Operational Overview and
Departmental Responsibilities for a
Digital Switch Corporation DEX ECS1L

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1. General

1.1 Purpose

This practice defines departmental responsibilities for operational and administrative procedures associated with Electronic Digital Cross-Connect System (ECS1) L). In general, the responsibilities defined in this practice apply to all electronic cross-connect systems. It is not intended to specify how individual responsibilities will be accomplished, since each department produces procedural practices that delineate specific duties. This practice refers **to** the ECS1L) manufactured by Digital Switch Corporation (DSC). The DSC switch is called DEX-ECS. The present DEX-ECS is sized at 8,064 terminations, and the next generation will be sized at 32,096 ports.

1.2 Filing Instructions

File this practice in numerical order in your practices set.

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2. System Description

2.1
Overview

The ECS1 L is an electronic termination and routing point for digital signals that eliminates manual cross-connect patch panels. Combined with an M-13 multiplexer interface, an ECS1 L can provide multiplexing with enhanced DSX-1 capabilities. Applications provide:

- Segregation or concentration.

- For a hubbing network.

- Facility maintenance.

- Network control.

The ECS1L is an electronic switch which performs three basic functions:

- Cross-connect DS-1 signals.

- M 13 multiplexer.

- DS1/DS3 signal monitor.

The ECS1 L consists of three main parts:

- Administrative subsystem.

- Matrix subsystem.

- **Unit subsystem.**

2. System Description, continued

2.2
Terms

The following terms are used in this practice:

Term	Definition/Meaning
CNAS	Circuit Network Administration system. The corporate-supported business information system that maintains the data bases necessary to record the position assignments and digroups for each DS1 facility interconnected at the DCS. CNAS records show spare positions in appropriate digroups that must be interconnected to establish the circuit path.
DCS	Digital Cross-Connect System. A generic name describing a digital cross-connect frame installed in a designated Central Office. A DCS frame consists of ports that allow cross-connection of DS0 and DSI. The DCS is not only capable of cross-connecting circuits and facilities, but it can also provide facility performance monitoring (DS1 level).
DCS Port	Connection point on a DCS that permits the termination of cable facility with one DS1 system. Each port is connected to a unique digroup within the DCS.
DS0	Digital Signal Level 0. An individual digital signal at the channel level having 64 Kb/s bandwidth capacity.
DS1	Digital Signal Level 1 (1.544 Mb/s). A digital carrier system consisting of 24 DS0 channels.
DS3	Digital Signal Level 3 (44.736 Mb/s).
Facility	A single direct path for the transmission of electrical signals, with a defined bandwidth or bit rate between two points.
NC	Network Controller. A computer system that is designed to monitor, communicate, and control the DCS network from a central location. The controller provides the flexibility to manage and reconfigure on a dynamic basis.
RTS	Remote Test System. Equipment used to test DS1 and DS0 facilities and circuits from a distant location to where the circuits are located.
TCB	Test Channel Bank. A device used to interface the DCS with an RTS.

2. **System Description,** continua

2.3
Acronyms

The following acronyms are used in this practice:

Acronym	Definition
AI	Administrative Subsystem
AIS	Alarm Interface Circuit Pack
ASCII	American Standard Code Information Interchange
BPV	Bipolar Violation
CO	Central Office
COEI	Central Office Equipment Installation
CPU	Central Processing Unit
CRCC	Carrier Restoration Control Center
CRC-6	Cyclic Redundancy Check (6 bit)
CV	Coding Violations
DC	Digital Interface Circuit Pack
DMC	Digital Matrix Center Circuit Pack
DMO	Digital Matrix Originating Circuit Pack
DMT	Digital Matrix Terminating Circuit Pack
DSC	Digital Switch Corporation
DSS	DCS Support System
ECS1 L	Electronic Digital Cross-Connect System

(continued)

**2.3
Acronyms,
continued**

Acronym	Definition
EKOS	Exchange Kemal Operating System
ER	**Bit Error** Rate
ESF	Extended Superframe
LED	Light Emitting Diode
LOS	Loss Of Signal
Mb	Megabyte (1,048,576 bits)
NP	Network Processing Circuit Pack
OOF	Out Of Frame
PAR	Parity Errors (DS3 only)
PDS	Product Documentation Standards
PER	Parity Error Rate
PI	Power Supply and Interface card
PM	Power Supply and Memory Circuit Pack
PROC	Processor Circuit Pack
PS	Power Supply Circuit Pack
QRSS	Quasi-Random Signal Source
RS	Redundancy Switch Circuit Pack
RU	Rack Unit

(continued)

**2.3
Acronyms,
continued**

Acronym	Definition
SES	Severe Errored **Seconds**
SIO	**Serial** Input/Output **Circuit Pack**
SL	**Serial Link Circuit** Pack
SSCC	Special Services Control Center
SSOC	Switching Services Operation Center
SYNC	System Clock Generator **Circuit Pack**
UPS	Uninterrupted Power Supply

**2.4
Administrative
Subsystem**

The Administrative subsystem is **fully redundant** and consists of the hardware **and** software needed to manage and maintain the entire system. It consists of five parts:

- Microprocessor **.**
- Alarm interface.
- Control (serial input/output).
- Memory.
- Power supplies.

NOTE: Existing customer traffic (cross-connects) is not affected by complete failure of the Administrative subsystem.

2. **System Description,** continued

2.5
Microprocessor

The microproces sor is the administrator of the Administrative subsystem. It has two serial links for direct access. The microprocessor acts as the director and administrator of additions and maintenance within the system. If the microprocessor card fails, the switch issues an alarm but continues to function without causing any degradation. When the microprocessor card fails, the switch maintains its network maps; however, the ability to make software changes to the system is interrupted. The ECS1L can be optionally equipped with a redundant microprocessor card to take over in the event of a failure. The redundant microprocessor is classified as a warm standby and must be manually loaded with the existing configurations and cross-connects that are stored on a hard drive before bringing online.

2.6
Alarm
Interface

The alarm interface (AI) card controls the reporting of alarms within the system. Every card in the system reports its condition to the AI card. Alarms are generated per the alarm settings, set by the local Telephone Company personnel. The AI also has sense points that can be hard-wired for remote alarming to such locations as SSOC or CRCC.

2.7
Control (Serial
Input/Output)

The serial input/output (SIO) card allows for expansion of the I/O ports (up to 8 additional ports with two SIO cards) to access the system. The ports can be **used** for direct or dial-up access. They can be synchronous or asynchronous. Each card can support four RS232C or RS449 ports, or one X.25 data link.

2.8
Memory

Memory consists of the Winchester floppy controller (WFC), the disk drive shelf power supply, a hard disk drive, and a 3.5-inch floppy disk drive. All of the software needed to run the system is stored on the hard disk. Software updates (SVRs) and backups of the hard disk are made via the 3.5 inch floppy drive.

2.9
Power
Supplies

The Administrative subsystem contains two power supplies that load-share. These redundant A and B cards are used to power the administration shelf cards. As is the case throughout the system, the A card is powered by the A plane power bus. Similarly, the B card is powered by the B plane power bus. The A and B power buses provide separate power sources off the Central Office power system.

2.10
Matrix
Subsystem

The Matrix subsystem provides a connection path between:

- Any incoming DS1 port orDS1 component of a DS3 port.

    AND

- Any outgoing DS1 port or DS1 component of a DS3 port.

The cross-connection is made through solid-state circuitry. The subsystem has two identical switching matrices and a pair of matrix controllers. Two identically mapped matrix planes, operating in parallel, provide a 1 :1 redundancy.

2. System Description, continued

**2.11
Matrix
Controller**

The matrix controller (MC) provides the power, memory, administration, and synchronization for the matrix. It is made up of two sets of three cards:

- Power supply and memory (PM) card.

- Processor (PROC) card.

- System clock generator (SYNC) card.

Each set of three cards handles the activities of its corresponding matrix shelf. Side A of the MC controls matrix A; side B controls matrix B. The MC continuously monitors all cross-connect paths for correct routing and signal quality, and maintains the routing and synchronization of the matrix.

**2.12
Matrix
Shelves**

The matrix is a two-shelf system with one designated as the A plane matrix and the other designated as the B plane matrix. The two shelves are identical in design, card configuration, and function, but they operate independently. The A plane shelf receives the A copy of a DS1 signal and is controlled by the A-side MC. The B plane shelf receives the B copy of the same DS1 signal and is controlled by the B-side MC.

Each shelf contains three cards:

- Digital matrix originating (DMO) card.

- Digital matrix center (DMC) card.

- Digital matrix terminating (DMT) card.

**2.13
Unit
Subsystem**

The Unit subsystem is made up of two main parts:

- The unit controller.

- The DS1 unit shelf and the DS3 unit shelf.

**2.14
Unit
Controller**

The unit controller (UC) functions similarly to the MC. The UC controls the unit shelves, with each UC consisting of an A and B set of the following cards:

- Power and memory (PM) card.

- Processor (PROC) card.

- Serial link (SL) card.

The UC is the interface between the Administrative subsystem and the unit shelves. Each UC controls the unit shelves in the same bay or rack.

2.15
DS1
Unit Shelf

The DS1 unit shelf is **the DS1 signal interface to the system. Each shelf is** equipped **to handle up to** 224 DS1 **tie-down points. Because this machine** is a **cross-connect** switch, it functions like a DSX patch **panel. Each shelf is equipped to handle four interface panels, each providing 56 DS1 connections to the DEX. These** panels **are** interchangeable to allow for wire wrap or connectorized termination to the DEX. The DS1 unit shelf contains two type of Cards:

- **DS1 power supply and interface** (PI) card. This card provides:

    - **Power** to its respective digital circuit pack.

    - **The DS1** signal interface to its respective matrix shetf points.

- Digital circuit pack (DC) cards, which process the DS1 signal. Each DC card represents one DS1 cross-connect point in the DEX.

DS1 signal interface and handling occur in the following manner:

- **Incoming: The DC card:**

    - Receives **the DS1** signal.

    - Monitors the data.

    - Splits the data into an A signal and an identical 8 signal before sending both signals **to their respective DS1** PI cards.

- **Outgoing:**

    - The UC evaluates the A and B signals from the respective planes and determines which signal to transmit.

    - **The DC card transmits the appropriate** A **or B** signal received from the **DS1 card.**

2.16

DS3

Unit Shelf

The DS3 **unit shelf is the** DS3 **signal interface** to the system. Each shelf is equipped to handle up to 16 DS3 electrical cross-connect points. (Optical-to-electrical conversion is handled outside the **DEX system in a separate system.) Unlike the DS1 unit** shelf, each **DS3** unit shelf has standby **redundancy in either a** I-for-16 or 2-for-16 configuration.

The DS3 **unit shelf contains** four types of cards:

- **DS3 power supply and interface (PI)** card which, like the DS1 PI card, provides:

  - Power **to its respective NPCs.**

  - The DS3 signal interface to its respective matrix shelf points.

- Network processor circuit pack (NPC) cards. These cards process the DS3 electrical signal and break it down into 28 A/B pairs of **DS1** s before sending them to their respective Pls.

- Redundant network processors (PCRs), which are regular NP cards on standby.

- Redundancy switch **(RS) card,** which does the physical rerouting of the DS3 signal to an available **RNP in that unit shelf** when the assigned **NP fails.**

DS3 electrical signal interface and handling occur in the following manner:

- **Incoming: The** NP card:

  - Receives the DS3 signal.

  - Monitors the data.

  - **DEMUXes the DS3 to seven DS2s** then to 28 **DS1s.**   `

  - **Prepares the signal for transmission through the matrix.**

- **NOTE:** **This DEX** is **a 1:1 cross-connect system with a DS3 interface. It does not cross-connect DS3 to DS3 without first DEMUXing and REMUXing the DS3 signal. In the process, It loses all DS3 and DS2 overhead information.**

- **Outgolng:**

  - The UC evaluates the A and **B** signals from the respective planes and determines which signal to transmit.

  - The NP card adds the necessary overhead and framing information, multiplexes the 28 **DS1** signals, and transmits the DS3.

2. System Description, continued

**2.17
System
Software**

The DEX ECS1 L is a software-driven machine. The functions performed by an **operator** are accomplished via a terminal device connected to the microprocessor circuit pack. The microprocessor translates the information input at terminals into instructions that are carried out by various circuit packs in the system. The ECS1 L uses the Exchange Kemal Operation System (EKOS). All software is under the control of the operating system. The operating system is a real-time message-based operating system that performs the following system message tasks:

- System initialization.

- Intertask communication.

- Task scheduling.

- Program/memory management.

- Disk handlers.

- Serial input/output drivers.

**2.18
Man Machine
Language**

The man machine language (MML) commands in the application software enable an operator to:

- Configure the DEX ECS1 L system.

- Perform cross-connects.

- Provide test access.

- Monitor the machine's performance.

- Display information about machine operation.

An operator executes these commands at a local or remote terminal.

3. System Operation

3.1
Overview

The DEX ECS1 L is an electronic termination and reconfiguration point for DS1 rate signals with a total of 8,064 DS1 ports (terminations).

The system provides:

- Termination of DS3 signals using an M 13 multiplexer

- Automated switching and monitoring capabilities.

- Remote and local control.

- Redundancy protection.

All cross connect paths are continually monitored for connectivity and signal quality.

3.2
Network
Provisioning

Provisioning commands are used to establish cross-connects and test access paths. For provisioning purposes, the DS3 is treated as 28 DS1 ports.

Connections can be made in one of four configurations:

- One-way: A simplex transmission path in which an incoming DS1 port is connected to any other outgoing DS1 port.

- **Two-way:** A full-duplex transmission path in which a DS1 port (incoming and outgoing) is connected to any other DS1 port.

- **Broadcast connect:** A one-way incoming DS1 port is connected from two to 28 outgoing DS1 ports.

- **Loopback:** A DS1 port is connected back to itself.

3.3
Data Base
Maintenance

An application program controls the making and breaking of cross-connections through system commands. This program also maintains the active cross-connect map and multiple alternate maps. Maps can be developed and analyzed offline, then implemented at a later time with a single command that may be used for:

- Rapid route restoration.

- Office cutovers.

- Scheduling in- and out-of-service.

- implementing circuit orders.

3. **System Operation** continued

**3.4
Network
Status**

System status reports provide current information about the status of the DEX ECS1L. System reports may be invoked from both remote and local terminals. A user can be restricted from any or all of the following:

- System reports (including system status reports).

- Alarm messages and alarm history.

- Facilities.

- Current cross-connect maps.

- Error counts.

- Out-of-service and failed devices.

**3.5
Performance
Monitoring**

Full performance monitoring is provided for signals conforming to either the D3/D4 or extended superframe (ESF) formats, as well as B8ZS (bipolar with eight-zero suppression). All incoming DS1 and DS3 signals are monitored for basic performance-monitoring parameters and path-routing through the switching matrix.

DS1 facilities are monitored for:

- Bipolar violations (BPV).

- Loss of signal (LOS).

- Alarm indication signal (AIS) (all 1s).

- Bit error rate.

- Out of frame (OOF).

- Cyclic redundancy check (CRC-6) for ESF.

- Errored seconds (ES).

- Severe errored seconds (SES).

DS3 facilities are monitored for:

- AIS

- LOS

. LOF

- Remote alarm.

- Parity error.

3. System Operation continued

**3.5
Performance
Monitoring,
continued**

Signals in transit are monitored for:

- Internal CRC errors.

- Path-routing errors.

- Internal LOS.

NOTE: For clarification of terms, coding violations (CVs) include BPVs, CRC-6, and quasi-random signal source (QRSS). Bit error rates are based on BPVs when running super-frame (D4) framing, and CRC-8 violations when running ESF framlng schemes.

The following system default settings are (in occurrences in the last 24 hours):

If the Parameter is...	The Major Setting Is...	And the Minor Setting Is...
CV	I6 (IS, 777,216)	IO (132,960)
ER	IO-3	IO-6
ES	I4 (6,480)	10 (648)
PAR	I6 (I6,777,216)	I4 (3,865,190) **DS3** Ckts Only
PER	10-3	IO-6 DS3 Ckts Only
OFF	9 (511)	4 (17)
SES	II **(864)**	**7 (100)**

The recommended settings for alarm thresholds are:

If the Parameter is...	The Major Setting Is...	And the Minor Setting is...
CV	**6 (I ,024)**	**4 (64)**
ER	IO-5	Io-7
ES	8 (255)	6 (64)
PAR	5 (256)	3 (16) DS3 Ckts Only
PER	IO-6	1 O-6 DS3 Ckts Only
OFF	6 (64)	4 **(17)**
SES	6 (64)	4 **(17)**

NOTE: Upon Initial Installation, the recommended settings may be too stringent. The recommended values should be used as a guideline for setting system thresholds. Acceptable system standard thresholds may be adjusted by the system administrator in an effort to customize the detail of alarm reporting to the workload and health of the network.

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3. **System Operation,** continued

**3.6
Test
Ports**

Standard policy relating to exact quantity of test ports required per quantity of circuits installed is a ratio of one percent test ports to every working termination, with a minimum of five on initial installation. For example, 1500 OS1 terminations require 15 test ports. If additional test ports are required, notify Engineering of the required quantity.

**3.7
Alarm
Messages**

Alarm messages are generated automatically whenever a fault is detected and **exceeds** the level set by the telephone company. Visual and audible alarm indicators are provided locally, with relay closures available for remote indicators.

Each alarm report includes the:

* Time the alarm occurred.

* Type of alarm.

* Device name and number.

The alarm report is filed on a hard disk and can be:

* Displayed.

* Dumped to a floppy disk.

* Transmitted over a data link.

* Deleted.

The DEX-ECS1 L supports these alarm categories:

* Critical – loss of 5 or more DS1 ports.

* **Major – loss** of 1 to 4 DS1 ports.

* Minor – non-service-affecting condition or a loss of redundancy.

* Major Processor – AI/MS circuit pack lost contact for more than 10 seconds.

* Information – system activity provided.

* Actlon – system fault that has no effect on cross-connect capability or redundancy, but requires corrective action.

4. **Departmental Responsibilities**

4.1
Overview

This section identities which functions, procedures, and responsibilities are necessary for providing GTE installation and ongoing maintenance.

4.2
Administration and System
Security

The DEX ECS1L requires you to logon by entering a user name or password in order to gain access to system commands. The **DEX–ECS1** L supports 255 user names. Each user has a password of two to 16 alphanumeric characters. The system manager can restrict command categories from a user to prevent unauthorized usage. The system administrator can also restrict a user to a limited pool of **DS1** systems. Administrative commands are used to set up the following desired software configurations:

- System initialization.

- Program and data back-up.

- Disk loading.

- User logon.

- User logoff.

- Multi-user access control.

- Software parameter control.

Administrative access and control is the responsibility of the Special Services Control Center. All administrative access passwords, partitioning arrangements, and test access are established by Special Services. If the controller interface is not available, Central Office personnel use an administrative terminal to access a local terminal and printer.

4. **Departmental Responsibilities** continued

**4.2
Administration
and System
Security,
continued**

NOTE: **When remote access Is provided ECS1L users are not assigned
or connected directly to a DCS administrative port. When remote
access Is not provided, Centra** Office **personnel access a local
printer and terminal at th site All ECS1L administration**
activities **are performed through the DCS netwlor controller
(digital network suppcr system). Assignment of the
administrative links of** digital **cross-c nnect system are as
follows:**

- **Link 1: Loca site terminal.**

- **Unk 2 Dial-up for vendor use and alternate access for:**

    - **NSSC.**

    - **CRCC.**

    - **SSCC.**

- **Link 3: Loca site printer.**

    Link 3 should be given up for other test system access.

- **Link 4** DSS.
    **(Concentrator.)
    NSSC.
    CRCC.
    sscc.
    Plannlng.
    Customer.**

- **Link5: REACT or SARTS or SASS or Test equipment.**

**4.3
Engineering**

Upon receipt of the Project Control Memorandum (PCM), Transmission
Engineering is responsible for work order, site detail, and equipment ordering.
They provide the following ongoing support and input to Exchange Planning to
support growth activity and plug-in needs:

- A one percent ratio of test ports to working terminations (minimum of five and
  a maximum of 80; e.g., 15 test ports for 1500 terminations).

- Minimum of 10 percent spares per unit up to a maximum of five per Central
  Office (CO). One complete set should be ordered with initial installation.

- HLI REACT test access equipment.

- AC power for I/O modems requiring they be placed on the uninterrupted
  power supply (UPS) system for remote access.

- XT compatible PC and printer.

- Off ice major and minor alarms and a means to transport alarms to
  SSOC/CRCC for remote monitoring.

- Off ice battery and frame ground.

4. **Departmental Responsibilities,** continued

4.4

Central Off ice Equipment Installation

The following covers Central Office equipment installation (COEI) responsibilities of CS1 systems:

- Inventory all working and spare circuit packs card cages, frames, cables, and all other hardware necessary to the ECS1L system.

- Ensure system specifications are met.

- Verify modems **have been engineered to meet th** same specifications as the modems in an electronic office. Modems should be placed on the UPS system to allow remote access to the DCS in the event of a power outage.

- Verify office **battery** and frame ground meet GTE Telephone Operations Practices 795-805-073, "Transmission Equipment – Central Office Grounding" and 795-805-071, "Grounding System Central Office – Engineering Applications."

- Verify remote and local alarms.

- Notify SSOC/CO/CRCC/SSCC personnel **when CSI** system is ready for acceptance.

- Once acceptance testing has been completed, issue a copy of the configurations and assignments to the SSCC/CRCC and the DSS administrator. The SSCC **verifies in** CNAS that the configuration matches the work order information. CRCC will have permanent records for restoral; information.

- Update prints and supporting documents, leaving one copy on-site and returning a copy to the Transmission Engineering department.

- Coordinate with SSOC/CO personnel for complete acceptance and performance testing.

The following DSC Communication Corporation standard practices should be referenced for installation and test procedures:

313-001-400	DEXCS Engineering Guide
315-001-200	DEXCS1/1 S Installation Procedures
313-001-000	**DEXCS1** to **CS1** L System Expansion Overview
315–01 I-200	**DEXCS1** L Installation Procedures
345-001-200	**CS1** L Installation Procedures
345-001-500	**CS1** L Acceptance and Test Procedures
345–002–200	Growth Procedures

4. **Departmental Responsibilities** continued

4.5
Special Services
Control Center

The DEX ECS1 L provides remote provisioning capabilities that may be used to maintain the active cross-connect and alternate routing maps. It allows the Special Service coordinator to enable commands immediately or schedule them **to be** initialized at a later date. In areas where SSCC provisioning and testing personnel do not have remote access, the SSCC or CO initiates software commands with direction and coordination from SSCC.

The regional SSCC maintains all software revision records for the ECS1 L units **within their operating area. The SSCC must** ensure that the ECS1 L software revisions are compatible with the support software of the network controller. The SSCC has **responsibility for all software connections and should be responsible** for coordination of all internal and external cross-connect requirements, including:

- Preconversion software connections.

- Implementing and coordinating all circuit order activity.

- Issuing circuit design layout cards.

- Port assignments for DS3/DS1 facilities on the DEX ECS1 L. (The SSCC should ensure GTE standards for such assignments, e.g., test ports.)

- Maintaining network maps and cross-connect assignments.

- System data base backup (SVRs, etc., one per week).

- Network maps data base backup three times per week.

4.6
Carrier
Restoration
Control Center

The Carrier Restoration control Center (CRCC) is responsible for the maintenance of **DS3/DS1** facilities assigned to the DEX. Accordingly, the CRCC initiates network facility restoration and provides first-level technical support. Technical second-level support is provided by TSS. CRCC performs ongoing preventive and corrective maintenance through the use of operational support systems such as digital span line monitoring and/or DCS Support System (DSS).

In the absence of operational support systems **being deployed** in a CRCC environment, span line testing and restoration is accomplished via remote dial-up access to the DEX or through site maintenance personnel. The CRCC should:

- Ensure all remote access test equipment is in proper operation.

- Complete any software (SVR) upgrades.

   NOTE: The CRCC shares thls responsibility with the CO.

4. Departmental Responsibilities continued

4.6
Carrier Restoration Control Center, continued

- Perform all corrective maintenance tasks or internal investigation required to correct a hardware fault. This includes responding to any alarm indications or messages on local or remote terminals. The Corrective Maintenance Task List provided by the vendor includes:

    - A task list.

    - Individual task procedures **(TPs),** which provide detailed instructions for performing the required tasks.

    NOTE: **The CRCC shares this responsibility with the CO.**

- **Perform** all monitoring functions.

- Respond to and coordinate restoration of all ECS1 L failures and alarms.

    NOTE: **The CRCC shares this responsibility with the CO.**

- **Coordinate** DS1/DS3 facility acceptance and status completions.

- Respond to facility alarms.

- Perform route restoration.

- Provide emergency route restoration.

- Analyze performance monitoring measurements and network status reports.

- Initiate and control activities required to return systems to assigned facilities.

4.7
Switching Services Operations Center and Central Office

The SSOC is the primary interface between the Central Office and both CRCC **and SSCC** when testing, monitoring, and repair activities for the ECS1 L are to be accomplished. In the event the controller interface is not available, an administrative terminal is utilized by Central Office personnel to access a local terminal and printer.

First-level technical support is provided by the CRCC, and second-level support is provided by TSS.

NOTE: **Any reference to Central Office maintenance responsibilities is synonymous with CRCC span maintenance in areas that have CRCC span maintenane personnel assigned.**

4. Departmental Responsibilities continued

4.7

Switching Services Operations Center and Central Off ice, continued

The following activities are within SSOC and Central Office responsibility:

- Coordinate acceptance with CRCC and SSCC administration.

- Work with COEI or vendor-provided installation personnel to perform acceptance of the ECS1 L using vendor documentation. **GTE** standard acceptance procedures should be used with vendor documentation.

- Test/audit all spare cards.

- Maintain on-site critical spare cards and parts.

- Ensure test equipment is available, calibrated, and functioning properly.

- Respond to and coordinate restoration of all ECS1L failures and alarms.

    NOTE: **The CO shares this responsibilty with the CRCC.**

- Complete any software (SVR) upgrades.

    NOTE: **The CO shares this responsibility with the CRCC.**

- Coordinate with SSCC/CRCC for DS1/DS3 acceptance locally at DEX or remotely through digital span line monitoring system.

- Ensure span acceptance is in accordance with the following Telephone Operations Engineering Practices:

    - DS1 Span Acceptance 200-002-725.

    - Fiber Optics Acceptance Test Procedures 392-342-500.

- Perform all corrective maintenance tasks or internal investigation required to correct a hardware fault. This includes responding to any alarm indications or messages on local or remote terminals. The Corrective Maintenance Task List provided by the vendor includes:

    - A task list.

    - Individual task procedures (TPs), which provide detailed instructions for performing the required tasks.

    NOTE: **The CO shares thls responsibility with the CRCC.**

- Routine maintenance, including inspection and replacement of the fan filter as described in TP-501.

- Perform system data base backups at least once per week. (When activity is high, data base backups on the circuit provisioning and cross-connects should be done three times per week.)

- Perform vendor required diagnostics to make sure that system performance and internal investigation features function properly.