NPANXX:

Defined Services

Trunk Group/Service ID	Description

Internal Calls Costing

The Internal Calls Costing function allows you to apply costs to calls made within a system. These internal calls are made in the Meridian 1 from station to station. If you wish to calculate a cost for your company's internal calls and, if the main node produces records for such calls, then use this function to enter these costs.

System Call Digit Translation

The System Call Digit Translation function allows you to translate the digits dialed on call records for all trunk groups. This allows Call Accounting to process and print a different pattern from the one that is actually dialed. For example, the digit pattern '917135551234' could be re-interpreted as '812145551234'.

Note: Call Digit Translation does not affect CLID/ANI digit patterns on incoming calls.

The System Call Digit Translation function translates the digits dialed in all of the call records in this system prior to the trunk group Call Digit Translation function.

Note: The digit pattern translated by the System Call Digit Translation function may be translated again using the trunk based Call Digit Translation function. You should therefore be careful when using this function.

Utilities

The Call Accounting database utilities provide added commands which will assist you in managing your Call Database and help in system diagnostics.

To access these functions, click **Utilities** from the Database drop-down menu and click the desired function name in its cascading menu.

Call Database

The Call Database editor allows you to display and edit the Call Database records. In some cases, it may be necessary to edit or delete some call records of this database due to corrupted dates or IDs. This allows you to remove bad or unwanted sections of the database or replace invalid dates with valid dates.

Display Index File

The Index file (INDEX1.DAT) contains the indexing information used to sort the Call Database (MDR1.DAT) from the raw data file collected from the Meridian 1. Use the Display Index File function to scan through the records in the current system's Index file. This is a diagnostic tool which your support personnel use to determine the source of a reporting or costing problem.

ReIndex Call Database

In some cases, the Call Database may not be correctly sorted with the Index file. This can be caused by edits to the Call Database or by some system failure which may cause it to lose records. This can cause problems such as unsuccessful or inaccurate reporting. The ReIndex Call Database function corrects the Index file to match the Call Database.

List Call Database Dates

This function lists the dates of the call records for the current system's Call Database. Use this function to search for any invalid dates in the Call Database before generating your reports. If you find any incorrect dates, use this editor to search for and remove these call records from the Call Database.

Account Code Editor

Use this function to edit the account codes for call records in the Call Database after they have been collected from the Meridian 1. Once a call is stored in the Call Database, you can use this editor to add an account code to the call or modify an existing one. You can locate a call by selecting a telephone extension and reviewing each call for that extension.

Text File Editor

Call Accounting provides you with a method of modifying your existing text files (e.g., AUTOEXEC.BAT file). When you click **Text File Editor** from the Database drop-down menu, Call Accounting invokes the Windows Notepad utility. Use this editor to open any text files, edit them and save them again.

Reporting Options

The Reporting Options function allows you to set the features over the entire system which determine what will appear on selected reports. To access this function, click **Reporting Options** from the Database drop-down menu.

Note: To set the reporting options for any specific trunk, refer to the section Costing and Reporting Options. To set the reporting options on a digit pattern basis, refer to the section Call Reporting Options.

Figure 27
Reporting Options

Reporting Options

Include Account Calls Banner Page on Reports
 Replace Acct. Code by Name Use Acct. as Auth. Code
 Reports by Auth. Code Tax Summary on Reports
 Export Other Billable Items Update Data Before Reporting
 Include Auth. Code Calls Approximate Distance Calculation
 Replace Orig.ID with Inc.ID

Cost Summary Fields

Field 1: Field 2: Field 3:
 Field 4: Field 5: Field 6:

Bottom Line Message on Reports

Message 1:
 Message 2:
 Message 3:

Other Billable Items

The Other Billable Items function is used to assign any additional calls which are not being recorded by the Meridian 1 to a station. Use this function to enter costing information for calling criteria such as calling card calls or cellular calls. To assign these costs to the appropriate extension, you must either transfer the data from a file or you must copy the information from the printed credit card or telephone bill.

If the items you wish to enter are stored in a file in a format supported by Call Accounting, then you can transfer this data to the Other Billable Items database file ADDMDR1.DAT. If the items you wish to enter in this database cannot be transferred directly to the file, then you must type in the information from the source bill. Use the Other Billable Items editor dialog to enter this information.

System Options

This function contains specific system options that you enable for optimum system performance. Return to this function to change these options throughout your Call Accounting session.

Location Books & Rate Tables

The Location Books and Rate Tables provide the global pricing information and rate tables for your Telephone Configuration Database. Before you define your Telephone Configuration Database, you must ensure that the rate tables and templates have been defined.

Use the following functions to define the location books, carrier pricing templates and rate tables:

- Location Book Registry
- Carrier Pricing Templates
- Call Type Definition
- Edit Variable Rate Table

Location Book Registry

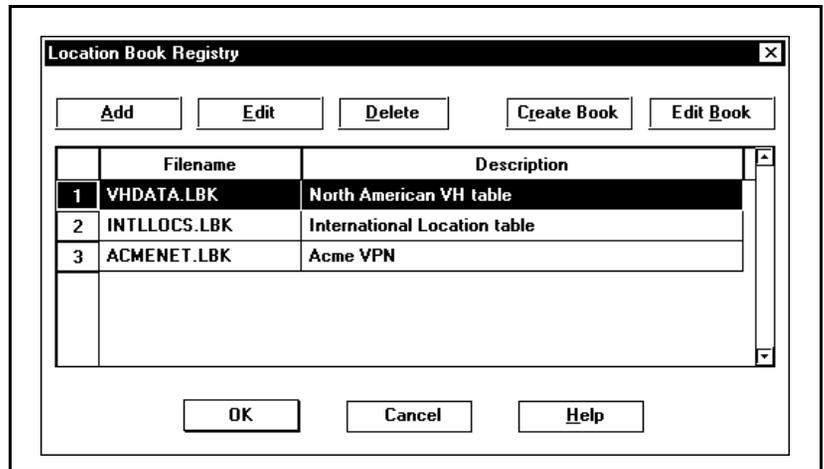
Location books contain the terminating location identified by the dial codes or area codes. Some location books such as V&H or Dial Code V&H consist of the vertical and horizontal coordinates which are used to calculate distances between different destinations. When calls are costed based on distance, the system uses the coordinates in these location books to calculate the distance between the points.

Call Accounting includes a set of predefined location book files which can be used in calculating distances between the different call destinations. It will read the digits dialed in the call record and will locate them in the location books. If the call was made over a trunk that is costed using measured distance rates, then it can be costed based on the distance between the node and the destination.

Each location book file can be assigned to a record in this database. These files can then be referenced from the functions which will calculate the distance-based costs of the calls.

The following is an example Location Book Registry dialog.

Figure 28
Location Book Registry

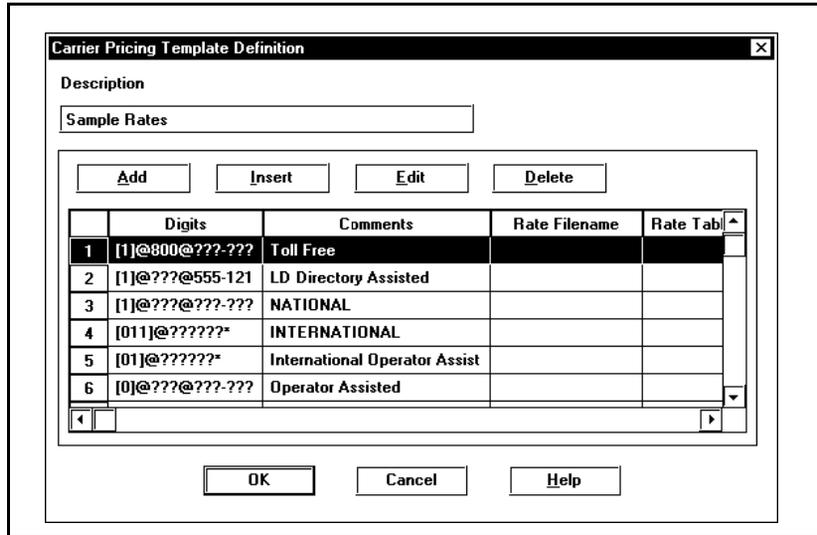


Carrier Pricing Templates

Use the Carrier Pricing Templates editor to define the criteria which determines the type and cost of a call. This information is based on the digits dialed, time of day and date.

The following is an example Carrier Pricing Templates dialog.

Figure 29
Carrier Pricing Templates Definition



Call Type Definition

The Call Type Definition function allows you to specify the different types of calls used when you are defining the trunk usage of calls. This will distinguish the types of calls to allow for different costing to be applied to each call matching the call criteria.

Edit Variable Rate Table

Call Accounting includes common rate tables offered by the different carriers. The rate tables contain the required rates and coverage areas which define the locations (area codes, exchanges, etc.) from where calls are made. This way, the system will know which call will be costed with which rate.

The following is an example Rate Interface Editor dialog.

Figure 30
Rate Interface Editor

	R.T.L.	Description	Rate Type	Table	
1	DDD	Long Distance Rates	Measured	DDD	
2	INT-1	International Rates 1 (60,60)	INT'L	TGLB	
3	INT-2	International Rates 2 (60,3)	INT'L	TGLB	
4	INT-3	International Rates 3 (30,6)	INT'L	TGLB	
5	INT-4	Advantage Rates	INT'L	INT-4	
6	INT-5	Discounted Rates for Area C	INT'L	STN	

Buttons below the table:

- Measured Distance Rates
- Volume Discount Plan
- Point to Point Rates
- International Rates
- Volume Affected Rates
- Charge Bands
- Coverage Area Tables
- OK
- Cancel
- Help

Use the following order of operations when setting up and implementing your rate tables.

- 1 Create rate tables using the Measured Distance Rates, Point to Point Rates, Volume Affected Rates, International Rates or Charge Band editors.
- 2 Define any coverage areas using the Coverage Area Tables editor (optional).
- 3 Define any volume discount plans using the Volume Discount Plan editor (optional).
- 4 Enter the rate table codes and any supporting information such as descriptions and pricing periods in this grid.

Communications menu

The Communications function performs the first step in processing CDR data. It collects the data from the Meridian 1 through an optional buffer unit and stores it for processing. It is used to set up communications between the PC and your Meridian 1 and perform data collection.

The following is a brief summary of the functions and commands in the Communications menu.

Communications Database

The Communications Database contains the information necessary to poll and index call data from the Meridian 1 or optional buffer unit to your PC's disk drive for data processing.

The following is an example Communications Database dialog.

Figure 31
Communications Database

Communications Database

Selected Profile		
Name	Type	Comm Port
Pro1	Serial	2

Connection Parameters		
Data Rate	Stop Bits	Parity
9600	1.00	None
Data Bits	Delay (secs)	Timeout (secs)
8	9	30

System Access	
Modem Script	Phone number
Modem Access ID	Modem Password
Buffer Equipment Type	
None	

Collection parameters
<input type="checkbox"/> Collect
<input type="checkbox"/> Index
<input type="checkbox"/> Auto Backup
Delay (min)
0

Script Setup
<input checked="" type="radio"/> Poll
<input type="radio"/> Continuous
Name

File Setup
<input type="checkbox"/> File Collection
Filename

OK Cancel Help

Data Collection

Data Collection is the process of transferring the call detail data from the Meridian 1 or optional buffer unit to the raw Call Detail file `DETAIL1.DAT` on your system disk. Call Accounting will then index this raw data file and save it to the Call Database `MDR1.DAT` when a data collection option is initiated.

Collecting and indexing

Data collection is a two step process. During the first step, the system collects the data from the Meridian 1 through the optional buffer unit and stores it in the raw Call Detail file. The second step involves appending this file into the Call Database.

Schedule Data Collection

You can set up Call Accounting to collect and index the call detail records from the Meridian 1 by setting up the MAT Common Services Scheduler application. By providing basic information in the initial setup, you can signal Call Accounting to collect and/or index these call records at a scheduled date and time.

Advanced Network Setup

This chapter contains a sample setup which will assist you in entering a more advanced telephone configuration. It contains the steps required to connect to the Meridian 1, collect and cost call records, enter a telephone configuration and generate reports.

This example involves advanced network and configuration concepts and is intended to provide advanced users with assistance in entering telephone configurations for more complex networks. To learn how to set up Call Accounting using a basic example, refer to the chapter entitled: *Getting Started* in this guide. As well, you should refer to *Getting Started* for details on how Call Accounting collects and processes CDR data.

Note: This sample setup assumes that you have already installed Call Accounting onto a PC as part of MAT. If you have not already done so, then install Call Accounting before proceeding.

CAUTION

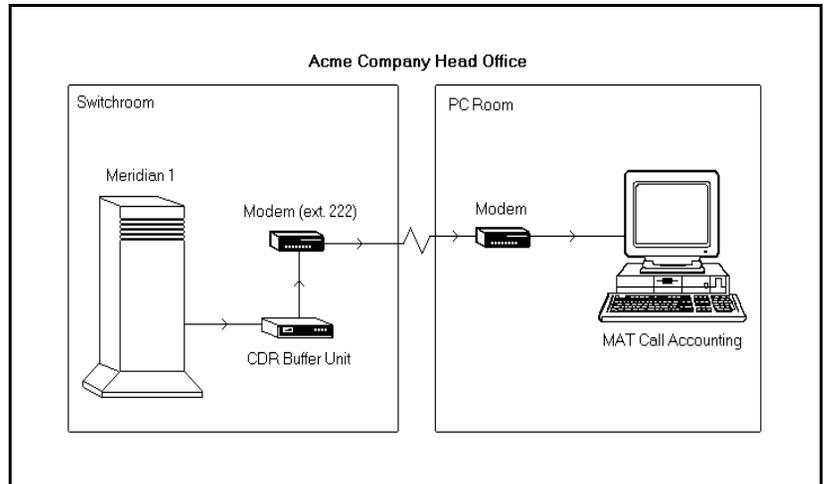
This sample setup is intended to be only an example of how to set up your configuration when running Call Accounting. The configurations, trunks and rate tables listed in this setup are only examples. When setting up your own configuration, you must enter your own company's configuration and rate information.

Scenario

This sample setup is based on the following scenario:

- The company Acme Company Ltd. is located in Dallas, Texas. The telephone number for the head office is **(214) 655-1111**. It has a branch office in Houston with the telephone number **(713) 455-1111**. The main node in Dallas is also connected to a Virtual Private Network (VPN).
- The name of this site is **Acme Company** and the system is **Head Office**. These have already been created using the System Configuration function of MAT Common Services.
- There are 16 members (trunks) on the main location's Meridian 1. These are configured as follows:
 - **Route 0** has five (5) members (trunks) **1 to 5** for regular long distance service (DDD). These have access code **9**.
 - **Route 1** has two (2) members **1 and 2** for incoming calls using the company's 800 service and do not require access codes. These are output as trunks 1001 and 1002.
 - **Route 2** has two (2) members **1 and 2**. These trunks use a Tie Line service and have access code **8**. These are output as trunks 2001 and 2002.
 - **Route 3** has seven (7) members **1 to 7**. These are connected to a Virtual Private Network (VPN) with location codes **220, 221 and 222** and have access code **7**.
- The Meridian 1 is located in the switch room of the Acme Company head office. It requires a CDR buffer unit to be connected to it to collect CDR data. A modem is attached to this CDR buffer unit to allow for communications between it and a PC in another room. It has a dedicated extension number 222.
- The PC on which Call Accounting is installed is located in another room of the same building. A modem is attached to this PC's COM1 port and will be used to connect to the CDR buffer unit which is attached to the Meridian 1 and collect the CDR data from it.
- Acme wishes to report on toll calls only when generating reports. In addition, they wish to collect local calls which are to be summarized for each extension.

Figure 32
Sample Setup schematic



Before you define the telephone configuration for this scenario, you must have previously added a site and system to the MAT Navigator and assigned Call Accounting to the system. When Call Accounting is assigned to a system, a set of files will be created to store its data in its directories and databases (e.g., Customer Directory, Billing Database, Call Database, Communications Database and Telephone Configuration Database). Refer to the *MAT Common Services User Guide* for complete details on how to enter system information and assign Call Accounting to a system.

The following steps outline the input required to complete this example. For more details on the functions and commands listed here, access the Call Accounting on-line Help.

Summary of Steps

The following list summarizes the steps which will be discussed in this chapter.

- 1 Install CDR buffer unit
- 2 Open Site & System
- 3 Install Rate Tables

- 4 Run Call Accounting
- 5 Test Data Collection
- 6 Enter Telephone Configuration
 - a Create Location Book for VPN
 - b Enter Reporting Options
 - c Update Call Type Definitions
 - d Update Carrier Pricing Templates
 - e Enter Telephone Configuration
- 7 Test Telephone Configuration

Step 1: Install CDR buffer unit

In this sample setup, a CDR buffer unit is used to collect call records from the Meridian 1's CDR port. Therefore, the first step is to connect and install the CDR buffer unit onto the Meridian 1. It can then collect and store call records as they are output from the Meridian 1. You must then connect the PC to the buffer unit to collect the call records from the buffer unit to the Call Accounting database files. In this example, you would configure and connect modems to the buffer unit and the PC.

The following is a summary of the steps required to install the CDR buffer unit. Refer to the chapter entitled: *Getting Started* in this guide for more details on installing and connecting buffer units.

- 1 Locate the CDR port on the Meridian 1 and ensure that the Meridian 1 is configured to output CDR records.
- 2 Connect the CDR buffer unit to the Meridian 1 CDR port and to an optional modem.

- 3 Plug in and turn on the CDR buffer unit. Test it to ensure that it collects according to its instructions. Check its commands and displays to ensure that it responds.
- 4 Connect the PC on which Call Accounting is installed to the CDR buffer unit. You can connect the PC to the CDR buffer unit either directly (using an RS232 cable) or through a modem connection (using a null modem cable). This example requires a modem connection between the PC and the CDR buffer unit. Therefore, plug one modem into the CDR buffer unit with the null modem cable and the other at the configured communications port (COM1) of the PC.

The operation of the CDR buffer units which are supported by Call Accounting may vary. You should therefore refer to the documentation provided with your CDR buffer unit for complete details on installing and connecting it.

Step 2: Open Site & System

Before you run Call Accounting, first run the MAT Navigator and open this site and system. You can then select Call Accounting from the Telemanagement menu in this system's window.

Note: The system Head Office must already have been created using the System Configuration function. Refer to the *MAT Common Services User Guide* for more details on the System Configuration function.

Perform the following steps to open the site and system for this example.

- 1 Run the MAT Navigator by clicking the **MAT Navigator** icon. At the Login dialog which appears, enter your user ID and password and click **OK** to continue.
- 2 To open the site for this example, click **Acme Company** in the MAT Navigator window.
- 3 To open the system for this example, click **Head Office** from this site.

This will access the system window for Head Office.

Step 3: Install Rate Tables

Before you configure Call Accounting, you must install the rate tables which reflect your telecom provider's rates. These provide such rates as long distance rates for direct dialed calls to North America as well as international long distance rates. Call Accounting requires these rate tables to accurately apply costs to your long distance calls. You can obtain rate tables from a rate service or from your dealer. Remember that the rate table files must be compatible with the Call Accounting software. If in doubt, check with your supplier before purchasing any rate tables.

To install the rate table files, simply follow the instructions included with them. Remember to install the rate table files onto your MAT Call Accounting directory so you can select the appropriate rate table files when you are defining your carrier pricing templates.

Step 4: Run Call Accounting

Once you have opened this system, you can then run Call Accounting to test the data collection, enter your configuration information and generate reports.

To run Call Accounting, open the system Head Office from the site Acme Company and click the **Telemanagement** menu item. This will display the MAT applications which have been assigned to the system Head Office under **Telemanagement** (e.g., Call Accounting, Call Tracking and Traffic Analysis). To run Call Accounting, double-click **Call Accounting** from this menu.

Step 5: Test data collection

Before you enter your telephone configuration, you should verify that Call Accounting is collecting data from the Meridian 1 in the correct format. This way, you can test the configuration against actual calls. To test the data collection, enter the data collection parameters, collect the call records from the Meridian 1 and view them in the Call Database.

Enter communications parameters

Before you attempt to run a data collection, enter the communications parameters for the site and system.

To enter the communications parameters for Call Accounting, access the Communications Database and perform the following steps.

- 1 Turn on the **Collect** check box to enable data collection once it is invoked.
- 2 Turn on the **Index** check box to index the data and create the Call Database file during data collection.
- 3 From the **Script Name** drop-down list box, select the script filename which contains the commands which perform the data collection. The script name you select depends on the type of data collection to be performed. Refer to the *MAT Common Services User Guide Appendix D: Script File Summary* for a list of supported buffer units and their corresponding script filenames.
- 4 Click **OK** to select these options and return to the Call Accounting window.

Test data collection

Now that you have configured your hardware and entered the required communications parameters, you are now ready to test the data collection. At this stage, you should just run data collection as a test. Later, you can set up and invoke data collection once you have entered all of your system information and you are ready to run it live.

To test the data collection, perform the following steps.

- 1 Wait for some calls to be recorded by the Meridian 1. Either wait for some calling activity on the Meridian 1 or make a few telephone calls for this test.
- 2 Start the data collection by clicking **Data Collection** from the Communications drop-down menu. Call Accounting will start collecting the call records from the CDR buffer unit to the Detail file (DETAIL1.DAT) and index them to the Call Database (MDR1.DAT).
- 3 During the data collection process, Call Accounting will display a window with the status of the data collection. This will show the data collection activity including any errors.

- 4 Once this data collection is complete, view the Call Database (MDR1.DAT) to verify that these call records are in the correct format. To view the Call Database, click **Call Database** from the Utilities cascading menu of the Database drop-down menu. The Call Database dialog will appear listing the call records which were just collected.
- 5 Review the call records for any invalid fields. For example, check the trunks, access codes and digits dialed for invalid values. As well, check the call records' dates and times to ensure that they match the date and time on the Meridian 1.

If for some reason, the data appears invalid, then repeat the previous steps ensuring that your hardware is connected properly and that you have the correct settings.

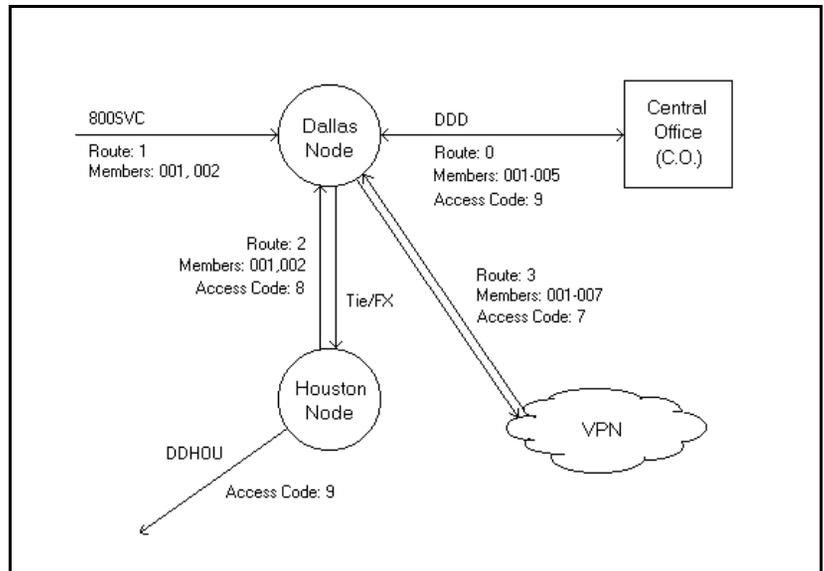
Step 6: Enter Telephone Configuration

The Telephone Configuration Database provides the main costing structure for the call records collected from the Meridian 1.

Note: This telephone configuration is only an example. When setting up your own configuration, you must enter your own company's configuration and rate information.

The following schematic outlines the trunk configuration for this setup. This was described in the *Scenario* section of this chapter.

Figure 33
Trunk configuration schematic



There are several steps involved in entering a telephone configuration for this scenario. These are itemized into the following main steps:

- Create Location Book for VPN
- Enter Reporting Options
- Update Call Type Definitions
- Update Carrier Pricing Templates
- Enter Telephone Configuration

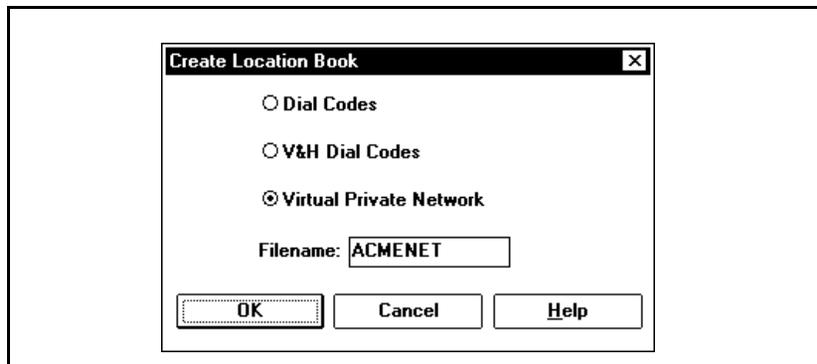
Create Location Book for VPN

In this scenario, the main node is connected to a virtual private network (VPN) which is not associated with any predefined location books. You must therefore create a new location book to allow for costing in this VPN.

To create a VPN table and add it to the Location Book Registry, perform the following steps.

- 1 Click **Location Books and Rate Tables** from the Database drop-down menu and click **Location Book**. The Location Book Registry dialog will appear.
- 2 From the Location Book Registry dialog, add a new location book by clicking **Create Book**.
- 3 From the Create Location Book dialog which appears, click **Virtual Private Network**. In the Filename field, enter: **ACMENET** (the VPN filename without the LBK extension). Click **OK** to save this information.

Figure 34
Create Location Book



- 4 The Virtual Private Network grid window will then appear allowing you to add the range of digits for the location codes 220 to 222.

For the location code 220, click **Insert** from the Edit drop-down menu and enter the following information:

Low Range: **2200000**

High Range: **2209999**

Actual NPANXX: **214655**

Leave the Location field blank and click **OK** to add this VPN range of digits. This range indicates the location on the VPN where 220 is the location code and 0000 to 9999 represents the extension.

- 5 Repeat this step for the location code 221 by clicking **Insert** from the Edit drop-down menu and entering the following information:

Low Range: **2210000**

High Range: **2219999**

Actual NPANXX: **214455**

Leave the Location field blank and click **OK** to add this range of digits.

- 6 Repeat this step for the location code 222 by clicking **Insert** from the Edit drop-down menu and entering the following information:

Low Range: **2220000**

High Range: **2229999**

Actual NPANXX: **214755**

Click **OK** to add this VPN range of digits.

- 7 At the new blank Virtual Private Network dialog, click **Cancel** to save this information and exit to the Virtual Private Network grid dialog. Notice that the grid will be updated with the digit range for this VPN.

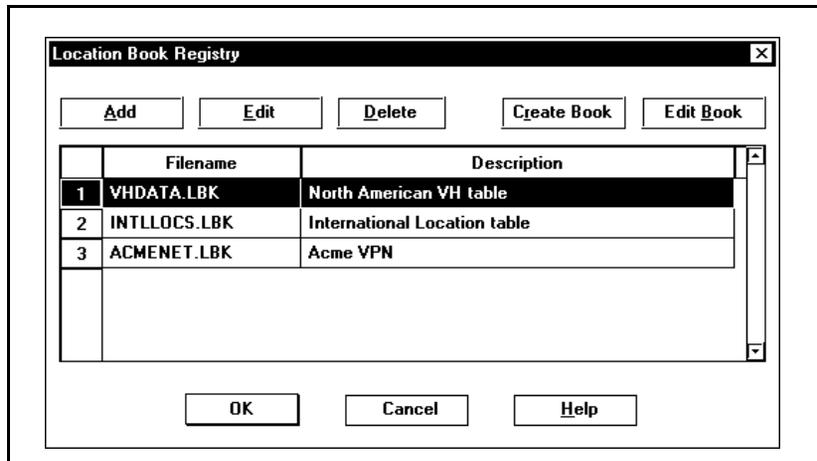
Figure 35
Virtual Private Network grid

	Low Range	High Range	Location	Actual NPANXX
1	2200000	2209999		214655
2	2210000	2219999		214455
3	2220000	2229999		214755

Record : 1 Total : 3

- 8 Click **Close** from the Edit drop-down menu to exit to the Location Book Registry dialog.
- 9 To add the location book ACMENET.LBK, click **Add** from the Location Book Registry dialog. The Location Book Selection dialog will appear.
- 10 From the Filename drop-down menu, select the filename which you entered in the Filename field in the previous step with the extension .LBK. For this example, enter: **ACMENET.LBK**.
- 11 In the Description field, enter: **Acme Virtual Network**. Click **OK** to select it. This location book will be added to the Location Book Registry grid. Click **OK** to save it and exit to the main window.

Figure 36
Location Book Registry



This completes the steps for creating this VPN location book. Select this location book when you are defining the carrier pricing template for the VPN (later section).

Enter Reporting Options

Before you enter your telephone configuration, first define the cost fields which will appear on your reports. These cost fields directly link the reported summary fields to the defined services in the Telephone Configuration Database (defined later).

To enter the reporting options for this scenario, perform the following steps.

- 1 Click **Reporting Options** from the Database drop-down menu.
- 2 Enable the following options by turning on their check boxes:
 - Include Account Calls
 - Export Other Billable Items
 - Include Auth. Code Calls
 - Banner Page on Reports
 - Tax Summary on Reports

Even though these do not apply to the telephone configuration, they provide the basic reporting features of your detail and summary reports.

Note: If you are using authorization codes in your system, then enable the “Reports by Auth. Code” option. If you do not enable this option, then the Department, Division, and Corporate Summary Reports will be grouped by extension numbers rather than authorization codes.

- 3 To list the totals in the summary fields of the detail reports, enter the following information in the Cost Summary Fields:

Field 1: MDDD	Field 2: 800SV	Field 3: Network
Field 4: HDDD	Field 5: [blank]	Field 6: [blank]

- 4 Leave the Bottom Line Message on Reports fields set to the default values (e.g., **Reviewed By:** _____ **Approved By:** _____).
- 5 Click **OK** to save this information.

Update Call Type Definitions

The Call Type Definition function contains a list of the types of calls used in the Telephone Configuration Database (e.g., International). You will select these types of calls when you are defining the trunk usage of calls in the Carrier Pricing Template and Call Reporting Options (following steps). Select these predefined call types when entering your costing and reporting options.

The Call Type Definition function already includes a set of default call types which you will select when entering your costing and reporting options. In this step, you will add any additional call types which you may require for your configuration (e.g., virtual private network). If you do not require any additional call types, then you can skip this step.

The following steps demonstrate how to enter a call type. For this example, you will enter the call type: **VPN** for the virtual private network you added in the previous step.

To enter the call type **VPN**, perform the following steps.

- 1 From the Database drop-down menu, click **Location Books and Rate Tables** and click **Call Type Definition** from its cascading menu.
- 2 Click **Add** and, in the Call Type field, enter: **VPN**.
- 3 Click **OK** to add this new call type to the list of default call types.
- 4 Click **OK** from the Call Type Definition dialog to save this addition and exit to the main window.

Update Carrier Pricing Templates

The Carrier Pricing Templates contain the criteria which determine the type and cost of a call. This information is based on the digits dialed after the call digit translation (e.g., 1 214 655-1111). The Telephone Configuration Database uses these templates to assign costs to the calls based on which trunks they used.

Define each template using the Carrier Pricing Templates editor. For this example, you will need to update the pricing definition for regular DDD service with multiple pricing definitions. You will also need to add a pricing definition using the location book defined for virtual private networks.

For each trunk that represents a billable call, you will assign either the rate filename and interface from this template or a per minute/call charge (later in this chapter). The per call fields are in addition to what cost is assigned by the rate filename.

Carrier Pricing Template—Acme DDD Service

To edit the pricing definitions for the first Carrier Pricing Template, perform the following steps.

- 1** Click **Location Books and Rate Tables** from the Database drop-down menu and click **Carrier Pricing Templates** from its cascading menu.
- 2** Enter the pricing definitions by clicking **Add**. The Carrier Pricing Template Definition editor will appear with a default template containing a set of templates for North America. You will only need to edit these default templates to insert your rate tables.
- 3** In the Description field, enter: **Acme DDD Service**.

Edit pricing definitions

The following steps describe how to edit the pricing definitions for the Acme DDD Service. These pricing definitions allow the template to interpret any type of call containing identifiable digit patterns and then cost them accordingly.

For this example, you will only edit the pricing definitions for international and North American long distance calls to include the rate tables for your configuration. These default pricing definitions have already be created to provide you with standard pricing values. You just need to select the rate tables for them. In certain cases, you may need to add new pricing definitions to match your own configuration.

You will modify each pricing definition in this carrier pricing template by selecting the definition from the list and clicking **Edit**. For example, to edit the International pricing definition, click the record which contains **International** in the Comments field and click **Edit**. In the Pricing Definition dialog which appears, enter the desired rate table and rate table interface and click **OK** to save the change and exit to the Carrier Pricing Template Definition dialog.

- 1 For international calls, click the International definition to highlight it, click **Edit** from the template dialog and enter the following information:

Rate Filename: **NNNRATE** (where NNN represents the carrier for these calls)

Rate Table Interface: **INT-1**

Leave the remaining fields with their defaults and click **OK**.

- 2 For long distance calls, click the Long Distance (DDD) definition to highlight it, click **Edit** from the template dialog and enter the following information:

Rate Filename: **NNNRATE** (where NNN represents the carrier for these calls)

Rate Table Interface: **DDD**

Leave the remaining fields with their defaults and click **OK**.

- 3 Click **OK** from this dialog to save this information and exit to the Carrier Pricing Templates grid.

This completes the entries for this template's pricing definitions. The next step is to enter the definitions for the virtual private network.

Carrier Pricing Template—Acme VPN

To enter the pricing definitions for this Carrier Pricing Template, perform the following steps.

- 1 From the Carrier Pricing Templates grid, click **Add**. The Carrier Pricing Template Definition editor will appear.
- 2 In the Description field, enter: **Acme VPN**.

Enter pricing definitions

The remaining steps will describe how to enter the pricing definitions for the Acme VPN template. These will allow the templates to interpret calls which contain selected digit patterns and then cost them accordingly.

For this example, you will create pricing definitions for the following types of calls:

- VPN Calls
- Other Calls

Note: The order in which these pricing definitions are entered is importation. For example, you will enter the Other Calls pricing definition last. This way, its digit pattern (“*”) will only match the calls which have been first processed using the VPN pricing definition. If the Other Calls pricing definition had been entered first, then its digit pattern would match all calls (without being processed by the VPN pricing definition).

When you enter digit patterns for the pricing definitions, you can use certain wild card and function characters as digit place holders. Use the asterisk (*) or question mark (?) as wildcards for selecting common digit patterns. Use the optional flags { } (curled brackets) to select optional digits to be included in the digits dialed. Use the delete flags [] (square brackets) to select any digits which need to be suppressed during rate table lookups but displayed on reports. Refer to the on-line Help under Pricing Definition for more details on using wild card characters.

- 1 For VPN Calls, click **Add** from the template dialog and enter the following information. Assume a cost per minute of \$0.08:

Digit Patterns: ???-????

Comments: **VPN Calls**

Location Book: **Acme VPN**

Cost per Minute: **0.08**

Call Type: **VPN**

Leave the remaining fields blank (they are not required for this example) and click **OK**.

- 2 For Other Calls, click **Add** and enter the following information:
Digit Patterns: *
Comments: **Other Calls**
Location Book: **North American VH Table**
Call Type: **VPN**
Leave the remaining fields blank (they are not required for this example) and click **OK**.
- 3 From the Carrier Pricing Template dialog, click **OK** to save this template and return to the main window.

This completes the entries for these templates' pricing definitions. The next step is to enter the telephone configuration for this scenario.

Delete 10 digit local calls

The default carrier pricing template may contain a definition for 10 digit local calls. 10 digit local calls are calls which are treated as local calls (and usually have no charges) but which require the area code when dialing. If you do not have 10 digit local calls in your area, then delete this pricing definition by clicking this record in the template and clicking **Delete**.

Enter Telephone Configuration

The Call Accounting Telephone Configuration Database is your key to pricing calls and tracing them to their destinations. It defines the type of costing used through each trunk (e.g., DDD, Incoming 800 lines) and includes any additional costs defined for your system and location. Each defined service uses predefined location books and rate tables based on the offerings of your telecommunications carrier. Call Accounting uses this configuration information to cost the call records which are collected from the Meridian 1 and report on them.

To access the Telephone Configuration Database, select **Telephone Configuration** from the Database drop-down menu. The Telephone Configuration dialog will appear allowing you enter the node information for your configuration.

The following sections describe how to enter your telephone configuration.

Define Internal Calls

If your Meridian 1 outputs CDR for internal calls (i.e., calls made between extensions within the Meridian 1 system), then you can enter these costs in the Internal Calls Costing section of the Telephone Configuration Database. To enter this information, click **Internal Calls Costing** from the Telephone Configuration dialog and enter the costs in the available fields. For this example, you do not need to define any internal calls.

Add main node - Dallas

The next step in entering this telephone configuration is to define the main node. From the Telephone Configuration grid, click **Add** and enter the following information.

- 1 In the Company Name field, enter: **Acme Company**.
- 2 In the Company Location field, enter: **Dallas, Texas**.
- 3 Turn on the Main Node check box. This should be turned on if you have only one node (most cases).
- 4 From the Location Book Name drop-down list box, select: **North American VH Table**.
- 5 In the Dial Code/NPANXX field, enter: **214655**.
- 6 Click **OK** to save this information and exit to the Telephone Configuration dialog.

Note: Frequently, the **OK** command button will appear at the bottom of a data entry grid when you initially add data. As well, you may encounter the **Close** command button in the same grid when editing data. You can use both the **OK** and **Close** command buttons to enter the added or updated data and exit from the data entry grid.

This completes the general definition for this node.

Add second node - Houston

This scenario requires that a second node in Houston be connected to the main node in Dallas. To add this second node to the telephone configuration, click **Add** from the Telephone Configuration grid as you did in the previous step.

From the Node Information dialog, enter the following information:

- 1 In the Company Name field, enter: **Acme Company Ltd.**
- 2 In the Company Location field, enter: **Houston, Texas.**
- 3 Since you have already defined the Dallas node (the previous record) as the main node, leave this Main Node check box blank.
- 4 There is no time zone difference between this node and the main node. Therefore, in the +/- Time Zone field, enter: **0.**
- 5 Similarly, there is no currency exchange for this node. Therefore, in the Currency Exchange field, enter: **1.**
- 6 From the Location Book drop-down list box, select: **North American VH Table.**
- 7 In the Dial Code/NPANXX field, enter: **713455** (the area code and exchange for Houston).
- 8 Click **OK** to save this information and exit to the Telephone Configuration dialog.

This completes the entries for the general information of this node. Before you attempt to enter its service definition, you should return to the main node's record and enter its service definition. This will allow for the second node's Tie Line services to be assigned to the main node first.

Add DDD service definition to main node

Add the first service definition to the main node by performing the following steps.

- 1 From the Telephone Configuration grid, edit the Main Node record by highlighting its record line in the grid and by clicking **Edit**.
- 2 In the Defined Services grid, click **Add** to add the main node's service definition information. The Trunk Group Service Definition dialog will appear.
- 3 In the Trunk Group/Service ID field, enter: **DDD**.

- 4 For this example, enter the trunk range **0001** to **0005**. Trunk range data is entered as the route number immediately followed by the three digit member number. For the low range trunk entry, this would be “0” + “001” (or “0001”). For the high range trunk entry, this would be “0” + “005” (or “0005”). Since leading zeros can be ignored, you can also simply enter **1** to **5**.

Note: When entering trunk numbers for your own configuration, you must review the trunking information output from your Meridian 1. You can do so by reviewing the List Trunk and Member (LTM) report from the Meridian 1.

To enter this trunk range, click **Edit Trunks** and then **Add** and enter the following information:

Low Range: **0001**

High Range: **0005**

Line/Description: **DDD Trunks**

This will add the route “0” members “001” to “005” to this node.

Click **OK** to save this information and click **Cancel** to exit to the Trunk Numbers grid. Click **Close** to exit to the Trunk Group Service Definition dialog.

- 5 In the Description field, enter: **Acme Carrier Service**.
- 6 Define the costing for outgoing calls by clicking **Outgoing Calls**.
- 7 Enter the connect time adjustment (the call’s connection time to the trunk) by clicking **Add** from the Connect Time Adjustment grid.
- 8 In the Digits field, enter: **011***. The system will interpret all calls starting with the digits 011 (International Calls) and apply the appropriate connect time adjustments.
- 9 In the Comments field, enter: **International Calls**.
- 10 In the Minimum Call Duration field, enter: **10**. This is the minimum amount of time (in seconds) which the call must register for it to be costed.

- 11 In the Connect Time field, enter: **5**. This is the time (in seconds) which the system allows for a connection. This will be subtracted from the call duration.
- 12 Click **OK** to add this record to the grid.
- 13 Repeat steps 7-12 for digit patterns '1*' (long distance calls) and '*' (other calls). Ensure that the pattern '*' is the last entry in the grid. Click **Cancel** to exit to the Outgoing Calls Costing dialog.

Note: If these trunks have answer supervision, then you do not need to enter a connect time adjustment value. You can therefore ignore steps 7-12.

- 14 Leave the remaining fields blank (they are not required for this example) and click **OK**.
- 15 Click **Close** to save this information. Click **Close** again to exit to the Trunk Group Service Definition dialog.
- 16 Enter the call reporting options for this trunk service by clicking **Call Reporting Options**. To add a record, click **Add** and enter the following information:

Call Type: **All Calls**

Print Option: **Detail**

Cost Field: **DDD**

Route DES: **DDD**

Digits Mask: **0**

- 17 Click **OK** to save this information and click **Cancel** to exit to the Call Reporting Options grid. The grid will automatically be updated with this information. Click **Close** to exit to the Trunk Group Service Definition dialog.

This completes the first defined service (DDD) for the main node. Click **OK** from the Trunk Group Service Definition dialog to save this information and exit to the Node Information dialog.

Add 800 service definition to main node

The main node contains a trunk group with an 800 service for incoming calls. Add this service definition to the main node by performing the following steps.

- 1 Click **Add** to add another service definition record to the Service Definition grid.
- 2 In the Trunk Group/Service ID field, enter: **800SV**
- 3 Click **Edit Trunks** to define the range of trunks which use this node's services. Click **Add** and enter the following information:
Low Range: **1001**
High Range: **1002**
Line/Description: **800 Incoming Trunks**
This will add the route 1 members 001 to 002 to this node. Click **OK** to save this information and click **Cancel** to exit to the Trunk Numbers grid. Click **Close** to exit to the Trunk Group Service Definition dialog.
- 4 In the Description field, enter: **800 Incoming Service**.
- 5 To define the incoming calls for this service, click **Incoming Calls** and enter the following information:
Connection Type option button: **Direct**
Carrier Pricing Template: **Acme DDD Service**
Click **Close** to save this information and exit to the Trunk Group Service Definition dialog again.

- 6 Enter the call reporting options for this service by clicking **Call Reporting Options**. From the Call Reporting Options grid which appears, click **Add**.

Enter the following information in this dialog:

Call Type: **All Calls**

Print Option: **Detail**

Cost Field: **800SV**

Route DES: **800**

Digits Mask: **0**

- 7 Click **OK** to save this information and click **Cancel** to exit to the Call Reporting Options grid. The grid will automatically be updated with this information. Click **Close**.

This completes the entries for the service definitions of the main node. Click **OK** to save this trunk group information and exit to the Node Information dialog. Click **Close** to save the node information and exit to the Telephone Configuration dialog. Click **OK** from the Telephone Configuration dialog to save this information and exit.

Add Tie Line service definition to main node

The next step is to add the definition for a Tie Line service to the main node. To cost a Tie Line service, perform the following steps.

- 1 Click **Add** from the Defined Services grid of the Node Information dialog. This will access the Trunk Group Service Definition dialog.
- 2 In the Trunk Group/Service ID field, enter: **Tie**.

- 3 Click **Edit Trunks** to define the range of trunks which use this node's services. Click **Add** and enter the following information:
Low Range: **2001**
High Range: **2002**
Line/Description: **Tie Trunks**
This will add the route 2 members 001 to 002 to this node. Click **OK** to save this information and click **Cancel** to exit to the Trunk Numbers grid. Click **Close** to exit to the Trunk Group Service Definition dialog.
- 4 In the Description field, enter: **Tie Trunks to Houston**.
- 5 Enter the fixed costs for this Tie Line service by clicking **Fixed Costs**. These costs will apply to all calls. In the All Calls Cost per Month field, enter: **200.00**.
- 6 Click **Close** to save this information and exit to the Trunk Group Service Definition dialog.
- 7 Define the costing for any outgoing calls from this trunk group by clicking **Outgoing Calls**.
- 8 Click **Add** from the Access Code Carrier Costing grid and enter the following information:
Access Code: **8**
Connection Type option button: **Tie/FX Line**
Tie Node Location: **Acme Company Ltd. - Houston, Texas**
Click **OK** from this dialog to save this information and return to the Outgoing Calls Costing dialog.
- 9 Since this service does not require any connect time adjustments, leave its grid blank.
- 10 Click **Close** from this dialog to return to the Trunk Group Service Definition dialog again.
- 11 Define the costing for any incoming calls for this trunk group by clicking **Incoming Calls**.

- 12 Enter the following information:
Connection Type option button: **Tie/FX Line**
Tie Node Location: **Acme Company Ltd. - Houston, Texas**
Leave the remaining fields blank and click **Close**.
- 13 Enter the call reporting options for this trunk group by clicking **Call Reporting Options**. In the Call Reporting Options grid which appears, click **Add** and enter the following information:
Call Type: **All Calls**
Print Option: **Detail**
Cost Field: **NETWORK**
Route DES: **TIE**
Digits Mask: **0**
- 14 Once you have entered this information, click **OK** to save it and return to the Call Reporting Options grid. Click **Close**.

Add VPN service definition to main node

The next step is to add the definition for a VPN service to the main node. To enter this service, perform the following steps.

- 1 Click **Add** from the Defined Services grid of the Node Information dialog. This will access the Trunk Group Service Definition dialog.
- 2 In the Trunk Group/Service ID field, enter: **VPN**.
- 3 Click **Edit Trunks** to define the range of trunks which use this node's services. Click **Add** and enter the following information:
Low Range: **3001**
High Range: **3007**
Line/Description: **VPN Trunks**
This will add the route 3 members 001 to 007 to this node. Click **OK** to save this information and click **Cancel** to exit to the Trunk Numbers grid. Click **Close** to exit to the Trunk Group Service Definition dialog.
- 4 In the Description field, enter: **VPN Trunks**.

- 5 Define the costing for any outgoing calls from this trunk group by clicking **Outgoing Calls**.
- 6 Click **Add** from the Access Code Carrier Costing grid and enter the following information:
Access Code: **7**
Connection Type option button: **Direct**
Carrier Pricing Template: **Acme VPN**
Click **OK** from this dialog to save this information and return to the Outgoing Calls Costing dialog.
- 7 Since this service does not require any connect time adjustments, leave its grid blank.
- 8 Click **Close** from this dialog to return to the Trunk Group Service Definition dialog again.
- 9 Enter the call reporting options for this trunk group by clicking **Call Reporting Options**. In the Call Reporting Options grid which appears, click **Add** and enter the following information:
Call Type: **All Calls**
Print Option: **Detail**
Cost Field: **NETWORK**
Route DES: **VPN**
Digits Mask: **0**
- 10 Once you have entered this information, click **OK** to save it and return to the Call Reporting Options grid. Click **Close**.

This completes the entries for the service definitions of the main node. Click **OK** to save this trunk group information and exit to the Node Information dialog. Click **Close** to save the node information and exit to the Telephone Configuration dialog.

Add DDD service definition to Houston

The next step in setting up the telephone configuration is to define the services for the second site (Houston). To enter this information, double-click the record line for the Houston node in the Telephone Configuration grid (already created in a previous step).

Click **Add** in the Defined Services grid and perform the following steps.

- 1 In the Trunk Group/Service ID field, enter: **DDHOU**.
- 2 In the Description field, enter: **DDD Service for Houston Node**.
- 3 Do not enter any fixed costs for this service.
- 4 Enter the details for any outgoing calls from this node by clicking **Outgoing Calls**.
- 5 Define the connect time adjustments for this node by clicking **Add** from the Connect Time Adjustment grid and entering the following information:
 - Digits: **011***
 - Comments: **International Calls**
 - Minimum Call Duration: **10**
 - Connect Time: **5**

Click **OK** to save this information. Repeat this step for digit patterns '1*' (long distance calls) and '*' (other calls). Ensure that the pattern '*' is the last entry in the grid. Click **Cancel** to exit to the Outgoing Calls dialog.
- 6 Enter the access code carrier costing information by clicking **Add** in the Access Code Carrier Costing grid and entering the following information:
 - Access Code: **9**
 - Connection Type option button: **Direct**
 - Carrier Pricing Template: **Acme DDD Service**

Click **OK** to save this information.
- 7 Click **Close** to save this information and exit to the Trunk Group Service Definition dialog.

- 8 Define the call reporting options for this trunk group by clicking **Call Reporting Options** from the Trunk Group Service Definition dialog.
- 9 In the Call Reporting Options grid dialog which appears, click **Add**. Enter the following information:

Call Type: **All Calls**
Print Option: **Detail**
Cost Field: **HDDD**
Route DES: **HDD**
Digits Mask: **0**
- 10 Click **OK** to save this information and click **Cancel** to exit to the Call Reporting Options dialog. Click **Close** to save this information and exit to the Trunk Group Service Definition dialog. Click **OK** to exit to the Node Information dialog.
- 11 From the Node Information dialog, click **Close**.
- 12 From the Telephone Configuration dialog, click **OK** to save this node information and exit to the main window.

This completes the steps for entering a telephone configuration for this sample setup.

Step 7: Test Telephone Configuration

Now that you have your system's costing model and configuration, you should print some reports to test the accuracy of your data. The following is a description of these reports.

Configuration/Diagnostic Report

The Configuration/Diagnostic Report displays your telephone configuration information. Review this report to check the accuracy of your telephone configuration. Look specifically for inactive trunks. These are trunks which you entered in the configuration but no calls were made on them. As well, you should look for trunks that were missed (calls which were made in or out but are not in the configuration).

Exception/Chronological Report

The Exception/Chronological Report lists in chronological order all of the calls that were made and collected by Call Accounting. Review this report to verify that data collection was performed correctly and that the calls were processed and costed correctly. If this report does not show any call records and you are sure that some calls were recorded in the Meridian 1, then Call Accounting is not collecting or costing them properly.

If report reflects errors

If this report does not accurately represent the call records or is inconsistent with your actual telephone usage, then your configuration may be incorrect. Access the Telephone Configuration Database again and enter the correct information. The following is an example error situation.

The Route Used fields in the Exception/Chronological Report contain the cost field name **TIEFX** only for selected call records. This is due to the fact that you entered trunks ranging from **2000** to **2001** for the Tie/FX service instead of trunks **2001** to **2002**. Only the Tie/FX calls which were made on trunk **2001** were recorded and displayed on this report; not for trunk **2002**.

To correct this error, return to the Telephone Configuration Database and from the Defined Services dialog, change the trunk range to **2001** to **2002**. This was entered in the step under *Enter Telephone Configuration*, entitled: *Add Tie Line service definition to main node*.

If report is correct

If this report indicates that these call records were processed and costed correctly, then this setup is complete.

Now that you have set up Call Accounting to collect and process the call records from the Meridian 1, you can update the other supporting databases to enhance the information provided in your reports. As well, you should set up a schedule of procedures to simplify the use of Call Accounting.

This completes this sample setup.

Appendix A: LAN Information

This appendix assumes that a Local Area Network has already been setup for your workstations and outlines the file access limitations and requirements for Call Accounting from a network server. It also lists the shared and local files which must be set up in order for Call Accounting to properly operate from a network server.

As part of the Meridian Administration Tools LAN installation, Call Accounting can be run by supported workstations (PCs) over a network. Running Call Accounting from a network provides a central source for all of the system databases.

File descriptions

Depending on their properties, the Call Accounting database files reside on different directories either on the server or on individual workstations (PCs). As part of the network installation, Call Accounting will automatically assign the shared and non-shared files to their proper drives and directories.

The following sections describe these shared and non-shared files. These files will be installed onto the network and workstation drives during the network installation and setup procedures.

Shared files

Shared files are files that may be used by all users on the network (according to their specific access rights). They are installed onto a network server drive in the selected directory. The following table contains a list of these shared files.

Table A-1
Shared files

File Label	Filename
Call Database	MDR1.DAT
Index File	INDEX1.DAT
Customer Directory	CUST1.DAT
Billing Database	BILLDB1.DAT
Other Billable Items File	ADDMDR1.DAT
Carrier Pricing Template Files	CARRIE1.MOD
Communications Database	MDRCOMM.DAT
Auto Backup File	BACKUP1.DAT
Reporting Options	SYS1.DAT
—end—	

Non-shared files

Non-shared files are installed on the disk and subdirectory of each workstation which runs Call Accounting. These provide each workstation with specific data management and reporting functions.

The following list of non-shared files will be assigned to the working drive and directory of each workstation using the same directory configuration as the network directory. For example, if Call Accounting was installed on the network drive: **E:\NETDIR\MAT** and its working directory was **E:\NETDIR\MAT\WORK\SITEA**, then these non-shared files will be installed on **C:\NETDIR\MAT\WORK\SITEA**.

Table A-2
Non-shared files

File Label	Filename
Report File	REPLOG1.xxx
Select File	SELECT1.DAT
Summary File	CUMM1.DAT
—end—	

File access limitations

The Call Accounting database files are either available as shared files (installed on the network server) or as non-shared files (installed on each workstation). Non-shared files are used by each workstation and contain information required specifically for that workstation. Due to their properties, shared files can be accessed from the network with certain restrictions. The following sections describe the restrictions for the shared database files.

File locked access

File locked database files can be accessed by multiple users (workstations) simultaneously. Only the first user has full read/write access to the files (except for the Index File which is always a read-only file). All subsequent users have read-only access to the files. If a user attempts to access a database file while it is opened by another user, its dialog will appear in read-only mode allowing the user to view its records but not edit them.

The Telephone Configuration Database (CONFIG1.DAT) is a shared file with read/write access to the first user. All subsequent users will be locked out of the file until it is closed by the first user.

Table A-3
Shared files with locked access

File Label	Filename
Billing Database	BILLDB1.DAT
Customer Directory	CUST1.DAT
Call Database	MDR1.DAT
Index File	INDEX1.DAT
Other Billable Items File	ADDMDR1.DAT
Carrier Pricing Template Files	CARRIE1.DAT
Location Book Registry	LOCATION.REG
—end—	

Simultaneous access

These database files can be accessed and edited by multiple users at the same time. Their edits, however, can only be saved by each workstation one at a time. These files have 'multi-user browse' and 'single user write' access. That is, multiple workstations can access a single file at the same time, but only the user who last saves the file and exits from the database editor will have their edits saved.

Therefore, if multiple users edit the same record simultaneously, only the last user to save that file will have their edits saved. The other users will have their data overwritten. To avoid confusion, you should have only designated users update these databases.

Table A-4
Shared files with simultaneous access

File Label	Filename
Reporting Options File	SYS1.DAT
System Options File	MDRSYS.DAT
—end—	

Report generation restrictions

When generating reports, the system uses shared database files for calculating costs and summaries as well as assigning employee and customer information. The reporting function provides read-only access to these databases and allows multiple users to generate reports simultaneously. The system will not allow reports to be run by another workstation during the indexing stage of data collection. During this process, the Call Database will be opened by a workstation performing the data collection in exclusive mode and cannot be accessed by another workstation.

Appendix B: Additional Printer Commands

Call Accounting includes a separate initialization file entitled 'MDR.INI' which provides your PC with initialization parameters used by the system. The following is a list of command parameters in the MDR.INI file which you can update to change your printer setup.

Note: Improper editing of these command parameters may create errors in your configuration. Only users should attempt to modify this file.

Table B-1
Printer commands

Command	Description
Printer=	Sets out default printer
Font_80=	80 character font
Font_132=	132 character font
Draft=0	Disables draft mode (high speed) printing
Draft=1	Enables draft mode for device fonts (default)
Expand=0	Fonts wider than 132 columns clip at 132 columns
Expand=1	Allows fonts wider than 132 columns to expand reports
—continued—	

Table B-1
Printer commands

Command	Description
Duplex=0	Disables printing on both sides for printers which can handle duplex printing
Duplex=1	Allows duplex printers to print duplex with vertical binding (default)
Duplex=2	Allows duplex printers to print duplex with horizontal binding
—end—	

Appendix C: Troubleshooting

The following is a list of some of the more common problems and solutions relating to Call Accounting. Use these solutions for configurations with or without modems.

Problem**Solution**

'Disk directory full'.

Use the Purge Call Database function to eliminate old/unwanted records in your databases.

Some call records do not list a location and are not costed.

Define these trunks in the Defined Services editor of the Node Information dialog.

Enable the Approximate Distance Calculation option in the Reporting Options dialog.

Modem dials unsuccessfully.

Check the modem's physical connection.

Verify the telephone number in the Telephone Number field of the Communications Database.

Problem	Solution
When do I Initialize the Summary File?	<p>Before running the first report of the month.</p> <p>If the report filters for the summary report are different from the detail report.</p> <p>If new call data has been added to the database after the Summary File has been indexed.</p>
Modem dials but the modem on the receiving end is not responding.	<p>Check the remote modem for power supply and cabling. Ensure that its 'Auto Answer' mode is activated.</p>
Inactive extensions and trunks appear on Configuration Diagnostic Report.	<p>They represent trunks and extensions that did not appear in the current Call Database.</p>
Trunk Detail Report lists more trunk-to-trunk call records than Extension Detail Report.	<p>The Trunk Detail Report will collect the information that has already been accumulated in the CUMM1.DAT file and split any trunk-to-trunk calls in two, indicating the incoming and outgoing trunk lines.</p>
The number which Call Accounting displays in the Data Collection log fails to increment or remains at zero.	<p>Call Accounting has not been able to communicate with the buffer unit. Ensure that the modem's AA (auto-answer) light is on, or, make sure that the communications port which you specified in the Communications Database is the same as the connection on the back of your PC (the port on which you connected your cable).</p>

Appendix D: Error Messages

This appendix provides a listing of commonly occurring error messages, their definitions and possible solutions on how to correct them.

TME (too many extensions)

A 'TME' error signifies that 'Too Many Extensions' are found either in the Billing Database or in the Index File INDEX1.DAT. This error implies that you have exceeded the maximum number of extensions allowable in your software. When entering employee extensions, TME may appear if you exceed the software's set limit of entries.

When running a report, the system will add up all the extensions found in the Index file plus any inactive extensions found in the Billing Database. This total might exceed the total number allowed in the Billing Database. To correct this problem and to ensure that it will not happen again, remove all of your inactive extensions from the Billing Database.

To determine the number of extensions which the system is using, perform the following steps.

- 1 Click **Utilities** from the Database drop-down menu and click **Display Index File**.
- 2 When the dialog appears, search for a record that starts with *D* in the Key column (skip *D099999*). When the first *D* is found, enter the record number on the left hand side of the Key column.
- 3 Use the scroll bar or press the last arrow key to access the last record in the Index file.
- 4 Write down the last record number.
- 5 Calculate the difference between these two numbers and write down the answer.

- 6 Click **Close** to close this dialog.
- 7 Access the Reports drop-down menu and click **Directory/Configuration**. From this cascading menu, click **Configuration Diagnostic Report**.
- 8 When its dialog appears, disable the **Print Configuration File Contents** check box.
- 9 Print the report and count the extensions that are under the **Inactive Extension** heading.
- 10 Add the inactive extensions total with the total from the Index file.

Run time errors

Run Time Errors are generated by Call Accounting to indicate problems dealing with your configuration or with your hardware. They are in the format:

Run Time Error xx at XXXX:XXXX

The common errors of this type are listed below.

200: An attempt by the software to divide a number by zero occurred. This is usually caused by an error in your configuration, such as a zero entry that should have a non-zero value. Generate a Configuration Diagnostic Report to identify the problem.

202: This can occur when a particular sequence of events has lead the software to be corrupted in memory. It is usually corrected by rebooting your computer. Use the <Ctrl-Alt-Del> key combination to invoke a 'warm boot'.

IFF error INDEX1.DAT. Call Service.

This error occurs when the Index file and the Call Detail file are not synchronized. To alleviate this problem, reindex the Call Database.

G.P.F.

General Protection Faults are caused in Windows applications. Shut down Windows and start Call Accounting up again.

Output device not ready.

An attempt by the Call Accounting system to locate your specified output device fails. This can either indicate that the specified output device is not ready (e.g., the printer is off-line or turned off), or that it is not recognized by the PC as an attached peripheral. Verify that your output device is operational and is specified in Call Accounting.

Appendix E: Database, File & Report Specifications

This appendix contains a quick reference of the database, file, and report specifications for Call Accounting.

The following table is a list of the Call Accounting databases including their filenames and descriptions.

Table E-1
Database specifications

Database Name	Disk Filename	Description
Billing Database	BILLDB1.DAT	Contains all employees' details
Customer Directory	CUST1.DAT	Contains customers' details
Telephone Configuration Database	CONFIG.DAT	Contains information for your telephone system and costing
Other Billable Items	ADDMDR1.DAT	Contains manually entered billable items such as credit card calls
Call Detail File	DETAIL1.DAT	Contains the raw call detail records as output from the Meridian 1

—continued—

Table E-1
Database specifications

Database Name	Disk Filename	Description
Call Database	MDR1.DAT	Contains call details in normalized format (each call from the Call Detail file is changed to normalized format and is appended to the Call Database; after the last record is processed the Call Detail file is erased)
Communications Database	MDRCOMM1.DAT	Contains the parameters which allow Call Accounting to collect call records from the Meridian 1 or buffer unit

—end—

The following is a list of reports and the file extensions associated with them.

Table E-2
Report layout

Extension	Report
EXD	Extension Detail Report
CHL	Exception/Chronological Report
DEP	Department Summary Report
TKD	Trunk Detail Report
DVN	Division Summary Report
TKU	Trunk Utilization Report
COR	Corporate Summary Report
ACS	Account Code Summary Report
UDV	Undisbursed Verification Report
UDS	Undisbursed Summary Report
CUS	Customer Directory Report
ATH	Authorization Code Report
TKG	Trunk Graph Report
ACT	Account Code Report
EMP	Billing Database Report
TDM	Tandem Tie Report
CON	Configuration Diagnostic Report
NNX	Location Summary Report
FRQ	Frequently Called Numbers Report
CSR	Customer Summary Report
—continued—	

Table E-2
Report layout

Extension	Report
DIG	Digits Detail Report
CLD	Calling Line Frequency Report
SDF	Export Detail Report
CLX	Calling Line Summary Report
RGT	Ring Time Summary Report
DSR	Call Duration Summary Report
HTD	Hold Time Detail Report
HLD	Hold Time Summary Report
NAD	Unanswered Call Detail Report
NAS	Unanswered Call Summary Report
DCR	Area Code Summary Report
ASX	Account Code Summary by Extension Report
—end—	

Appendix F: List of Terms

The following provides a listing of commonly used telecommunications and computer terms. Many of these terms are used throughout the text without definition and are therefore offered here.

A

Access Code

The number dialed to connect the user with an outgoing trunk group. For example, '9' for local calls.

Account Code

An optional series of digits dialed used for internal corporate purposes of identifying a customer or client. These codes are used for client billing or tracking purposes.

AIOD/SMDR

Automatic Identification of Outward Dialing, or Station Message Detail Recording. Suggests a method of capturing complete details of outgoing calls, which may be further processed.

Area Code

A three digit number used to identify toll centers which are not in the Numbering Plan Area of the calling party.

Attendant

Console operator for the Meridian 1, often referred to as the switchboard operator.

Authorization Code

A series of digits dialed which identify the caller and cause the Meridian 1 to grant access to services which are otherwise restricted.

B

Band

A geographical area to which a subscriber is entitled to call. Band 1 entitles the subscriber to call fewer area codes than Band 5. Also referred to as Zone.

Baud

A measure of data transmission speed. It is expressed in bits per second which roughly represents the character speed multiplied by 10. For example 300 Baud is roughly 30 characters per second.

C

CBX

See Private Branch Exchange.

CCS

See Centi-Call Seconds.

CDR

Call Detail Recording. See Station Message Detail Recording.

Central Office

Refers to the telephone company office to which incoming and outgoing lines are connected for the subscriber.

Centi-Call Seconds

A unit used for the measurement of telephone traffic analysis, equivalent to one hundred seconds of telephone usage.

D

Database

A file or group of files which are interrelated, or serve a common purpose.

DDD

See Direct Distance Dialing.

Direct Distance Dialing

The service which allows dialing to areas outside the local area without the assistance of the operator.

DN

Directory Number. A user's telephone extension number.

Duration

The length of time taken for a call. The Meridian 1 records the duration as an estimate, because no signal is available to determine when the called party answers. Therefore, many short calls may be recorded for which no conversation took place. The limit for call duration is often adjustable.

E**EAS NPA**

See Extended Area Service.

Erlang

The telephone traffic's international unit of measurement. One erlang is a trunk occupied for an hour, this is equivalent to 36 CCS.

Exchange

An area in which there is a uniform set of charges for the telephone service. Often refers to a central office, and the first three digits dialed for a local call. Also referred to as NXX.

Extended Area Service

A local telephone calling area which is larger than normal.

F**Field**

One data item which is part of a group of data items making up a data record.

File

A group of data records.

Flat Rate Service

A uniform fee paid for services regardless of usage.

Foreign Exchange

A telephone number from a remote exchange working in a local exchange. Mileage charges usually apply.

FX

See Foreign Exchange.

G

Grade of Service

The probability of getting a busy signal when trying to access a line.

I

Index

The process of merging the Call Detail File with the existing Call Database records.

L

LCR

See Least Cost Route.

Leased Lines

Refers to private lines between two switching centers.

Least Cost Route

Some Meridian 1's have the ability to determine the least expensive call route.

M

Measured Service

Measured service charges are dependent on the time of day, duration of the call, and the distance to the point dialed. Local calls in some cities are charged by measured unit, which is measured service.

Message Unit

A unit for charging local calls comprised of length of call, distance called and time of day.

N**Node**

Used to indicate a Meridian 1 in a network. Can also mean any endpoint in a network.

NPA

See Area Code.

NXX

See Exchange.

O**Other Common Carrier**

A private company which has filed tariffs with the FCC to provide long distance telephone service to subscribers.

P**PABX**

See Private Branch Exchange.

PBX

See Private Branch Exchange and Node.

Peg Count

A counting device within the Meridian 1 which indicates the number of calls placed, received, or blocked.

Private Branch Exchange

A privately owned telephone system which supplies the interface between business user and the public network. Also referred to as PABX (Automatic) and CBX (computerized).

Pro-rated Costing

When the cost per minute for calls (using a specific trunk or trunk group) is calculated automatically by the system based on the total fixed cost of the trunks and divided by the actual usage of those trunks.

S

SMDR

See Station Message Detail Recording.

Station Message Detail Recording

The ability of a Meridian 1 to output information to supply reports which include time of call, calling extension, duration of call, number dialed, trunk group, and date. Additional information may also be output.

T

Tariff

A document filed with the FCC which details the services, equipment (and costs) offered by a communications carrier. A 'tariffed' item has a fixed cost.

TELCO

A telephone company.

Tie Line

A dedicated circuit linking two Meridian 1 systems.

Trunk

A circuit used to connect two telephones. Trunks can be incoming, outgoing, two way, or interoffice. Trunks are also identified by the type of service they provide (i.e., DDD, FX).

Trunk Group

A group of trunks categorized by the type of service they provide. For example, trunks with DDD access are contained in a single trunk group.

Z

Zone

See Band.

Meridian Administration Tools
Call Accounting
User Guide

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