
Optivity Telephony Manager

Telecom Billing System

User Guide

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Introduction

Welcome to the Telecom Billing System, the Optivity Telephony Manager's costing and billing application. The Telecom Billing System helps monitor and control telecom costs for your telephone system. It collects call records from your Meridian 1, allocates costs to the appropriate users and generates detail and summary reports outlining these costs. The reports provide details on the actual usage of your telephone system and allow you to assess the effectiveness of your telephone services.

The Telecom Billing System collects data from your Meridian 1 either through a buffer device or through a direct connection. Using defined communications and collection parameters, the Telecom Billing System communicates with the Meridian 1 to collect the necessary telephone usage data. In order for the Telecom Billing System to communicate with the Meridian 1 and collect data, the Meridian 1 must be equipped with a suitable CDR port.

This user guide provides basic information on setting up and running the Telecom Billing System. Along with a brief outline of its main functions, this user guide also contains examples and procedures to assist you in setting up the Telecom Billing System. This user guide assumes that you have 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 it.

Overview

The Telecom Billing System supports the Meridian line of telephone switches. The Meridian 1 must be equipped with a suitable CDR port for proper connection to the PC or 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 who 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 data collection options

The Telecom Billing System can collect CDR data from the Meridian 1 in several ways:

- It can collect CDR data directly from the Meridian 1 to its databases,
- It can collect CDR data through the OTM Data Buffering and Access (DBA) application or
- It can collect CDR data through a buffer unit.

The DBA application and the optional buffer units can be used to continuously collect CDR data from the Meridian 1 and store the data for later collection and processing by the Telecom Billing System. CDR data is saved to system-specific files so that multiple DBA's or buffer units (multiple Meridian 1 switches) can be supported concurrently by the Telecom Billing System. For a complete list of script files used for communications and data collection, refer to *Appendix A: Script File Summary* of the *Common Services User Guide*. For more information about the DBA application, refer to the Data Buffering and Access section of the *Common Services User Guide*.

Where required, buffer units can connect to each 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 documentation for more information.

Note: It is recommended that you use either the DBA application or a buffer unit for CDR data collection. If you use one of these devices, the CDR data will be collected and securely stored for later retrieval by the Telecom Billing System. Although the DBA or buffer units are not required to properly use the Telecom Billing System, these options are recommended in order to securely store the CDR data. If you choose to collect the CDR data directly to the PC without the use of the DBA or buffer unit, then you may lose data if the PC is accidentally rebooted or shut down.

About this user guide

This user guide is intended to provide you with an introduction to the Optivity Telephony Manager (OTM) Telecom Billing System 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 the Telecom Billing System.

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 and Windows NT® 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 Telecom Billing System function and command in detail. It only discusses the major functions and how they are accessed. For detailed information on each Telecom Billing System 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 the Telecom Billing System, 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 Telecom Billing System help topics, search for a specific topic or print the help information.

To view a list of Help topics for the Telecom Billing System, 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 the Telecom Billing System and set it up for initial use. Using the instructions and examples in this chapter, you will be able to configure the Telecom Billing System to collect and process the call detail recording (CDR) records which are output from your Meridian 1.

This chapter includes:

- An overview of a call record and how the Telecom Billing System 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 Intelligent Storage Device (ISD),
- How to run the Telecom Billing System for a system,
- How to set up and start data collection for the Telecom Billing System and
- How to set up the Telecom Billing System Telephone Configuration Database (including entering node information, rate tables and location books).

The instructions and examples in this chapter are intended to assist you in setting up the Telecom Billing System for your own configuration. Since each telephone system is configured differently and each OTM 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 Telecom Billing System 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 the Telecom Billing System, you must install and configure it as part of the Optivity Telephony Manager (OTM) system. Refer to Getting Started in the OTM *Common Services User Guide* for complete details on installing the Telecom Billing System as part of OTM and assigning it to a site and a system.

Anatomy of a call record

Before you enter your system configuration and update your Telecom Billing System 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 the Telecom Billing System.

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

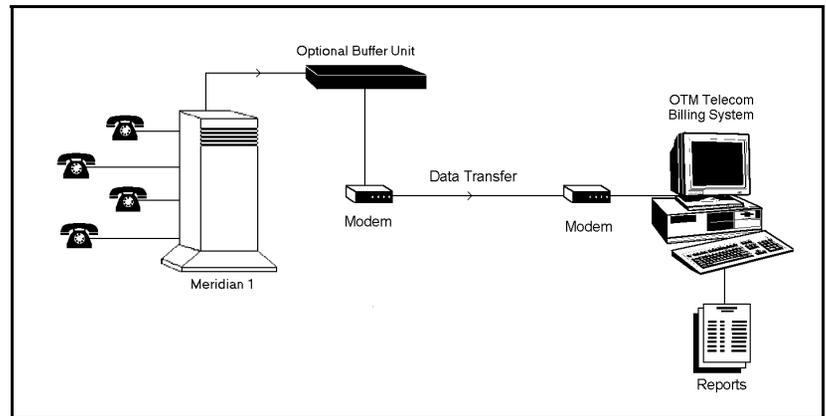
Meridian 1 outputs call records

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 processed. This could be a buffer unit which is connected to the Meridian 1's CDR port (recommended) or even a PC running the Telecom Billing System for a direct connection.

As call records are output from the Meridian 1, the Telecom Billing System collects this data either through a buffer unit such as the MDR-2000 ISD 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. 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 Telecom Billing System software program on a PC. Notice that modems can be used to communicate with the Meridian 1 and buffer units from distant locations.

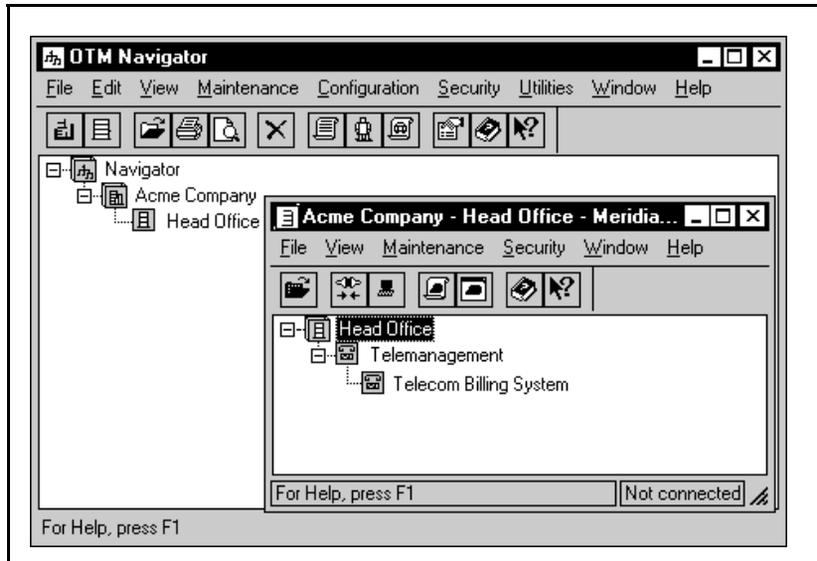
Figure 1
System block diagram



The example in the above schematic represents a single “System”. This system usually represents a Meridian 1 or physical location in the Telecom Billing System software, and contains the actual database files for it. Before attempting to use the Telecom Billing System, you must add it as an application to the appropriate system.

The following is an example of how the System would be set up.

Figure 2
Sample System setup

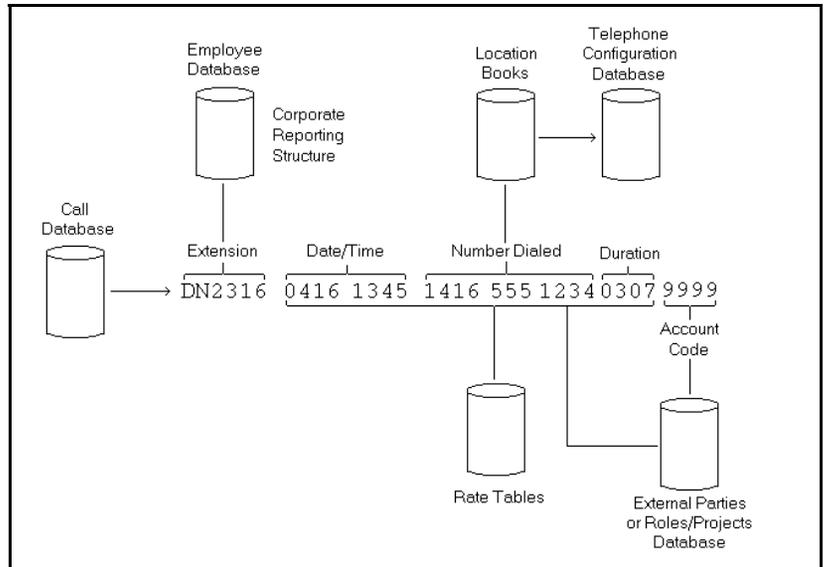


The Telecom Billing System collects call records

The Telecom Billing System collects call records from your Meridian 1 through the buffer unit and formats and appends them to the end of the Call Database. The Call Database is an indexed collection of call records which reflects the calling activity of the Meridian 1.

The following is a breakdown of the information found in each call record. Notice how the Telecom Billing System databases uses each component of the call record.

Figure 3
Sample call record allocation



The Telecom Billing System costs call records

Once the Telecom Billing System collects the call records, it runs them through a series of calculations to apply costs to them. It then stores these costed call records in the Call Database. Each process uses the parameters stored in the Telephone Configuration Database (you will see how to configure these later in this chapter).

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

- 1 The Call Digit Translation table of the Telephone Configuration Database translates the digits dialed to remove or edit any access codes.
- 2 The Telecom Billing System looks up the trunk the call went out on to see which service definition to check. It looks this up in the Telephone Configuration Database's Service Definition table.
- 3 The Telecom Billing System applies any minimum call duration and network connect time adjustment values to the call.

- 4 The Telecom Billing System identifies the Carrier Pricing Template assigned to the trunk. This indicates: the type of call it is; how the number should be formatted on the report; and which rate structure should be used to cost it.
- 5 The Telecom Billing System applies any fixed costs to the call.

This completes the overview of how the Telecom Billing System processes a call record.

Setting up the Telecom Billing System: Example scenario

The example setup in this chapter are based on the following scenario.

- The company Acme Company has its head office located in Dallas, Texas. The telephone number for its head office is (214) 555-1111.
- The telephone system requires that users enter the access code “9” before making any outgoing calls.
- There are 5 trunks on the Meridian 1. These are configured as trunks 1 to 5.
- The Meridian 1 located in the switch room of the Acme Company head office building requires an MDR-2000 ISD to collect CDR data. A modem is attached to it to allow for communications between it and a PC in another room. It has a dedicated extension number 222.
- The PC on which the Telecom Billing System 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 MDR-2000 ISD.

Setting up the Telecom Billing System: Summary

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

- 1 Ensure that the Meridian 1 is set up to properly output CDR data.
- 2 Install and set up the buffer unit.
- 3 Install any rate tables purchased for your dialing plan.
- 4 Run the Telecom Billing System so it can be configured.

- 5 Set up and test the data collection process before running it in a real-time situation.
- 6 Obtain the List Trunk and Member (LTM) values from the Meridian 1.
- 7 Set up the telephone configuration.
- 8 Test the telephone configuration.

For more details on each of the Telecom Billing System functions and features described in the following sections, refer to the on-line Help included with Telecom Billing System. For more details on the hardware components included with the OTM Telecom Billing System (e.g., buffer units, modems), refer to their associated documentation.

Step 1: Ensure that Meridian 1 is set up properly

In order for the Telecom Billing System 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 the Telecom Billing System 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**). The Telecom Billing System contains script files for supported buffer units, including the MDR-2000 ISD. As well, it 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 the Telecom Billing System 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 ISD are:

- Baud = **1200**
- Data Bits = **8**
- Parity = **N**
- Stop Bits = **1**

If you plan to use the default values for the MDR-2000 ISD, you must use the same values for the SDI port.

Step 2: Install and set up buffer unit

The Telecom Billing System 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 this setup, assume that the Telecom Billing System is collecting CDR data from the MDR-2000 ISD. This section describes how to connect the MDR-2000 ISD 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 OTM-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 for MDR-2000 ISD

The MDR-2000 ISD is a precision electronic product. Remember to review all of the documentation included with the MDR-2000 ISD 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 ISD, take all proper electrostatic discharge (ESD) precautions, including personnel and equipment grounding.

- Do not rest the MDR-2000 ISD on the power cord. A damaged power cord can cause fires or electrical shocks.
- Do not use the MDR-2000 ISD 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.
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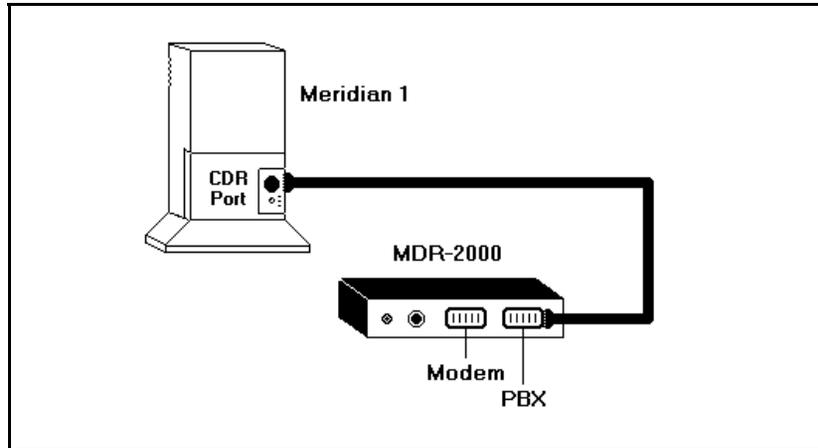
Connect MDR-2000 ISD to Meridian 1 and PC

The first step is to connect and install the MDR-2000 ISD 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 ISD so the Telecom Billing System can collect the call records from its database files. For this example, you would configure and connect modems to the MDR-2000 ISD and to the PC.

Perform the following steps to connect the MDR-2000 ISD 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 ISD 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 ISD 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 ISD.

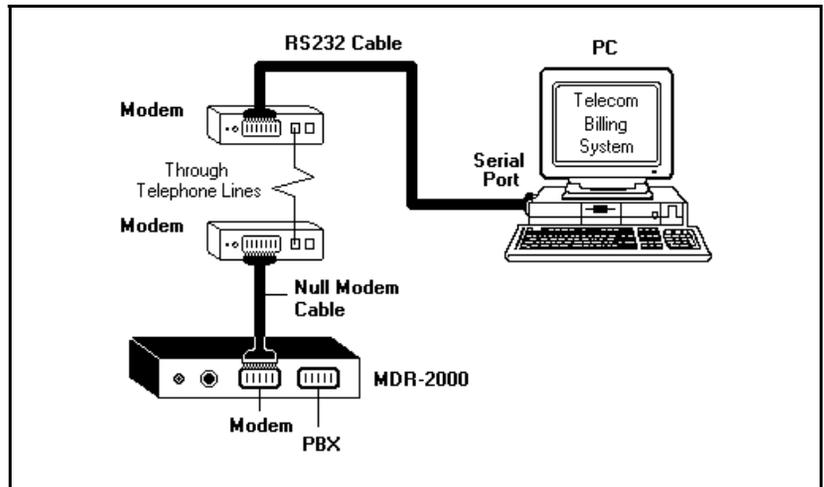
Figure 4
Meridian 1 to MDR-2000 ISD



- 3 Connect the MDR-2000 ISD to the first modem:
 - a Connect the null modem cable which is provided with the MDR-2000 ISD from the Modem port of the MDR-2000 ISD 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 of the second modem.**

Figure 5
MDR-2000 ISD to modems to PC



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

- 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 ISD to ensure that it is collecting data. Once you have turned on the MDR-2000 ISD, 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 MDR-2000 ISD has been turned off and on.

The PBX indicator will flash as the MDR-2000 ISD 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 MDR-2000 ISD, then ensure that it is connected between the CDR port of the Meridian 1 and the PBX port of the MDR-2000 ISD.
- Ensure that CDR is turned on for the trunk route you are using.

Verify that the MDR-2000 ISD is collecting data

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

- 1 Run a terminal program such as Windows HyperTerminal.
- 2 Dial up the telephone number of the MDR-2000 ISD. This is the number where the MDR-2000 ISD was connected via its modem. If the PC is connected directly to the MDR-2000 ISD, then you can simply start typing the commands to edit the parameters. For this example, enter: **222**.
- 3 Type: **<Ctrl-V> I D <Enter>**. This will verify that you are communicating with the MDR-2000 ISD. The response will be the serial number of the MDR-2000 ISD.
- 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 ISD default communications parameters may be different from the Meridian 1. For example, the MDR-2000 ISD 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 ISD 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 ISD's communications parameters, access the MDR-2000 ISD 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 ISD (e.g., **222**). This is the number where the MDR-2000 ISD was connected via its modem. If the PC is connected directly to the MDR-2000 ISD, then you can simply start typing the commands to edit the parameters.
- 3 Access the MDR-2000 ISD interface by typing: **<Ctrl-V> I M <Enter>**. The **M2K>** prompt will appear.
- 4 Check the status of the MDR-2000 ISD by typing: **ST <Enter>**. The status will appear similar to the following.

Figure 6
MDR-2000 ISD 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 ISD 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 ISD.
- 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 ISD, 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 ISD 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 ISD interface and change the strings as necessary. Refer to the documentation provided with the MDR-2000 ISD for more details on what the customization strings represent.

Step 3: Install rate tables and location books

Before you configure the Telecom Billing System, you must install the rate tables which reflect your telecom provider's rates. These provide such rates as long distance charges for direct dialed calls to North America as well as international long distance charges. The Telecom Billing System requires these rate tables in order to accurately apply costs to your long distance calls.

As well as rate tables, you must install a set of location books for your software. Location books contain codes for the actual locations which are used by the rate tables to determine the charges incurred when calling these locations.

You can obtain rate tables from a rate service or from your dealer. Remember that the rate table files must be compatible with the Telecom Billing System software. If in doubt, check with your supplier before purchasing any rate tables.

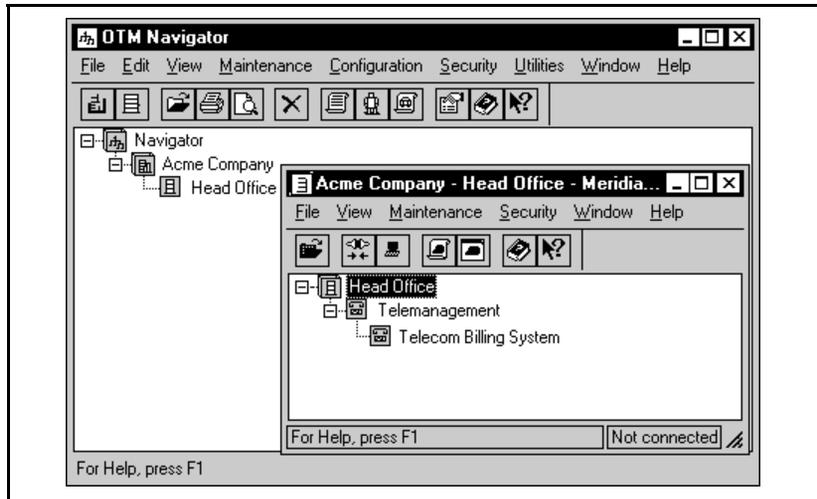
To install the rate tables and location books, simply follow the instructions included with them. Remember to install the rate table files onto your OTM Telecom Billing System directory so you can select the appropriate rate table files when you are defining your carrier pricing templates.

Step 4: Run Telecom Billing System so it can be configured

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

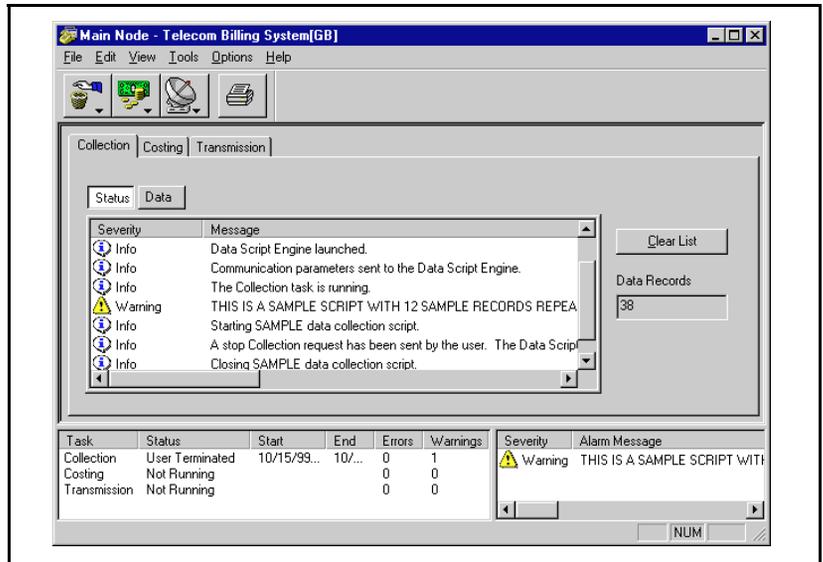
Once you opened the site and system, the following windows will appear.

Figure 7
OTM Navigator



From the selected site and system in the OTM Navigator, click **Telemanagement** and click **Telecom Billing System**. This will access the Telecom Billing System application main window from which you can set up the communications parameters, telephone configuration and rate tables 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 8
Telecom Billing System main window



Step 5: Set up and test data collection

Before you enter your telephone configuration, you should verify that the Telecom Billing System 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

In order for the Telecom Billing System to collect data from the Meridian 1, 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*). You would just need to access the System Configuration function's Communications tab to select the communications and data collection parameters.

To enter the data collection parameters for the Telecom Billing System, perform the following steps.

- 1 From the Telecom Billing System main window, click **Options | System Configuration**. The System Configuration dialog will appear.
- 2 Click the **Collection** tab and enter your communications and collection parameters. For example, enter the following values:
 - Type: **Dial-Up**
 - Phone No: **222**
 - Redials: **3**
 - Port: **COM1**
 - Baud Rate: **9600**
 - Data Bits: **8**
 - Parity: **None**
 - Stop Bits: **1**
- 3 In the Collection Script field, enter name of the script file which will be used for this data collection. This file contains the instructions used to communicate with the buffer unit and collect data from it. The script filename 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 the MDR-2000 ISD, then you would select **COLLECT.COL**. Refer to the *OTM Common Services User Guide* for a list of supported buffer units and their corresponding script filenames.
- 4 Click **OK** to select these options and return to the Telecom Billing System 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 ISD 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.
- The Telecom Billing System will collect this CDR data from the MDR-2000 ISD and 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 ISD 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 process by clicking **Tools | Collection | Start** from the Telecom Billing System main window.
- 3** From the Start Collection dialog, select the **Batch** option and click **Start**. The Telecom Billing System will start collecting the call records from the MDR-2000 ISD and place them in the Call Database.
- 4** During the data collection process, the Telecom Billing System will display both the collection activities as well as the call records as they are collected. To view this information, click the **Collection** tab in the System Tasks pane. Click **Status** to view the status of the collection. Click **Data** from this tab to view the call records and verify that they are in the correct format.
- 5** Review the call records for any invalid fields. For example, check the trunk numbers and digits dialed for invalid values. The trunk numbers appear in the Orig ID or Term ID fields depending on the “Orig” or “Term” values. Check the first digits in the Digits Dialed fields to confirm the access codes. As well, check the call records’ dates and times to ensure that they match the date and time on the Meridian 1.

Figure 9
Call Database

Rec. ID	Call Type	Orig	Orig ID	Term	Term ID	Date	Time	Duration
1	Normal	Ext.	3535	Trunk	000019	9/10/98	3:48:00 PM	2:36
2	Normal	Trunk	000007	Ext.	3845	9/10/98	3:50:00 PM	0:46
3	Internal	Ext.	3523	Ext.	3550	9/10/98	3:51:00 PM	9:34
4	Normal	Ext.	3425	Trunk	000014	9/10/98	3:50:00 PM	0:50
5	Internal	Att.	1	Ext.	3403	9/10/98	3:51:00 PM	0:30
6	Normal	Trunk	000008	Ext.	3844	9/10/98	3:47:00 PM	5:28
7	Normal	Trunk	000007	Ext.	3535	9/10/98	3:52:00 PM	0:10
8	Internal	Ext.	3460	Ext.	3893	9/10/98	3:52:00 PM	0:56
9	Internal	Ext.	3523	Ext.	3895	9/10/98	3:52:00 PM	0:12
10	Normal	Trunk	000002	Ext.	3518	9/10/98	3:50:00 PM	2:00
11	Internal	Att.	1	Ext.	3403	9/10/98	3:52:00 PM	0:16
12	Normal	Trunk	000009	Ext.	3846	9/10/98	3:51:00 PM	2:18
13	Normal	Ext.	3535	Trunk	000019	9/10/98	3:48:00 PM	2:36
14	Normal	Trunk	000007	Ext.	3845	9/10/98	3:50:00 PM	0:46

- 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 ISD.

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 the Telecom Billing System is to define the telephone configuration. This identifies how the Telecom Billing System 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.

Note: This telephone configuration is only an example. When setting up your own configuration, you must enter your own company's system and rate information. You should review all of the documentation provided with your Meridian 1 and by your service provider. 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.

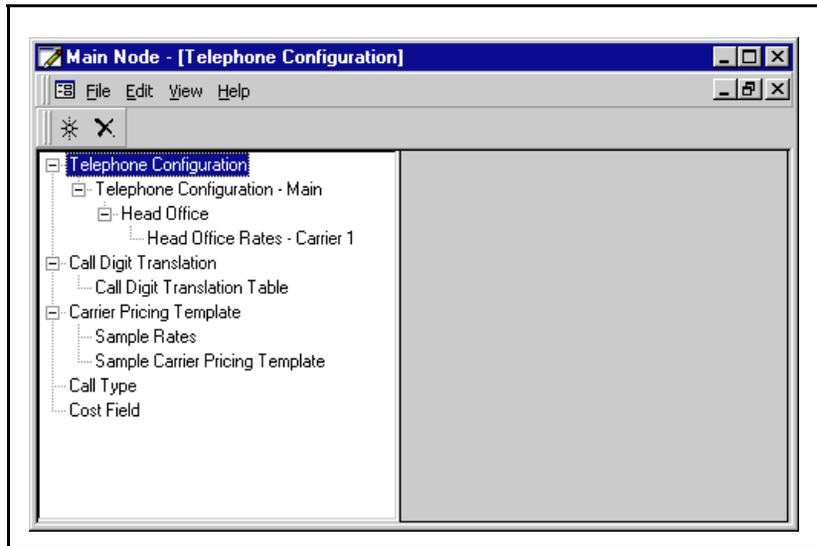
- 1 Access Telephone Configuration Database editor
- 2 Update Call Type Definitions table
- 3 Define Carrier Pricing Template
- 4 Define Call Digit Translation
- 5 Enter Telephone Configuration
 - a Create Telephone Configuration
 - b Add Main Node
 - c **Add Long Distance Service Definition to Main Node**

Access Telephone Configuration Database editor

To access the Telephone Configuration Database tables, click **Edit | Telephone Configuration** from the Telecom Billing System main window.

The following is a sample Telephone Configuration editor. When you access this function for the first time, it will appear with blank menu items in the Telephone Configuration menu tree.

Figure 10
Telephone Configuration Editor



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.

Update Call Type Definitions

The Call Type Definition function contains a list of the types of calls that may be used by your organization (e.g., International, Local, etc.). You will select these call types when you define the dialing patterns of your organization in the Carrier Pricing Template. Select these predefined call types when entering your costing and reporting options.

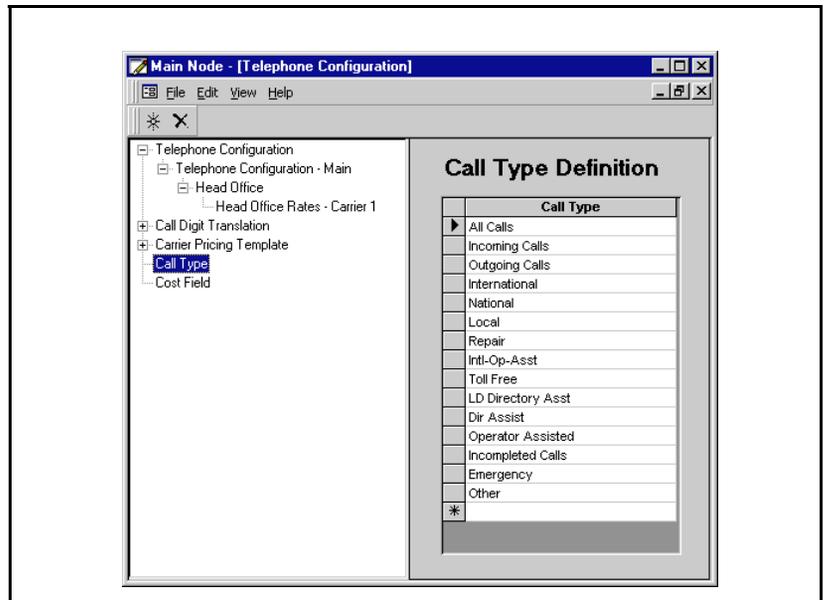
The Call Type Definition function lists a set of default call types which you can select when entering your costing and reporting options. In this step, add any additional call types which you may require for your configuration (e.g., emergency calls). If you do not require any additional call types,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

- 1 From the Telephone Configuration menu tree, click **Call Type**. The Call Type Definition grid will appear in the right pane with a list of default definitions.
- 2 Click a blank line at the bottom of this grid and type: **Emergency**. This will add this call type to this list.

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

Figure 11
Call Type Definition



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

Define Carrier Pricing Templates

Carrier Pricing Templates help determine the type and cost of a call. The Telephone Configuration Database uses these templates to assign costs to the calls based on the trunks used and the digits dialed. For this example, you will define a template for regular long distance service with multiple pricing definitions.

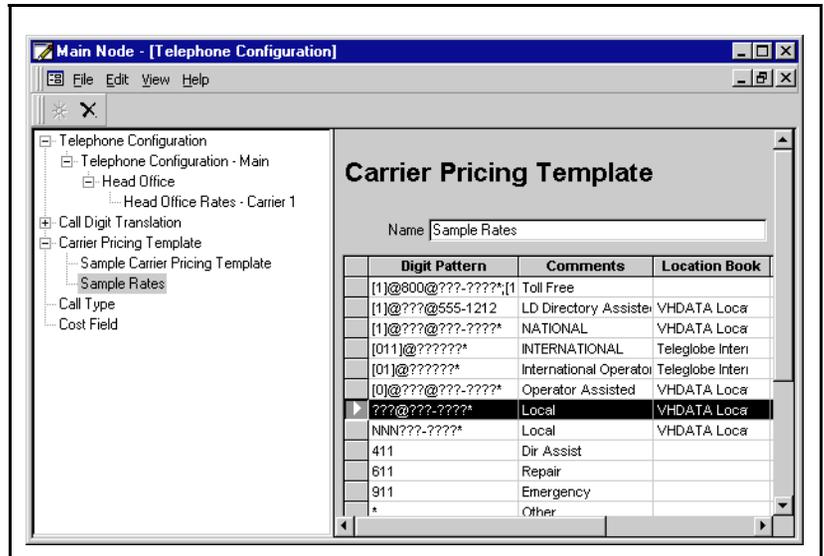
For each digit pattern that represents a billable call, assign either the rate file and table from your telephone company or a flat per-minute or per-call charge. Add the flat per-call charges to the cost assigned by the rate file of your telephone company.

Carrier Pricing Template—Sample Rates

To enter the sample carrier pricing template, perform the following steps.

- 1 From the Telephone Configuration menu tree, click **Carrier Pricing Template** and click **File | New Carrier Pricing Template**. This will display the Carrier Pricing Template grid in the right pane.
- 2 In the Name field, enter: **Sample Rates**.
- 3 Click the **Use Default Template** button to create a set of default values for North America. Update these values with your own system requirements.

Figure 12
Carrier Pricing Template



Edit pricing definitions in Carrier Pricing Template

The following steps describe how to edit the pricing definitions for this default table. These pricing definitions allow the Telecom Billing System to interpret any type of call containing identifiable digit patterns and then cost them accordingly. They appear as a line-by-line listing in the grid.

For this example, you will only edit the pricing definitions for international and North American long distance calls to specify the appropriate rate tables for your carrier. These default pricing definitions have already been created to provide you with standard North American dialing patterns. You only need to select the appropriate rate tables for them. The following examples demonstrate the use of the rate tables.

National Calls: These types of calls will use the location book **VHDATA Location Book**.

International Calls: These types of calls would use the location book **Teleglobe International Location Book**.

In certain cases, you may need to add new pricing definitions to match your own configuration and dialing patterns.

Note: The order in which you enter these pricing definitions is important. During costing, calls are compared to the digit pattern of the first definition at the top of the list. The Telecom Billing System then proceeds down the list until it matches the Digit Pattern field and, if used, the rate table. The Telecom Billing System will then proceed to the next 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 format characters as digit place holders. Use the asterisk * (multiple place holder) or question mark ? (single place holder) 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. Use the hide flag . (period) to hide all of the digits which follow it in formatted 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 clicking the record line in the list and typing over the available fields. To view each record in a dialog, click the record line and click **Edit**.

For example, to edit the International pricing definition, click the record line for International (you may need to scroll across the grid to locate **International** under the Comments field) and click **Edit**. In the dialog which appears, simply enter the desired information for it. Once you have entered the rate information for each type of call, click **OK** to save it and return to the Carrier Pricing Template grid.

Perform the following steps to modify these pricing definitions.

International Calls

- 1 Click the record line in the Carrier Pricing Template grid which contains **International** in the Comments field and click **Edit**.
- 2 Enter the information as listed in the following dialog for International calls and click **OK**.

Figure 13
Carrier Pricing Template: International Calls

The screenshot shows a dialog box titled "Carrier Pricing Template" with the following fields and controls:

- Digit: [011]@??????*
- Comments: INTERNATIONAL
- Location Book: Teleglobe International Location Book (dropdown menu)
- Rate Filename: (dropdown menu)
- Rate Table: (dropdown menu)
- Use Volume Discount Plan:
- Call Type: International (dropdown menu)
- Cost/Minute: \$0.00
- Cost/Call: \$0.00
- Cost/Pulse: \$0.00
- % Cost Adj: 0
- Initial Duration Rounding Period: 1 (Seconds)
- Additional Duration Rounding Period: 1 (Seconds)
- Best Guess Lookup:
- Buttons: OK, Cancel

Long Distance (National) Calls

- 1 Click the record line in the Carrier Pricing Template grid which contains **National** in the Comments field and click **Edit**.
- 2 Enter the information as listed in the following dialog for national calls and click **OK**.

Figure 14
Carrier Pricing Template: Long Distance (National) Calls

The screenshot shows a dialog box titled "Carrier Pricing Template" with the following fields and controls:

- Digit: [1]@???@???-????*
- Comments: NATIONAL
- Location Book: VHDATA Location Book (dropdown menu)
- Rate Filename: (dropdown menu)
- Rate Table: (dropdown menu)
- Use Volume Discount Plan:
- Call Type: National (dropdown menu)
- Cost/Minute: \$0.00
- Cost/Call: \$0.00
- Cost/Pulse: \$0.00
- % Cost Adj: 0
- Initial Duration Rounding Period: 1 (Seconds)
- Additional Duration Rounding Period: 1 (Seconds)
- Best Guess Lookup:
- Buttons: OK, Cancel

Repeat the above steps for other dialed digit patterns where other charges may apply. This completes the entries for this template's pricing definitions.

Define Call Digit Translation

The Call Digit Translation function translates the digits dialed on call records. This translation can be applied to all outgoing calls in the system or to calls on specific trunk groups in the system. This allows the Telecom Billing System to process and print a different digit pattern from the one that is actually dialed (e.g., suppressing access codes).

Note: Call Digit Translation does not affect Calling Line ID or Automatic Number Identification (CLID/ANI) digit patterns on incoming calls.

For this example, you will build a System Call Digit Translation table to remove the access code “9” from the digits dialed of the call records. This way, each call record will appear without the access code on reports. The digit is the access code 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 outgoing 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 Click **Call Digit Translation** from the Telephone Configuration menu tree.
- 2 Click **File | New Digit Translation Table** to add a new definition for this table. This will create another menu item entitled: **New Digit Translation Table 1** under this menu item. For this new call digit translation, a blank table will appear in the right pane.
- 3 Rename this table by typing: **Sample CDT** in the Name field.
- 4 Enter the following information in the first line of this grid:
 - Match Digits: **9**
 - Replace Digits: **-**
- 5 Leave the remaining fields blank.

If you are not sure of what your access codes are, review the collected call records in the Collection tab (Data) of the System Task pane. Access the Telecom Billing System main window, click the **Collection** tab of the System Task pane, and click **Data**. 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.

Enter Telephone Configuration

The Telephone Configuration Database is the key to pricing calls and tracing them to their destinations. This database 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 your telecom carrier's offerings. The Telecom Billing System uses this configuration information to cost the call records and report on them.

Now that you have all of the elements required to construct your telephone configuration, you must add them to this table. The Telephone Configuration table (in the Telephone Configuration Database editor) is sorted into the following three components:

- General information (includes internal call definitions)
- Node information
- Service definitions (trunks)

You can define multiple nodes for each telephone configuration. As well, you can define multiple service definitions for each node.

The following sections will describe how to create each of these components.

Create Telephone Configuration (General Information)

The first part of the Telephone Configuration table contains its general information and optional costing for internal calls.

To create a new telephone configuration table and enter its general information, perform the following steps.

- 1 Click the **Telephone Configuration** menu item and click **File | New Configuration**. A data entry form will appear in the right pane allowing you to enter this telephone configuration's general information.
- 2 Enter a descriptive name for this configuration by typing: **Telephone Configuration Head Office** in the Telephone Configuration field.

- 3 Specify the Call Digit Translation table which will be used for this Telephone Configuration by selecting **Sample CDT** from the Call Digit Translation drop-down list box. You previously defined this table in the Call Digit Translation function.
- 4 If your Meridian 1 outputs CDR for internal calls (i.e., calls made between extensions within the Meridian 1 system), then enter these costs in the Internal Calls fields of this table. For this example, leave the default values in these fields.

Figure 15
Telephone Configuration editor

The screenshot shows the 'Telephone Configuration editor' window. The left pane displays a tree view with the following structure:

- Telephone Configuration
 - Telephone Configuration Head Office (selected)
 - Call Digit Translation
 - Sample CDT
 - Carrier Pricing Template
 - Call Type
 - Cost Field

The right pane shows the configuration for 'Telephone Configuration Head Office'. The 'Call Digit Translation' dropdown is set to 'Sample CDT'. The 'Internal Calls' section has the following fields:

- Initial Duration Rounding Period: 1 (Seconds)
- Additional Duration Rounding Period: 1 (Seconds)
- Outgoing
 - Cost per Minute: \$0.00
 - Cost per Call: \$0.00
 - Route Designator: [Empty]
 - Cost Field: [Dropdown]
 - Print Option: Suppress [Dropdown]
- Incoming
 - Cost per Minute: \$0.00
 - Cost per Call: \$0.00
 - Route Designator: [Empty]
 - Cost Field: [Dropdown]
 - Print Option: Suppress [Dropdown]

This completes the steps for creating a new Telephone Configuration table and entering its general information.

Add Main Node (Node Information Editor)

The next step in entering this telephone configuration is to define the general information for the main node. Since a telephone configuration can contain multiple nodes, you must define each node separately. For example, your company's telephone system may span different offices (nodes). For this example, you are creating the minimum required node—the Main Node.

To add a node to this defined configuration, click the menu item **Telephone Configuration Head Office** (which you just created in the previous steps) and click **File | New Node**.

Perform the following steps to edit this node.

- 1** In the Company/Node Name field, enter the name for this node. For example, enter: **Main Node**. The title in the menu tree will change to **Main Node**.
- 2** In the Company Location field, enter the city and province/state for your company. For example, enter: **Dallas, Texas**.
- 3** In the Main Phone Number field, enter the telephone number for this location. For example, enter: **214-555-1111**.
- 4** From the Location Book drop-down list box, select: **VHDATA Location Book**.
- 5** Since this is the main node, leave the Time Zone field at **0**.
- 6** Since this is the main node, leave the Currency Exchange field at its default value: **1**.
- 7** Leave the Main Node check box turned on. Only one node can have this checked.
- 8** If the rates defined for this node require additional taxes, then select them from the Tax Information drop-down list boxes. You must have defined these taxes in the Taxes editor.

Figure 16
Telephone Configuration - Node editor

Tax Information		Percentage %
Tax1	[Dropdown]	[Input]
Tax2	[Dropdown]	[Input]
Tax3	[Dropdown]	[Input]
Tax4	[Dropdown]	[Input]

This completes the steps for defining the Main Node. The next step is to create the service definitions for this node. That is, you must enter the costing parameters for the different trunk groups in this node.

Add Long Distance Service Definition to Main Node

Now that you have selected a node, you must enter its pricing definitions. These pricing definitions apply to different trunk groups. For example, trunks 1 to 5 may be used for regular long distance calling and trunks 7 and 8 may be used exclusively for toll free calls.

To add a long distance service definition to the main node, click the **Main Node** menu item and click **File | New Service/Trunk Group**. This will create another menu item under it entitled: **New Service 1** and will display the tabs in which you can enter the service definition, fixed and variable costs, and reporting options. Click on the following tabs to enter the information for this service.

Service Definition Tab

In this tab, enter the general information for this service definition. This includes the range of trunks using this service as well as its billing parameters.

Perform the following steps to enter this service definition.

- 1 In the Name field, enter: **Main Trunk Group** over the “New Service 1” text. Notice that the tree menu item will change to reflect what you just typed.
- 2 Leave the Termination option (Public Switch Network) and the Billing Parameters fields in their defaults.
- 3 In the Trunk Numbers table, enter the trunk range for this trunk group in your Meridian 1. For this example, enter the following:
 - Total Number of Equipped Trunks: **5**
 - Line/Description: **CO Trunks**
 - Low Range: **1**
 - High Range **5**

Note on Billing Parameters

For certain types of calls (e.g., international calls), you may need to enter a connect time adjustment or a minimum call duration to allow for a delayed connection. Enter this information in the Billing Parameters table of the Service Definition tab.

Click the first record line of the Billing Parameters table, and perform the following steps to enter a minimum call duration and a connect time adjustment for international calls.

- 1 In the Match Digits field, enter: **011**. The system will interpret all calls starting with the digits 011 (international calls) and apply the minimum call duration and connect time adjustment from the following fields.
- 2 In the Comments field, enter: **International Calls**.

- 3 In the Min. Duration field, enter: **10**. This is the minimum call duration in seconds, which a call must exceed for it to be costed.
- 4 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 before costing.

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

Figure 17
Telephone Configuration - Service Definition

The screenshot shows the 'Main Node - [Telephone Configuration]' window. The left pane shows a tree view with 'Main Trunk Group' selected. The main pane is divided into tabs: 'Service Definition', 'Fixed Costs', 'Variable and Carrier Costing', and 'Report Options'. The 'Service Definition' tab is active, showing the following fields and values:

- Name: Main Trunk Group
- Access Code(s): 9
- Call Digit Translation: [dropdown]

Below these are 'Termination' options: Public Switch Network, Tie/PX Line, and Tie Node Location: [dropdown].

'Billing Parameters' section:

- Duration Rounding Periods: Initial 1, Additional 1
- Monthly Billing Period: 1 - 31

A table for Match Digits is shown:

Match Digits	Comments	Min. Duration	Connect Time
▶ 011	International Calls	10	5
*		0	0

'Trunk Numbers' section:

- Total Number of Equipped Trunks: 5

Another table for Line/Description, Low Range, and High Range is shown:

Line/Description	Low Range	High Range
▶ CO Trunks	1	5
*		

Fixed Costs Tab

If your system requires fixed costs for these trunk groups, then enter them in the Fixed Costs tab. You can enter fixed costs per minute, per call, per meter pulse or per month. As well, you can define these costs for outgoing or incoming calls.

Variable and Carrier Costing Tab

In this tab, enter the costs which will be applied to calls made on this service. You can enter costs for both outgoing and incoming calls. For outgoing calls, you can enter variable costs based solely on the digit patterns or you can enter the carrier costs which are based on these digit patterns. The carrier costs will vary depending on the destinations of the outgoing calls.

For this example, you will select the predefined Carrier Pricing Template for all calls using this service. The Carrier Pricing Template can then distinguish between different types of calls for its costing.

Perform the following steps to select the carrier costing for this service.

- 1 In the Carrier Costing by Digits Comments field, enter: **Outgoing Calls**.
- 2 Leave the VPN Location Book field blank.
- 3 From the Carrier Pricing Template drop-down list box, select **Sample Rates**.
- 4 Leave the % Cost Adjust field blank.

Report Options Tab

In this tab, enter the call reporting options for this trunk service. This allows you to define how calls which use this service will appear on reports. For example, you can suppress all incoming calls.

To enter the call reporting options for all calls using this service, perform the following steps.

- 1 Click the first record in this grid.
- 2 From the Call Type drop-down list box, select: **All Calls**.
- 3 In the Print Option field, enter: **Detail** (this indicates that these calls should be displayed in the main report body of the detail reports).
- 4 Leave the Cost Field blank. This determines the report grouping and summary field on reports. Cost fields are defined in the Cost Field table.
- 5 In the Route DES field, enter: **DDD** (this is the route used on detail reports for this call).

This completes the defined service for the main node. You have now defined how calls from this trunk should be costed according to the template you created. Click **File | Close** to save this information and return to the Telecom Billing System main window.

Step 8: Test telephone configuration

Now that you have entered your system's costing model and configuration, you should test the accuracy of the configuration. To do so, you must apply these costs to the collected call records and print some reports to review the generated costs.

Apply costs to call records

The Telecom Billing System applies the costs based on your Telephone Configuration Database and Rate Tables as a separate step to data collection. That is, once you have collected the call records from the Meridian 1, you must apply costs to them as a separate step.

To apply these costs to the collected call records, perform the following steps.

- 1 Click **Tools | Costing | Start** from the Telecom Billing System window.
- 2 From the Start Costing dialog which appears, select the **Batch** Costing Mode option. This will perform a one-time costing of all non-costed call records.
- 3 In the Available Telephone Configurations list, turn on the **Telephone Configuration Head Office** check box. This will apply this specific telephone configuration to these call records.
- 4 Click **Start** to cost the call records. The Telecom Billing System will then start the costing procedure.
- 5 Click the Costing tab **Status** view of the System Tasks pane to check this process. Once it displays the message: **The Costing task has completed**, you are ready to generate reports based on the costed call records.

This completes the steps involved in costing the call records.

Generate reports

Generate the following reports to test the accuracy of the telephone configuration which you just entered.

Telephone Configuration Report

The Telephone Configuration Report displays your telephone configuration information.

To print this report, perform the following steps.

- 1 Click **File | Reports** from the Telecom Billing System main window. The Reporting dialog will appear.
- 2 From the Telecom Billing System Reports menu folder in the Reporting menu tree (left pane), double-click the **Utility Tools** folder.
- 3 From the list of reports which appears, click **Telephone Configuration**.
- 4 From the Output Type drop-down list box, select **Printer**.
- 5 From the Configuration drop-down list box, select **Telephone Configuration Head Office**. This represents the telephone configuration you just defined.
- 6 Click **Go** to print the report.

Exception Chronological Report

The Exception Chronological Report lists in chronological order all of the calls that were made, and then collected by the Telecom Billing System. Review this report to verify that the calls were processed and costed accurately. 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 Database include incorrect access codes and missing trunks.

To print this report, perform the following steps.

- 1 Click **File | Reports** from the Telecom Billing System main window. The Reporting dialog will appear.
- 2 From the Telecom Billing System Reports menu folder in the Reporting menu tree (left pane), double-click the **Cost Analysis** folder.
- 3 From the list of reports which appears, click **Exception Chronological**.
- 4 From the Output Type drop-down list box, select **Printer**.

- 5 From the Configuration drop-down list box, select **Telephone Configuration Head Office**. This represents the telephone configuration you just defined.
- 6 Click **Go** to print the report.

If either of these reports appears inaccurate, then review your input and make any necessary adjustments to your telephone configuration.

Update databases

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

Employee Database: This 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 Employee Database contains this information as well as the organizational hierarchy level to which this extension belongs. If you have installed the OTM Station Administration application, then this is populated from the Set Database.

External Parties Database: This database contains information about individuals or companies with whom you have regular contact.

Roles/Projects Database: This database contains information about the different roles or projects which require reporting in the Telecom Billing System.

To view these databases and add any additional records to them click the appropriate name in the **Edit** drop-down menu of the Telecom Billing System main window.

Conclusion

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

Operating Procedures

Once you have initially populated the main databases with your company's information, all that you need to do is to collect data, apply costs to the call records and generate reports regularly. Since the Telecom Billing System 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, you should routinely maintain and backup your databases to keep them 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 the Telecom Billing System.

Schedule of activities

The following table contains a recommended schedule of activities which you should follow while using the Telecom Billing System. To simplify these activities, use the OTM Scheduler to schedule them to run at regular intervals.

Task	Frequency
Data collection	Daily
Costing of call records	Daily
Report generation	Monthly
Directory updates	
— Employee Database	Weekly
— External Parties Database	Weekly
— Roles/Projects Database	Weekly
— Telephone Configuration Database	Monthly
— Location Books	Quarterly
— Rate Tables	Quarterly
Database management	
— Backup databases	Weekly
— Restore databases	When recovering lost data
Call Database maintenance	
— Archive Call Database	Monthly
— Purge Call Database	Monthly
— Restore Call Database	When recovering lost data

Data collection (daily)

The collection of call records from the Meridian 1 (or optional CDR buffer unit) to the PC is a key task of your Telecom Billing System operations. Without this detailed calling information, the Telecom Billing System reports will not contain any call record data. Therefore, it is important to regularly collect call records from the Meridian 1.

Run data collection 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, access the Telecom Billing System for the selected system, and click **Tools | Collection | Start** from its main window. From the Start Collection dialog, select either **Batch** or **Real Time** mode and click **Start**. Select the **Batch** option to perform a one-time data collection from the Meridian 1 or buffer unit. Select **Real Time** to continuously collect CDR records from the Meridian 1 or buffer unit.

During the data collection process, the Telecom Billing System collects data from the Meridian 1 (or optional buffer unit) and builds that data into the Call Database. Depending on the size of the buffer unit, communications would usually take place nightly. Less frequent data collection is possible, provided the buffer unit does not reach capacity.

Note: If the buffer does 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 in the Collection tab of the System Tasks pane. As well, all activity completed by the Telecom Billing System will be recorded in the OTM Event Log Viewer for diagnostics and troubleshooting. You can access the Event Log Viewer from the OTM Navigator. Review this information while collecting data to ensure that the system is collecting properly.

Once you have collected CDR data from the Meridian 1, you are ready to apply costs to them and generate reports based on this information.

Data collection troubleshooting

During data collection, the Telecom Billing System will display the call records it has collected. If this number fails to increment or remains at zero, then either there is no data to collect, or the Telecom Billing System has not been able to communicate with the Meridian 1. In this case take the following actions.

- Click the Collection tab from the System Tasks pane (main pane in the Telecom Billing System window) and click **Status** to review the task's status.
- Check the System Alarms pane (bottom right pane in the Telecom Billing System window) to review any relevant information.

- If communicating through a modem, ensure that the modem's AA (auto-answer) light is on.
- Make sure that the communications port which you specified in the System Configuration Collection tab 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.
- The communications parameters are not set up properly for the system.
- The data collection parameters are not set up properly.
- The PC has insufficient disk space for the Call Database.

Costing of call records (daily)

The Telecom Billing System applies the costs based on your Telephone Configuration Database and Rate Tables as a separate step to data collection. That is, once you have collected the call records from the Meridian 1, you must then apply costs to them based on the telephone configuration. As with the Data Collection procedure, you should run the costing procedure on a daily basis. This way, you can quickly identify any problems in the costing model or telephone configuration.

To cost call records for a system, access the Telecom Billing System for the selected system, and click **Tools | Costing | Start** from its main window. From the Start Costing dialog, select either **Batch** or **Real Time** mode and click **Start**. Select the **Batch** option to perform a one-time costing of all non-costed call records. Select **Real Time** to continuously cost all non-costed call records.

During this process, the Telecom Billing System creates a costed Call Database containing the calculated costs. The status of each costing procedure is tracked in the Costing tab of the System Tasks pane. As well, all activity completed by the Telecom Billing System will be recorded in the Event Log Viewer for diagnostics and troubleshooting. Review this information while costing the call records to ensure that the system is costing properly.

Once you have costed the call records, you are ready to generate reports based on this information.

Report generation (monthly)

The Telecom Billing System 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 display their information.

To access the Reporting function, click **File | Reports** from the Telecom Billing System main window. Perform the following steps to generate a report.

Step 1: Select report

Select the report you wish to generate from the Report menu tree in the Reporting dialog. For example, to select the Extension Detail Report, click **Telecom Billing System Reports | Cost | Extension Detail Report** from the Reporting menu tree.

Step 2: Select output device

The Telecom Billing System can send reports to a selected output device such as a configured printer, the PC's screen, to a file, or to an email address. Select the output device from the Output Type drop-down list box in the Reporting dialog.

Step 3: Select report filters

Before you generate your reports, you should select the parameters (filters) that determine the data ranges on which the reports are run. This will include only the desired range of data.

To enter your reporting filters, access the Reporting dialog and click the ellipsis command (...) next to the Filters field. In the Filters dialog which appears, click **Add**. The Filter editor dialog will appear allowing you to enter the report's filters. Once you have defined this filter's parameters, enter a unique name for it in the Filter Name field. When you exit from this function and return to the Reporting dialog, you can simply select this predefined filter from the Filter drop-down list box.

Step 3: Generate report

Once you have selected your parameters, you can then generate your report by simply clicking **Go**.

If you wish to schedule a report to run at a specific date and time, click **Schedule**. This will invoke the OTM Scheduler. Use the Scheduler to enter the date and time that you wish to run the report. It will then generate it at the selected date and time.

Database updates

The Telecom Billing System 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 Telecom Billing System databases contain outdated information (e.g., the Employee 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 Telecom Billing System database files for recovery purposes. This way, if your PC loses data (e.g., in case of hardware or disk failure), you can recover the lost data.

Note: 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.

The following is a list of the databases which you should update on a regular basis.

Employee Database (weekly)

The Employee Database controls the distribution of costs to the different cost centers within your company. It is extremely important to have each extension's charges allocated to the appropriate organizational level. Update this directory as often as necessary depending on the frequency of changes made to the employee records. As a rule, you should update it weekly.

To avoid any problems, follow these steps during your Employee Database updates.

- 1 Print the Employee Directory Report. Access the Reporting dialog by clicking **File | Reports** from the Telecom Billing System main window. From the Reporting dialog, click **Telecom Billing System Reports | Directory Information | Employee Directory**. Select **Printer** as the Output Type and click **Go** to print this report.
- 2 On the hard copy printout of this report, enter the changes that have occurred over the past week (e.g., **New department, Staff moving to another department, New extensions**, etc.).
- 3 Enter the new changes into this database using the Employee editor. Access the Employee editor by clicking **Edit | Employees** from the Telecom Billing System main window.
- 4 Print the Employee 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.

External Parties and Roles/Projects Databases (weekly)

Similar to the Employee Database, these databases contain valuable information which will be used to generate accurate reports. To avoid errors or out-of-date records, print the External Parties and the Roles/Projects reports and check them. Remember to update these databases on a weekly basis.

Telephone Configuration Database (monthly)

The Telephone Configuration Database contains the information needed to cost your telephone carrier's services. Periodically, you may be required to enter changes to ensure the accuracy of your rates. These changes may involve edits to the rate tables, carrier pricing templates, or to the trunk tables.

To avoid any problems, follow these steps during your Telephone Configuration Database updates.

- 1 Print the Telephone Configuration Report. From the Reporting dialog, click **Telecom Billing System Reports | Utility Tools | Telephone Configuration**. Select **Printer** as the Output Type and click **Go** to print this report.
- 2 Check that the information on this report is complete.
- 3 Review the information for accuracy with the appropriate personnel.
- 4 Make the appropriate changes to the Telephone Configuration Database. Access this database by clicking **Edit | Telephone Configuration** from the Telecom Billing System main window.

Location Books (quarterly)

Location books serve two purposes in calculating costs for the Telecom Billing System. Their first and primary purpose is to find a meaningful location name for the source and destination of a phone call. The second purpose is to obtain additional rating information which is used to determine the cost of a call. That is, it identifies the physical or virtual locations of calls so that the Telecom Billing System can apply the appropriate usage costs to them based on their distance or codes.

Periodically, location designations change (e.g., new area codes are added to the North American V&H grid). You must therefore remember to update your defined location books on a regular basis. You can obtain the latest location books from your dealer.

Rate Tables (quarterly)

The Rate Tables provide the Telecom Billing System with the required rates and coverage areas used to identify how the calls to different locations will be costed. This way, the Telecom Billing System will know which calls will be costed with which rates.

Similar to the Location Books, Rate Tables need to be updated on a regular basis due to changes in tariffs. You must therefore update your rate tables on a regular basis. You can obtain the latest rate tables from your dealer as they are updated.

Database management (weekly)

The Telecom Billing System 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. As a rule, you should back up your data on a weekly basis.

Backup Utility

Use the Backup Utility from the OTM Navigator to make backup copies of all of the database files used by the Telecom Billing System for this site/system.

Note: This will only make a backup copy of the Telecom Billing System database files. If you wish to backup other OTM system files, then use the application to which the database files belong.

Restore Utility

In the event that you do lose some data for this site/system, use the Restore Utility from the OTM Navigator to copy the backed up files back to your system.

Call Database maintenance (monthly)

The Call Database contains all of the call records (CDR) that you have collected from your Meridian 1 and optionally costed using the Telephone Configuration Database. As the Telecom Billing System collects call records from the Meridian 1, the Call Database file will continue to grow in size and take up more space on your PC's disk drive. You should therefore periodically remove any old or unwanted call records from the Call Database to make room for the new call records. This will prevent the Call Database from taking up too much disk space on your PC. You should remove old data from the Call Database on a monthly basis. Depending on the size of your Call Database, you may need to remove old data from it more frequently.

You can remove old call records from the Call Database by either copying (or archiving) them to an external source, or by simply deleting them. The following sections will briefly describe the functions used to archive, delete (purge) and restore these call records.

Archive Call Database

The archive feature of the Telecom Billing System allows you to copy (or archive) call records from the Call Database to an external device. You can archive the entire Call Database, or you can archive a range of call records within a Call Database based on their call dates. This way, you can archive any old call records that you no longer require.

To archive the call records in the Call Database, you must use the Telecom Billing System's Export function. The Export function contains the export configuration entitled "Archive CDR/Costed Data." This allows you to copy a range of call records from the Call Database to a selected external device such as a network or floppy disk drive.

To access the Export function, click **File | Export** from the Telecom Billing System main window. Select **Archive CDR/Costed Data** as the Export Configuration. To define the parameters for this archive, click the ellipsis command button (...) next to this list box. In the Export configuration dialog that appears, enter the destination of this archive (e.g., A:\ for a floppy disk drive) and the range of data to be archived.

Purging Records After Writing!: Select the **Purge Records After Writing** option to delete the range of call records from the original Call Database once the call records have been copied to the external source. This will clear up disk space on your PC.

Once you have selected the archive information, click **Go** to proceed with the archive. If you archive your data to floppy diskettes, remember to properly label them.

Purge Call Database

The Telecom Billing System allows you to delete (or purge) call records from a Call Database either during the archive procedure (see previous section) or directly from the Call Database editor. Use this operation to eliminate any old data that you no longer require.

To delete call records from the Call Database directly from the Call Database editor, you must first access this editor. Click **Edit | Call Database** from the Telecom Billing System main window. In the Call Database editor that appears, click once on the records you wish to delete to highlight them and press **[Delete]**. At the confirmation prompt, click **Yes** to proceed with the deletion.

Restore Call Database

The restore feature of the Telecom Billing System allows you to copy the archived call records from the external device (e.g., network drive or floppy diskette) back to the Call Database.

To copy the call records back to the Call Database, you must use the Telecom Billing System's Import function. The Import function contains the import configuration entitled "Merge CDR/Costed Data." This allows you to copy a range of call records from the external device to the Call Database and merge them with the current Call Database's data.

To access the Import function, click **File | Import** from the Telecom Billing System main window. Select **Merge CDR/Costed Data** as the Import Configuration. To define the parameters for this restore operation, click the ellipsis command button (...) next to this list box. In the Import configuration dialog that appears, enter the external device from which the data will be restored (e.g., A:\) and the range of data to be restored.

Once you have selected the restore information, click **Go** to proceed with the restore operation.

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

- Collect CDR data from your buffer unit (it is recommended that you use a buffer unit 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 unit, a dedicated PC COM port will continuously collect the CDR data as they are output from the Meridian 1.
- Review the data collection Status pane daily to ensure that your scheduled collection was successful. As the Telecom Billing System collects call records, it will display them in the data collection Data tab.

Ongoing tasks (recommended weekly)

- If you are not using the Station Administration application, you will need to perform your Employee Database updates manually.
- Update External Parties and Roles/Projects Databases. These databases assign the names of external parties or roles and projects to the digits dialed. The reports can then include not just the dialed number but also these name. If you use these databases, they should be updated periodically.
- Perform database backups. It is important to maintain backup files of your databases on external devices or media (such as floppy diskettes) for security purposes.

Monthly tasks

- Run your monthly reports. 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.
- Archive or purge your Call Database data. Remove any old or unwanted call records from the Call Database to make room for the new call records. Depending on the size of your Call Database, you may need to remove old data from it more frequently than once a month.

Quarterly tasks

- Update your system's Location Books. Periodically, location designations change (e.g., new area codes are added to the North American V&H grid). You must therefore remember to update your defined location books on a regular basis.
- Similar to the Location Books, Rate Tables need to be updated on a regular basis due to changes in tariffs.

User's Reference

This chapter contains an overview of the Telecom Billing System functions and databases. It briefly describes their function and purpose. For complete details on each of these functions and their operation, refer to the on-line Help included with the software.

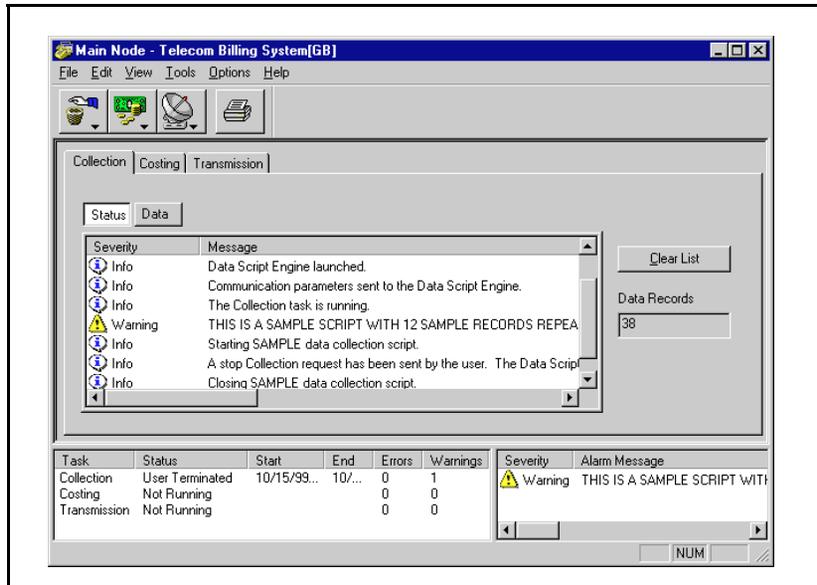
Overview

The Telecom Billing System application is the Optivity Telephony Manager's telephone cost accounting and billing program. Use the Telecom Billing System to collect call records from your telephone system, allocate costs to the appropriate users and generate meaningful reports summarizing these costs.

Interface

The Telecom Billing System's main window is the main interface for editing the databases, collecting data and generating reports.

Figure 18
Telecom Billing System



The following sections provide a brief outline of the Telecom Billing System commands, databases and panes.

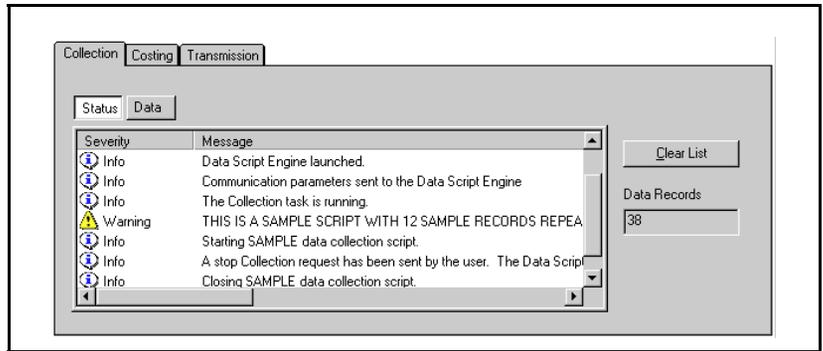
Panes

The Telecom Billing System displays its activities in the following panes.

System Tasks pane

The System Tasks pane displays information about the data collection, costing and data transmission functions. Each tab in this pane displays the data being processed as well as the status of each process. Use this pane to view the status of your data and of the system's functions.

Figure 19
System Tasks pane



System Monitor pane

The System Monitor pane displays another view of the Collection, Costing and Transmission activities. You can easily view the status of a particular process and determine at a glance if the system is running properly.

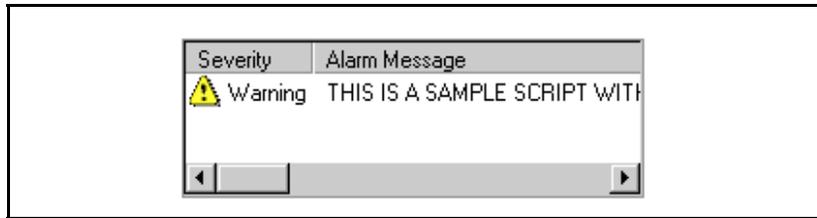
Figure 20
System Monitor pane

Task	Status	Start	End	Errors	Warnings
Collection	User Terminated	10/15/99...	10/...	0	1
Costing	Not Running			0	0
Transmission	Not Running			0	0

System Alarm pane

The System Alarm pane displays any alarm messages to indicate any abnormal activity during the Telecom Billing System session. It displays the alarm messages for alarms which were defined in the System Configuration function (see the section System Configuration later in this chapter). When the system encounters an activity which surpasses a defined alarm threshold, it will display the corresponding alarm in this pane. As well, this pane displays all status messages for any running tasks with a severity level of "Warning" or higher.

Figure 21
System Alarm pane



File menu

The File menu accesses functions used to import and export data, generate reports and exit from the Telecom Billing System.

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

- Import
- Export
- Reports
- Exit

Import

The Import function is used to import data records from an external source to this system and convert them to a format compatible with the Telecom Billing System databases. This function is useful for quickly updating the Telecom Billing System databases with data from another application.

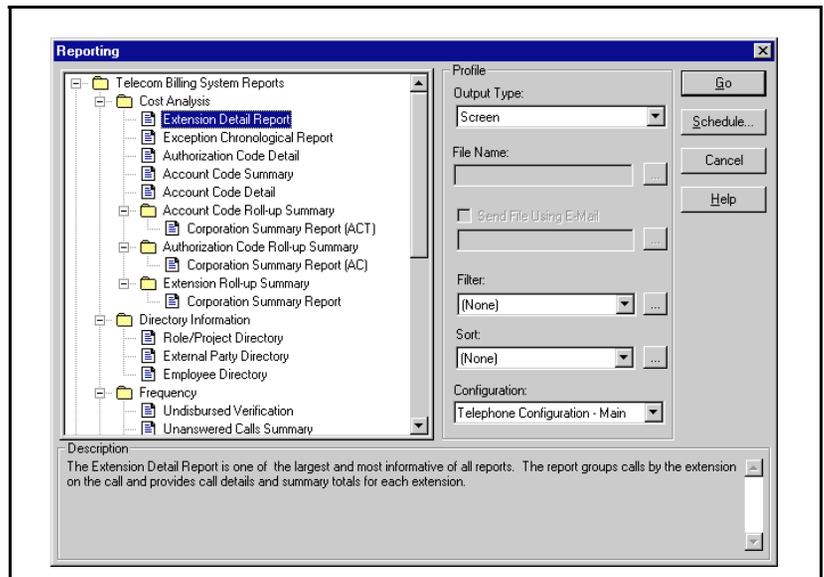
Export

The Export function is used to export data from the Telecom Billing System databases to an external source. This is useful for archiving a range of data for later retrieval.

Reports

The Telecom Billing System reports provide you with thorough and detailed information about your telephone system. These reports detail and summarize your telephone system's usage, assign costs to the appropriate cost centers and display information on your system's organizational databases. As well, they provide statistics on your system to help assess the effectiveness of your telephone services.

Figure 22
Reporting dialog



The following is a brief description of the reports which are available for the Telecom Billing System.

Cost Analysis Reports

The Cost Analysis Reports display costing information for calls made by your employees, either by their extensions or authorization codes. The tabulated costs are then rolled up to their respective organizational level summaries. Costs can also be identified by account codes and then charged back to your clients.

The following is a list of the available Cost Analysis Reports.

- Extension Detail Report
- Exception Chronological Report
- Authorization Code Detail Report
- Account Code Summary Report
- Account Code Detail Report
- Account Code Roll-up Summary Reports
- Authorization Code Roll-up Summary Reports
- Extension Roll-up Summary Reports

Directory Information Reports

The Directory Information Reports provide you with details about your system's corporate databases. Such reports as the role/project, external party and employee directory reports are useful in maintaining an up-to-date listing of your projects, customers and employees.

The following is a list of the available Directory Information Reports.

- Role/Project Directory Report
- External Party Directory Report
- Employee Directory Report
- Call Area Summary Report

Frequency Reports

The Frequency Reports provide details on actual telephone usage. Management can isolate individual users and departments that are not properly using the telephone system through misuse or neglect. As well, system administrators can use this information to determine which services are not being utilized. This analysis will allow you to adjust your telephone services to suit your needs.

The following is a list of the available Frequency Reports.

- Undisbursed Verification Report
- Unanswered Calls Summary Report

- Unanswered Call Detail Report
- Ring Time Report
- Ring Time Analysis Report
- Location Summary Report
- Hold Time Summary Graph
- Hold Time Detail Report
- Frequently Called Numbers Report
- External Party Summary
- Duration Summary Graph
- Digits Detail Report
- Area Code Summary Report
- Area Code Location Summary Report

Trunk Usage Reports

The Trunk Usage Reports help to determine cost effective networking solutions by critically examining the telephone system's trunks and services.

The following is a list of the available Trunk Usage Reports.

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

Utility Tools Reports

The Utility Tools Reports provide invaluable assistance in managing the telephone configuration databases. These reports highlight features of your telephone configuration that need to be updated regularly in order to keep your network management and fiscal reports accurate.

The following is a list of the available Utility Tools Reports.

- Trunk Diagnostic Report
- Telephone Configuration Report
- System Configuration Report
- Extension Diagnostic Report

Edit menu

The Edit menu accesses the Telecom Billing System's main databases. These databases contain all of the information you will need to run the Telecom Billing System effectively for your organization.

To access these databases, click **Edit** from the main window and select the following.

- Organizational Hierarchy
- Employees
- External Parties
- Roles/Projects
- Asset Assignments
- Telephone Configuration
- Location Books
- Rate Tables
- Taxes
- Call Database

Organizational Hierarchy

The Organizational Hierarchy Database contains the different structural levels within your organization (e.g., departments, divisions etc.). You can create up to 20 different levels in this hierarchy. The Organizational Hierarchy and the Level editors are used to create, name and arrange these different organizational levels. The employees in your organization will be assigned to these levels. The cost summary reports can then summarize the calling activity and associated usage costs by these levels.

Employees

The Employee Database contains information about your organization's employees which are relevant to the Telecom Billing System. It includes such information as your employees' names, telephone extensions, authorization codes and their locations within the organizational hierarchy. This information is required to cost and allocate telephone calls to the proper extensions and cost centers within your organization.

External Parties

The External Parties Database contains information about individuals or companies with whom you have regular contact. It includes such information as the external party's name, address, telephone number and account code. Use this database to define the telephone numbers and optional account codes for your customers and contacts so you can identify commonly-called telephone numbers on your detail and summary reports. This database can also be used to maintain a list of your frequently-called customers or clients.

Roles/Projects

The Roles/Projects Database contains information about the different roles or projects which require reporting in the Telecom Billing System. It is used to assign extensions, authorization codes, account codes or dedicated trunk groups to projects or personnel for reporting purposes. For example, it could contain information on individuals or companies who use dedicated extensions but are not included in the Employee Database (e.g., contract workers). It could also contain information on projects which require dedicated extensions and therefore require a name and organizational position for reporting.

Asset Assignments

This database defines how the different assets are assigned to the corporate entities in the Employee, External Parties and Roles/Projects Databases.

Telephone Configuration

The Telephone Configuration Database is the Telecom Billing System's main costing database. It combines rate tables, location books and carrier pricing templates to calculate usage costs for the various trunk groups which are defined for the sites in your organization. As well, it allows you to define any additional fixed costs which are added to the basic usage costs of these trunk groups. It also allows you to assign various reporting groups to calls for the system's detail and summary reports.

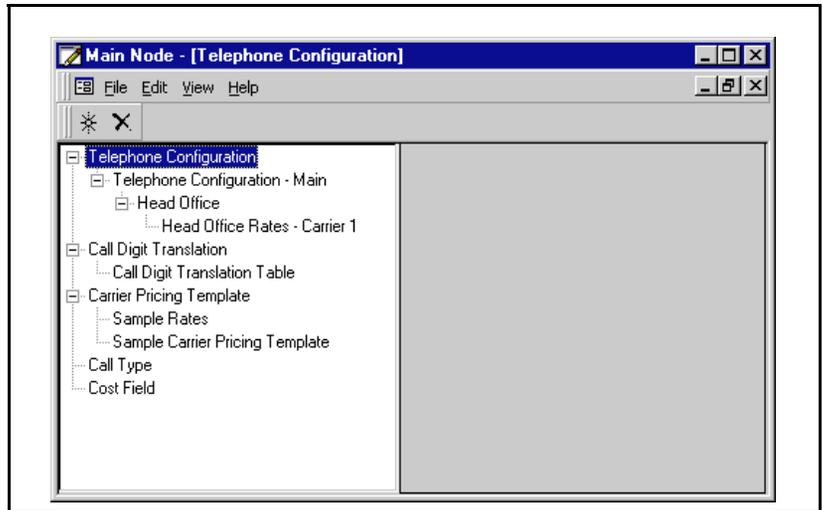
When calls are made through the trunks in these trunk groups, the Telecom Billing System uses the Telephone Configuration Database to calculate their total costs. It can then assign these costs to the appropriate extensions (and therefore personnel) as well as any defined organizational hierarchy levels within your company.

The following is a summary of some of the features of the Telephone Configuration Database.

- You can define multiple telephone configurations, call digit translations and carrier pricing templates. This allows you to set up multiple costing scenarios for a specific location and then compare rates from different carriers based on your telephone usage patterns. This way, you can find out the true savings of using different carriers.
- This single editor allows you to define multiple telephone configurations and easily assign any predefined call digit translations and carrier pricing templates to them.
- The Telephone Configuration menu tree allows you to easily view your configuration information for each system. Therefore, you can easily make any corrections to your configuration for all of your systems.

The following is an example of the Telephone Configuration Database editor.

Figure 23
Telephone Configuration Database editor



Location Books

The Location Books function is used to define the location books and virtual private network books which are used by the Telecom Billing System. Location books serve two purposes in calculating costs for the Telecom Billing System. Their first and primary purpose is to find a meaningful location name for the source and destination of a phone call. The second purpose is to obtain additional rating information which is used to determine the cost of a call. That is, it identifies the physical or virtual locations of calls so that the Telecom Billing System can apply the appropriate usage costs to them based on their distance or codes.

Rate Tables

The Telecom Billing System includes a set of common rate tables provided by different telecommunications carriers. These rate tables provide the Telecom Billing System with the required rates and coverage areas used to identify how the calls to different locations will be costed. This way, the Telecom Billing System will know which calls will be costed with which rates. Simply select these predefined rate table files from the Telephone Configuration Database.

In most cases, you will not need to edit these rate tables. Your supplier can provide you with the latest rate tables as they are updated. If, however, you wish to review or modify the rate tables included with the Telecom Billing System, or if you wish to create new rate tables, then use the Rate Table editor to do so.

Taxes

The Tax Definition editor is used to define the taxes which will be applied to the telephone usage costs for your system. For example, if you wish to add a sales tax to all usage costs calculated for the main node, then enter this tax value in this editor. You can then select it from the Tax Information fields of the Node Information editor. If your system requires compound taxes, then you must calculate them first and then enter the resulting value in these fields.

Call Database

The Call Database editor is used to display and edit the call records stored in the Call Database. The Call Database contains all of the call records which have been collected from the switch. In some cases, it may be necessary to edit or delete some call records (due to invalid fields such as corrupted dates or IDs). This allows you to remove bad or unwanted sections of the database or replace invalid dates with valid dates.

View menu

The View menu contains commands which are used to display or hide the Telecom Billing System's graphical toolbar and status bar. As well, you can clear the contents of the Alarms pane and select the data to be displayed in the System Tasks pane.

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

- Toolbar
- Status Bar
- Clear Alarms Pane
- Settings

Tools menu

The Tools menu accesses the commands which manage the Telecom Billing System's main processes. Use these commands to start, stop, schedule and configure the data collection, call costing and data transmission processes.

To access these commands, click **Tools** from the Telecom Billing System main window and click the following menu items. Note that you can also click the corresponding icons in the toolbar.

Collection

The Collection menu accesses the functions which manage the data collection process.

Start Collection: Starts the data collection in either batch or real time mode.

Stop Collection: Stops the data collection process.

Schedule Collection: Accesses the Scheduler to schedule data collection at a later date and time.

Configuration: Defines the parameters used by the Telecom Billing System to communicate with and collect data from the Meridian 1.

Costing

The Costing menu accesses the functions which manage the call costing process.

Start Costing: Starts the call costing process.

Stop Costing: Stops the call costing process.

Schedule Costing: Accesses the Scheduler to schedule call costing at a later date and time.

Configuration: Defines the costing parameters in the Telephone Configuration Database.

Transmission

The Transmission menu accesses the functions which manage the data transmission process.

Start Transmission: Starts data transmission in real time or batch mode.

Stop Transmission: Stops the data transmission process.

Schedule Transmission: Accesses the Scheduler to schedule data transmission at a later date and time.

Configuration: Defines the parameters used by the Telecom Billing System to communicate with and transmit data to an external source such as a Property Management System (PMS).

Options menu

The Options menu accesses the System Configuration function. To access this function, click **Options | System Configuration** from the main window.

System Configuration

The System Configuration function allows you to set up system options, data collection and transmission parameters and alarm thresholds.

System Tab: This tab contains processing parameters for the call records.

Collection Tab: This tab contains the connection and communications parameters for data collection.

Transmission Tab: This tab contains the connection and communications parameters for data transmission as well as the transmission setup configuration.

Alarms Tab: This tab contains any alarm thresholds and their corresponding alarm messages. These messages will appear in the System Alarms pane of the main window.

Appendix A: 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.

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.

Optivity Telephony Manager
Telecom Billing System
User Guide

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