DIGITAL TRANSMISSION SURVEILLANCE SYSTEM

ADMINISTRATIVE METHODS

DIGITAL DATA SYSTEM

1. GENERAL

1.01 This section outlines the specific responsibilities of offices and centers involved in the installation and maintenance of the Digital Transmission Surveillance System (DTSS). The DTSS provides performance information of DS-1 facilities used within and between digital serving areas in the Digital Data System (DDS). The DTSS may be used to aid in the maintenance of these facilities when used in DATAPHONE* Digital Service. The administrative procedures contained in this section emphasize DTSS reports and office responsibilities for those DDS offices providing DTSS. The administrative procedures for DDS are contained in Section 660-230-100.

1.02 This section is being reissued for the following reasons:

(a) Updates Digital Network Administration Center (DNAC) responsibilities

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(b) Updates the measurement plan

(c) Updates DTSS Reports

(d) Updates Table A, DTSS Reports

(e) Updates Glossary of Abbreviations & Terms.

Change arrows are used to emphasize the more significant changes.

1.03 The Digital Transmission Surveillance System is an enhancement to the DDS. The DTSS will remotely monitor, transmit, centrally process, and retrieve performance data on a digroup basis to identify troubles in each direction of transmission. The DTSS derives an 8-kb/s communications channel to transmit the DS-1 performance data to a centrally located minicomputer. The data is then processed and distributed in the form of performance reports over a multipoint network.

1.04 The DTSS utilizes circuit packs HL16B and HL95 in existing T1DMs which are linked to a central minicomputer. A brief description of the equipment follows.

(a) A T1DM circuit pack (CP) coded HL16B is provided for framing pattern error monitoring in the 24th channel. It also derives a channel for the transmission of performance data over existing DS-1 facilities. Specifically, the data channel is derived from the DS-1 signal by using the 191st bit in each 193-bit DS-1 frame. The 191st bit, which is also called the R-bit, is currently unused in the DS-1 signals between T1DMs. Since the DS-1 frame repetition rate is 8000 bits per second, the derived data channel is 8 kb/s. Also, since the DS-1 facilities are full-duplex, the derived 8-kb/s data channels are full-duplex. For DTSS operation, the HL16B circuit pack is substituted for the HL16 circuit pack in the T1DM. *A mixture of CPs HL16B and HL16 within the same bay is prohibited for DTSS operation but is permissible for normal T1DM service.* A CP HL16B provides for sensing an error in the framing pattern as well as determining if the T1DM is "in synchronization" or "out of synchronization."

(b) A multi-microprocessor surveillance unit circuit pack HL95 is inserted in a previously vacant slot of the protection spare T1DM. The surveillance unit collects and analyzes the perfor-

mance data furnished by circuit pack HL16B in the T1DMs that are being monitored. One surveillance unit is provided per T1DM bay which interconnects up to 11 working T1DMs and one protection spare T1DM. Some additional T1DM bay wiring is required if ▶the bay was manufactured prior to 1980. The T1DM bays manufactured during 1980 and beyond may or may not include the additional wiring that enables the surveillance unit to access all T1DMs in that bay. The wiring is dependent upon the list number of the bay.◀

(c) One PDP* 11/70 minicomputer and peripheral devices are required for the central collection and processing of data. The minicomputer has 128K memory as well as the following peripheral devices:

- One model LA36 writer II system console, or equivalent, for the system interface

- One model LP11 high speed printer, or equivalent, capable of 300 lines per minute

- One model RWP06 disk drive and controller, or equivalent, with a 176 megabyte capacity

- One model TWU16 tape drive and controller, or equivalent, capable of 1600 bits per inch per 9 tracks

- Multiplexers and controllers for 20 synchronous and 12 asynchronous communication lines or ports

- One Electronic Industries Association (EIA) level control unit to interface with the 64-kb/s multiplex channels.

Data storage for report production is accomplished using the disk system for recent data up to 7 days and the tape system for longer term storage. Access to the surveillance units in the system will be provided via the 20 synchronous communication lines. The 12 asynchronous lines will be used for the report distribution network.

1.05 The performance data collected by the surveillance units is transmitted via the 8 kb/s channels to the minicomputer for processing. The minicomputer generates performance reports based

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on the performance data it receives from the surveillance units. These reports will be transmitted automatically to terminals at selected locations via multipoint facilities. These locations include DNAC, all DDS/Centralized Test Centers (CTCs), the Long Lines Network Operations Center (NOC), Regional Facility Management Centers (RFMCs), and selected hub offices.

1.06 These reports consist of real-time performance reports and administrative reports. They indicate where corrective and/or preventive action is required in order for the Bell System to meet the expected facilities performance objectives.

2. DTSS RESPONSIBILITIES OF CENTERS AND OFFICES

2.01 Since DTSS is located in DDS offices, the definition and responsibilities for DDS offices are not listed in this section but are documented in Section 660-230-100. This part defines only those responsibilities that are unique to DTSS and are in addition to the normal responsibilities of the DDS office.

2.02 All centers and offices in the DDS hierarchy have the following responsibilities:

(a) Ensure that all applicable Bell System Practices (BSPs) are followed and that changes to these BSPs are applied.

(b) Maintain adequate and current records of facility assignments including records of temporary changes for which the center or office has responsibility as defined in this section.

(c) Cooperate with other centers or offices in testing to sectionalize troubles and in correcting unsatisfactory service conditions.

DIGITAL NETWORK ADMINISTRATION CENTER

2.03 The DNAC is a centralized point of contact for all offices involved with the DTSS network. It continually monitors the DTSS network and reviews and analyzes the DTSS reports. It will be designated as the Plant Control Office for the DTSS network. The responsibilities of the DNAC are ♦divided into system management and digroup performance areas and are described in the following paragraphs.

2.04 System management responsibilities at DNAC are as follows.♦

(a) Coordinates installation of additional digroups to the existing DTSS network by:

● Verifying correct strapping assignments for CP HL95s

● Verifying correct address assignment for CP HL95s

● Verifying correct option assignment for CP HL16Bs

● Verifying performance of each digroup between the remote CP HL16B location and the minicomputer center by using the system test (dotting pattern)

● Coordinating system test with other DDS hub offices located at intermediate points along that digroup as required

● Ensuring proper operation of DTSS on new digroups and existing digroups.

(b) Coordinates CP HL95 changes to the DTSS network by:

● Verifying correct option assignment for CP HL16Bs

● Coordinating additions and/or modifications of CP HL95(s) involving strapping, addressing, and testing.

(c) ♦Coordinates installation and/or repair of DATASPEED* model 40/3 printers used for DTSS by:

● Verifying printers accept test message

● Coordinating option changes with associated data set or diode matrix board

● Providing technical support and/or assistance to users and repair forces.♦

(d) Provides support to maintenance and repair of existing DTSS networks by:

● Ensuring the integrity of the minicomputer data base when CP HL95, CP HL16B, communications channels, or other DTSS hardware is at fault

● Initiating and coordinating the replacement of defective CP HL95s

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● After repaired CPs are installed and locally tested, coordinating system testing with associated DDS hub office.

(e) Provides operations support for daily functions by:

● Maintaining a current, valid, and updated data base

● Providing technical support and/or assistance to field operating forces.

(f) Provides ongoing support to operations by:

● Recommending reconfiguration possibilities, if analysis of reports so indicate

● Coordinating DTSS maintenance and scheduled downtime

● Enhancing maintenance procedures to improve availability of DTSS hardware

● Coordinating acceptance testing of new or changed generics for the minicomputer as well as CP HL95s

● Identifying and recommending any new development which improves performance of the DDS and/or DTSS network

● Monitoring DDS system performance and recommending corrective action.

(g) Coordinates activities to update the minicomputer data base by:

● Verifying information for correctness and entering into the data base whenever circuit layout order cards or equivalent information is received

● Determining if other data base updates are required and instituting those changes

● Verifying that the changes are feasible and do not affect performance, response, or degradation of the DTSS network

● Administering procedures which consistently maintain accurate information in the data base by providing backup procedures, loading procedures, and scheduling updates at prescribed times.

2.05 ▶Digroup performance responsibilities at DNAC are as follows:

(a) Refers all facility failures as determined by DTSS to the proper entity by:

● Providing continuous monitoring using DTSS

● Analyzing DTSS reports on a real-time basis

● Following up on failures to ensure that timely corrective action is in progress

● Initiating escalation procedures as required.

(b) Refers intermittent (dribbling) errors to the proper entity as determined by DTSS by:

● Analyzing real-time and historical reports of digroup performance

● Establishing a "worst facility list" and referring all chronic and/or poor performance digroups to the proper entity

● Following up on all trouble referrals to ensure that timely corrective action is in progress

(c) Publishing results monthly of digroup performance.

(d) Assisting the DDS plant control office and/or service/sales manager in the resolution of customer complaints.◀

MINICOMPUTER CENTER

2.06 The minicomputer controls the DTSS. It collects the performance data from all circuit pack HL95s via the 8-kb/s performance message transmission channels. The minicomputer processes performance data to determine the per-route performance levels. These statistics are outputted in the form of reports that are automatically transmitted to designated locations.

2.07 Maintenance of the minicomputer will be performed by the Maintenance Support Group. This group will be responsible for ensuring high availability and reliability of the DTSS minicomputer. This will encompass the following:

(a) Identifying hardware and/or software problems in the minicomputer

(b) Assisting DNAC in identifying any nonminicomputer problem, such as CP HL95, CP HL16B, data sets, DATASPEED 40 terminal, line, or circuit failure in DTSS network

(c) Performing first level of minicomputer maintenance

(d) Performing diagnostic tests on minicomputer

(e) Scheduling preventive maintenance and verifying system status

(f) Escalating problems to DNAC, if necessary

(g) Performing loading of new generic programs for minicomputer

(h) Ensuring adequate recovery procedures

(i) Assisting DNAC in resolution of DTSS problems and restoring DTSS to full monitoring capability.

CENTRALIZED TEST CENTER

2.08 This center has a receive only printer (ROP) for DTSS use. The specific DTSS responsibilities are as follows:

(a) Receives on-line DTSS performance reports via a dedicated ROP terminal

(b) Analyzes DTSS performance reports per paragraph 3.02 to determine trouble

(c) Initiates a trouble log (ticket) based on the DTSS analysis in (b) above and refers to the appropriate receive digroup control office

(d) Follows up administratively on troubles until resolved.

HUB OFFICE

2.09 This office has maintenance responsibility for DDS which is identified in Section 660-230-100. It has the equipment installation and maintenance responsibility for DTSS but may not have an ROP for DTSS reports. When equipped with an ROP for DTSS reports, this office has the same DTSS responsibilities as a CTC. The hub office responsibilities are as follows:

(a) Performs strapping and optioning changes to existing HL95 and HL16B CPs

(b) Performs installation of new CP HL95s which include strapping and addressing

(c) Performs local testing of CP HL95 and troubleshooting, if required

(d) Ensures that all installation and test procedures in Section 314-984-200 are followed

(e) Identifies line or circuit troubles

(f) Contacts DNAC for assistance in troubleshooting DTSS installation and in-service system problems

(g) Reports digroup failures to appropriate RFMC.

REGIONAL FACILITY MANAGEMENT CENTER

2.10 The RFMC coordinates and manages the restoration of failed broadband facilities [1A radio digital terminal (RDT) to 1A RDT or equivalent, ie, broadband data modem (BDM) to BDM] and the associated protection facilities. This office has an ROP for the DTSS reports. These reports are for digroups which contain broadband facilities that terminate within or traverse their realm of responsibility. An RFMC has the following responsibilities:

(a) Analyzes and assists in corrective and/or preventive maintenance activities at the request of a CTC and/or serving hub as required

(b) Aids the responsible office in contacting the surveillance and control of transmission system (SCOTS) or other alarm centers or main stations (if manned) to request switching of radio sections in its effort to restore the broadband facilities

(c) Refers those troubles that have been identified as the responsibility of the adjacent RFMC(s) to that RFMC(s)

(d) Maintains and reviews the administrative reports and performance statistics of broadband facilities terminating in its realm of responsibility

(e) Reports broadband facility failures to the Network Operating Center and follows up on failures under investigation until a satisfactory explanation is obtained.

SURVEILLANCE AND CONTROL OF TRANSMISSION SYSTEM OR ALARM CENTERS

2.11 The SCOTS is designed to automate and centralize remote alarm center surveillance activities for the transmission plant. This central location has responsibilities as follows:

(a) Reports all broadband facility failures to appropriate RFMC

(b) Receives requests from the RFMC to switch broadband facilities in an attempt to clear and sectionalize troubles

(c) Activates a switch from the regular broadband facility to protection or standby in an effort to locate the offending section

(d) Initiates a trouble report to the responsible (facility or broadband facility) maintenance force in whose realm of responsibility the trouble is sectionalized

(e) Notifies the RFMC when the trouble is cleared and switch-back to the original facility has been made

(f) Fulfills additional responsibilities as described in Section 190-201-010, Alarm Centers, Alarm Center Administration, Operations Support Systems.

NETWORK OPERATIONS CENTER—FACILITY MANAGEMENT (NOC—FM)

2.12 The NOC-FM will maintain the basic facility failure data base to ensure that failure information is accurately reflected. The specific Network Operations Center—Facility Management responsibilities are as follows:

(a) Continues to exercise responsibilities as present instructions emphasize in Section 002-503-901LL

(b) Assists in the coordination of broadband facility restoration

(c) Transmits all significant digroup failure reports via teletypewriter network 0001

(d) Highlights all significant digroup outages on the morning report.

3. MEASUREMENT PLAN

3.01 Along with stringent availability objectives (see Section 314-900-300), a quantitative description of data communications quality is necessary. To minimize the impact of imperfect data communications, attain 99.5% error free seconds on end-to-end DDS service as the operating quality objective for average efficiency.

3.02 The following DTSS measurements were developed to provide a means of objectively evaluating the DDS DS-1 error performance.

(a) Experience during a 24-hour day fewer than ▶the allocated errored-second criteria for each digroup.◀

(b) Experience during a 24-hour day fewer than five 15-minute periods of which each has more than 18 error seconds

(c) Experience during a 24-hour day fewer than two consecutive 15-minute periods of which each has more than 90 error seconds

(d) Experience during a 24-hour day fewer than fifteen 100-millisecond or greater error bursts.

3.03 The DTSS reports are analyzed by looking for an "at"(@)symbol. This symbol indicates when (a), (b), or (c) of the measurements in paragraph 3.02 have been exceeded. These measurements are referred to as maintenance-action criteria in the DTSS reports. Corrective action must be taken by the proper entity.

3.04 Information which correlates to these measurements is provided in DTSS reports which are described in Part 4.

4. DTSS REPORTS

4.01 Reports are categorized into two general areas: real-time performance reports and administrative reports.

REAL-TIME PERFORMANCE REPORTS

4.02 The real-time performance reports provide an up-to-the-minute indication of system performance and *may* require immediate action from ap-

propriate centers. The two types of real-time performance reports are the real-time exception report and the 15-minute summary exception report.

A. Real-Time Exception Report

4.03 The real-time exception report (Fig. 1) is utilized by those centers which monitor digroups on a real-time basis. This report enhances the centers capability to anticipate problem conditions.

4.04 The real-time exception report is generated when a digroup experiences more than 18 error seconds during a 15-minute time interval. It provides the number of error seconds and the error burst length information (grouped by length) for each digroup that exceeds the established error criteria. Once the criteria is exceeded, every error second will be printed for each 1-minute period until the end of the 15-minute interval. The error seconds of a specific digroup are cumulative during the 15-minute interval.

4.05 Upon request, the DNAC can change the 18-error seconds criterion (threshold) down to 1-error second threshold for a specific digroup. Reducing the threshold can assist in digroup troubleshooting which is indicated as TS on the report.

B. Fifteen-Minute Summary/Exception

4.06 This 15-minute summary/exception report (Fig. 2) is utilized by those centers which monitor digroups on DDS facilities on a real-time basis. This enables them to characterize the type of errors occurring within a digroup, thereby determining their impact and extent on the total network.

4.07 ▶This report is an exception printout of all digroups which exceed the allocated errored-seconds criteria (see paragraph 3.02). Also, this report is unique to that digroup as well as to all digroups which exceed the real-time criteria in the preceding 15-minute period. This report provides the previous 15-minute errored-seconds count [see (b) and (c) in paragraph 3.02] as well as the accumulative count for that day.◀

ADMINISTRATIVE REPORTS

4.08 Administrative reports provide a summary of vital indicators which serve as an analytical tool to identify system quality trends. The adminis-

trative reports are generated by the minicomputer and transmitted to the maintenance centers on daily, weekly, and monthly intervals. These reports are intended for internal system analysis by each Bell Operating Company (BOC) and Long Lines Region.

A. Twenty-Four Hour Summary/Exception Report

4.09 The 24-hour summary/exception report (Fig. 3) is generated at the close (23:59) of a 24-hour day. It provides the total number of error seconds, error bursts (grouped by length), percentage error-free seconds, and summary data for 15-minute periods for each digroup by each BOC and Long Lines Region. This report is utilized by centers to compare the distribution of errors and relative performance within each digroup.

B. Historical File Report

4.10 The historical file report (Fig. 4) is generated daily for any digroup that has exceeded (a), (b), or (c) threshold measurements in paragraph 3.02. This report lists the first day a criterion was exceeded up to 6 previous days. This report indicates the region a particular digroup appears in.

C. Weekly Performance Summary Report

4.11 The weekly performance summary report (Fig. 5) provides a digroup performance, measured in error-free seconds, for each day within the reporting period and for each digroup by each Long Lines Region or BOC. The report period is from Sunday through Saturday. This report is used by management centers to obtain a comparison of the overall performance for all digroups within their realm of responsibility.

D. Performance Ranking Facilities by Region for Monthly Period

4.12 The performance ranking facilities, by region, for the monthly period report (Fig. 6) provides a listing of the facilities by each Long Lines Region or BOC that indicates the relative performance measured in error-free seconds. The facilities are ranked in performance order for each region. This report is utilized by management to obtain a ranking by performance of facilities within their realm of responsibility (worst to best). The index cycle is from the 23rd of the month to the 22nd of the next month.

E. Monthly Facility Report by Rank

4.13 The monthly facility report (Fig. 7) is generated at the end of the index cycle (23rd to 22nd). It provides a listing of the facilities, indicating the relative performance measured in error-free seconds. This report is utilized by management to obtain a ranking of all facilities without regard to the Long Lines Regions or BOC.

REPORT HEADINGS

4.14 The following list of headings and notations are used in the DTSS reports. After the heading, a brief definition is given.

- ALLOC ERRSEC—The maximum allowable error seconds for a digroup during a 24 hour period. The allocation is based on the digroup length and facility technology.

- ENTER DATE—The date (month, day, and year) a digroup exceeds any maintenance action criteria. This digroup will remain on the report until three consecutive days of not exceeding the criteria. Enter date is used only with the Historical File report. Error data from the digroups is received by the HL95 in byte blocks, every millisecond (ms). If an error bit occurs in that byte, an errored ms is said to occur. A burst is said to start at the first errored ms after a nonerrored ms. The burst is said to terminate at the first nonerrored ms block after the start of a burst. Error bits in the byte blocks are also called sync failures. A TS to the right of a number in the 100+ category indicates a troubleshooting mode, specifically, the 18 errored-second criteria has been reduced to a 1-errored second criteria.

- FAIL—This notation indicates that the digroup is to be treated as failed based on its errored-second performance during a 15-minute period.

- # CONS PER >90 ERRSEC—For a given digroup, the number of consecutive 15-minute periods in which the number of errored seconds was greater than 90.

- # ERROR BURSTS BY LENGTH IN MS—For a given digroup, the error bursts are divided and totaled into four categories. Each category is different in time (length in milliseconds) and is 1, 2 through 10, 11 through 99, and 100+.

- # ERRD SEC—For a given digroup, the number of seconds in which a sync failure occurred.

- NUMBER OF ERRORED SECONDS PER DAY—The number of errored seconds accumulated from 0000 to 23:59 network time.

- # FAIL—This indicates the number of times the digroup failed based on allocated errored seconds.

- # PER >18 ERRSEC—For a given digroup, the number of 15-minute periods in which the number of errored seconds was greater than 18.

- ◆SERVICE INDICATOR—For a given digroup, it is calculated by 100 minus [(errored seconds divided by total seconds to present 15-minute period) multiplied by F and then multiplied by 100]. If there was a system outage or a CP HL95 out of service, the percentage is automatically adjusted since the elapsed time would be less than actual time. Rounding is done on all percentages less than 99.99; for percentages greater than 99.99 but less than completely error free, the value is 99.99. Asterisks in this column mean CP HL95 is not in place but the digroup is in the data base.

- TS—This notation indicates the digroup is in a one errored-second threshold troubleshooting mode.

- XXX.XX%—The percentage of digroups in the data base that have greater than 99.70% service indicator. It is calculated by 100 multiplied by the number of digroups with monthly service indicator greater than 99.70 divided by the number of all digroups in the DTSS data base.◆

5. REPORTS DISTRIBUTION

5.01 These reports are distributed via a multipoint network to terminals within the DTSS. Table

A summarizes the type of report and when each report is generated. All DTSS reports are distributed to the DNAC, NOC, RFMCs, and CTCs.

6. GLOSSARY OF ABBREVIATIONS AND TERMS

6.01 A listing of some of the more commonly used terms relating to DTSS is presented with a brief description.

Broadband Facility (Digroup Facility): Denotes for the purpose of this section a microwave radio and/or coaxial cable and all associated equipment required to support transmission of digital data (T1DM to T1DM).

CTC: A test location established to control installation and maintenance, test circuits remotely, administer records and results, and serve as the primary point of customer contact.

DDS: A system providing private line, point-to-point and multipoint, and duplex data transmission.

Digroup: A T1DM to T1DM connection providing for the transmission of digital data.

Digroup Control Office: A T1DM office at the receive end of a digroup.

DSA: The geographic area covering all DDS customer stations that home on a single DDS hub office.

DTSS: A system with the capability of continually gathering performance information on DS-1 facilities.

DTSS Reports: Reports showing the results of the performance information gathered from the DS-1 facilities. They are categorized into real-time or administrative reports.

Facility Control Office: A receive-end office that initiates requests to switch equipment in an effort to restore or clear a trouble condition.

Hub: A main office in the DDS that serves a digital serving area (DSA). The hub office also serves as a collection point for local and long-haul facilities. The hub office multiplexes, demultiplexes, and provides test access. Testing is performed either locally or remotely. A CTC is a test center and/or control center established to control and maintain circuit layout

record cards, receive customer trouble reports, assist in the checkout of newly installed stations, perform trouble isolations, and coordinate service restorals.

Minicomputer Center: The central location of the DTSS for data collection, formatting, generation, and transmission of DTSS reports.

Digital Network Administration Center: A centralized point of contact for all offices involved with the DTSS network.

Receive Only Printer: A high speed printer operating at 1800 bauds per minute. It is used to receive and print out the DTSS reports from the minicomputer center.

RFMC: Coordinates the restoration of failed broadband facilities.

SCOTS: Consolidates and automates alarm surveillance, control functions, and switching action on the long-, medium-, and short-haul broadband transmission facilities.

SU: A HL95 circuit pack that collects the performance information from the DDS DS-1 facilities via CP HL16B. Upon a poll from the minicomputer, the SU transmits the information to the minicomputer.

Sync Circuit Pack HL16B: Provides error monitoring of DDS DS-1 facilities and derives an 8-kb/s service channel for the transmission of performance data over existing DS-1 facilities.

7. REFERENCES

7.01 The following sections provide additional information.

SECTION	DESCRIPTION
002-503-901LL	Broadband Facility Management
190-201-010	Alarm Centers, Alarm Center Administration, Operations Support Systems
314-900-300	Digital Data System, Private Line Service Overall Maintenance
314-912-100	T1 Data Multiplexer, Description, Digital Data System
314-912-300	T1 Data Multiplexer, Maintenance and Troubleshooting, Digital Data Systems

SECTION	DESCRIPTION	SECTION	DESCRIPTION
314-912-500	T1 Data Multiplexer, Tests, Digital Data System	314-984-500	Digital Transmission Surveillance System, Overall System Maintenance Requirements and Test Procedures, Digital Data System
314-984-100	Digital Transmission Surveillance System, General Description, Digital Data System	660-005-011	Office Responsibilities, Special Services
314-984-200	Digital Transmission Surveillance System, Circuit Pack Installation and Test Procedures, Digital Data System	660-230-100	Administrative Procedures, Digital Data System
314-984-300	Digital Transmission Surveillance System, Central Processor Operation and Database Management, Digital Data System	682-000-015	Assignment of Network Control Office, Responsibilities
		880-605-101	Digital Transmission Surveillance System, Engineering Considerations and Design of Surveillance Network, Digital Data System

⬧ TABLE A ⬧

REPORT FREQUENCY AND DISTRIBUTION

TYPE OF REPORT	FREQUENCY	INITIAL DISTRIBUTION
Real-time exception	Real-time	Reports are distributed to the Digital Network Administration Center, DDS Test Centers*, Regional Facility Management Centers, and Network Operations Center—Facility Management.
15-minute summary/exception	Real-time	
24-hour performance data	Daily	
Historical file	Daily	
Weekly performance summary	Weekly	
Performance ranking of facilities by area	Monthly	
Monthly facility report by rank	Monthly	

*May be a Centralized Test Center or serving hub office.

```
-----------------4/26/81------REAL TIME EXCEPTION REPORT--------------------------------------------------------------------------------

TIME                  DIGROUP          #ERRD    ERROR BURSTS BY LENGTH IN MS
                                        SEC      1  2-10   11-99   100†
                 FROM         TO
00:12   1T1E  CLMBOH11T20  CLEVOHO2S10    1      0    1      0      0    TS
00:13   2T1E  NYCMNY54T30  ATLNGATL      19      1    2      0      1
00:14   1T1E  PITBPADGW10  PHLAPAMKW10   20      0    9      1      1
00:14   1T1E  CLMBOH11T20  CLEVOHO2S10  656      1    3      0      1    FAIL

    *** NOTICE: NOT FOR USE OR DISCLOSURE OUTSIDE THE BELL SYSTEM EXCEPT UNDER WRITTEN AGREEMENT.
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Fig. 1—▶Example of Real-Time Exception Report◀

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--------------------------4/26/81----------------------15MINUTE SUMMARY/EXCEPTION----------15:59------------------------------------

DIGROUP                      #ERRD   #      #ERROR BURSTS BY LENGTH IN MS    SVC    TOTAL    ALLOC
            FROM      TO      SEC    FAIL     1   2-10   11-99   100†        IND    ERRSEC   ERRSEC

1T1E   CLEVOHO2S10 CHCGILCLS60  656    1       1     3      0      1        0.00    1362@      22
2T1E   DLLSTXTL    KSCYMOO9      21    2      19     1      1      0       15.80      96@      11
1T1E   CHCGILCLS60 STLSMOO9      86    3      29     0      4      0       14.20     322@      12
1T1E   DNVRCOMA    LSANCAO1     423    0       1     0      1      0        6.00    1296@      16
                 @ = MAINTENANCE ACTION CRITERIA EXCEEDED
**NOTICE:  NOT FOR USE OR DISCLOSURE OUTSIDE THE BELL SYSTEM EXCEPT UNDER WRITTEN AGREEMENT.
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Fig. 2—▶Example of 15-Minute Summary/Exception Report◀

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----------------4/26/81---24 HOUR SUMMARY/EXCEPTION-------------------------------------------------------------------
    FACILITY                      #ERRD       #ERROR BURST BY LENGTH IN MS    SVC      #CONS PER   #PER      ALLOC
              FROM        TO       SEC            1    2-10  11-99   100†      IND      90ERRSEC    18ERRSEC  ERRSEC

ER ALTWPAAL
   1T1E   NYCMNY54T30  ALTWPAAL     1            0     2      0       0       99.98        0           0        55


NER NWRKNJO2T90
   2T1E   NYCMNY54T30  NWRKNJO2T90  861@        77    56      5       0       96.00        2           0        80
   3T1E   NYCMNY54T30  NWRKNJO2T90  701@         3     6      1       3       93.48        2@          3        95


NYCR NYCMNY54T30
   1T1E   DNVRCOMA     NYCMNY54T30   21         18    20      0       0       99.95        0           0        81

       *** NOTICE: NOT FOR USE OR DISCLOSURE OUTSIDE THE BELL SYSTEM EXCEPT UNDER WRITTEN AGREEMENT.
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Fig. 3—▶Example of 24-Hour Summary/Exception Report◀

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----------------4/26/82--------------------------------------HISTORICAL FILE------------------------------------PAGE 1--------------

                            DIGROUPS EXCEEDING MAINTENANCE ACTION CRITERIA

      DIGROUP              ENTER                    NUMBER OF ERRORED SECS PER DAY    >18 ES FOR >4    >90 ES FOR 2
   #  FROM        TO       DATE                                                      15 MIN PERD'S    CONS 15 MIN PD
                                    PREVIOUS DAYS                                    PREVIOUS DAYS    PREVIOUS DAYS
CR                                                                                   6 5 4 3 2 1 0    6 5 4 3 2 1 0
   1T1E  CLEVOHO2S10  CHCGILCLS60  6/30/82    24    61    96   118   300@  239@   99        @ @ @             @
MR
   2T1E  DLLSTXTL     KSCYMO09     5/28/82   805@  255@  323@  222@  118    92   140   @ @ @ @ @ @ @
   1T1E  CHCGILCLS60  STLSMO09     7/ 2/82    40    56     8    21    71   101   377@
WR
   1T1E  DNVRCOMA     LSANCA01     7/ 1/82    62    29   101    68   107   299@   17            @
                        @ = MAINTENANCE ACTION CRITERIA EXCEEDED
***NOTICE: NOT FOR USE OR DISCLOSURE OUTSIDE THE BELL SYSTEM EXCEPT UNDER WRITTEN AGREEMENT.
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Fig. 4—▶Example of Historical Report◀

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---------------WEEKLY PERFORMANCE SUMMARY,WEEK ENDING 4/25/81----------------------------------------------------

                                                   SERVICE INDICATOR

     DIGROUP                           SU      MO      TU      WE      TH      FR      SA      WEEK

ER   WASHDCSWW20
     1T1E   ATLNGATL    WASHDCSWW20    89.29   95.76   95.44   90.17   90.26   91.35   91.00   91.89
     1T1E   DNVRCOMA    WASHDCSWW20    99.78   99.69   99.95   99.78   99.54   99.56   99.48   99.68

NER  BSTNMAFRT50
     1T1E   KSCYMO09    BSTNMAFRT50    99.15   99.52   99.91   99.59   99.00   99.65   99.65   99.52
     1T1E   NWHNCT02    BSTNMAFRT50    99.58   99.54   98.82   99.64   99.48   99.49   99.55   99.45
     2T1E   NYCMNY54T30 BSTNMAFRT50    80.19   94.29   93.46   90.13   97.75   98.00   97.56   93.06
     3T1E   NYCMNY54T30 BSTNMAFRT50    99.42   99.58   99.99   99.52   99.36   99.39   99.52   99.55

NYCR NYCMNYBWSL1
     1T1E   CHCGILCLS60 NYCMNYBWSL1    99.53   99.92   99.93  100.00   99.78   99.58   99.68   99.77
     2T1E   NYCMNY54T30 NYCMNYBWSL1    99.57   99.98   99.95   99.65   99.50   99.42   99.32   99.64
                        NETWORK INDICATOR 95.80 98.59  98.41   97.37   98.00   98.33   98.25   97.83
***NOTICE: NOT FOR USE OR DISCLOSURE OUTSIDE THE BELL SYSTEM EXCEPT UNDER WRITTEN AGREEMENT.
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Fig. 5—▶Example of Weekly Performance Summary Report◀

```
------------PERFORMANCE RANKING FACILITIES BY REGION FOR MONTHLY PERIOD--------3/23/81-4/22/81-------------------

FACILITY:                            SERVICE INDICTOR              # FAIL

ER
   1T1E   ATLNGATL    WASHDCSWW20        0.00                        23
   1T1E   DNVRCOMA    WASHDCSWW20       99.15                         2

NER
   1T1E   KSCYMO09    BSTNMAFRT50       94.19                         1
   1T1E   NWHNCT02    BSTNMAFRT50       98.99                         1
   2T1E   NYCMNY54T30 BSTNMAFRT50       99.22                         0
   3T1E   NYCMNY54T30 BSTNMAFRT50       99.43                         0

NYCR
   1T1E   CHCGILCLS60 NYCMNYBWSL1       99.37                         0
   2T1E   NYCMNY54T30 NYCMNYBWSL1       99.46                         0

   *** NOTICE: NOT FOR USE OR DISCLOSURE OUTSIDE THE BELL SYSTEM EXCEPT UNDER WRITTEN AGREEMENT.
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Fig. 6—▶Example of Performance Ranking Facilities by Region for Monthly Period Report◀

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----------------MONTHLY FACILITY REPORT BY RANK-----------FROM WORST TO BEST----------3/23/81-4/22/81--------------------

   FACILITY:                        REGION   SERVICE INDICATOR   # MONTHS AMONG 10 WORST
   1T1E  ATLNGATL    WASHDCSWW20     ER           94.00               1
   1T1E  KSCYMO09    BSTNMAFRT50     NER          94.16               5
   1T1E  NWHNCT02    BSTNMAFRT50     NER          98.99               1
   1T1E  DNVRCOMA    WASHDCSWW20     ER           99.15               0
   2T1E  NYCMNY54T30 BSTNMAFRT50     NER          99.23               0
   1T1E  CHCGILCLS60 NYCMNYBWSL1     NYCR         99.38               0
   3T1E  NYCMNY54T30 BSTNMAFRT50     NER          99.47               0
   2T1E  NYCMNY54T30 NYCMNYBWSL1     NYCR         99.46               0    TOP TEN ACCOUNT FOR 7.93% TOTAL ES

59.52% FACILITIES GREATER THAN 99.70% SVCIND

1491T1E  GNVLSCDT    CLMASCTL        SR           93.66
   2T1E  TAMPFLXL    ORLDFLMA        SR           93.91
   3T1E  GNBONCEU    CHRLNCCA        SR           95.14
   1T1E  BLTMMDCHT10 NYCMNY54T30     NER          95.46

*** NOTICE: NOT FOR USE OR DISCLOSURE OUTSIDE THE BELL SYSTEM EXCEPT UNDER WRTTEN AGREEMENT.
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Fig. 7—▶Example of Monthly Facility Report by Rank◀