

7 OM Subsystem of the BTS

About This Chapter

By operation mode, the OM subsystem of the BTS consists of the near-end OM system and the far-end OM system. By structure, the OM subsystem of the BTS consists of the local OM system and the mobile integrated network management system.

[7.1 Structure of the OM Subsystem](#)

This topic describes the structures of the local OM system and the mobile integrated network management system.

[7.2 OM Functions of the BTS](#)

This topic describes the OM functions of the BTS. The main OM functions of the BTS are configuration management, interface signaling tracking, performance management, alarm management, and log management.

7.1 Structure of the OM Subsystem

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7.1.1 Structure of the Local OM System

This topic describes the structure of the local OM system, which realizes the far-end and near-end maintenance of the BTS.

7.1.2 Mobile Integrated Network Management System

This topic describes the networking mode and functions of the M2000 mobile integrated network management system (M2000 system).

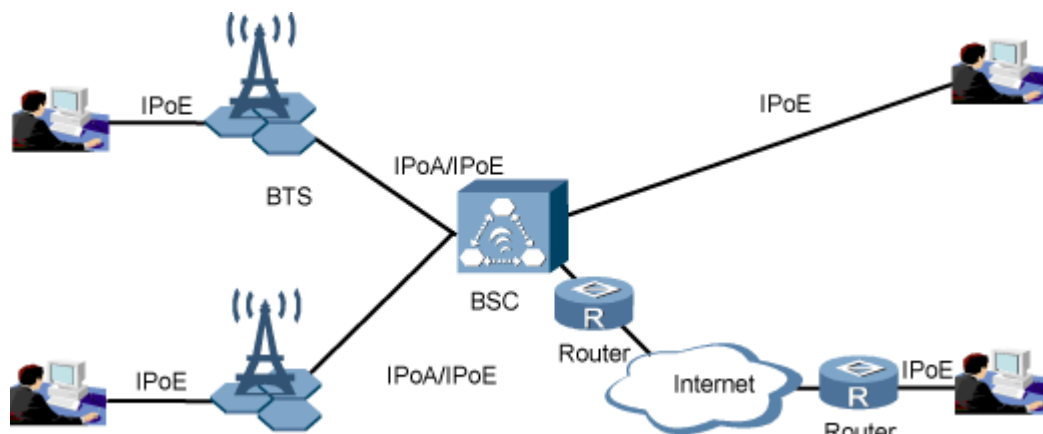
7.1.1 Structure of the Local OM System

This topic describes the structure of the local OM system, which realizes the far-end and near-end maintenance of the BTS.

Structure of the Local OM System Used by the BSS or AN

Figure 7-1 shows the structure of the local OM system used by the base station subsystem (BSS) or access network (AN).

Figure 7-1 Structure of the local OM system used by the BSS or AN



IPoA: IP over ATM IPoE: IP over Ethernet BTS: base transceiver station BSC: base station controller

Far-End Maintenance

This topic describes far-end maintenance of the BTS. The LMT is connected to the BAM server of the BSC to realize the far-end maintenance of the BTS.

The LMT and the BAM server work in client/server mode. Users run commands on different LMTs, and the BAM server processes commands from all the LMTs. After processing the commands, the BAM server sends them to the BSC or BTS and waits for responses. The BAM server records the operation results, for example, success, failure, timeout, or exception, and sends the results to the LMT in a specific format. In this way, users are informed of the results.

Using the BAM server, you can maintain all the BTSs managed by it and implement network planning on a centralized basis.

Near-End Maintenance

This topic describes the near-end maintenance of the BTS. The LMT is directly connected to the BTS through an Ethernet cable to realize the near-end maintenance of the BTS.

You can log in to the BTS through a Telnet client and run relevant MML commands to maintain the BTS.

You can also use the reverse maintenance function to log in to the BAM server from the near end of the BTS to maintain the entire BSS.

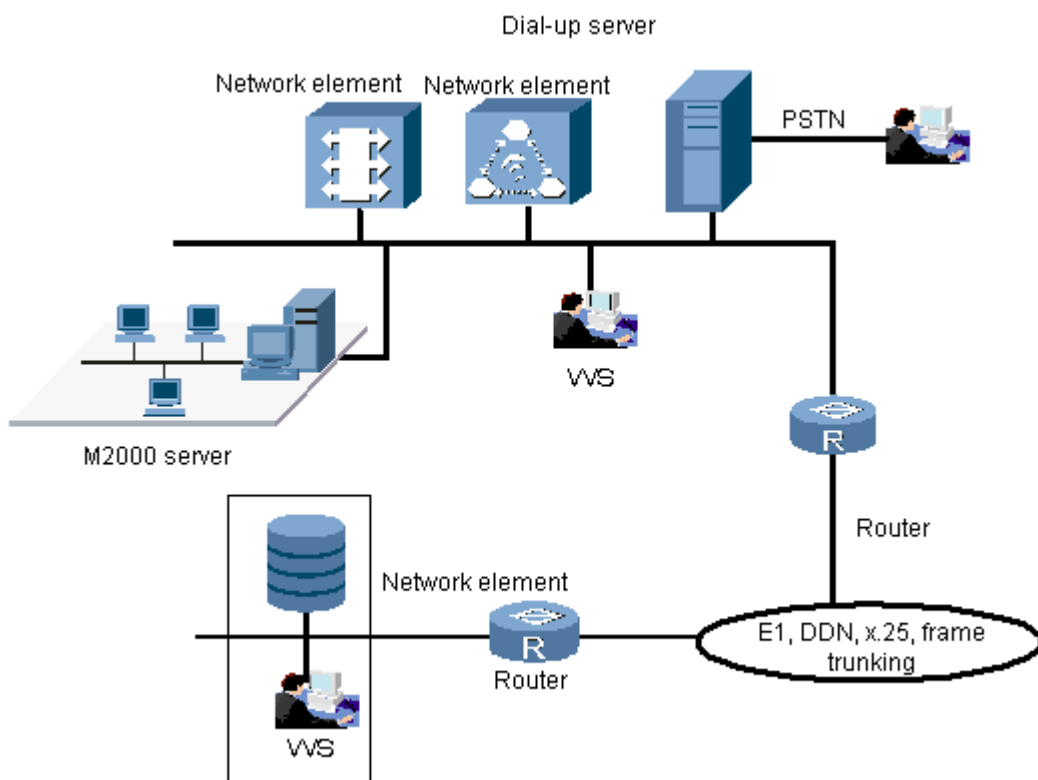
7.1.2 Mobile Integrated Network Management System

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Networking Mode of the M2000 System

The M2000 system supports the centralized maintenance of mobile communication equipment. Various network elements, for example, the BSC, MSC, and HLR, can be connected to the M2000 system through local area networks (LANs) or wide area networks (WANs). The BSC is connected to the M2000 system through the BAM server. [Figure 7-2](#) shows the typical networking mode of the M2000 system.

Figure 7-2 Typical networking mode of the M2000 system



Functions of the M2000 System

The M2000 system performs the following functions:

- Performance management
Using a network client, you can register traffic statistics tasks for network elements in the entire network and view the results of the tasks.
- Fault management
Using an alarm client, you can flexibly define criteria to query the required alarm data of network elements in the entire network. At the alarm client, you can view the query results and perform associated operations.

7.2 OM Functions of the BTS

This topic describes the OM functions of the BTS. The main OM functions of the BTS are configuration management, interface signaling tracking, performance management, alarm management, and log management.

Configuration Management Function

The configuration management function of the BTS is realized through the MML commands provided by the LMT.

The MML commands have a graphic user interface (GUI), which supports the selection of history commands, the predictive text input function, the search for keywords in commands, and the prompt for command parameters. These features enable you to operate conveniently and flexibly.

Using MML commands, you can configure, query, and modify data. The BTS receives and resolves MML commands, performs associated operations, and returns the results to the LMT.

Interface Signaling Tracking Function

The interface signaling tracking function of the BTS is implemented through the LMT. You can use the BSC maintenance navigation tree of the service maintenance system on the LMT to track and review signaling messages.

You can flexibly define interface and signaling tracking criteria to track and monitor the communication processes, service procedures, and resource usage in real time. You can also save the tracked messages and review them online or offline. With the help of the interface signaling tracking function, you can quickly and accurately locate and clear faults when the system fails.

Performance Management Function

The performance management function of the BTS is realized through the centralized performance management module of the M2000 system. The BTS generates performance measurement files and functions as an FTP server. The M2000 system functions as an FTP client and obtains the performance measurement files from the BTS to implement performance management.

The centralized performance management module of the M2000 system provides you with an easy-to-understand and comprehensive operating environment. You can implement performance management for the equipment in the entire network according to the actual

situation. For example, you can create, modify, and query performance measurement tasks and manage measurement results. The collected performance measurement data is the basis of performance assessment and network optimization.

Alarm Management Function

The alarm management function of the BTS is realized through the alarm management commands and the alarm management system provided by the LMT or through the centralized fault management module of the M2000 system. The BTS sends alarm information to the LMT or the M2000 system and saves the information in alarm files.

The BTS collects different alarm information and classifies the information by type and severity. Then, the BTS sends the alarm information to the LMT or the centralized fault management module of the M2000 system. The LMT or M2000 displays the alarm information in graphics, providing the locations and causes of faults and making troubleshooting suggestions.

Log Management Function

The log management function of the BTS is realized through the log management commands or interface provided by the LMT. The BTS logs events occurring during the processes of equipment running, service operation, and service commissioning.

By viewing and analyzing the log information, you can be clear about the current or history running status of the system and obtain information about operations and alarms. In this way, the system is not subject to exceptions or hidden risks.

