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Using Optivity Telephony Manager Release 1.2 Telemanagement Applications

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Revision History

Date Revised	Version	Reason for revision
June 2001	1.00	Initial Standard release.
January 2002	2.00	Upissued to coincide with the release of OTM Release 1.2.

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Preface

The Optivity* Telephony Manager (OTM) telemanagement applications provide OTM users with telecom network management services including: telecom billing and management; web-based reporting; consolidated reporting; and call monitoring.

Before you begin

This user guide is intended for telecom network managers using PC-based software. Prior knowledge of the OTM suite is not required, however, since these applications are installed as part of OTM, users should become familiar with OTM before proceeding. This guide assumes that you have the following background:

- User-level knowledge of the Windows* 95 and Windows NT* V4.0 operating systems

Text conventions

This guide uses the following text conventions:

bold Courier text	Indicates command names and options and text that you need to enter. Example: Use the **`dinfo`** command. Example: Enter **`show ip {alerts|routes}`**.
brackets ([ ])	Indicate optional elements in syntax descriptions. Do not type the brackets when entering the command. Example: If the command syntax is `show ip interfaces [-alerts]`, you can enter either `show ip interfaces` or `show ip interfaces -alerts`.

italic text	Indicates new terms, book titles, and variables in command syntax descriptions. Where a variable is two or more words, the words are connected by an underscore. Example: If the command syntax is `show at <valid_route>, valid_route` is one variable and you substitute one value for it.
`plain Courier text`	Indicates command syntax and system output, for example, prompts and system messages. Example: `Set Trap Monitor Filters`
separator (>)	Shows menu paths. Example: Protocols > IP identifies the IP option on the Protocols menu.
vertical line (|)	Separates choices for command keywords and arguments. Enter only one of the choices. Do not type the vertical line when entering the command. Example: If the command syntax is `show ip {alerts|routes}`, you enter either `show ip alerts` or `show ip routes`, but not both.

Acronyms

This guide uses the following acronyms:

IP	Internet Protocol
ISDN	Integrated Services Digital Network
SDI	Serial Data Interface

Related publications

For more information about using Optivity Telephony Manager and associated applications, refer to the following publications:

- *Installing and Configuring Optivity Telephony Manager* (553-3001-230)

  Provides installation and configuration procedures for Optivity Telephony Manager.

- *Using Optivity Telephony Manager* (553-3001-330)

  Provides information on using the applications and features available with Optivity Telephony Manager.

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Chapter 1
Overview of Telemanagement Applications

Welcome to the Optivity Telephony Manager's telemanagement applications. These applications offer you a wide range of telecom and network management services including: telecom billing and management; web-based reporting; consolidated reporting; and call monitoring. Each application contains unique functions that allow you to collect, cost, track and report on your telecom data. Together, they provide you with a complete call management and billing solution for your telecom network.

The following is a list of the telemanagement applications available from the Optivity Telephony Manager (OTM).

- Telecom Billing System
- Telecom Billing System Web Reporting
- General Cost Allocation System
- Consolidated Reporting System
- Call Tracking

Each application is installed separately onto OTM and runs independently of the other applications while still sharing common data, such as employee and configuration information. As well, some applications will use data from the other applications during their operation. For example, Telecom Billing System Web Reporting reports on data from the Telecom Billing System; and the Consolidated Reporting System generates reports for the Telecom Billing System and the General Cost Allocation System applications.

Depending on your OTM license, you may have some or all of these applications included with your OTM system. Contact your vendor for information on ordering additional telemanagement applications for OTM.

Description of telemanagement applications

The following is a brief description of the telemanagement applications available for OTM. Refer to the remaining chapter in this user guide for more information on these applications.

Telecom Billing System

The Telecom Billing System is OTM's advanced cost allocation and billing application. It collects call records from your Meridian 1 or Succession CSE 1000 system via the OTM Ethernet connection. Using multiple costing models over multi-level organizational hierarchies, it allocates costs to the appropriate users, and generates detail and summary reports outlining these costs. These reports detail the actual usage of your telephone system, thus allowing you to assess the effectiveness of your telephone services. As well, its network utilization and system administration reports help you to manage your telecom network more effectively.

Telecom Billing System Web Reporting

Telecom Billing System Web Reporting is OTM's Web-based reporting application for your telecom network. With Telecom Billing System Web Reporting, you can generate reports containing data from the Telecom Billing System through your Intranet or Internet server. These reports provide you with valuable information about your organization's calling activities. Its intuitive Web-based interface allows you to view this information from any PC with Intranet or Internet access to your server. Since these reports are based on data from the Telecom Billing System, you must have previously installed and configured the Telecom Billing System application as part of OTM.

General Cost Allocation System

The General Cost Allocation System is OTM's generic billing application. It assigns usage charges to appropriate individuals or departments within an organization. It can import bill information, identify and log departmental or user-specific spending characteristics and generate meaningful reports summarizing these costs. With the General Cost Allocation System you can enter billing information, either through an imported file, or manually from the printed

vendor statement. The data can then be used to allocate charges, such as those obtained from cellular calls or pagers, to relevant individuals or departments within your organization. The General Cost Allocation System generates detail and summary reports including the billed products or services, associated costs and departments or persons to be billed.

Consolidated Reporting System

The Consolidated Reporting System is OTM's telemanagement reporting application. It generates reports for both the Telecom Billing System and the General Cost Allocation System from a single interface. By defining filtering and sorting criteria, you can generate custom reports that detail organizational and employee spending characteristics for these applications. Each report is broken down into subreports which detail usage costs for the Telecom Billing System and the General Cost Allocation System.

Call Tracking

Call Tracking is OTM's call monitor and alarm application. Its graphs indicate trends and provide displays of unusual calls enabling you to adjust your equipment and services to maximize your resources. Call Tracking monitors and displays information output from the Meridian 1 or Succession CSE 1000 system. It accumulates this data and displays the information in different formats in its graphical displays. The Call Tracking interface consists of several graphical displays, which list your monitored call data in different formats.

Call Tracking also provides alarm generating functions which can be set up to warn you of unusual calling patterns. This is useful in the quick detection of unauthorized telephone calls that occur with toll fraud. You can define multiple alarm templates to detect different calling patterns including: calls exceeding a certain duration; calls made at unusual times; and toll calls. Call Tracking can also be configured to output different types of alarms including: visible and audible alarms on your PC; remote paging; and network reported alarms.

Purpose of this guide

This user guide is designed to provide you with basic information on setting up and using the Optivity Telephony Manager (OTM) telemanagement applications. Where applicable, it will include any additional system requirements or installation procedures for specific applications. Before using these applications, you must install and configure them as part of the Optivity Telephony Manager (OTM) system. Refer to *Installing and Configuring Optivity Telephony Manager* (553-3001-230) for complete details on installing these applications and assigning them to a site and a system.

On-line and Web-based Help

This user guide only briefly discusses the functions and commands of the OTM telemanagement applications. It provides you with a basic understanding of each of these applications and helps you to start using the applications. For detailed information on each function and command for these applications, refer to the on-line Help function included with them.

You can use the Help functions to obtain help for topics either directly or via their indexes and word-search functions. While running these applications, you can obtain context-sensitive help on any topic you require by simply clicking Help from a specific window or dialog. This will access the Windows Help function and display context-sensitive help information on the current topic.

To obtain help for a topic in Telecom Billing System Web Reporting, click Help from the currently-selected Web page. This will access the Help function and display context-sensitive help information on the current topic.

Note: If you click Help from a Web page other than that belonging to Telecom Billing System Web Reporting (e.g., the OTM Administrator Logon page), then the other Web application's Help will appear.

Chapter 2
Telecom Billing System (TBS)

This chapter provides basic information on setting up and running the Telecom Billing System. It also includes example procedures and reference information to assist you in setting up the Telecom Billing System.

Introduction

As the Optivity Telephony Manager's advanced 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 or Succession CSE 1000 system, 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 or Succession CSE 1000 system 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 or Succession CSE 1000 system to collect the necessary telephone usage data. In order for the Telecom Billing System to communicate with the Meridian 1 or Succession CSE 1000 system and collect data, the Meridian 1 or Succession CSE 1000 system must be equipped with a suitable Serial Data Interface (SDI) port.

The Telecom Billing System supports the Meridian 1 and Succession CSE 1000 lines of telephony equipment. The Meridian 1 or Succession CSE 1000 system must be equipped with a suitable SDI port for proper connection to the PC or CDR buffer unit.

Once you collect the call records either directly from the Meridian 1 or Succession CSE 1000 system 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 or Succession CSE 1000 system in several ways:

- It can collect CDR data directly from the Meridian 1 or Succession CSE 1000 system 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 or Succession CSE 1000 system 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 or Succession CSE 1000 systems) 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 B: Script File Summary* in *Using Optivity Telephony Manager* (553-3001-330). For more information about the DBA application, refer to the Data Buffering and Access section in the Common Services chapter of *Using Optivity Telephony Manager* (553-3001-330).

Where required, buffer units can connect to each Meridian 1 or Succession CSE 1000 system 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.

Getting started

This section describes how to access the Telecom Billing System and set it up for initial use. Using the following instructions and examples, 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 or Succession CSE 1000 system.

This section 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 or Succession CSE 1000 system 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 following instructions and examples 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 *Installing and Configuring Optivity Telephony Manager* (553-3001-230) 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 or Succession CSE 1000 system. 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 or Succession CSE 1000 system 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 and Succession CSE 1000 systems outputs call records

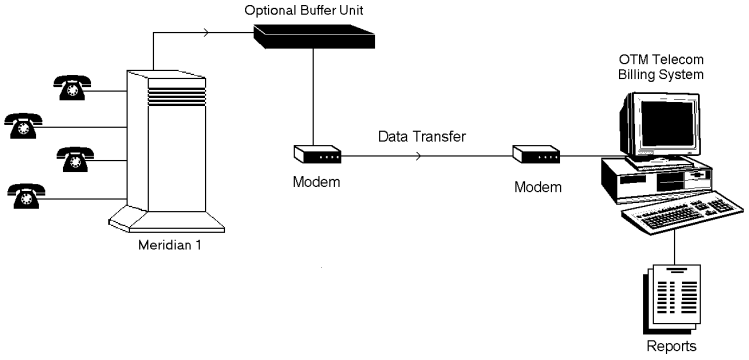
When a user places or receives a telephone call, the Meridian 1 or Succession CSE 1000 system records its information as a CDR record (call record). This record contains such information as the call's start date and time, its duration, the trunk it went out on, its associated line and the digits dialed. This data is sent to the Meridian 1 or Succession CSE 1000 system SDI 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 or Succession CSE 1000 system's SDI port (recommended) or even a PC running the Telecom Billing System for a direct connection.

As call records are output from the Meridian 1 or Succession CSE 1000 system, 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 or Succession CSE 1000 system. 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 or Succession CSE 1000 system, they will be lost.

The following schematic displays the movement of a call record from the Meridian 1 or Succession CSE 1000 system 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 or Succession CSE 1000 system and buffer units from distant locations.

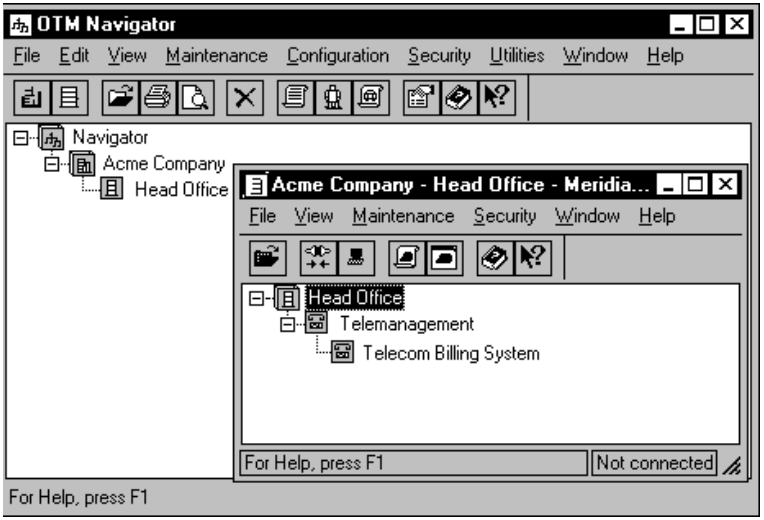
Figure 1 System block diagram



The example in the above schematic represents a single "System". This system usually represents a Meridian 1 or Succession CSE 1000 system or a 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

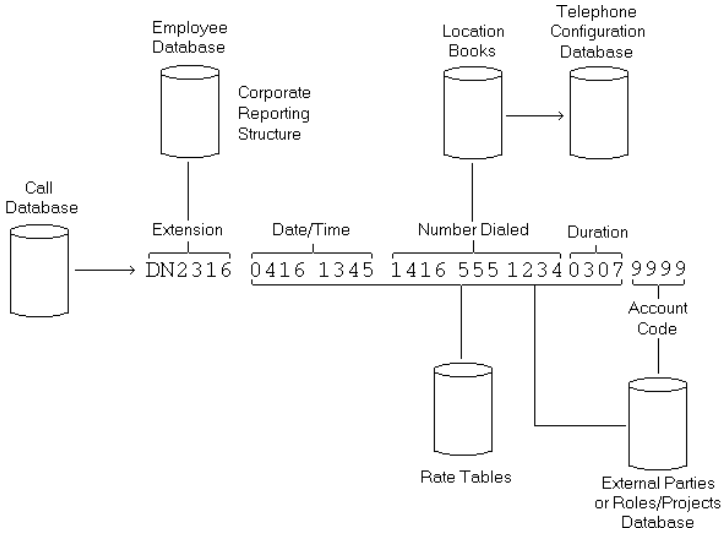


The Telecom Billing System collects call records

The Telecom Billing System collects call records from your Meridian 1 or Succession CSE 1000 system 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 or Succession CSE 1000 system.

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).

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 is 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 or Succession CSE 1000 system 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 or Succession CSE 1000 system is set up properly

In order for the Telecom Billing System to collect and process CDR data, the Meridian 1 or Succession CSE 1000 system must output the data in the proper format. You must therefore enable the required features and options in the Meridian 1 or Succession CSE 1000 system 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 or Succession CSE 1000 system 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 or Succession CSE 1000 system 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.

Connect MDR-2000 ISD to Meridian 1 or Succession CSE 1000 system and PC

The first step is to connect and install the MDR-2000 ISD onto the Meridian 1 or Succession CSE 1000 system. It can then collect and store call records as they are output from the Meridian 1 or Succession CSE 1000 system. 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.

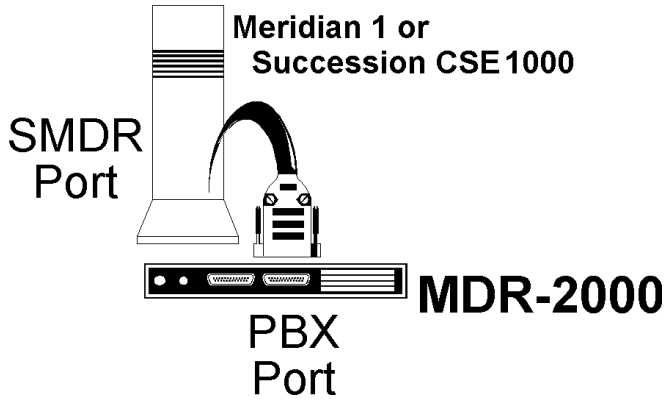
Perform the following steps to connect the MDR-2000 ISD to the Meridian 1 or Succession CSE 1000 system and then to the PC via a modem connection.

1. Locate the SDI port on the Meridian 1 or Succession CSE 1000 system.
2. Connect the MDR-2000 ISD to the Meridian 1 or Succession CSE 1000 system SDI 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 SDI output port on the Meridian 1 or Succession CSE 1000 system.

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.

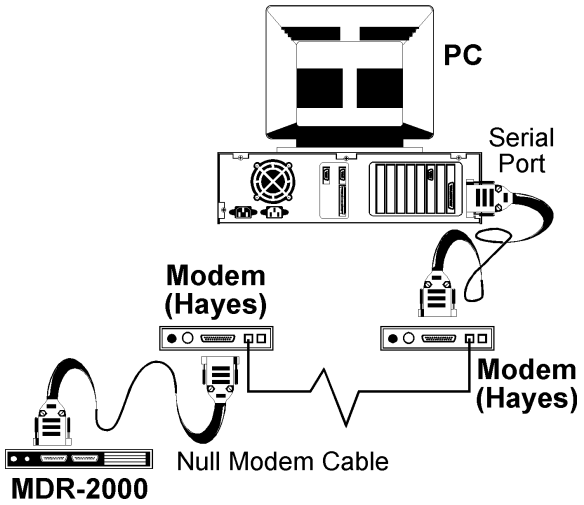
b Connect a telephone line cord from the “To Line” output jack of the first modem to the telephone jack.

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.

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 or Succession CSE 1000 system and the MDR-2000 ISD, then ensure that it is connected between the SDI port of the Meridian 1 or Succession CSE 1000 system 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 or Succession CSE 1000 system. For example, the MDR-2000 ISD baud rate defaults to 1200 and the Meridian 1 or Succession CSE 1000 system 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 or Succession CSE 1000 system, 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.

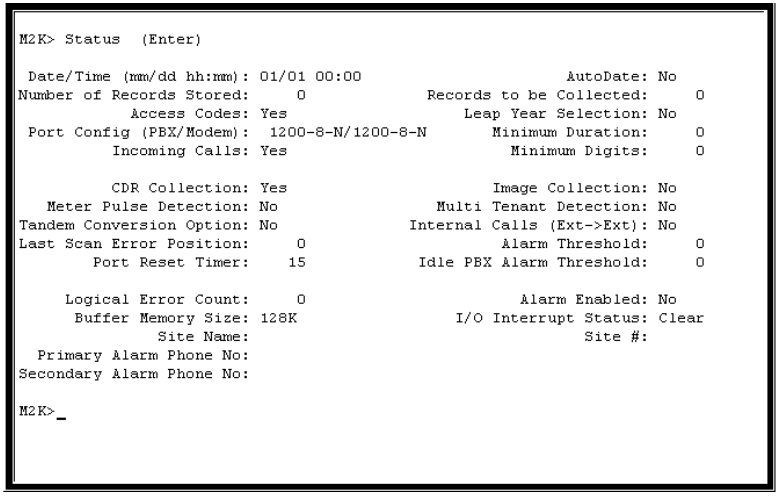
1. Run a terminal program such as Windows HyperTerminal.

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: 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: 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 or Succession CSE 1000 system. 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.

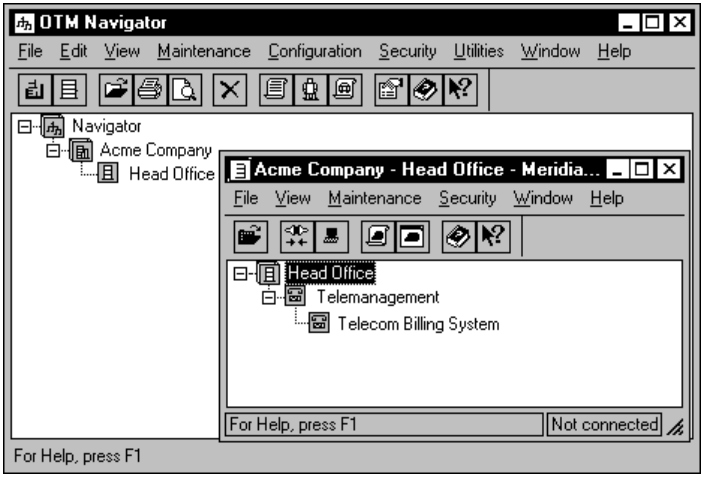
To install the rate tables and location books, simply follow the instructions included with them. Remember to install the rate table files onto your OTM Telecom Billing System directory so you can select the appropriate rate table files when you are defining your carrier pricing templates.

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).

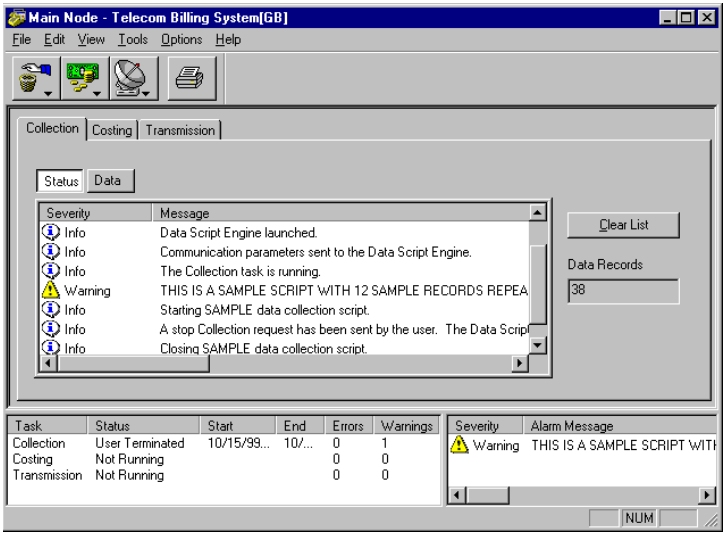
Once you opened the site and system, the following windows will appear.

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 or Succession CSE 1000 system 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 or Succession CSE 1000 system 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 or Succession CSE 1000 system, 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 or Succession CSE 1000 system 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 MDR2000.COL. Refer to the Common Services chapter of *Using Optivity Telephony Manager* (553-3001-330) 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.

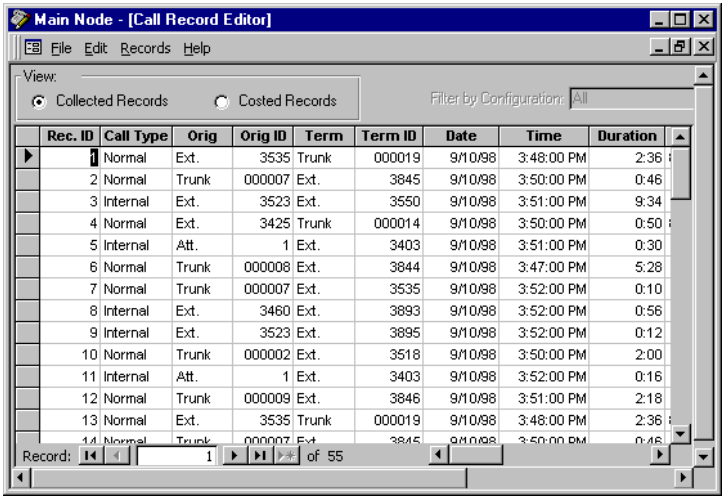
The following is an example to demonstrate how to test the data collection process. This example assumes the following:

- The Meridian 1 or Succession CSE 1000 system is outputting CDR data to the SDI port.
- The MDR-2000 ISD is directly connected to the Meridian 1 or Succession CSE 1000 system 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 or Succession CSE 1000 system. 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 or Succession CSE 1000 system, 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 or Succession CSE 1000 system.

Figure 9 Call Database



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 or Succession CSE 1000 system 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 or Succession CSE 1000 system

Before you start entering the telephone configuration, you must first obtain the List Trunk and Member (LTM) report from the Meridian 1 or Succession CSE 1000 system. 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 or Succession CSE 1000 system 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 or Succession CSE 1000 system 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.

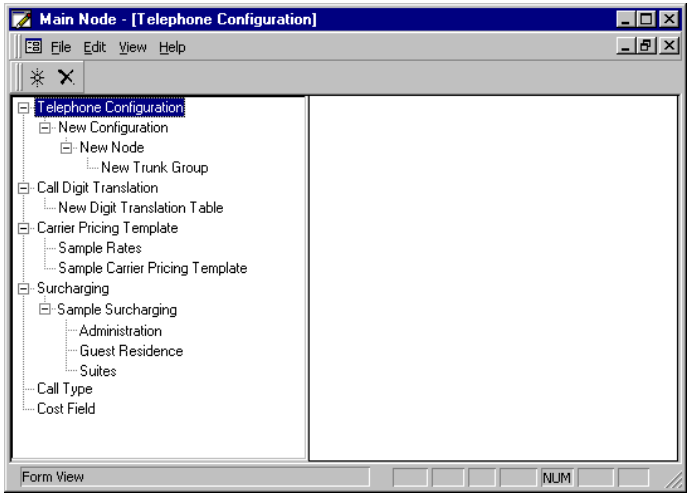
c Add Long Distance Service Definition to Main Node.

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 or Succession CSE 1000 system 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.

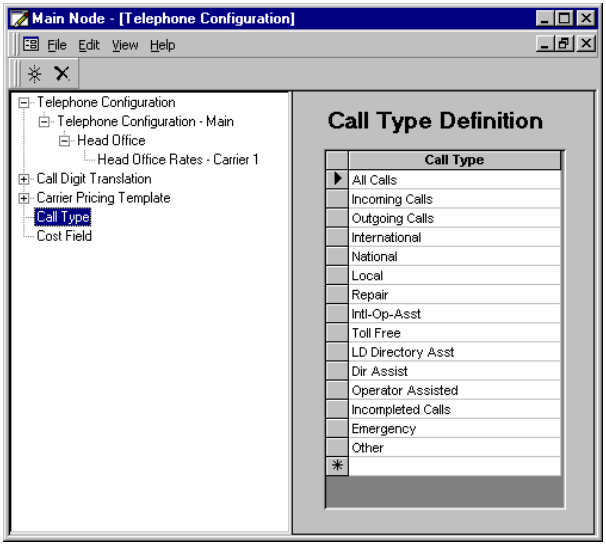
The Call Type Definition function lists a set of default call types which you can select when entering your costing and reporting options. In this step, add any additional call types which you may require for your configuration (e.g., emergency calls). If you do not require any additional call types,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

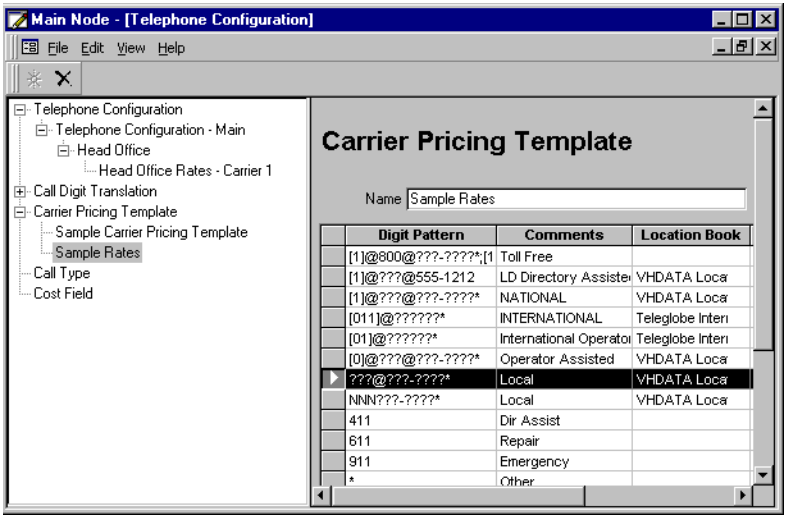
For each digit pattern that represents a billable call, assign either the rate file and table from your telephone company or a flat per-minute or per-call charge. Add the flat per-call charges to the cost assigned by the rate file of your telephone company.

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.

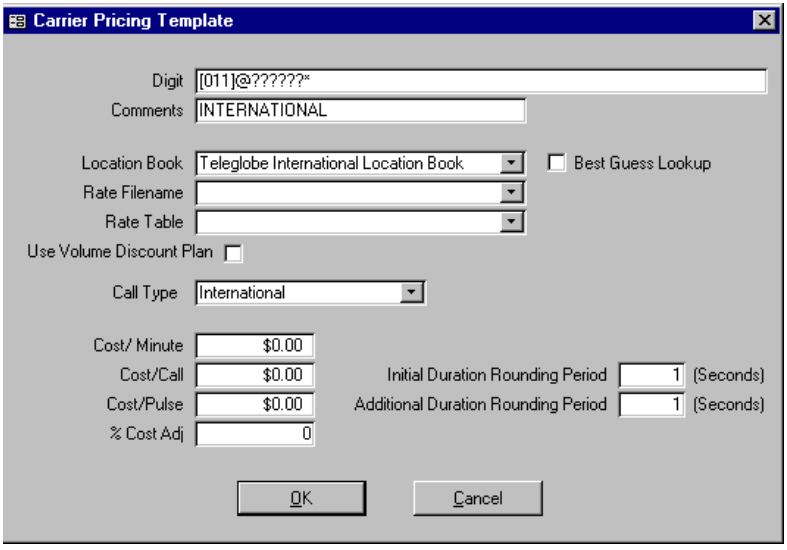
For example, to edit the International pricing definition, click the record line for International (you may need to scroll across the grid to locate International under the Comments field) and click Edit. In the dialog which appears, simply enter the desired information for it. Once you have entered 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

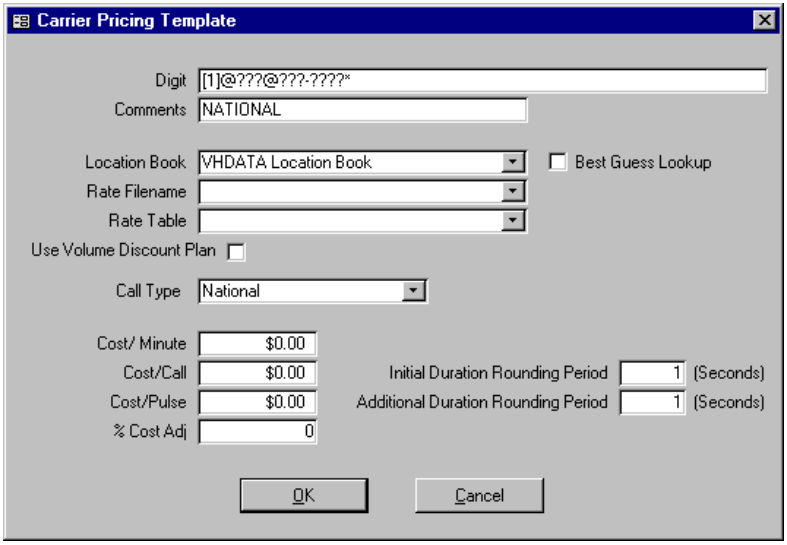


Long Distance (National) Calls

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



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 or Succession CSE 1000 system to initiate a call. For example, your Meridian 1 or Succession CSE 1000 system 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)

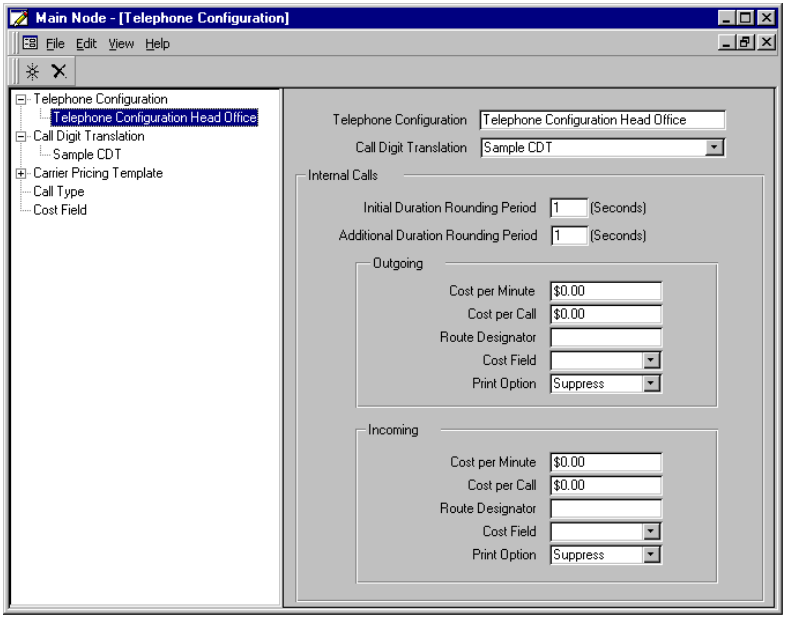
The first part of the Telephone Configuration table contains its general information and optional costing for internal calls.

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 you wish to assign bill party surcharging to this configuration (i.e., you wish to apply additional surcharges for telephone usage based on extensions, authorization codes, or account codes), then select the surcharge definition from the Call Party Surcharge Profile drop-down list box. For this example, leave this field blank. It does not require surcharging.
5. If your Meridian 1 or Succession CSE 1000 system outputs CDR for internal calls (i.e., calls made between extensions within the Meridian 1 or Succession

CSE 1000 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



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

Add Main Node (Node Information Editor)

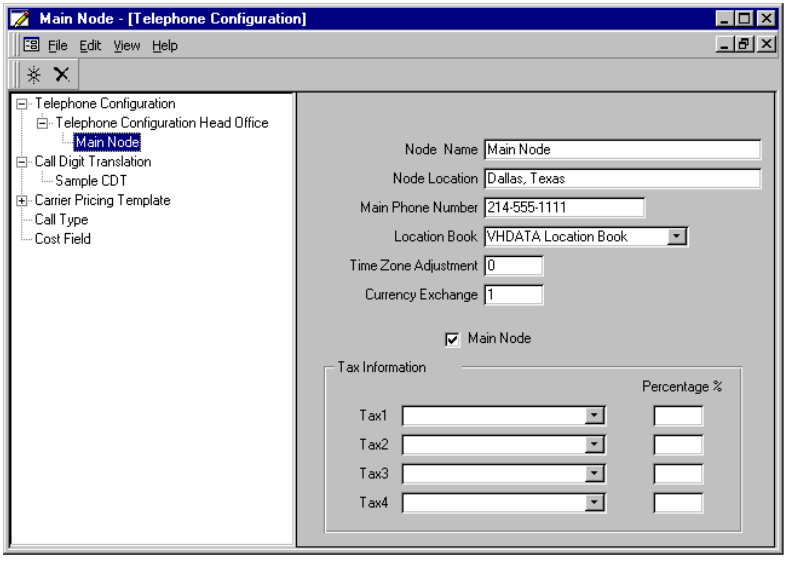
The next step in entering this telephone configuration is to define the general information for the main node. Since a telephone configuration can contain multiple nodes, you must define each node separately. For example, your company's telephone system may span different offices (nodes). For this example,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



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 and carrier 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 or Succession CSE 1000 system. 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

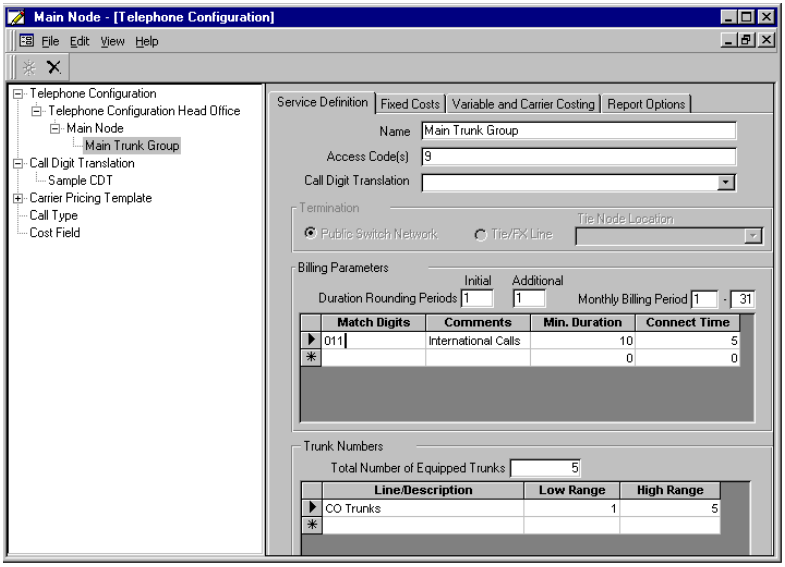
For certain types of calls (e.g., international calls), you may need to enter a connect time adjustment or a minimum call duration to allow for a delayed connection. Enter this information in the Billing Parameters table of the Service Definition tab.

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



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 From the Cost Field drop-down list box, select: DDD. This determines the report grouping and summary field on reports. Cost fields are defined in the Cost Field table.

4 From the Print Option drop-down list box, select: Detail. This indicates that these calls should be displayed in the main report body of the detail reports.

5 In the Route Description 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 or Succession CSE 1000 system, 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 or Succession CSE 1000 system. 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.

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 the previous sections.

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.

The following sections outline the standard procedures which you should incorporate into your regular operational routines. They provide 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 Succession CSE 1000 system (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 or Succession CSE 1000 system.

Run data collection on a daily basis. If there is a problem with the flow of data from the Meridian 1 or Succession CSE 1000 system, 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 Succession CSE 1000 system or from the buffer unit. Select Real Time to continuously collect CDR records from the Meridian 1 or Succession CSE 1000 system or from the buffer unit.

During the data collection process, the Telecom Billing System collects data from the Meridian 1 or Succession CSE 1000 system (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 or Succession CSE 1000 system, 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 or Succession CSE 1000 system. 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 or Succession CSE 1000 system, 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 or Succession CSE 1000 system. They also include information on your system databases and configurations. Once you have collected the call records from the Meridian 1 or Succession CSE 1000 system, 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 e-mail 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 or Succession CSE 1000 system and optionally costed using the Telephone Configuration Database. As the Telecom Billing System collects call records from the Meridian 1 or Succession CSE 1000 system, 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 function is used to copy—or archive—a range of call records from the Call Database to an external device such as network drive or a diskette. Using the Archive function's Purge option, you can delete this same range of call records from the current Site/System directory on your PC after the archive has

completed. This will make available more disk space on your PC for new call records. You can archive an 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. If you ever need this data again, you can copy it back to your source Call Database by using the Restore function.

To access this function, click File | Call Database | Archive from the Telecom Billing System main window. Enter your archive information and click Go to proceed with the archive.

Purge Call Database

The Purge function is used to delete—or purge—a range of call records from the Call Database. This will make available more disk space on your PC for new call records and improve overall system performance. You can purge an entire Call Database, or you can purge a range of call records within a Call Database based on their call dates. This way, you can remove any old call records that you no longer require.

To access this function, click File | Call Database | Purge from the Telecom Billing System main window. Enter your purge information and click Go to start purging the range of call records. The Archive/Restore/Purge status dialog will appear with the message: “Purge is an irreversible action. Are you sure you want to purge the records?”. Click Yes to proceed.

Restore Call Database

The Restore function is used to copy-or restore-the archived call records from an external device such as network drive back to the Call Database.

To access this function, click File | Call Database | Restore from the Telecom Billing System main window. The Restore dialog will appear. Enter your restore information and click Go to proceed with the restore operation.

Summary of tasks

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

Daily tasks

- Collect CDR data from your buffer unit (it is recommended that your 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 or Succession CSE 1000 system.
- 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.

System setup for hospitality billing

In addition to its standard general business functions (i.e., those required by most organizations to collect, cost, and report on calls), the Telecom Billing System also includes functions and reports to allow for hospitality and campus billing. The Bill Party Surcharge function applies charges to calls in addition to the trunk-based usage charges. This allows for additional telephone usage charges to be assigned to users based on such criteria as their extensions, authorization codes, and account codes. The filterable data transmission function can post this usage data to an existing Property Management System.

This section explains how to set up the Telecom Billing System to process call records for hospitality billing. Specifically, it describes how to set up the system databases to assign surcharges to guests at a hotel and transmit this data to a Property Management System.

This section also describes how to perform the other functions required to set up and run the Telecom Billing System. These include data collection, trunk-based costing, and report generation. Although these additional functions are described previously in this chapter (for the general business sample setup), they are included here to help you understand how the hospitality-related functions relate to the other Telecom Billing System's general business functions.

Example scenario

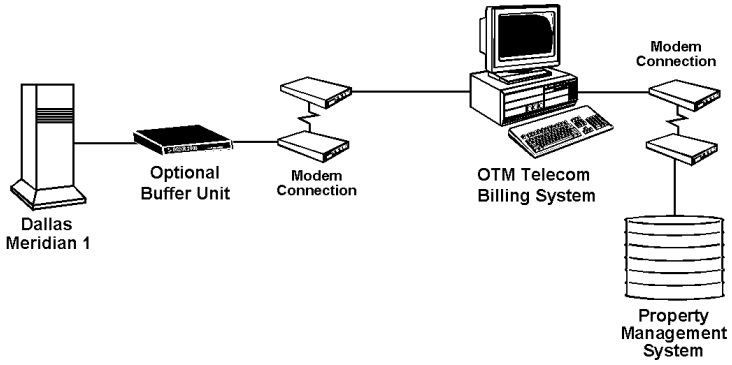
The instructions in this section are based on the following scenario.

- A hotel chain “Rooms International” has a property located in Dallas, entitled “Downtown Property”. The telephone number for this hotel is (214) 555-1111. The telephone system requires that all users and guests enter the access code 9 before making any outgoing calls.
- There are 5 trunks on the Meridian 1. These are configured as trunk 1 to 5.
- The Meridian 1 located in the switch room of this property 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. The Telecom Billing System will collect the CDR data from the MDR-2000 in real time mode.
- The Telecom Billing System must also post all calling activity for its rooms (Guest Rooms and Suites with extensions 100 to 999) to its Property Management System.

System schematic

The following schematic outlines the relationship between the Telecom Billing System and its hardware components.

Figure 18 System block diagram



Summary: Setting up the Telecom Billing System

The following is a summary of the steps required to set up and configure the Telecom Billing System to process call records.

1. Ensure that the Meridian 1 or Succession CSE 1000 system is set up to properly output CDR data.
2. Install and set up the MDR-2000 ISD.
3. Install any rate tables that were 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:
   a. Enter the data collection parameters.
   b. Test data collection.
6. Obtain LTM from the Meridian 1 or Succession CSE 1000 system.
7. Set up the Organizational Hierarchy and Employee Databases to include the extensions for the guest rooms and suites as well as the hotel's staff.
8. Set up Telephone Configuration Database:
   a. Access the Telephone Configuration Database editor.
   b. Update the Call Type Definitions table.

c Define carrier pricing templates.

d Define the call digit translation.

e Define the bill party surcharges.

f Enter the telephone configuration.

9 Test the telephone configuration.

10 Set up data transmission to post call records to the Property Management System in real time.

11 Start data collection and transmission.

Step 1: Ensure that Meridian 1 or Succession CSE 1000 system is set up properly

In order for the Telecom Billing System to collect and process CDR data, the Meridian 1 or Succession CSE 1000 system must output the data in the proper format. You must therefore enable the required features and options in the Meridian 1 or Succession CSE 1000 system 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 or Succession CSE 1000 system 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 or Succession CSE 1000 system 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.

Connect MDR-2000 ISD to Meridian 1 or Succession CSE 1000 system and PC

The first step is to connect and install the MDR-2000 ISD onto the Meridian 1 or Succession CSE 1000 system. It can then collect and store call records as they are output from the Meridian 1 or Succession CSE 1000 system. 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.

For a complete description of how to connect the MDR-2000 ISD to the Meridian 1 or Succession CSE 1000 system and the PC, refer to the section earlier in this chapter entitled: *Getting started.*

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.

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.

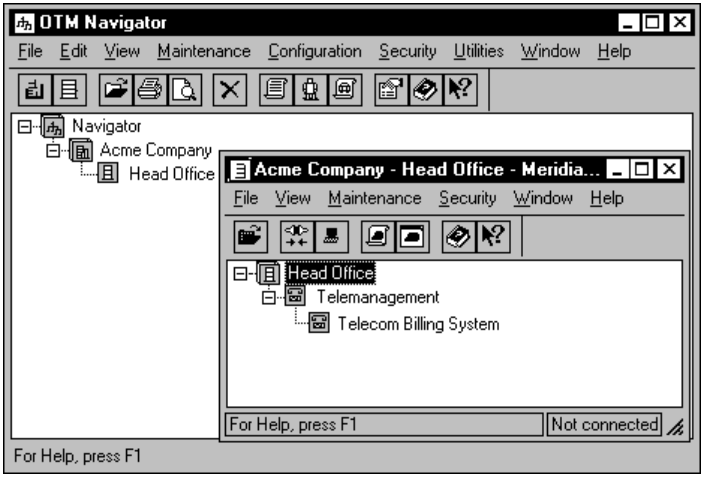
To install the rate tables and location books, simply follow the instructions included with them. Remember to install the rate table files onto your OTM Telecom Billing System directory so you can select the appropriate rate table files when you are defining your carrier pricing templates.

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).

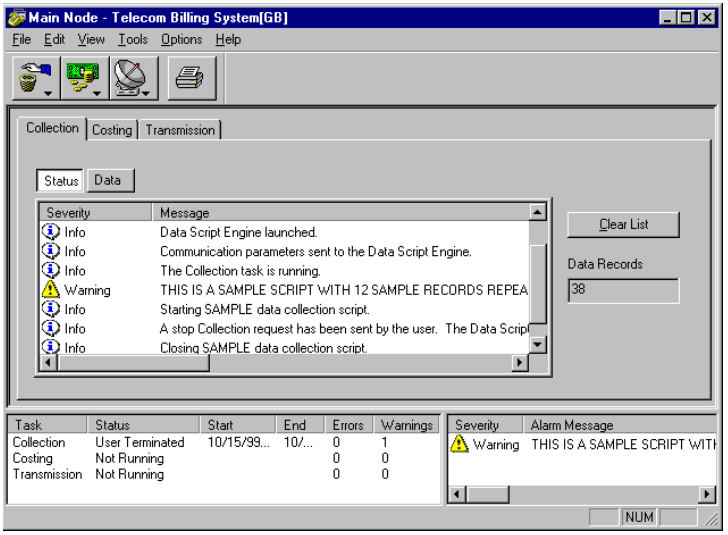
Once you opened the site and system, the following windows will appear.

Figure 19 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 20 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 or Succession CSE 1000 system 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 or Succession CSE 1000 system 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 or Succession CSE 1000 system, 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 or Succession CSE 1000 system 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 MDR2000.COL. Refer to the Common Services chapter of *Using Optivity Telephony Manager* (553-3001-330) 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 or Succession CSE 1000 system is outputting CDR data to the SDI port.
- The MDR-2000 ISD is directly connected to the Meridian 1 or Succession CSE 1000 system 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 or Succession CSE 1000 system. 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 or Succession CSE 1000 system, it will collect and store these call records as they are recorded by the Meridian 1 (note that the BMT light will be out).

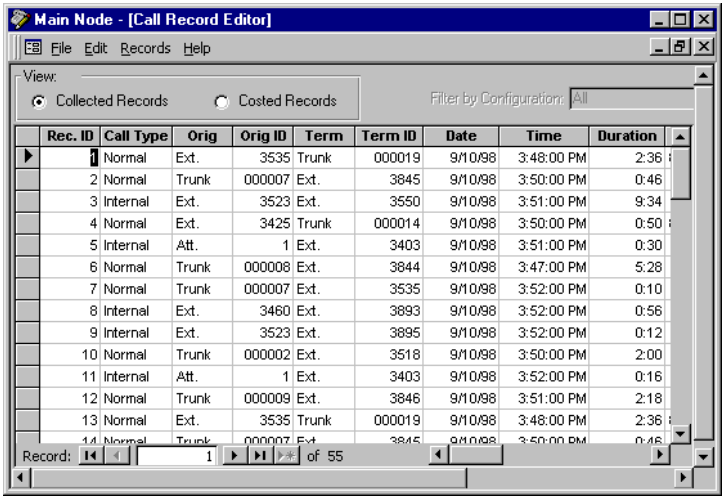
2 Start the data collection process by clicking Tools | Collection | Start from the Telecom Billing System main window.

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 or Succession CSE 1000 system.

Figure 21 Call Database



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 or Succession CSE 1000 system 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 or Succession CSE 1000 system

Before you start entering the telephone configuration, you must first obtain the List Trunk and Member (LTM) report from the Meridian 1 or Succession CSE 1000 system. 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 or Succession CSE 1000 system and print the associated LTM and RDB reports.

Step 7: Set Up Organizational Hierarchy and Employee Databases

The next step is to set up your Organizational Hierarchy and Employee Databases to include the extensions for the guest rooms and suites as well as for your hotel staff.

Set up Organizational Hierarchy Database

The Organizational Hierarchy Database stores the information for the different levels within your hotel. It provides you with a flexible means of structuring these levels (e.g., properties, towers, guest rooms, suites, etc.).

The following example will demonstrate how to add the hotel's property in Dallas —Downtown Property—as an organizational level to the Organizational Hierarchy Database. It will also demonstrate how to add "Guest Rooms" and "Suites" as sub-levels to the Downtown Property level. Once you have defined these levels, you can then enter their corresponding room numbers and details in the Employee Database.

Add Downtown Property to Rooms International

To add the level Downtown Property to the Rooms International System, perform the following steps.

1. Access the Organizational Hierarchy Database editor by clicking Edit | Organizational Hierarchy from the Telecom Billing System main window. The Organizational Hierarchy Editor dialog will appear with a set of default levels.
2. Click the Organizations tab. The Organizations menu tree will appear with the following top-level default value: ORG.
3. Change this default title by right-clicking the ORG node. From the pop-up menu that appears, click Rename and type: Rooms International.
4. Add a new division to this node by right-clicking the newly-named Rooms International node. From the pop-up menu that appears, click Add New Division.
5. A new node will appear with the default value New Division 1. Type over this name with the desired division title. For this example, type: Downtown Property.

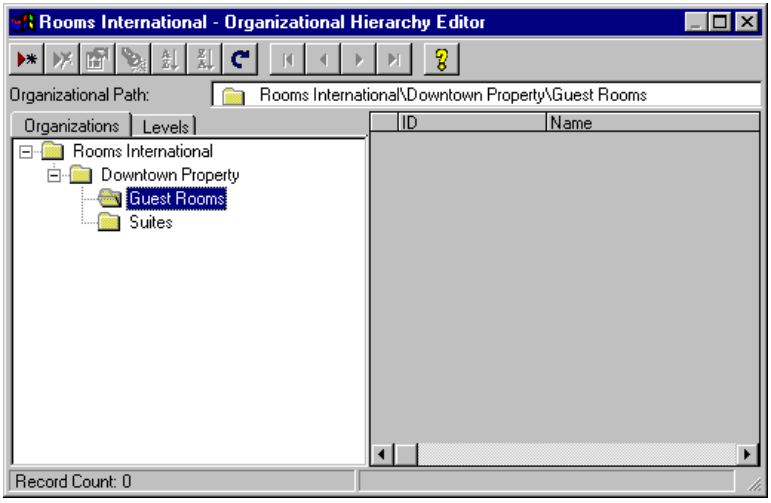
Add Guest Rooms and Suites to Downtown Property

To add the levels Guest Rooms and Suites to the Downtown Property level, perform the following steps.

1. Add the level Guest Rooms to the Downtown Property level by right-clicking the newly-named Downtown Property node. From the pop-up menu that appears, click Add New Department.
2. A new node will appear with the default value New Department 1. Type over this name with the desired department title. For this example, type: Guest Rooms.
3. Add the level Suites to the Downtown Property level by right-clicking the Downtown Property node again. From the pop-up menu that appears, click Add New Department.
4. Again, a new node will appear with the default value New Department 1. Type over this name with the desired department title. For this example, type: Suites.

The following is an example of the Organizational Hierarchy editor with this input.

Figure 22 Organizational Hierarchy Editor



Enter Guest Rooms and Suites in Employee Database

The Employee Database contains information about the employees in your organization. For hospitality billing, this database can also be used to store information about the rooms within your property (e.g., the extensions in these rooms). This information is required to cost and allocate telephone calls to the proper extensions and cost centers within your hotel—for both guests and staff.

The following steps will demonstrate how to enter a sample guest room (Guest Room 10 with extension 101) in the Employee Database. You will need to repeat these steps for each guest room and suite that has a telephone extension and requires billing.

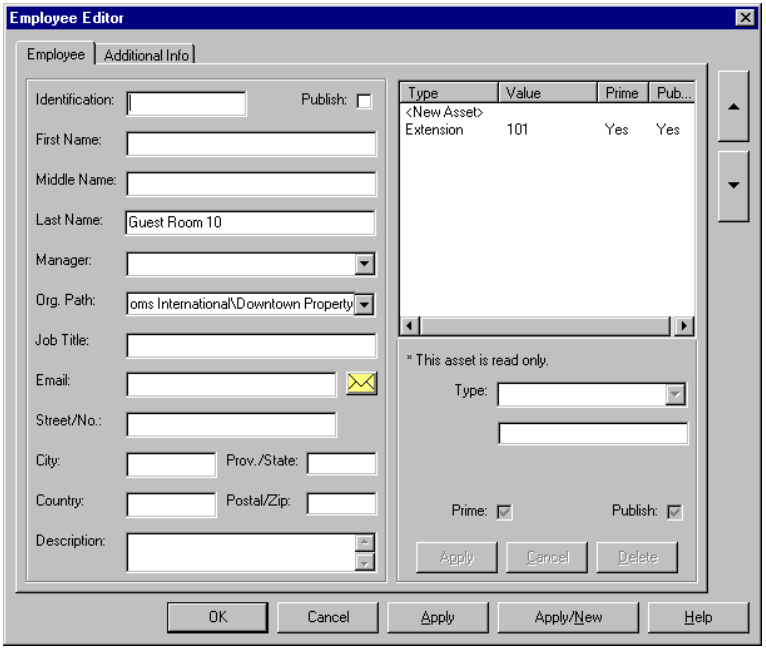
1. Click Edit | Employees from the Telecom Billing System main window. The Employee Editor dialog will appear.
2. Click the Add New Record icon.
3. Enter the following information in the Employee tab.
   - Last Name: Guest Room 10
   - Org. Path: Rooms International\Downtown Property\Guest Rooms

4. Leave the remaining fields blank and click Apply.
5. Click <New Asset> from the Assets field.
6. Click Extension from the Type drop-down list box.
7. In the blank field, under the Type drop-down list box, enter: 101.
8. Turn on the Prime check box (if you do not turn on this check box, the system will mark it as prime as a default).
9. Click Apply from the assets field.
10. Click OK to save this information and return to the Employee Editor dialog. Note that a new record line will appear with this room's identification and name. Click Close from this dialog to save this information and return to the Telecom Billing System main window.

This completes the steps required to enter this room's information in the Employee Database. Repeat these steps for each guest room and suite in your property. Remember to assign each guest room to the Guest Room level and each suite to the Suite level.

The following is a sample of the Employee Editor dialog with this room's information.

Figure 23 Employee Database editor



Step 8: Set up Telephone Configuration Database

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 or Succession CSE 1000 system 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.

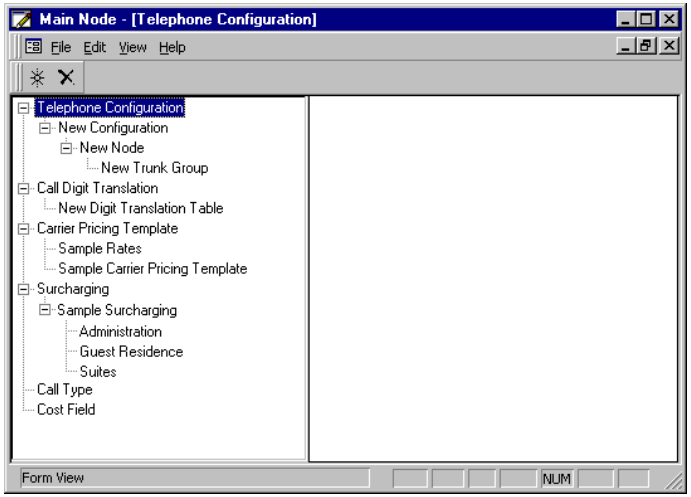
1. Access Telephone Configuration Database editor.
2. Update Call Type Definitions table.
3. Define Carrier Pricing Template.
4. Define Call Digit Translation.
5. Define Surcharges.
6. Enter the Telephone Configuration:
   - a. Create Telephone Configuration.
   - b. Add Main Node to Telephone Configuration.
   - 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 24 Telephone Configuration editor



Review the LTM report from the Meridian 1 or Succession CSE 1000 system 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.

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.

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).

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.

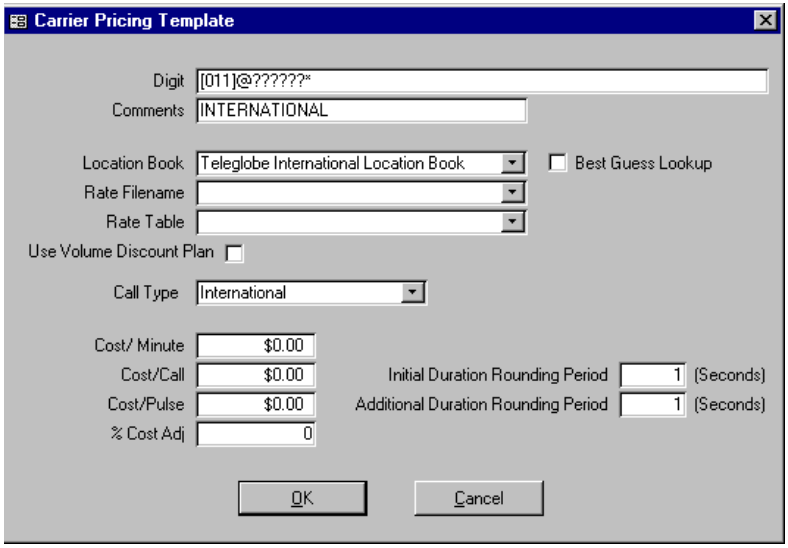
For example, to edit the International pricing definition, click the record line for International (you may need to scroll across the grid to locate International under the Comments field) and click Edit. In the dialog which appears, simply enter the desired information for it. Once you have entered 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.

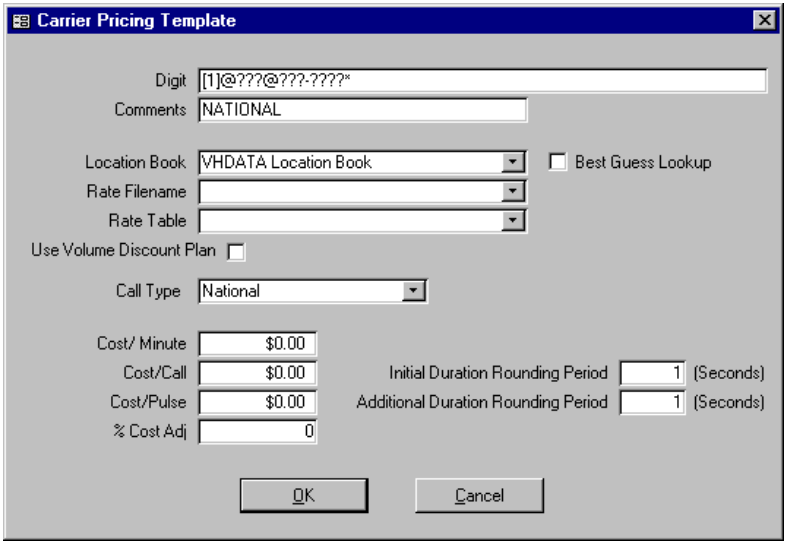
Figure 25 Carrier Pricing Template: International Calls



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 26 Carrier Pricing Template: Long Distance (National) Calls



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 or Succession CSE 1000 system to initiate a call. For example, your Meridian 1 or Succession CSE 1000 system 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.

Define Surcharges

The Bill Party Surcharge function of the Telephone Configuration Database is used to define any charges that will be applied to calls in addition to your trunk-based charges. This function allows for additional telephone usage charges to be assigned to users based on their extensions, authorization codes, or account codes.

The following sections will describe how to set up the surcharge profiles for this example configuration. Surcharge profiles define two key pieces of information. They define how to calculate the surcharges and to whom these surcharges should be applied. Once you have defined these surcharges and assigned them to a surcharge profile, you can select this profile when entering the telephone configuration (see next section).

Create Surcharge Profile and Surcharge Groups

For this example, you will create the surcharge profile entitled: Room Group Surcharge. This profile will contain the surcharge groups entitled: Guest Rooms and Suites. These surcharge groups will allow you to apply telephone usage charges to the Guest Rooms and Suites you defined in the Organizational Hierarchy and Employee Databases.

Surcharge Profile

To create the new surcharge profile Room Group Surcharge, perform the following steps.

1. Click Surcharging from the Telephone Configuration menu tree.
2. Click File | New Surcharge Profile to add a new surcharge profile to this table.
3. In the Name field, enter: Room Group Surcharge.
4. Select Extension from the first Identify Bill Party by drop-down list box.

Surcharge Group

To assign the surcharge groups Guest Rooms and Suites to the surcharge profile you just defined, perform the following steps.

1. Click the name of the Surcharge Profile you just created (i.e., Room Group Surcharge) and click File | New Surcharge Group.
2. In the Name field, enter: Guest Rooms.
3. Repeat the above steps and create the Surcharge Group: Suites.

Define Surcharges for Guest Rooms and Suites

Now that you have created the surcharge profile and its groups, you are ready to apply the surcharges to these rooms. You will do so by entering the organizational units Guest Rooms and Suites in the Members tab for each group. You would have already defined these units in the Organizational Hierarchy Database and assigned the appropriate extensions to them in the Employee Database. You will then enter the appropriate surcharges for these members in the Surcharges tab.

Define Surcharges for Guest Rooms

To define the surcharges for the surcharge group Guest Rooms, perform the following steps.

1. Click Guest Rooms from the Surcharging profile Room Group Surcharge.
2. Click the Members tab and click the Organizational Unit drop-down list box. Select: Rooms International/Downtown Property/Guest Rooms. Since there are no sub-units to this node that require additional surcharges, you can turn off the Include Sub-units check box.
3. Click the Surcharges tab. For this example, you will assign a surcharge of $1.00 to all local outgoing and incoming calls. You will also add a surcharge of $2.00 to all national outgoing and incoming calls.
4. Click the first line and enter the following information:
   - Rule Name: Local Calls
   - Call Type: Local
   - Cost/Call: 1.00
   - Transmit Call: Enabled
5. Click the second line and enter the following information:
   - Rule Name: National Calls
   - Call Type: National
   - Cost/Call: 2.00
   - Transmit Call: Enabled
6. Leave the remaining fields in each line at their defaults.

This completes the steps for defining surcharges for Guest Rooms.

Define Surcharges for Suites

To define the surcharges for the surcharge group Suites, perform the following steps.

1. Click Suites from the Surcharging profile Room Group Surcharge.
2. Click the Members tab and click the Organizational Unit drop-down list box. Select: Rooms International/Downtown Property/Suites. Since there are no sub-units to this node that require additional surcharges, you can turn off the Include Sub-units check box.
3. Click the Surcharges tab. For this example, you will assign a surcharge of $2.00 to all outgoing calls only. Click the first line and enter the following information:
   - Rule Name: Outgoing Calls
   - Call Type: Outgoing Calls
   - Cost/Call: 2.00
   - Transmit Call: Enabled
4. Leave the remaining fields at their defaults.

This completes the steps for defining surcharges for Suites. Now that you have defined the surcharges for this surcharge profile, you can enter it in the Telephone Configuration table (next section).

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 Rooms International 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. Select the surcharge definition from the Call Party Surcharge Profile drop-down list box. For this example, select: Room Group Surcharge. This will apply the surcharges you defined for the hotel guest rooms and suites.
5. If your Meridian 1 or Succession CSE 1000 system outputs CDR for internal calls (i.e., calls made between extensions within the Meridian 1 or Succession CSE 1000 system), then enter these costs in the Internal Calls fields of this table. For this example, leave the default values in these fields.

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 defining this telephone configuration is to enter 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 Rooms International (that you just created in the previous steps) and click File | New Node.

Perform the following steps to edit this node.

1. In the 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 Node 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 Adjustment field blank.
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.

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 and carrier 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 or Succession CSE 1000 system. For this example, enter the following:
   - Total Number of Equipped Trunks: 5
   - Line/Description: CO Trunks
   - Low Range: 1
   - High Range 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. From the Cost Field drop-down list box, select: DDD. This determines the report grouping and summary field on reports. Cost fields are defined in the Cost Field table.
4. From the Print Option drop-down list box, select: Detail. This indicates that these calls should be displayed in the main report body of the detail reports.
5. In the Route Description 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 9: 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 or Succession CSE 1000 system, 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 that 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 Rooms International 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 your configuration.

Trunk Diagnostic Report

The Trunk Diagnostic Report compares trunk ranges you entered in the Telephone Configuration with the trunks that have actual call activity.

To print this report, perform the following steps.

1. Click File | Reports (or simply click the Reports icon) from the Telecom Billing System main window.
2. In the Reports dialog that appears, double-click the Telecom Billing System Reports menu item and double-click Utility Tools | Trunk Diagnostic Report.
3. From the Output Type drop-down list box, select Printer.
4. From the Configuration drop-down list box, select Telephone Configuration Rooms International. This represents the telephone configuration you defined.
5. Click Go to print the report.

Extension Diagnostic Report

The Extension Diagnostic Report compares the extensions assigned to users in the Corporate Directories (i.e., employees, external parties, and roles and projects) with the extensions that have actual call activity.

To print this report, perform the following steps.

1. Click File | Reports from the Telecom Billing System main window.
2. In the Reports dialog that appears, double-click the Telecom Billing System Reports menu item and double-click Utility Tools | Extension Diagnostic Report.
3. From the Output Type drop-down list box, select Printer.
4. From the Configuration drop-down list box, select Telephone Configuration Rooms International. This represents the telephone configuration you defined.
5. 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 any of these reports appears inaccurate, then review your input and make any necessary adjustments to your telephone configuration.

Step 10: Set up Data Transmission

The Data Transmission function is used to transmit the call records to an external device or location, such as a Property Management System. For this example, you will set up the Telecom Billing System to post the call usage records for your hotel's guests to a Property Management System using the ACK/NAK interface protocol. Once you have set up the data transmission, you will run it in real time along with the data collection (see next step).

To set up the data transmission for this example, perform the following steps.

1. Click Options | System Configuration from the Telecom Billing System main window and click the Transmission tab.

2. From the Connection Type drop-down list box, select: Direct.
3. In the Port Settings fields, enter the communications parameters required to connect to your Property Management System. For example, enter the following settings:
   - Port: COM2
   - Baud Rate: 9600
   - Data Bits: 8
   - Parity: None
   - Stop Bits: 1
4. Click the Record Format command button and enter the fields you wish to include in the call records that will be posted.
5. Click the ellipsis (…) next to the Record Filter drop-down list box to select the filters for the call records being posted. For this example, you will only post call records that have extensions 100 to 999. These extensions represent the guest rooms and suites in your hotel.
6. From the Filters dialog that appears, click Add.
7. From the Filter Definition dialog, click the Trunks and Extensions tab.
8. Enter the following filters to post only the call records for extensions 100 to 999. Note that the first line represents outgoing calls from this range of extensions. The second line represents all incoming calls to this range of extensions.

Table 1 Trunks and extensions filters

Originating ID Type	Low	High	Terminating ID Type	Low	High	Show Cost
Extension	100	999				Both
			Extension	100	999	Both

9. Click the Include option and the Activate check box to include this filter range.
10. In the Filter Name field, enter the name for this filter. For this example, enter: Guest Rooms and Suites.
11. Click OK to save this filter range and return to the previous dialog. Click OK again to save it and return to the Transmission tab.

12 Click the Record Filter drop-down list box and select Guest Rooms and Suites.

13 From the Interface Protocol list box, select ACK/NAK.

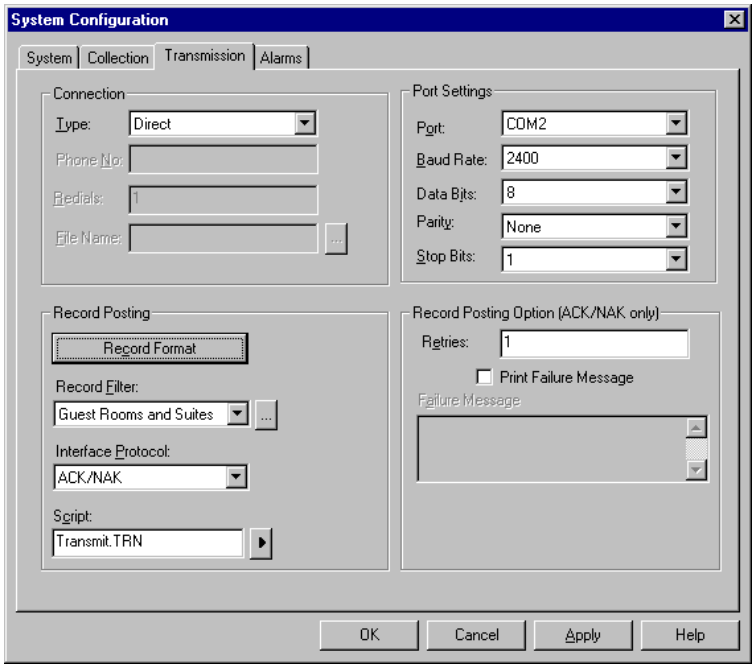
14 In the Script field, enter: Transmit.TRN.

15 Under the Record Posting Options (ACK/NAK only) options, enter: 1 in the Retries field.

16 Click OK to save these settings and return to the Telecom Billing System main window.

This completes the steps used for entering your data transmission values. The following dialog represents these settings.

Figure 27 Transmission tab



Step 11: Start data collection and transmission

Now that you have entered all of your collection, costing and transmission settings, you are ready to start collecting and processing your call records. The following sections will describe how to start the data collection, call costing and data transmission processes in real time.

Start collection

Perform the following steps to start collecting call records from a Meridian 1 or Succession CSE 1000 system through the MDR-2000 ISD.

1. Click Tools | Collection | Start from the Telecom Billing System main window. The Start Collection dialog will appear prompting you to select the collection mode and start the data collection.
2. Select the Real Time option to have the system continuously collect CDR records from the MDR-2000 ISD.
3. Click Start. The data collection will then start. The status pane will display a list of the call records as they are collected.

Start costing

Perform the following steps to start costing the call records.

1. Click Tools | Costing | Start from the Telecom Billing System main window. The Start Costing dialog will appear prompting you to select the costing mode and start the call costing process.
2. Select the Real Time option to have the system apply costs to the collected call records continuously.
3. In the Available Telephone Configurations list, turn on the Telephone Configuration Rooms International check box. This will apply this specific telephone configuration to these call records.
4. Click Start to start costing the call records.

Start transmission

Perform the following steps to start posting the call records to the Property Management System.

1. Click Tools | Collection | Start from the Telecom Billing System main window. The Start Transmission dialog will appear prompting you to select the data transmission mode and start the data transmission.
2. Select the Real Time option to have the system continuously transmit calls that have not been transmitted.
3. Click Start to start transmitting the call records.

This completes the steps required to set up the Telecom Billing System to process call records for hospitality billing.

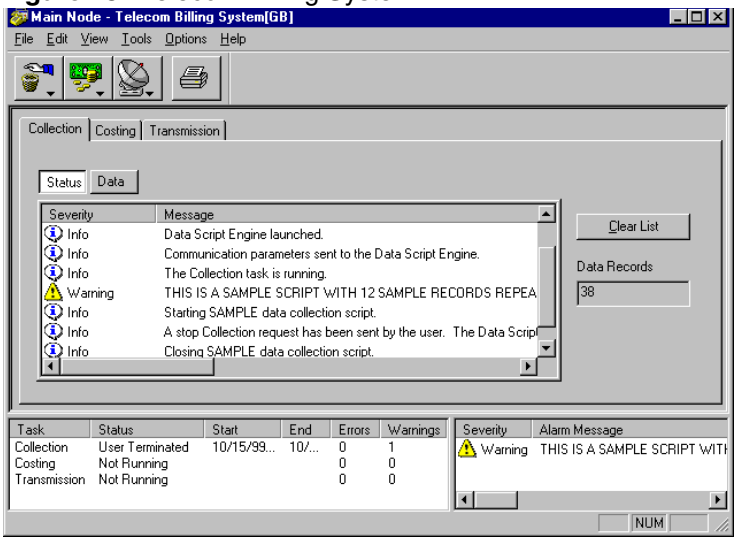
User's reference

This section 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.

Interface

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

Figure 28 Telecom Billing System



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

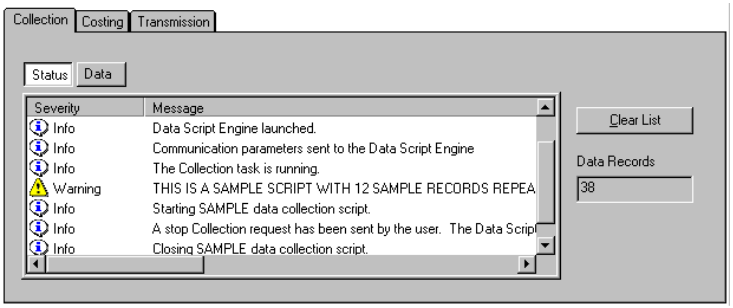
Panes

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.

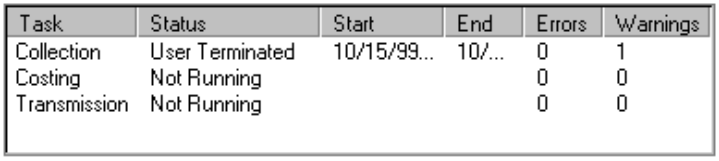
Figure 29 System Tasks pane



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 30 System Monitor pane



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. 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 31 System Alarm pane

File menu

The File menu accesses functions used to: archive, purge and restore the Call Database; 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:

- Call Database
  - — Archive
  - — Restore
  - — Purge
- Import
- Export
- Reports
- Exit

Call Database

The Call Database menu item accesses another cascading menu containing the Archive, Restore and Purge menu items. These menu items access the Archive, Restore and Purge functions, which will help you to manage your Call Database records.

Archive

The Archive function is used to copy—or archive—a range of call records from the Call Database to an external device such as network drive or a diskette.

Restore

The Restore function is used to copy—or restore—the archived call records from an external device such as network drive back to the Call Database.

Purge

The Purge function is used to delete—or purge—a range of call records from the Call Database. This will make available more disk space on your PC for new call records and improve overall system performance.

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.

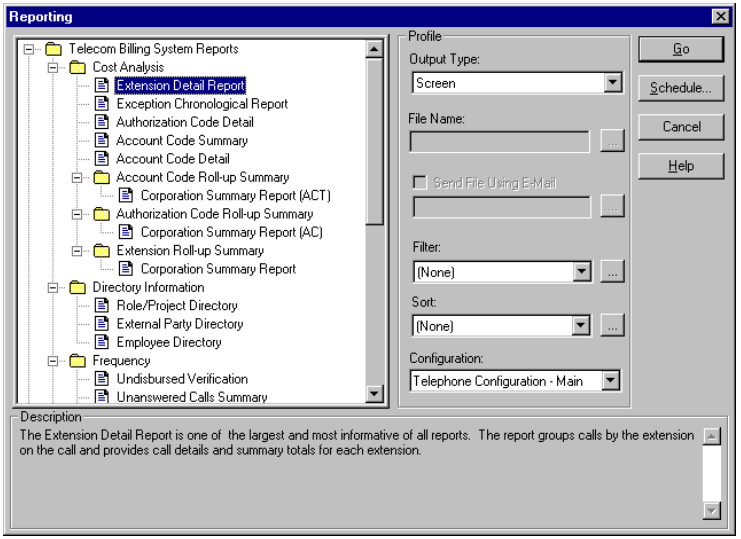
Export

The Export function is used to export data from the Telecom Billing System databases to an external source.

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 32 Reporting dialog



Reporting options

The following options are used to select the output device for the report as well as its filters and sorting definitions. These options appear in the Profile section (right side) of the Reporting dialog.

Output Type

The Output Type drop-down list box contains a list of output formats for the selected report. You can select from the following options:

Screen: This option displays the report to the screen.

Printer: This option prints the report to the Windows-configured printer.

Rich Text Format: This option exports the report to a file in rich text format (RTF). Its filename will be the name you entered in the File Name field with the extension .RTF.

HTML Format: This options exports the report to a file in hypertext markup language format (HTML). Its filename will be the name you entered in the File Name field with the extension .HTM.

Snapshot Format: This option exports the report to a file in Microsoft Snapshot format. Its filename will be the name you entered in the File Name field with the extension .SNP. In order to open the file in Snapshot format, you must have the Snapshot Viewer installed on your PC.

File Name

When outputting a report to a format other than a printer or screen, the Report Generator requires that you specify its filename and destination. This way, it can save the report to a file in that selected format. In the File Name field, enter the name of the file to which the report will be exported. Also select the destination drive and directory for this file. This filename will have an extension which corresponds to the format of the file. This field in only activated if you are exporting the report to a file in one of the supported formats (RTF, HTML or Snapshot).

Note that you can enter specific variable tags in your filenames to create unique filenames during report generation. This will provide you with added flexibility when you are generating reports at scheduled intervals and you do not wish to rename the files for each interval.

Send File Using E-Mail

When generating a report to a file, you can also send copies of that file to definable e-mail addresses. The Send File Using E-Mail option allows you to e-mail a copy of the report to selected e-mail addresses. When you generate the report, this option will insert the report file as an attachment to an e-mail message. This option will e-mail the outputted file which you entered in the File Name field. Since this function inserts the report file as an attachment to an e-mail message, it is only available if you are outputting a file to RTF or Snapshot format.

Note: In order for this function to operate, your operating system must have MAPI installed with it. As well, a MAPI-compliant e-mail client program must be installed and enabled for e-mail.

Filter Definitions

The Filter Definitions function is used to select the reporting criteria for your reports. This allows you to generate reports based on very specific requirements. For example, you may wish to view a report for only the current day. You can simply use the Filter Definitions function to select the most recent day for this report. You can then select this filter name from the Filter drop-down list box in the main Report Generation dialog when you print the report.

Sort Definitions

The Sort Definition function is used to sort the data in the reports in different formats. For example, you may wish to display a report by date and time. You can simply use the Sort Definition function to sort the report by the selected date and time. You can then select this sort definition name from the Sort drop-down list box in the Reporting dialog when you print the report.

Reporting commands

The following is a list of the Report Generator commands.

Go: This command generates the selected report.

Schedule: This command schedules the report to be run at a later date and time. This will access the Scheduler application from which you can enter the scheduling criteria for the report, including the initial date and time of the report generation as well as any subsequent intervals for generating the report.

Cancel: This command exits from this function.

Help: This command allows you to obtain help on the Report Generator function.

List of reports

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
- Entity Detail Report
- DNIS Summary Report
- DNIS Detail Report
- Auxiliary ID Detail 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
- Entity 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 (Ordered by Organizational Unit)
- Employee Directory 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 Report
- Duration Summary Graph by Call Type
- Duration Summary Graph
- Digits Detail Report
- Call Answer Summary Report
- Area Code Summary Report
- Area Code Location Summary Report

Surcharge Reports

The Surcharge Reports display costing information for calls made through your system. They itemize the total usage charges by cost, surcharge (profit), and total cost (billed amount). The tabulated costs are then rolled up to their respective organizational level summaries. These costs are identified by the associated authorization codes and extensions on the entity reports. The costs can also be identified by account codes and then charged back to your clients.

The following is a list of the available Surcharge Reports.

- Exception Chronological Surcharge Report
- Entity Surcharge Summary Report
- Entity Surcharge Detail Report
- Account Code Surcharge Summary Report
- Account Code Surcharge Detail Report
- Account Code Surcharge Roll-up Summary Reports
- Entity Surcharge Roll-up Summary Reports

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

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
- Authorization Code Diagnostic Report
- Account Code 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. It also calculates additional fixed costs, which can be added to the basic usage costs of these trunk groups. As well, it allows you to assign various reporting groups to calls for the system's detail and summary reports.

The Bill Party Surcharge function is used to define and apply additional charges to calls over and above the standard charges calculated using the Telephone Configuration Database. These surcharges are assigned to bill (or call) parties-typically the extension from which the call was placed-rather than the trunk line over which the call was transmitted. This feature is used primarily in the hospitality and campus billing market where the Telecom Billing System can be used to bill guests and other users.

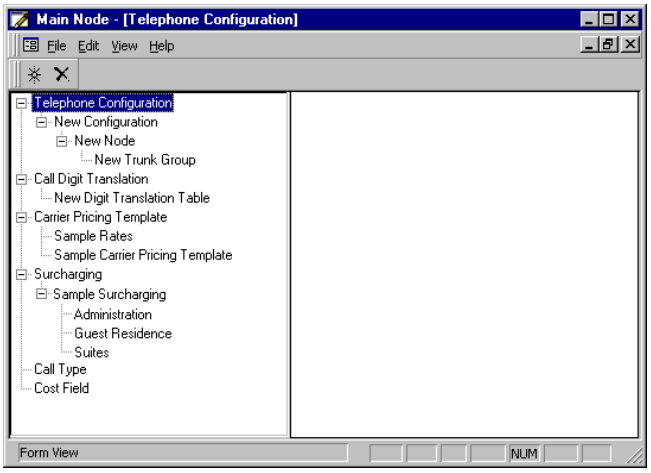
When calls are made through the trunks in these trunk groups, the Telecom Billing System uses the Telephone Configuration Database to calculate their total costs. It can then assign these costs to the appropriate extensions (and therefore personnel) as well as any defined organizational hierarchy levels 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 33 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 or Succession CSE 1000 system.

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.

Chapter 3
Telecom Billing System (TBS) Web Reporting

This chapter provides basic information on setting up and running Telecom Billing System Web Reporting. Along with a brief outline of its main functions, this chapter also contains procedures and reference information to assist you in setting up Telecom Billing System Web Reporting.

Introduction

Telecom Billing System Web Reporting is the Optivity Telephony Manager's Web-based reporting application for your telecom network. With Telecom Billing System Web Reporting, you can generate reports containing data from the Telecom Billing System through your Intranet or Internet server. These reports provide you with valuable information about your organization's calling activities.

The Telecom Billing System application is the Optivity Telephony Manager's telephone cost accounting and billing application. It collects call records from your telephone system, calculates usage costs based on defined rates and configurations, and allocates these costs to the appropriate users in your organization. Telecom Billing System Web Reporting generates reports summarizing and detailing these costs. It provides you with an easy method of accessing the Telecom Billing System information.

Overview

The following is an overview of some of the features of Telecom Billing System Web Reporting.

- Telecom Billing System Web Reporting produces a variety of costing reports detailing your organization's calling activities.

- Depending on your access rights, you can view call detail information for any level in your organizational hierarchy (e.g., departments and users), both from a summary level and a detail level.
- Its reports provide details on the actual telephone usage of your system. Management can then isolate individual users or departments who are not utilizing the telephone system properly through misuse or neglect.
- Its intuitive interface allows you to easily access this information through any PC. Simply run a Web browser, access the Optivity Telephony Manager (OTM) Web server and run Telecom Billing System Web Reporting.

Getting started

This section describes how to access and use Telecom Billing System Web Reporting.

Before using Telecom Billing System Web Reporting, you must install and configure it as part of the Optivity Telephony Manager (OTM). You must then assign it to a site and system. Refer to *Installing and Configuring Optivity Telephony Manager* (553-3001-230) for complete details on installing this application and assigning it to a site and system.

Additional system requirements

The following sections will outline the additional software requirements for the server and client PCs that will be running Telecom Billing System Web Reporting.

System requirements for server PC

The following are the additional software requirements for the OTM Web server PC. This server PC will be used to store the files for Telecom Billing System Web Reporting. Refer to *Installing and Configuring Optivity Telephony Manager* (553-3001-230) for a complete list of hardware and software requirements for OTM.

- 80 MB free disk space (for program and data files)
- Optivity Telephony Manager (OTM) common services and Telecom Billing System applications

- Internet Information Server (IIS)
- Internet Explorer 4.01 Service Pack 2

System requirements for client PC

The following are the system requirements for any client PCs that will access Telecom Billing System Web Reporting. The client PC will only be used to access this application's reports through a browser such as Microsoft Internet Explorer or Netscape Navigator. Since this client PC can be different from the PC on which the OTM common services applications reside, these system requirements will differ from those of OTM common services.

- IBM PC or compatible (100 MHz Pentium processor)
- 32 MB of RAM
- SVGA graphics monitor
- Screen resolution of 1024 x 768 with 256 color palette
- Mouse pointer
- Optional configured printer
- Microsoft Windows 95/98 or Windows NT 4
- Internet Explorer version 4 (or later) or Netscape Navigator version 4.7 (or later)

Server setup and installation

Before installing Telecom Billing System Web Reporting, you must first ensure that the server is set up properly. This means that you must set up your server and install the Internet Information Server (IIS) to allow other users to have remote Web access to the server. You must also install the OTM common services and Telecom Billing System onto the server on which you will be installing Telecom Billing System Web Reporting.

Since Telecom Billing System Web Reporting is the reporting application for OTM Web Services, you must also install OTM Web Services onto the Web server before attempting to run it. Refer to the Web Services chapter in *Using Optivity Telephony Manager* (553-3001-330) for instructions on installing and setting up OTM Web Services.

Installation

The Telecom Billing System Web Reporting installation kit includes all of the components you will need to install, configure and run the program as part of OTM Web. The Setup utility will install each of the required components for Telecom Billing System Web Reporting and prompt you for specific information pertaining to your system (e.g., install drive, directory, program folder, etc.). During the installation procedure, enter your system information as directed.

System access

The following is a summary of the steps used to run Telecom Billing System Web Reporting as part of OTM Web. It is assumed that you have already set up the access rights for the OTM Web users, and that you have selected Telecom Billing System Web Reporting as a reporting application.

1. Log on as an OTM Web user.
2. From the Site/System page, select the Telecom Billing System Web Reporting application.
3. Select a report from Telecom Billing System Web Reporting.

Step 1: Log on as an end-user

To log on as an end-user of OTM Web, perform the following steps.

1. Access the User Identification page by selecting the page **`login.asp`** from the installed directory on your server (e.g., **`http://`*`server_name`*`/EndUser/Eng/login.asp`**, where ***`server_name`*** is the name of your OTM Server).
2. From the User Identification page, log on as an end-user. In the User Name field, enter your user ID (as defined in the OTM Corporate Databases). In the Password field, enter its corresponding password.
3. From the Site/System page, you can select the desired site and system as well as the application Telecom Billing System.

Step 2: Select Telecom Billing System

To view information for a site and system, simply click the Site/System name and Telecom Billing System from the menu tree. The Telecom Billing System Reports page will appear.

Step 3: Select desired report

To view the report from the Telecom Billing System, simply click the report name in the Telecom Billing System page. From here, you can select a telephone configuration table and any filters for the report. Click Run Report to view the report.

User's reference

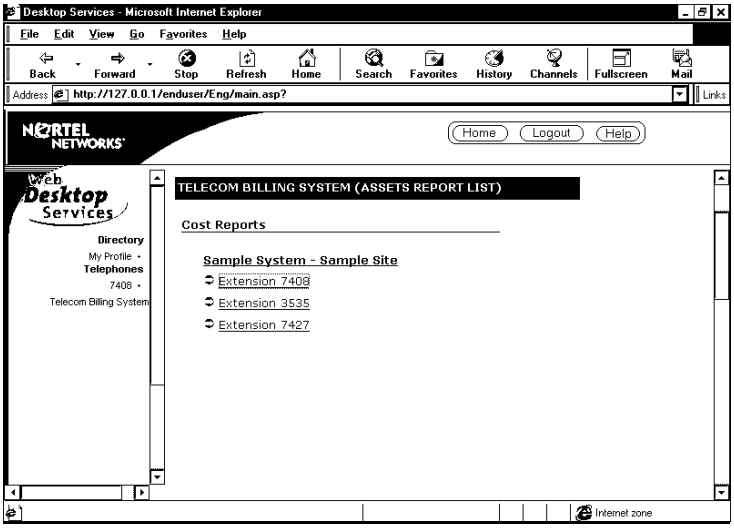
This section contains a brief overview of the Telecom Billing System Web Reporting main Web interface. For complete details on each of its functions, refer to the on-line Help.

Telecom Billing System Web 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.

Once you have logged on to OTM Web, you can view the Telecom Billing System Web Reports. The following is a sample page listing these reports

Figure 34 Telecom Billing System Web Reports page



List of reports

The following sections will briefly describe the reports available for Telecom Billing System Web Reporting. Depending on your access rights, some or all of these reports will appear in this list.

Cost reports

The following reports provide summaries and details of your organization's telephone usage costs. These are based on your extensions, authorization codes or account codes.

- Extension Report
- Authorization Code Report
- Account Code Report

Level reports

The following reports provide roll-up summaries of telephone usage costs for your organization based on extensions, authorization codes or account codes. They access summary and detail reports displaying this data based on the organizational level. For example, the Extension Roll-up Report consists of the Extension Roll-up Report for the current organizational level, the Extension Summary Report for its sub-level and so on, until you have reached the detail report for each user.

- Extension Roll-up Report
- Authorization Code Roll-up Report
- Account Code Roll-up Report

Frequency/Digits reports

The following reports provide roll-up summaries of your calling activity based on frequency of calls to specific numbers and locations.

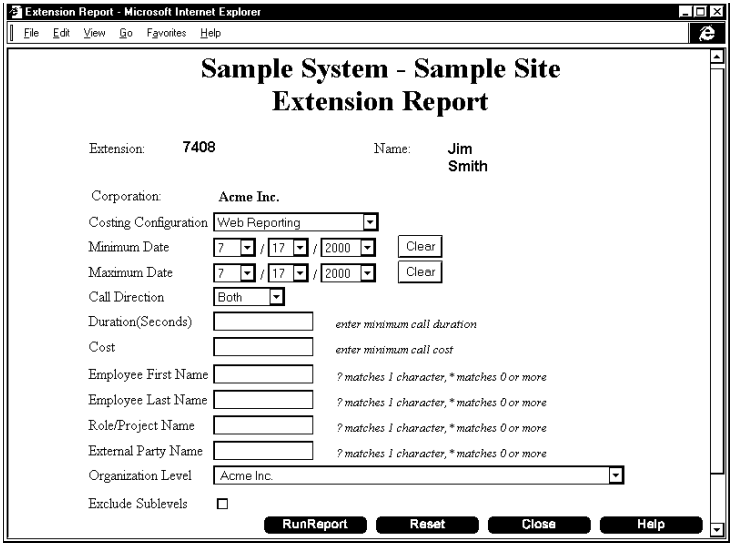
- Frequently Called Numbers Report
- Frequently Called Location Report

Filters and configurations

The Filters page is used to select the reporting criteria for your reports. This allows you to generate reports based on very specific requirements. Whenever you select a report from the Telecom Billing System page, the Filters page will appear allowing you to select its filters.

The following is a sample Filters page for the Extension Report. Depending on the report you select, the Filters page will display different filters.

Figure 35 Filters and Configuration page



Chapter 4
Call Tracking

This chapter provides basic information on setting up and running Call Tracking. It also includes an example to assist you in setting it up for a real time monitoring session.

Introduction

Call Tracking is OTM's call monitor and alarm program. Its graphs indicate trends and provide displays of unusual calls enabling you to adjust your equipment and services to maximize your resources. Call Tracking monitors and displays information output from the Meridian 1 or Succession CSE 1000 system. It then accumulates the data and displays the information in different formats in its graphical displays.

Call Tracking consists of several graphical displays which list your monitored call data. Each of these is a separate window or dialog which displays the call information in a unique format.

The main window is the background for these graphical display windows. The commands in its main window provide you with the overall functions of these graphical displays.

Call Tracking also provides alarm generating functions which can be set up to warn you of unusual calling patterns. This is useful in the quick detection of unauthorized telephone calls that occur with toll fraud. You can define multiple alarm templates to detect different calling patterns including: calls exceeding a certain duration; calls made at unusual times; and toll calls. Call Tracking can also be configured to output different types of alarms including: visible and audible alarms on your PC; remote paging; and network reported alarms.

Getting started

This section provides an overview of how to run and set up Call Tracking for a real time and data file monitoring session.

Before using Call Tracking, you must install and configure it as part of the Optivity Telephony Manager (OTM). Refer to *Installing and Configuring Optivity Telephony Manager* (553-3001-230) for complete details on installing this application.

System access

After you have assigned Call Tracking to a site and system, you can set it up to collect and monitor CDR data and configure its alarms. The following sections highlight the main functions required to use Call Tracking to collect and monitor CDR data in real time mode and from a data file.

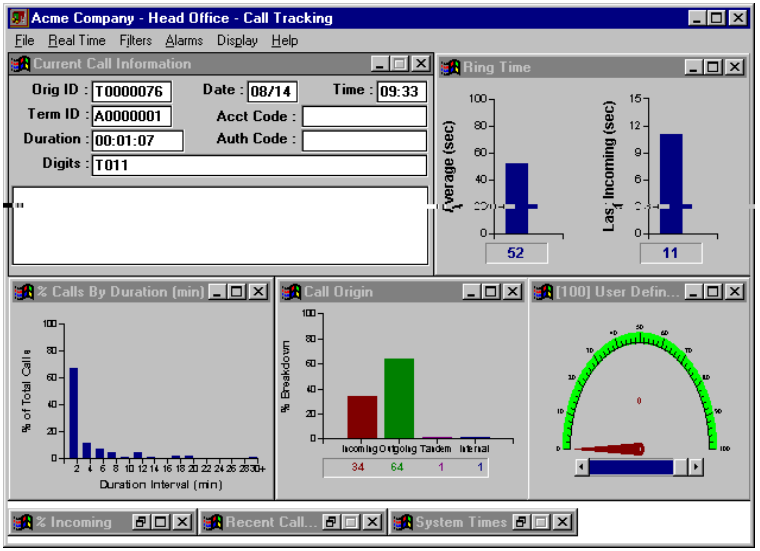
Note: If you are using Call Tracking in real time mode (i.e., you are collecting and analyzing the calls as they are completed and recorded on the Meridian 1 or Succession CSE 1000 system), then you must first select the communications script used for the connection to the Meridian 1 or Succession CSE 1000 system.

If Call Tracking has not been assigned to this system, it will not appear in the Telemanagement menu. To assign Call Tracking to this system, access the OTM System Properties function. In the Communications tab, assign a profile for Call Tracking by entering it in the Communications Profile field. In the Applications tab, select the communications profile you just entered in the Communications tab, click Call Tracking to highlight it and click the Enable check box. Click OK from the System Properties dialog to assign Call Tracking to this system.

Run Call Tracking

To access Call Tracking from the OTM Navigator, click the desired site and system and click Call Tracking from the Telemanagement menu. The main Call Tracking window will appear.

Figure 36 Call Tracking main window



Set filters

During the Call Tracking session, you can use the Filters commands to set the filters for the call records as they are being collected. You can for example, set a filter to have Call Tracking only collect call records having a set minimum call duration. You can select up to 10 different filters and have Call Tracking include or exclude the call records matching these filters.

Set alarms

The Alarms function is used to set an alarm monitor to warn of suspicious calls. These alarms can be sent to your PC as a visual or audible alarm, or to an external device such as a log file, printer, network workstation, pager or modem.

Collect CDR data from Meridian 1 or Succession CSE 1000 system in real time mode

Once you have accessed Call Tracking, you can then use the Real Time command to initiate a call monitoring session.

Before initiating the real time data collection and monitoring process, you should first access the Communications Database dialog and verify the communications settings for Call Tracking on this system. In this dialog, you can also select the script file which will be used for this session.

Verify communications parameters

To verify the communications parameters for this system, click Edit Database from the Real Time drop-down menu. The Communications Database dialog will appear displaying the communications and connection criteria for this Meridian 1 or Succession CSE 1000 system. These are displayed for informational purposes.

Review the data in these fields to ensure that they correspond to your system's connection parameters. If any of these values are incorrect, then return to the System Configuration function in the OTM Navigator, access the Communications tab and edit them. When you access the Call Tracking Communications Database again, its values will be changed accordingly.

The next step is to select the script file which will be used for this communications session. To select this script file, click on the script file name from the Script Setup Name drop-down list box (e.g., SL1.SCR). Click OK to save this selection and exit to the main window.

Connect

To initiate a connection to the Meridian 1 or Succession CSE 1000 system and start collecting and monitoring the call records, click Connect from the Real Time drop-down menu. There will be a brief delay as the communications process is initiated. Call Tracking will then monitor calls as they are recorded by the Meridian 1 or Succession CSE 1000 system.

If you wish to pause the monitoring process at any time, click Pause from the File drop-down menu. Click Pause again to resume the monitoring session. To stop the real time monitoring of the calls, click Disconnect from the Real Time drop-down menu. Click Connect again to resume the session.

User's reference

This section describes the Call Tracking main menus, their functions and the graphical displays. For a detailed description of each menu command and function, refer to the online Help.

Call Tracking menus

The main Call Tracking window is the background for the graphical display windows. Use these commands to configure the appearance of your graphical displays, connect to the Meridian 1 or Succession CSE 1000 system and define your alarms.

File menu

The File menu contains commands used to affect the main action of the call records as they are collected. Use these functions to pause the data collection, print graphical displays of data, reset the call collection and display Employee Database information.

The following is a list of the functions and commands in this menu:

- Call Tracking ID Code
- Schedule
- Print
- Print Setup
- Reset
- Reset Longest Call
- Employee Database Options
- Detail File
- Pause
- Exit

Real Time menu

The Real Time menu contains functions and commands used to view communications parameters, select connection scripts and connect to the Meridian 1 or Succession CSE 1000 system to start and end a real time monitoring session. For a complete list of script files used for communications and data collection, refer to *Appendix B: Script File Summary* in *Using Optivity Telephony Manager* (553-3001-330).

The following is a list of the functions and commands in this menu:

- Edit Database
- Connect
- Disconnect

Filters menu

Use the Filters commands to set the filters for the call records as they are being monitored. You can for example, set a filter to have Call Tracking only collect call records having a set minimum call duration. You can select up to 10 different filters and have Call Tracking include or exclude only the call records matching these filters.

The following is a list of the functions and commands in this menu:

- Filter Definitions
- Include
- Exclude

Alarms menu

The Alarms menu contains functions used to configure the Call Tracking alarm monitor. These alarms can be sent to your PC as a visual or audible alarm, or to an external device such as a log file, printer, network workstation, pager or modem.

The Alarm Definitions function is used to define the alarm criteria. The Alarm Setup function is used to define the alarm parameters used by the Alarm Definitions. These parameters are global and can therefore be used by any alarm definitions. This includes such information as: pager and modem alarm parameters; audible alarm time-outs; and inactivity alarm monitoring.

The Alarm Log displays a listing of all of the alarm calls that have been logged using the Log File alarm mode. This will display the last 200 call records that signaled the alarms having the Log File mode turned on. Each alarm definition accompanies the call record which it signaled. This way you can scan through the call records based on specific alarm definitions.

The following is a list of the functions and commands in this menu:

- Alarm Definition
- Alarm Setup
- Alarm Log

Display menu

The Display menu contains functions used to manipulate the graphical display windows in the Call Tracking main window. As well, it lists the names of the graphical displays allowing you to select them by name.

The following is a summary of the graphical display commands:

- Display Detail Digits
- Auto Save Positions
- Arrange Icons
- All Icons
- Tile
- Refresh

Graphical Displays

The individual graphical displays are the main graphical components of Call Tracking. Each graphical display highlights call records in a different statistical format. These windows will continuously display your call record information. To edit the parameters and features of each graphical display, use their control-menu commands.

The following sections provide a brief description of these graphical displays.

System Times

The System Times graphical display lists the current time (as recorded by the PC's internal clock). It also displays the date and time when you started collecting the call record information.

Note: The time in this dialog is the PC time; not the Meridian 1 or Succession CSE 1000 system time.

Recent Call History

The Recent Call History dialog lists the details of the last 20 call records. Refer to this dialog to review the most recent call records. Each call record consists of the originating and terminating ID's (extensions or trunks), the date and time, duration, the digits dialed and any authorization codes.

Current Call Information

The Current Call Information graphical display lists the information of the most recent call. It includes such items as the start date and time, the originating and terminating ID, the call duration and the digits dialed. If you enabled the Additional Info command from the Employee Database Options drop-down menu, then this window will also include the information of the employee sending or receiving this call.

User Defined Speedometer

The User Defined Speedometer is a speedometer-like analogue gauge (call meter) which displays user definable calling activity as a percentage value. This call meter represents the percentage of calls which meet the criteria specified for a sample size. It also contains an alarm function which will activate a predefined alarm when an alarm threshold is exceeded.

Percent Calls by Duration Graph

The Percent Calls by Duration Graph displays a percentage of the total calls separated into distinct time periods. Each item in the graph represents the percentage of total calls which have a duration within each time period and lists the total for each period as a percentage of the total calls. Use this graph to spot trends in call duration and gain an overview of your telephone system's usage. Select the intervals for this graph by selecting the total range from its control-menu.

Call Origin Graph

The Call Origin Graph displays the total percentage of incoming, outgoing, tandem and internal calls. The horizontal axis contains each type of call and the vertical axis lists their percentage values based on total calls.

Call Origin Pie Chart

The Call Origin Pie Chart displays the percentage of incoming, outgoing, tandem and internal call records. This represents a different way of displaying a specific call type as shown in the Call Origin Graph.

Ring Time Meter

The Ring Time Meter window contains two graphs which display ring time information (time taken for an extension to ring before it is answered or disconnected). If your release of Meridian 1 or Succession CSE 1000 system software supports ring time output, then this dialog will display this information.

Sample setup for real time monitoring

The following sample setup provides information on setting up Call Tracking to connect to the Meridian 1 or Succession CSE 1000 system and collect CDR data in real time mode.

Sample scenario

A user requires a connection between Call Tracking and the Meridian 1 or Succession CSE 1000 system. CDR data is output through the SDI port and is routed via a y-cable to a CDR buffer unit and to a modem (connected to Call Tracking). This y-cable allows the CDR data to be output in two identical data streams: one for storage in the buffer unit (optional); and the other for real time monitoring by Call Tracking.

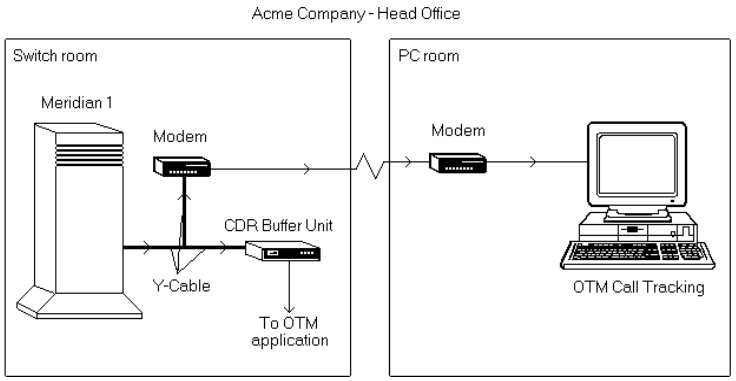
The following details apply.

- The company's Meridian 1 is located in the switch room of the Head Office and is configured to output CDR information from its SDI port.
- A y-cable is connected to the SDI port with one connection to a CDR buffer unit (optional) and the second to a modem.
- The modem at the Meridian 1 is configured to communicate with another modem at the Head Office in the PC room. This second modem is attached to the PC (on COM1) on which Call Tracking is installed.
- Call Tracking requires a script file (SL1.SCR) to collect the CDR records from the Meridian 1 through these modems in real time. This script is provided with the OTM kit.

Since this scenario outlines the steps required to set up Call Tracking, it assumes that you have already entered the following information.

- Call Tracking was installed as part of the OTM installation on a PC in the Head Office.
- A site and system have been created and configured for this connection to the Meridian 1. The site is entitled: Acme Company and the system is entitled: Head Office. Its communications parameters for the SDI port have already been entered in the Communications tab of the OTM System Configuration function.

Figure 37 Schematic for sample scenario



Steps to connecting Call Tracking to a Meridian 1 or Succession CSE 1000 system

The following is a summary of the tasks required to start Call Tracking and connect to the Meridian 1 in real time mode:

- Run OTM and open a site and system
- Run Call Tracking
- Verify communications parameters and select script file
- Ensure hardware connections
- Collect CDR data from Meridian 1 or Succession CSE 1000 system in real time mode

Note: The instructions in this example assume that you have already installed the OTM software and completed the OTM configuration tasks described in the Common Services chapter of *Using Optivity Telephony Manager* (553-3001-330). It also assumes that you have created a site and system on which you can assign Call Tracking.

Step 1: Run OTM & open site/system

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

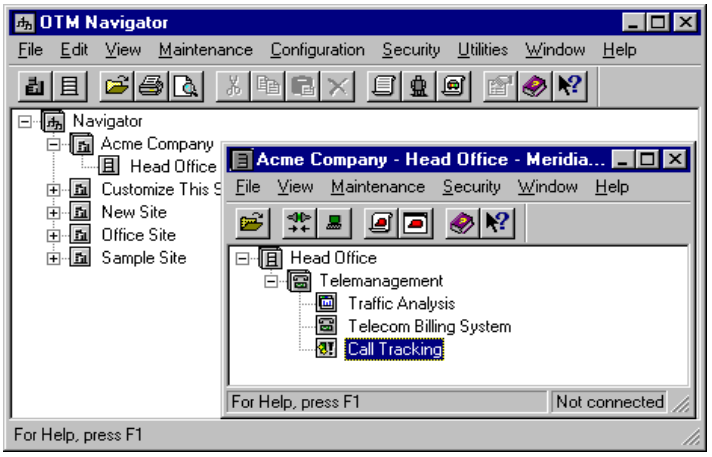
Perform the following steps to open the site and system:

1 Run the OTM Navigator by clicking the OTM Navigator icon. At the Login dialog which appears, enter your user ID and password and click OK to continue.

2 To open the site and system for this example (e.g., site name is Acme Company and system name is Head Office), click Acme Company in the OTM Navigator window and double-click Head Office from this site.

This will access the system window for Head Office.

Figure 38 OTM Navigator



Step 2: Run Call Tracking

Perform the following steps to run Call Tracking.

1 From the system window, click the Telemanagement menu item. This will display the OTM applications which have been assigned to the system Head Office under Telemanagement (e.g., Call Accounting, Call Tracking and Traffic Analysis).

2 To run Call Tracking, double-click Call Tracking from this menu. The Call Tracking main window will appear. You can then use its commands to connect to the Meridian 1 or Succession CSE 1000 system and start the call monitoring session.

Step 3: Verify communications parameters & select script file

To verify the communications parameters for Call Tracking in this system, click Edit Database from the Real Time drop-down menu. The Communications Database dialog will appear displaying the communications and connection criteria for the Meridian 1 or Succession CSE 1000 system. These are displayed for informational purposes.

Review the data in these fields to ensure that they correspond to your system's connection parameters. If any of these values are incorrect, then return to the System Configuration function in the OTM Navigator, access the Communications tab and edit them. When you access the Call Tracking Communications Database again, its values will be changed accordingly.

The next step is to select the script file which will be used for this communications session. Select SL1.SCR from the Script Setup Name drop-down list box. Click OK to save this selection and exit to the main window.

Step 4: Ensure hardware connections

Since this system requires a modem connection between the PC and the Meridian 1 or Succession CSE 1000 system, you must ensure that the equipment used in this connection is turned on and running properly.

Check the following equipment:

- Y-Cable attached to Meridian 1 or Succession CSE 1000 system (switch room)
- Modem attached to y-cable (switch room)
- Modem attached to PC (PC room)

Refer to the documentation provided with this equipment to ensure that they are properly connected and configured.

Step 5: Collect CDR data from Meridian 1 or Succession CSE 1000 system in real time mode

To start collecting and monitoring the call records using the defined communications criteria, click Connect from the Real Time drop-down menu. There will be a brief delay as the communications process is initiated. Call Tracking will then monitor calls as they are recorded by the Meridian 1 or Succession CSE 1000 system.

If you wish to pause the monitoring process at any time, click Pause from the File drop-down menu. Click Pause again to resume the monitoring session. To stop the real time monitoring of the calls, click Disconnect from the Real Time drop-down menu. Click Connect again to resume the session.

This completes the steps required to establish a real time connection for Call Tracking. Use the Call Tracking Filter Definition and Graphical Display commands to control the display of the call records as they are collected from the Meridian 1 or Succession CSE 1000 system. As well, you can use the Alarm Setup function to define any required alarms for this session.

Chapter 5
General Cost Allocation System (GCAS)

This chapter provides basic information on setting up and running the General Cost Allocation System. It also includes example procedures and reference information to assist you in setting up the General Cost Allocation System.

Introduction

The General Cost Allocation System is used to assign usage charges to appropriate individuals or departments within an organization. It can import bill information, identify and log departmental or user-specific spending characteristics and generate meaningful reports summarizing these costs.

With the General Cost Allocation System, you can enter billing information either through an imported file or manually from the printed vendor statement. The data can then be used to allocate charges, such as those obtained from cellular calls or pagers, to relevant individuals or departments within your organization. The General Cost Allocation System generates detail and summary reports including the billed products or services, associated costs and departments or persons to be billed.

The following is a summary of some of the General Cost Allocation System's features.

- It allows for effective distribution, tracking and monitoring of all chargeable costs to departments or persons within an organization.
- Its reports detail products or services purchased, and the appropriate chargeable entity. Management can then effectively monitor and isolate specific costs to various business lines within an organization.
- Billing charges can be imported directly from a vendor's electronic bill, thus significantly reducing data entry time.

- The “user friendly” hierarchical organizational interface allows for quick, easy and effective control of the chargeable groups within your organization.
- Intuitive database editors allow you to easily populate, update and view your database records.

Getting started

This section describes how to access the General Cost Allocation System and set it up for initial use.

Before using the General Cost Allocation System, you must install and configure it as part of the Optivity Telephony Manager (OTM). You must then assign it to a site and system. Refer to *Installing and Configuring Optivity Telephony Manager* (553-3001-230) for complete details on installing this application and assigning it to a site and system.

System access

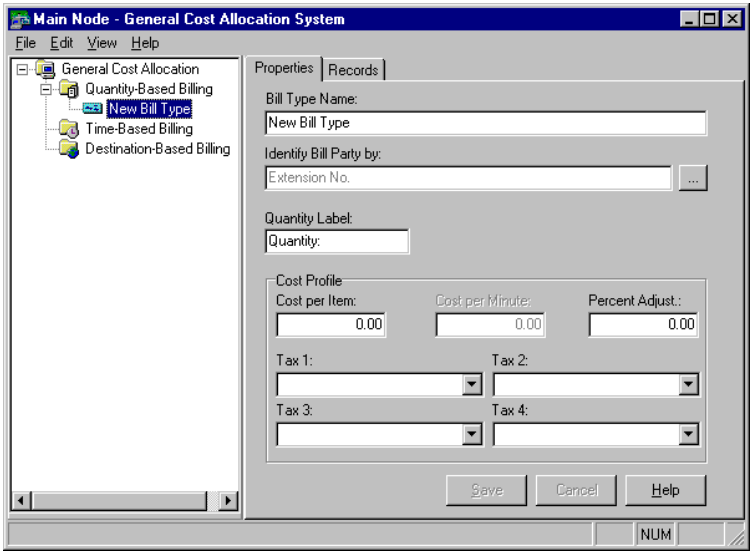
After you have assigned the General Cost Allocation System to a site and system, you can then run it to assign the usage charges to your organization.

To access the General Cost Allocation System from the OTM Navigator, click the desired site and system and click General Cost Allocation System from the Telemanagement menu. The main General Cost Allocation System window will appear. From within this window, you can define and add your various bill types. The following is an example of the General Cost Allocation System main window displaying the Properties tab for a sample quantity-based bill type.

Operating procedures

The following sections outline the steps required to set up the General Cost Allocation System for initial use. These sections also describe the procedures you should follow when running the General Cost Allocation System.

Figure 39 General Cost Allocation System main window



These sections briefly describe how to:

- Create an organizational hierarchy
- Enter employee, external party and role or project information
- Enter bill type information
- Generate reports

Create organizational hierarchy

The Organizational Hierarchy Database is a structured database containing important information about your organization including the different organizational levels and how these levels are related (e.g., departments within divisions). Once you have set up your organizational levels in this database, you can enter your bill type information and generate reports.

Before any meaningful allocation of billing charges can take place, you should define the logical hierarchical structure of your organization. In short, you are creating a framework that will hold and link the billing information in the General Cost Allocation System to the correct billed entity (i.e., the employee or department).

To define your organizational hierarchy, perform the following steps.

1. From the General Cost Allocation System main window, click Edit | Organizational Hierarchy.
2. Right-click the existing folder ORG. and from the pop-up menu, click Rename. Change ORG to a name that will represent the top of your organizational structure. For this example, enter: Acme Company.
3. For this example, the following levels have been defined: “Division” and “Department”. Therefore, to add the first level to this organization, right-click the existing folder and click Add New Division. The first menu item under “Acme Company” will appear as “New Division 1” in editable form. Type over this default name with the name Head Office.
4. Right-click over the name “Head Office” and click Add New Department. The first menu item under “Head Office” will appear as New Department 1 in editable form. Type over this default name with Sales.

This completes the steps required to set up a sample organizational hierarchy with the levels Acme Company (top level), Head Office (Division level) and Sales (Department level).

Enter employee, external party and role or project information

With your organizational hierarchy now in place, the next step is to enter your company’s employee, external party and role or project information. These are entered in your corporate databases.

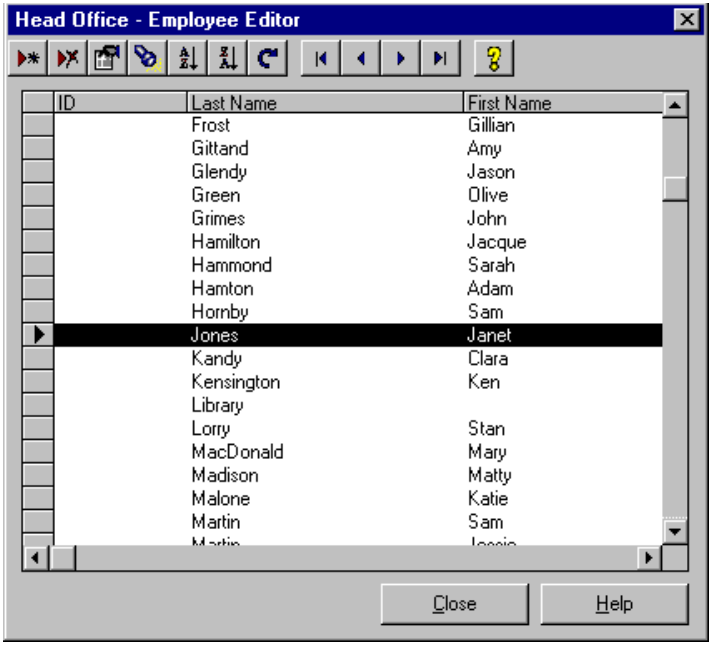
Enter employee information

Employee information is necessary to cost and allocate billing data to the proper individuals and cost centers within your organization.

To enter specific employee information, perform the following steps.

1. From the main window, click Edit | Employees.
2. The Employee Editor grid dialog will appear.
3. To add an employee to this grid, click Add New Record.

Figure 40 Employee Database Editor



4 A blank Employee Editor will appear. Enter the employee information in the following fields.

- **Identification:** This is a unique identifier for this employee. For this example, enter: 001.
- **First, Middle and Last Name fields:** These fields contain the employee's name (for informational purposes). For this example, enter: John Adam Smith.
- **Job Title:** For this example, enter: Sales Manager.
- **Org. Path:** This represents the employee's location in the organizational hierarchy. For this example, enter: \Acme Company\Head Office\Sales.
- **Manager:** In this field, enter the employee's manager. This can be selected from the drop-down menu. For this example, enter: M. President.
- **Email:** In this field, enter the employee's email address. For this example, enter: jasmith@acme.com.
- **Street No., City, Prov./State, Country, Postal/Zip:** In these fields, enter the employee's address. For this example, leave these fields blank.

- **Description:** In this field, enter any additional comments about this employee. This is for informational purposes only. For this example, leave this field blank.

5 The right pane allows you to add any assets which should be assigned to the employee for billing and reporting purposes. This can include such assets as account codes, extensions, cellular phone or pagers). To add an asset to this employee, click Apply. This will enable the Asset list.

6 From the Type drop-down list box, select the desired asset. For example, select Account Code.

7 In the Account Code field which appears, enter the account code. For example, enter: 1001.

8 Click OK to accept these values and return to the previous dialog. Click Close from this grid to exit to the main window.

This completes the steps to entering a sample employee.

Enter external party information

External parties are those individuals or organizations that exist outside the realm of your organization (e.g., customers, vendors etc.).

This database editor is similar to the Employee Database editor. For instructions on editing this type of database, see the example on entering information in the Employee Database.

To enter specific external party information in the External Party Database, perform the following steps.

1 From the main window, click Edit | External Parties.

2 The External Party Editor grid dialog will appear. To add an external party to this grid, click Add New Record.

3 A blank External Party editor will appear. Enter the external party's information in the available fields.

4 Click OK to accept these values and return to the previous dialog. Click Close from this grid to exit to the main window.

This completes the steps to entering a sample external party.

Entering roles or projects information

Within the Roles/Projects Database you can document information relevant to a particular organizational project. For example, within your organization, there could be a marketing project incurring costs. In turn, you could define your billing entity to be the role project name.

This database editor is similar to the Employee Database editor. For instructions on editing this type of database, see the example on entering information in the Employee Database.

To enter role or project information in the Roles/Projects Database, perform the following steps.

1. From the main window, click Edit | Roles/Projects.
2. The Roles and Projects Editor grid dialog will appear. To add a role or project to this grid, click Add New Record.
3. A blank Roles and Projects Editor will appear. Enter the role or project information in the available fields.
4. Click OK to accept these values and return to the previous dialog. Click Close from this grid to exit to the main window.

This completes the steps to entering a sample role or project.

Enter bill types

By default, bill types fall into one of three categories: quantity-based, time-based and destination-based. Quantity-based bill types are defined as having quantitative amounts and unit charges (e.g., office furniture, computers, stationery, etc.). Time-based bill types are defined as having start and finish times (e.g., Internet usage, etc.). Destination-based bill types are defined as having call attributes such as location, digits dialed and route, source and destination, (e.g., cellular or pager calls).

Assign bill to a bill type

Having established what kind of bill type is best suited to represent your data, the next step is to enter the information from your bill into the General Cost Allocation System. There are two ways in which you can enter this information. You can import a file or manually enter the data from a printed statement (e.g., from a vendor's bill). Whichever method of input used, your first task is to attach your bill to one of the three defined bill types quantity-based, time-based or destination-based.

Note: A quantity-based bill type will be used for example purposes. The methods of data entry for both time-based and destination-based bill types are fundamentally the same as quantity-based bill types. However, where data entry formats are different, examples and illustrations will provide extra guidance.

Example: Quantity-based bill type

Perform the following steps to enter a quantity-based bill type.

1. From the General Cost Allocation System main window, click once on the Quantity-Based Billing type option in the menu tree.
2. Click File | New Bill Type.
3. The Properties tab will appear. Under Bill Type Name, identify your bill with an appropriate name. For example, enter: Office Furniture.
4. In the "Identify Bill Party by" field, enter how the billing information for this bill type will be associated to the correct billing party in your organization. For example, you could use an employee's extension number to assign office furniture charges to the employee, or you could use a calling card to assign calling card charges to the employee.
5. To select an existing value or to add a new one, click the ellipsis button (…). The Billing Key Information dialog will appear.
6. The left pane displays the Lookup Keys that are used to allocate the bill type charges to the appropriate bill party in your organization. If a Lookup Key is not defined, click <Define New Bill Party Lookup>. In the "Identify Bill Party by" field, enter your Lookup Key name.

7 The display mask denotes the format used when entering values relevant to a particular bill type. The display mask characters can be numeric; identifying the format of the Lookup Key. Refer to the following tables for examples of mask properties and definitions. You can enter up to 50 characters in this field. Once the new Lookup Key properties have been defined, click Apply to save the new Lookup Key into the system.

8 For this example, you will assign the office furniture to each employee using their extension numbers. From the list box, click Extension No. and click OK.

Repeat the above steps for each bill type you are defining.

The following tables represent the available mask properties:

Table 2 Examples of mask properties

Mask	Description
Null String	(Default) No mask. Acts like a standard text box
###	Example: 321 (extension number)
#### ### ### ###	Example: 1234 567 891 000 (phone card number)
???? ###	Example: ABCD 123 (license plate)
??.#####	Example: AB.12345 (purchase order number)

Table 3 Mask characters

Mask	Description
#	Digit placeholder (Optional)
.	Decimal placeholder
‘	Thousands separator
:	Time separator
/	Date separator
&	Character placeholder
>	Convert all the characters that follow to upper case
<	Convert all the characters that follow to lower case
A	Alphanumeric character placeholder (entry required)
a	Alphanumeric character placeholder (entry optional)
9	Digit placeholder (entry optional)

Table 3 Mask characters (continued)

Mask	Description
C	Character or space placeholder
?	Letter placeholder

Enter cost profiles

Having defined your bill party identification key within the Billing Key dialog, you can now enter your cost profiles (optional). Cost profiles allow you to define additional "fixed" costs and applicable taxes to each billable item within a bill type.

Surcharges or deductions can be applied to an item in any of the following ways:

- A fixed cost per item charge added to the existing item charge. For example, a $0.10 fixed surcharge can be made against each record related to a calling card bill. If a calling card has a base cost of $2.00, the total cost of the record, not including tax, would be $2.10.
- A cost per minute charge applied to each minute of each item. This surcharge is only applicable to time-based and destination-based bill types, and is calculated by multiplying each item's duration (in minutes) by the value entered in this field.
- A percentage adjustment applied against the original charge of each item. To increase each item's charge by 10%, enter 10.00 in the Percent Adjust field.

Define taxes

You have the option of selecting up to four applicable taxes for each bill type. For this example, you will enter one applicable tax: the Sample State Tax (SST) of 5%.

To define the taxes for this example, perform the following steps.

1. From the Properties/Cost Profile dialog, click Edit | Taxes to launch the Tax Editor dialog.
2. Click the Add graphical command button.

3 In the Name field, enter the tax name. For this example, enter: Sample State Tax.

4 In the Short Name field, enter an abbreviation of the tax name. For this example, enter: SST.

5 In the Percentage field, enter the percentile tax amount. For this example, enter: 5.

6 Click OK to accept the values and return to the previous dialog.

7 Once you have defined all of the required taxes, click Close to save them and return to the main window.

8 In the Cost Profile group box, select the appropriate taxes for your bill type from the Tax drop down list boxes.

9 Once all of the information for your bill type is entered, click Save to add the new bill type to the General Cost Allocation System.

Deleting Bill Types

To delete a bill type, you need to search the menu view and highlight the desired bill type for deletion. Deleting a bill type will delete any billing records associated with it. The deleted bill type will then be removed from the menu tree. To delete a bill type, perform the following steps.

1 From the menu tree view of the General Cost Allocation System main window, click on the bill type to be deleted.

2 Click File | Delete Bill Type.

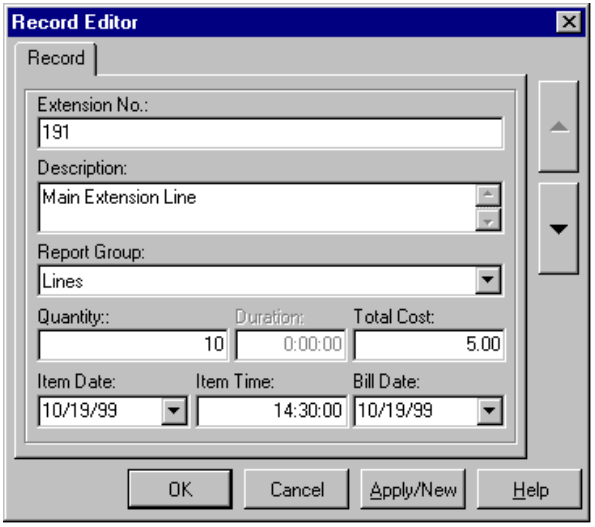
Create billing records

Having defined your bill types, you can now enter individual billing records or items that belong to them. To enter your new billing records, perform the following steps.

1 From the menu tree view of the General Cost Allocation System main window, click on a defined bill type and click the Records tab.

2 Click the Insert New Record command button. The Record Editor dialog will appear.

Figure 41 Record Editor dialog



3 In the Record Editor dialog, enter the appropriate value that identifies the bill party for this record. In this example, the employee extension is required. Therefore, in the Extension No. field, enter: 191.

4 In the Description field, enter a description of the bill record. This is an optional field. For this example, enter: Main Extension Line.

5 From the Report Group field drop-down list box, select a Report Group value. If an appropriate value is not found in the list, you can type the required value in the Report Group drop-down combo box. This value further organizes billed items into smaller subgroups. This field is optional. For this example, enter: Lines.

6 In the Quantity field, enter the quantity of products or services which are to be billed. For this example, enter: 10.

7 In the Total Cost field, enter the pre-tax total cost for the specified quantity of items. For this example, enter: 5.00.

8 In the Item Date field, enter the date assigned to this item (e.g., the original purchase date). For this example, enter: 10/19/99.

9 In the Item Time field, enter the time assigned to this item (e.g., the original purchase time). For this example, enter: 14:30:00.

10 In the Bill Date drop-down combo box, enter the bill date (i.e., the date of the bill or bill period on which this record should appear). For this example, enter: 10/19/99.

11 Click OK to accept the values and save the records and return to the main window.

Summary of fields (Record Editor dialogs)

You do not necessarily need to enter data into every available data field within the Record Editor. In many instances, you can choose what data you wish to enter. However, dependent upon what type of bill you are entering, there are specific fields that must be entered with a value.

The following table displays a complete summary of all field headings. Each field is designated as a "Required" or "Optional" entry.

Table 4 Summary of record fields

Field	Description
Billing Key	Required. The "Bill Party Lookup Key" value that associates the charge record to the appropriate bill party in your organization.
Report Group	Optional. Provides the ability to organize the records within a bill type into smaller subgroups for reporting purposes.
Description	Optional. Description of the record.
Item Date	Required. Date that the record was created. Dates are displayed in the format specified by the "short date format" entered in the regional settings of your PC's control panel.
Item Time	Optional. Time that the record was created. Time is displayed in the format hh:mm:ss.
Bill Date	Required. Default is the current date.
Quantity	Optional. The quantity of product or service items billed by this record. Default is 1.
Duration	Optional. Applicable for Time and Destination-Based bill types. The default value is 0:00:00 and the format is hhhhh:mm:ss.
Total Cost	Optional. Default is 0.00.
Destination ID	Optional. For Destination-Based bill types. Digits dialed.
Destination Location	Optional. For Destination-Based bill types. Called location.
Source ID	Optional. For Destination-Based bill types. ID of the record source (e.g., the source telephone number of a calling card call).

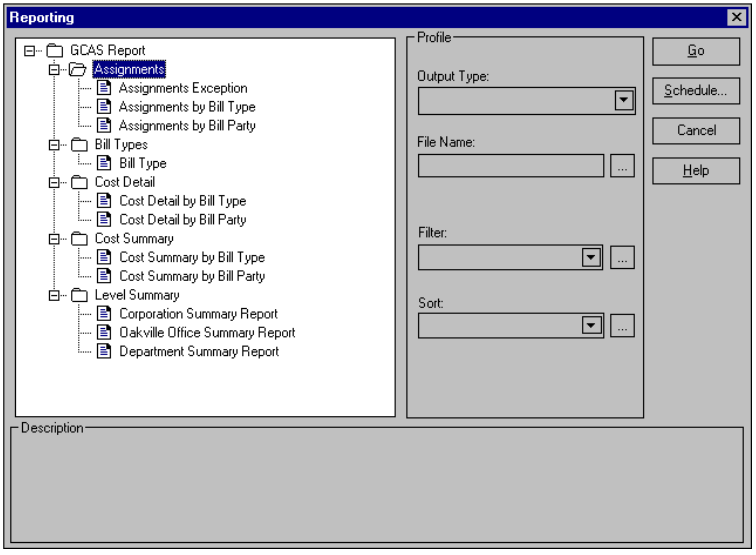
Table 4 Summary of record fields (continued)

Field	Description
Source Location	Optional. For Destination-Based bill types. Location of where the record was made.
Direction	Optional. For Destination-Based bill types. Incoming or Outgoing.
Route Used	Optional. For Destination-Based bill types.

Generate reports

Once you have created your organizational hierarchy, populated your corporate databases and entered your billing information, you can generate detail and summary reports listing this information. The reports can be displayed on the screen, saved to a file, output to a printer or sent to an email address. You can also filter and sort information within your bill and therefore create reports based on specific information. The following dialog illustrates the types of billing reports that can be generated.

Figure 42 Reporting dialog



To generate a report, perform the following steps.

1 From the General Cost Allocation System main window, click File | Reports.

2 Click once on the report you wish to generate from the Reporting menu tree. When you select the report, a brief description of it will be visible in the description field at the bottom of this dialog.

3 Select the desired output device from the Output Type drop-down list box in the Profile group box. You can choose to output your report to a printer, the PC's screen, to a file or to an email address.

4 If you do not wish to select filters or sorting criteria for this report, click Go to generate the report. See the following steps for information on selecting filter and sorting criteria.

Before you generate your reports, you may select parameters (filters and sorting criteria) that determine what data will appear on the report, and how the report details will be sorted.

Select report filters

To enter your filter and sort information, perform the following steps.

1 To define a filter, click the ellipsis button (...) next to the Filter drop-down list box. This will access the Filters grid dialog.

2 In the Filters grid dialog, click Add. This will access the Filter definition dialog.

3 In the Filter definition dialog, enter the following filter values:

- **Filter Name:** In this field, enter the name of the filter. This will appear in the Filters grid dialog list and in the Filter drop-down menu of the Reporting dialog. You will be able to select this filter by clicking this name in the Filter drop-down menu of the Reporting dialog.
- **Name in Report:** In this field, enter the name of the filter which will appear on the applicable reports.
- **Description:** In this field, enter any additional descriptive information about this filter. This is for informational purposes and will also appear in the Filters grid dialog.

4 Define the report parameters using the various filter tabs in this dialog. Each tab allows you to define specific information based on your filter requirements.

Several of the values entered on each tab are ranges of time or cost (i.e., "From" a certain date "To" a certain date, and a "Minimum" cash amount to a "Maximum" cash amount). For example, you could print all reports between two dates and include all records that fall between two cost amounts. However, the following tab fields do have different characteristics: Bill Type, Direction and Organization. In each of these cases, you can select choices from a drop-down list by clicking the down arrow button located to the right of each option line.

5. Once you have entered the filter's parameters, click OK to save them and return to the Filters grid dialog. Notice that the name you entered in the Filter Name field will appear in this grid.
6. To select this filter, click it once to highlight it and click OK. This name will appear in the Filter drop-down menu of the Reporting dialog.

Once the filter is defined, you can select it any time by simply clicking it from the Filter drop-down list box in the Reporting dialog.

Select sorting criteria

Perform the following steps to select sorting criteria for the reports.

1. To define a sort order, click the ellipsis button (...) next to the Sort drop-down list box. This will access the Sort grid dialog.
2. In the Sorts grid dialog, click Add. This will access the Sort definition dialog.
3. In the Sort definition dialog, enter the following values:
   - **Sort Name:** In this field, enter the name of the sorting definition. This will appear in the Sorts grid dialog list and in the Sort drop-down menu of the Reporting dialog. You will be able to select this sort definition by clicking this name in the Sort drop-down menu of the Reporting dialog.
   - **Description:** In this field, enter any additional descriptive information about this sort definition. This is for informational purposes and will also appear in the Sorts grid dialog.
4. In the Sort by fields, click the drop-down commands and enter the sorting criteria.
5. Once you have entered the sorting criteria, click OK to save them and return to the Sorts grid dialog. Notice that the name you entered in the Sort Name field will appear in this grid.

6 To select this definition, click it once to highlight it and click OK. This name will appear in the Sort drop-down menu of the Reporting dialog.

Once the sort order is defined, you can select it any time by simply clicking it from the Sort drop-down list box in this dialog.

Schedule reports

If you wish to schedule a report to run at a specific time, click Schedule from the Reporting dialog. Use the Scheduler to enter the date and time that you wish to run the report.

User's reference

This section contains an overview of the General Cost Allocation 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.

File menu

The File menu contains commands used to manage the bill type records, generate reports, import and export data and exit from the system.

The following is a list of the functions and commands in this menu:

- New Bill Type
- Delete Bill Type
- Reports
- General Export
- Import Bill Type
- Export Bill Type
- Archive Bill Type
- Merge Bill Type
- Purge
- Exit

Edit menu

The Edit menu accesses the General Cost Allocation System's main databases. These databases contain the corporate information you will need to run the General Cost Allocation System effectively for your organization.

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

Organizational Hierarchy: This 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 editor 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: This database contains information about your organization's employees which are relevant to the General Cost Allocation 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 allocate charges to the proper extensions and cost centers within your organization.

External Parties: This 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.

Roles/Projects: This database contains information about the different roles or projects which require reporting in the General Cost Allocation System. It is used to assign extensions, authorization codes or account codes to projects or personnel for reporting purposes.

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

Taxes: This editor is used to define the taxes which will be applied to the usage or equipment charges of the billing records.

View menu

The View menu contains commands and toggles to display various components of the General Cost Allocation System database.

This menu contains the following commands and toggles:

- Bill Party
- Grid Lines
- Status Bar
- Refresh
- Find
- Replace

Chapter 6
Consolidated Reporting System (CRS)

This chapter provides basic information on setting up and running the Consolidated Reporting System. It also includes example procedures and reference information to assist you in setting up the Consolidated Reporting System.

Introduction

The Consolidated Reporting System is used to generate reports by consolidating data from the Telecom Billing System and the General Cost Allocation System. By defining filtering and sorting criteria, you can generate custom reports that detail organizational and employee spending characteristics.

Each report is broken down into subreports which detail user costs for specific applications within OTM. The report is summarized by aggregating all the costs associated with the chargeable entity (i.e., the sum of all the subreport totals).

The following is an overview of some of the features of the Consolidated Reporting System.

- The Consolidated Reporting System allows for effective, fast, report generation of all chargeable costs to departments or persons within your organization.
- The Consolidated Reporting System combines data from the Telecom Billing System and General Cost Allocation System applications detailing products or services purchased, and the appropriate chargeable entity. Management can then effectively monitor and isolate specific costs to various business lines within your organization.
- You can quickly use this information to determine how organizational entities are utilizing corporate funds and resources.

- The user-friendly Tree View interface allows for quick, easy and effective generation of your reports.
- The Report Engine prints professional-looking reports using TrueType fonts and customizable report logos.

Getting started

This section describes how to access and use the Consolidated Reporting System. Before using the Consolidated Reporting System, you must install and configure it as part of the Optivity Telephony Manager (OTM). You must then assign it to a site and system. Refer to *Installing and Configuring Optivity Telephony Manager* (553-3001-230) for complete details on installing this application and assigning it to a site and system.

System access

After you have assigned the Consolidated Reporting System to a site and system, you can then run it to generate your reports.

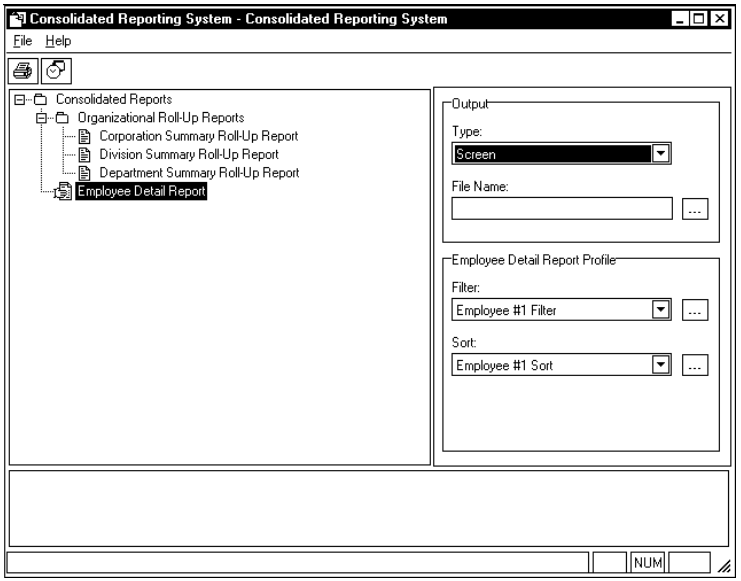
To access the Consolidated Reporting System from the OTM Navigator, click the desired site and system and click Consolidated Reporting System from the Telemanagement menu. The main Consolidated Reporting System window will appear. The following is an example of this window.

Operating procedures

The remaining sections in this chapter will outline the operational procedures of the Consolidated Reporting System. The following topics will be discussed.

- Consolidated reports
- Report generation (filters, sort definitions, output, printing and scheduling)

Figure 43 Consolidated Reporting System main window



Consolidated reports

The Consolidated Reporting System allows you to generate the following consolidated reports:

- Employee Detail Report
- Organizational Roll-up Reports

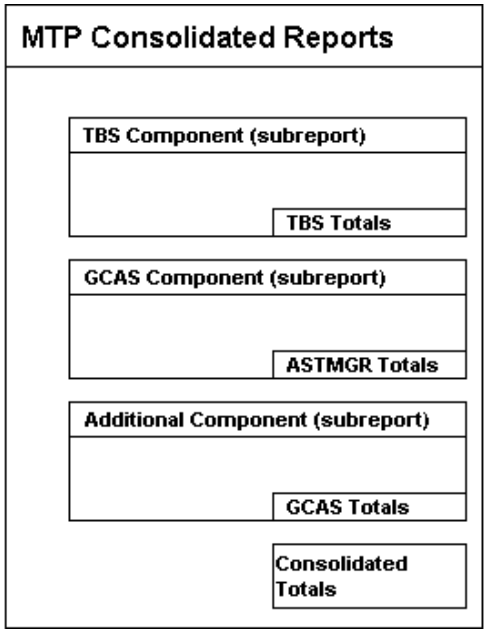
Employee Detail Report

The Employee Detail Report consolidates employee costs from each of the supported OTM applications. By consolidating information in this manner, you can quickly and effectively determine employee costs.

This report details a listing of individual billing costs within each OTM application for each employee. The employee's chargeable records for each application are listed under separate headings called subreports (e.g., Telecom Billing System and General Cost Allocation System). Each of these subreports

contains a detailed listing and a subreport summary of the incurred costs for that application for that employee. These summary costs are then combined to produce a grand total cost/charge for that employee (i.e., the sum of all the subreport totals).

Figure 44 Consolidated report structure



Organizational Roll-up Reports

Organizational Roll-up Reports consolidate organizational billing information (e.g., corporate, divisional and departmental). The Organizational Roll-Up Reports folder contains a report for each level in your organizational hierarchy (e.g., Corporation Roll-Up Report, Division Roll-Up Report and Department Roll-Up Report).

These reports provide a grouping of information based on the organizational level identified in the report name. For example, the Departmental Summary Report provides a grouping of information by department (e.g., a report for Sales, Accounts, Admin., Engineering etc.). The Engineering grouping displays a

summary of all chargeable items incurred by any entity, person or organizational unit immediately attached to the Engineering node, such as the Engineering Manager, the Quality Assurance Team and the Research and Development Team. The latter two are roll-ups of the chargeable items of their respective members.

Generating an Employee Detail Report

To generate an Employee Detail Report, perform the following steps.

Step 1: Select report

From the Tree View in the main window, click Employee Detail Report. You can either generate a report that incorporates all employee information from all the OTM applications, or you can define subreports. Selecting subreports allows you to choose which OTM applications you wish to include in the report, and their order of inclusion. This example will include a subreport.

With the Employee Detail Report selected, right-click over the dialog and click Select Subreport. From the Available Applications list, select one or more of the available applications you wish to include as subreports (e.g., Telecom Billing System or General Cost Allocation System). Use the arrow keys next to the Available Applications list to move the applications to the Selected Applications list. You can then order the chosen applications using the arrow keys next to the Selected Applications pane. Click OK to accept the settings, or Cancel to return to the main window without changing the previous configuration.

Step 2: Select application-specific filters and sort definitions (optional)

You may also select filter and sort criteria that determine the data ranges that will be reported on (optional). These filter and sort options can be applied to each subreport (e.g., Telecom Billing System or General Cost Allocation System).

From the Tree View in the main window, click the chosen report's Tree View node expander button and click the application. To select a current reporting filter or sort option, click the Filter or Sort drop-down list box and select from the list.

To add new filters or sorts for this application, click the ellipsis button (…) next to the Filter field or Sort field. In the Filters or Sorts dialog, click Add. You now have access to the application's own filter tabs or sort options. Navigate the filter tabs or sort options to define your filtering or sorting criteria. Click OK to save the filter or sort options, or Cancel to return to the Filter or Sort dialog without saving.

Step 3: Select output device

Click the report in the Tree View in the main screen. The Consolidated Reporting System can send reports to output devices such as a printer (configured in the operating system), the PC's screen or to a file. Select an output device from the Output Type drop-down list box in the Output group box. To output your report to a file, select the appropriate file type from the Output Type drop-down list box. Click the ellipsis button (...) to the right of the File Name field. From the Save As dialog, select the desired name and location for the output file.

Step 4: Add additional report filters and sort definitions (optional)

In the Employee Detail Report Profile group box, select any additional report filters or sort options (optional). These are additional report filter or sort options and are used over and above application-specific filter or sort options, detailed in step 2.

Step 5: Generate report

Once you have defined your filters, sorts and output method, you can generate your report.

To generate your report, click File | Print or click the Printer icon on the toolbar.

Schedule report

If you wish to launch a report to run at a specific date and time, click File | Schedule or click the Schedule icon on the toolbar.

Generating an Organizational Roll-up Report

The method of generating an Organizational Roll-up Report is basically the same as generating an Employee Detail Report. The only difference is that you select the Organizational Roll-Up Report folder in the Tree View, which allows you to choose from a list of reports types based on your organizational structure. Simply select the desired report and follow the same instructions detailed under the previous section *Generating an Employee Detail Report*.

User's reference

This section contains a brief overview of the Consolidated Reporting System's main window interface. For complete details on each of the functions within the main window, refer to the on-line Help.

Interface

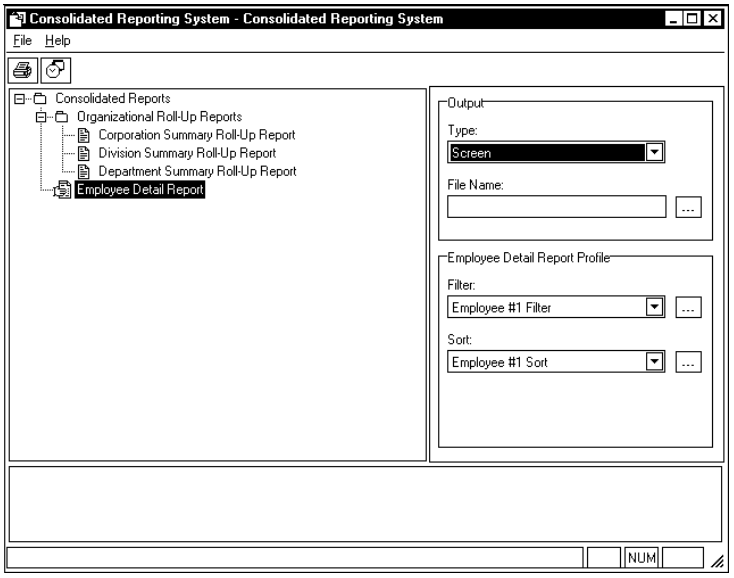
The Consolidated Reporting System's main window is the interface for generating consolidated reports.

In the main window you can:

- Select a report,
- Define filters and sorts (optional),
- Define an output method and
- Schedule or execute a report.

By simply clicking on the desired report in the Tree View and defining report settings, you can generate reports easily and quickly. The following is a sample of the Consolidated Reporting System main window.

Figure 45 Consolidated Reporting System main window



The main window has the following menu commands.

- File
- Help

File menu

The File menu contains the Print, Schedule and Exit commands. To access these functions, click File from the main window and select the desired command.

Print

Click the Print command to immediately launch your report.

Schedule

Click the Schedule command to define a time and date when you wish to launch the report.

Exit

Click the Exit command to exit from the Consolidated Reporting System program.

Help menu

The Help menu consists of Consolidated Reporting System help topics and other important information about the Consolidated Reporting System (e.g., system information). To access these functions, click Help from the main window and select the following.

Help Topics

Select the Help Topics command to activate the on-line help system. From within this system you can obtain detailed help on the functions of the Consolidated Reporting System.

About Consolidated Reports

Select the About Consolidated Reporting command to activate the Consolidated Reporting System Properties dialog. This dialog contains the following tabs.

General: Details important information about the Consolidated Reporting System. This information is useful when contacting technical support.

System Info: Details important file information about the OTM Consolidated Reporting System environment, including program files, system files and registry entries.

Glossary

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.

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 or Succession CSE 1000 system, often referred to as the switchboard operator.

Authorization Code

A series of digits dialed which identify the caller and cause the Meridian 1 or Succession CSE 1000 system to grant access to services which are otherwise restricted.

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.

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.

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 or Succession CSE 1000 system 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.

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.

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.

Grade of Service

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

LCR

See Least Cost Route.

Leased Lines

Refers to private lines between two switching centers.

Least Cost Route

Some Meridian 1 and Succession CSE 1000 systems have the ability to determine the least expensive call route.

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.

Node

Used to indicate a Meridian 1 or Succession CSE 1000 system in a network. Can also mean any endpoint in a network.

NPA

See Area Code.

NXX

See Exchange.

Other Common Carrier

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

PABX

See Private Branch Exchange.

PBX

See Private Branch Exchange and Node.

Peg Count

A counting device within the Meridian 1 or Succession CSE 1000 system 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.

SDI port

See Serial Data Interface port.

Serial Data Interface port

A port on the Meridian 1 or Succession CSE 1000 system that can be configured to output CDR data.

SMDR

See Station Message Detail Recording.

Station Message Detail Recording

The ability of a Meridian 1 or Succession CSE 1000 system 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.

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 or Succession CSE 1000 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.

Zone

See Band.

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