

## ADMINISTRATIVE PROCEDURES

### DIGITAL DATA SYSTEM

CONTENTS	PAGE
1. GENERAL . . . . .	1
2. GENERAL RESPONSIBILITIES OF ALL OFFICES . . . . .	5
3. DEFINITION AND RESPONSIBILITIES OF OFFICES . . . . .	5
A. Serving Bureau (SVB) Hub Office . . . . .	5
B. Hub Office . . . . .	6
C. Centralized Test Center (CTC) Office . . . . .	6
D. Collection Hub Office . . . . .	9
E. End Office . . . . .	10
4. SELECTION AND RESPONSIBILITIES OF PLANT CONTROL OFFICES (PCO) . . . . .	10
5. ESCALATION PROCEDURES . . . . .	12
6. FORMAL COMPLAINT PROCEDURES . . . . .	13
7. MEASUREMENT PLAN . . . . .	14
8. OFFICE RECORDS . . . . .	14
9. SERVICE OBJECTIVES . . . . .	15
10. BELL INDEPENDENT RELATIONS (BIR) . . . . .	15
11. GLOSSARY OF TERMS . . . . .	15
12. REFERENCES . . . . .	17

#### 1. GENERAL

**1.01** This section outlines the specific responsibilities of offices involved in the installation and maintenance of the Digital Data System (DDS). This section also provides general information for the administration of the service.

**1.02** This section is reissued to redefine office responsibilities and to include the remote testing capabilities applicable to DDS. Responsibilities for all offices in the DDS hierarchy are given. Since this is a general revision, arrows ordinarily used to indicate changes have been omitted.

**1.03** The DDS offers 2-point and multipoint service at 2.4-, 4.8-, 9.6-, and 56-kb/s data rates. There is no provision for alternate voice or voice coordination. These basic data rates are multiplexed in such a way as to achieve efficient fills on the transmission facilities and on shared equipment. Offices are arranged in a hierarchy from hub office to end office as shown in Fig. 1. A hub office serves as the cross-connect point for all interdigital and intradigital serving area circuits. Digital access to long-haul equipment is available at the hub office. All hub offices are equipped with test access. Figure 2 is an example of a digital serving area (DSA) structure. For more information on DDS equipment and overall operation, refer to Section 314-900-100.

**1.04** In addition to the DDS office responsibilities listed in this section, other responsibilities may be assigned to an office. Those duties would be assigned per the administrative procedures dealing with any particular Bell System service riding DDS facilities.

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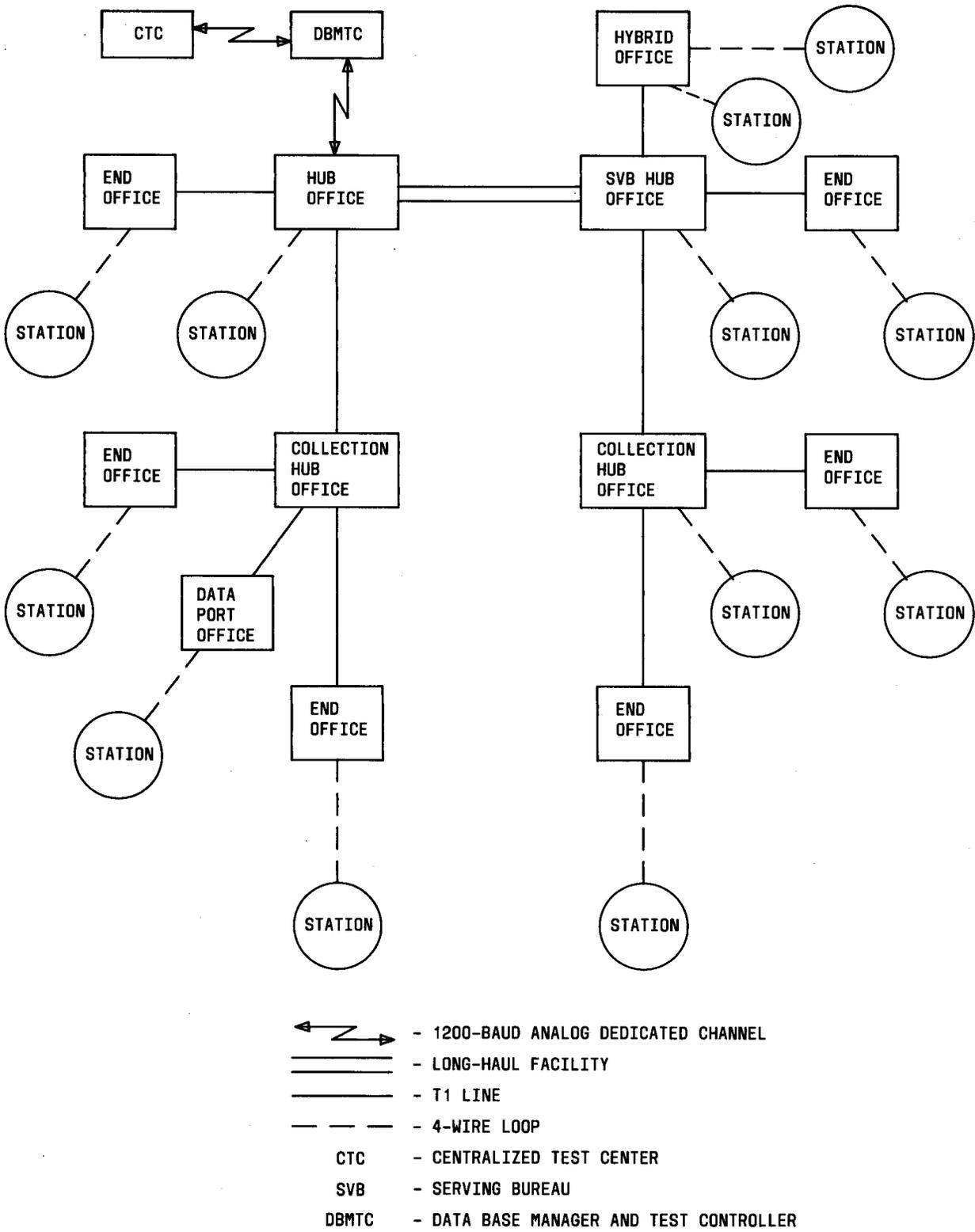


Fig. 1—DDS Hierarchy Block Diagram

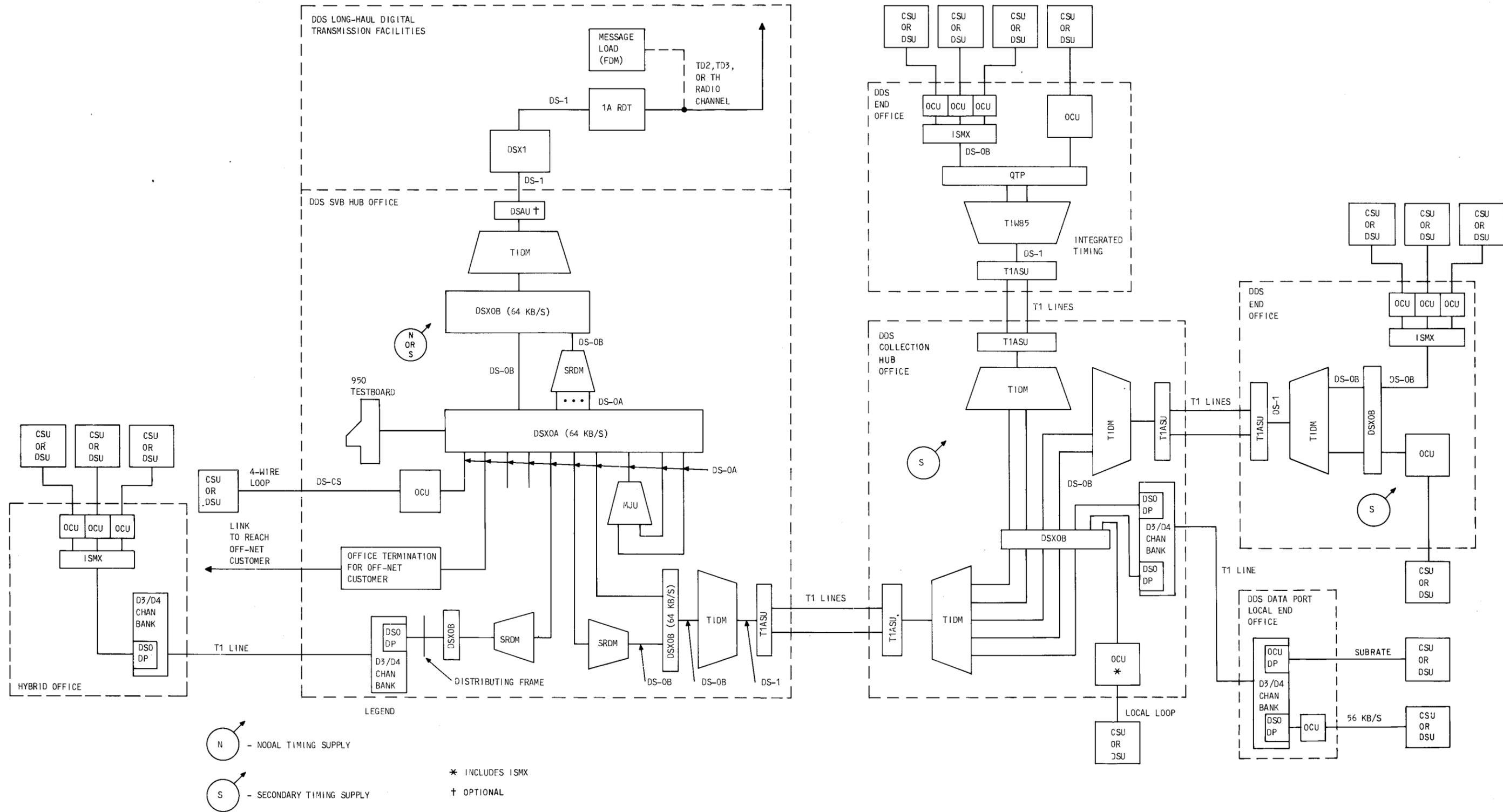


Fig. 2—Example of DSA Structure

**2. GENERAL RESPONSIBILITIES OF ALL OFFICES**

**2.01** All offices in the DDS hierarchy have the following responsibilities:

- (a) Insure that all applicable Bell System Practices (BSP) are followed and that revisions to these BSPs are applied.
- (b) Maintain adequate and current records of facilities and equipment assignments including records of temporary changes for which the office has responsibility as defined in this section.
- (c) Maintain correct designations at testboards, equipment bays, digital cross-connect bays, multiplexing bays, special service protection, and if ordered by the customer, special safeguarding measures to avoid service interruptions.
- (d) Cooperate with other offices in testing to sectionalize troubles and in correcting unsatisfactory service conditions.
- (e) Establish instructions and procedures which outline the action to be taken in the event of a major service failure. The instructions should include a list of required reports and should refer to the BSPs in which the reports are described.
- (f) Advise the PCO of major failures or abnormal conditions.
- (g) Initiate corrective action locally of any condition which might have an adverse service reaction and report to the PCO the trouble noted and action taken.
- (h) Refer all problems detected outside the responsibility of the individual office to the PCO.
- (i) Consult with the PCO before making any change which might affect service.
- (j) Cooperate with other offices during emergencies in making the best use of available facilities.
- (k) Work with the PCO and T carrier protection control center to provide fast restoration of T-Carrier Systems carrying DDS service via data port.

(l) Follow data technical (DATEC) support procedures as outlined in Section 010-521-100.

(m) Follow procedures as outlined in this section.

**3. DEFINITION AND RESPONSIBILITIES OF OFFICES**

**3.01** This part defines the DDS offices by function and lists the responsibilities in addition to the general responsibilities.

**A. Serving Bureau (SVB) Hub Office**

**3.02** The DDS serving bureau (SVB) hub office is the focal point of its serving area, termed digital serving area (DSA). It serves as a concentration point for the efficient packing of data streams to be transmitted over long-haul facilities. The SVB hub office is the cross-connect and testing point for all DDS channels that terminate in its DSA. The SVB hub has test responsibilities for its own stations and for those served by collection hubs, both within its own DSA and in a subtending DSA.

**3.03** The SVB hub office is equipped with 950-type manual testboards. There is no electronic connection between an SVB hub office and a centralized test center (CTC).

**3.04** The installation responsibilities of the SVB hub office maintenance force are as follows:

- (a) Follow intercompany service coordinator (ISC) procedures.
- (b) Establish and coordinate cross-connections.
- (c) Assist installation and repair forces at the local level.
- (d) Schedule and request dispatches of the installation and repair forces.
- (e) Test with the installation and repair forces.
- (f) Establish office records.
- (g) Perform perservice tests.
- (h) Report completion to PCO.
- (i) Assist testing of the systems.

**SECTION 660-230-100**

- (j) Verify that circuit ID and trouble number have been posted at customer premise.
- (k) Establish Special Service System (SSS) inventory.

**3.05** The maintenance responsibilities of the SVB hub office maintenance force are as follows:

- (a) Accept trouble reports from distant CTC or SVB hub office.
- (b) Respond to office alarms and restore failures.
- (c) Receive C1 trouble reports from customers within DSA.
- (d) Prepare trouble tickets.
- (e) Analyze trouble reports.
- (f) Perform sectionalization tests.
- (g) Monitor and coordinate maintenance activities.
- (h) Notify customer of trouble status.
- (i) Notify PCO of trouble status.
- (j) Follow up on referred out troubles.
- (k) Notify customer of circuit turnup.
- (l) Notify PCO of circuit turnup and advise of customer credit allowance (CCA) or maintenance of service charge (MSC).
- (m) Input data to special service system (SSS) plan.
- (n) Assist in investigation of formal complaints.
- (o) Perform service analysis.
- (p) Maintain trouble history.

**B. Hub Office**

**3.06** The function of the hub office is identical to that of the SVB hub office.

**3.07** The hub office is equipped with remote testing access via a system termed Automated Bit Access Test System (ABATS). This system

incorporates the KS-21899 Data Test System, plus a subsystem termed Automated Loop Access Test System (ALATS). Individual circuits are accessed at the digital cross-connect, 64-kb/s level (DSX0A); digital cross-connect, 1.544-Mb/s level (DSX1); and at the 4-wire loops. Figure 3 is a block diagram of a hub office equipped with ABATS remoted to a CTC.

**3.08** The installation responsibilities of the hub office maintenance force are as follows:

- (a) Establish and/or coordinate cross-connections.
- (b) Follow the intercompany service coordination (ISC) plan outlined in Section 010-520-137.
- (c) Assist installation and repair forces at the local level.
- (d) Schedule and request dispatches of installation and repair forces.
- (e) Test with the installation and repair forces.
- (f) Notify the CTC of completed tests.
- (g) Establish office records.
- (h) Confirm equipment and test access assignments with CTC.

**3.09** The maintenance responsibilities of the hub office maintenance force are as follows:

- (a) Accept trouble reports from any CTC or SVB hub.
- (b) Respond to office alarms and restore failures.
- (c) Clear trouble.
- (d) Report status to CTC.

**C. Centralized Test Center (CTC) Office**

**3.10** The CTC has the testing access of a hub office equipped with ABATS. It is responsible for the testing and maintenance of all circuits that terminate in its assigned territory. The testing access is provided via a DATASPEED® 40 display unit and printer which controls ABATS. The CTC is also responsible for maintaining all necessary manual records and inputting all data base. The

LEGEND:

ABATS	DDS AUTOMATED BIT ACCESS TEST SYSTEM
BATS	BIT ACCESS TEST SYSTEM MEASURES DIGITAL TRANSMISSION PARAMETERS TO AND FROM NEAR AND FAR CUSTOMER LOCATIONS
CSU	CHANNEL SERVICE UNIT
DSAU	DIGITAL SERVICE ACCESS UNIT
DSX	DIGITAL CROSS CONNECT
LATS	LOOP ACCESS TEST SYSTEM MEASURES VOLTAGE, RESISTANCE, AND CAPACITANCE OF 4-WIRE LOOP
MJU	MULTIPOINT JUNCTION UNIT
OCU	OFFICE CHANNEL UNIT
SRDM	SUBRATE DATA MULTIPLEXER
T1DM	T1 DATA MULTIPLEXER
CTC	CENTRALIZED TEST CENTER
DBMTC	DATA BASE MANAGER AND TEST CONTROLLER

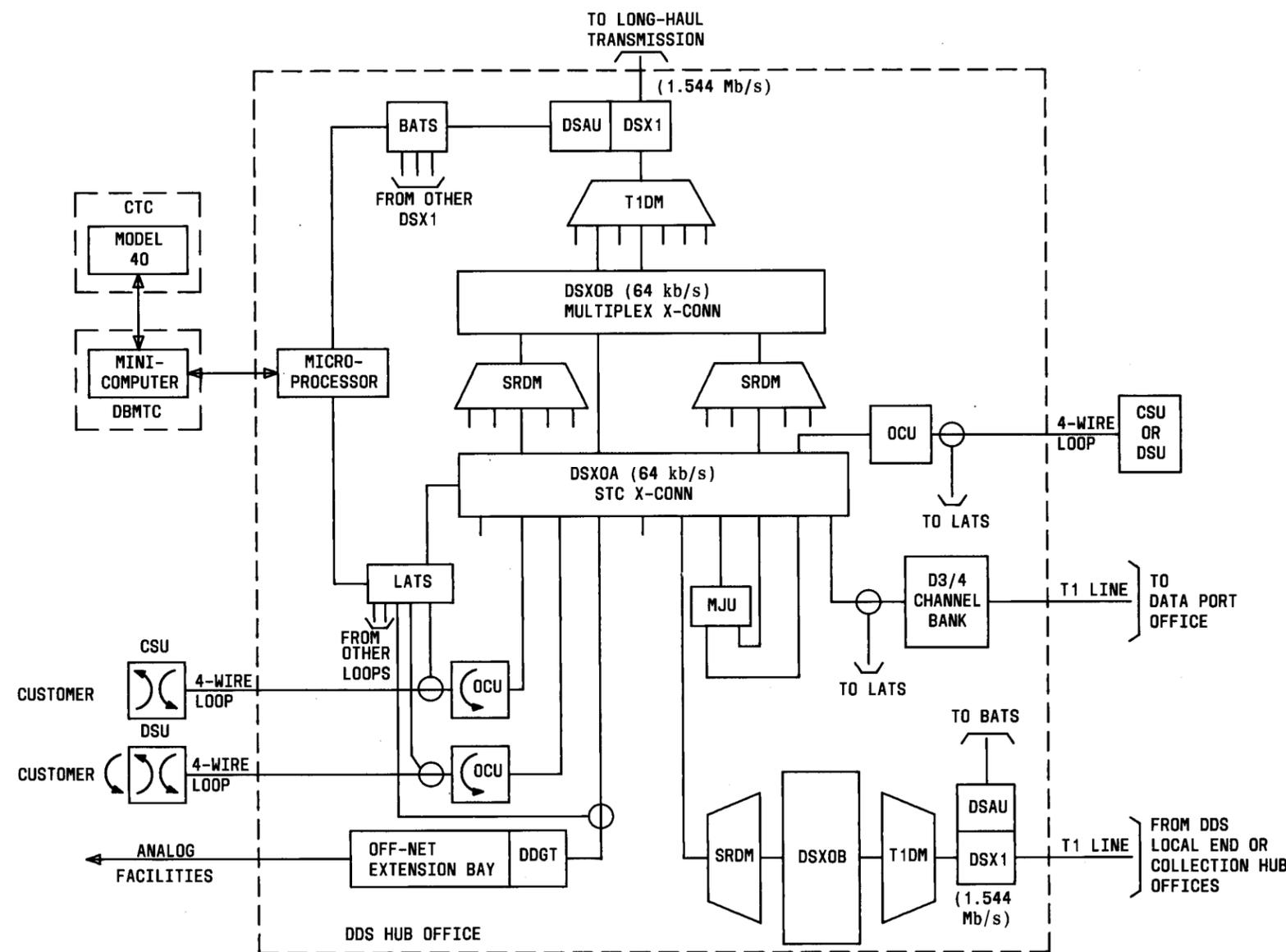


Fig. 3—Block Diagram of Hub Office Using ABATS

data base is stored in a minicomputer at the data base manager and test controller (DBMTC) in Chicago. The test console, minicomputer, and ABATS are interconnected by 1200-baud analog channels. A block diagram of this arrangement is shown in Fig. 3. The CTC has the same SVB responsibilities for the DSA as if it was a part of the hub office. A CTC in conjunction with a hub office serves the same function as that of an SVB hub office. One CTC can handle the testing requirements for multiple hub offices.

**3.11** The installation responsibilities of the CTC are as follows:

- (a) Follow ISC procedures.
- (b) Perform preservice tests.
- (c) Establish office records.
- (d) Report completion to PCO.
- (e) Assist or complete system test.
- (f) Verify that circuit ID and trouble number have been posted at the customer premise.
- (g) Establish SSS inventory.
- (h) Receive circuit completion from hub offices in its assigned territory.
- (i) Verify data base information with hub office.
- (j) Arrange for input of data base to DBMTC.

**3.12** The maintenance responsibilities of the CTC are as follows:

- (a) Accept referred in trouble from distant SVB hub office.

**Note:** A CTC will not normally accept a referred in trouble from another CTC. The system is designed so that a CTC can receive a C1 report, sectionalize the trouble, and refer the trouble directly to any hub or SVB hub office responsible for the DSA in which the trouble appears.

- (b) Receive C1 reports from customers in its region.

- (c) Prepare trouble tickets.
- (d) Analyze trouble reports.
- (e) Perform sectionalization tests.
- (f) Notify customer of trouble status.
- (g) Notify PCO of status.
- (h) Follow up on referred out troubles.
- (i) Turn up circuit to the customer.
- (j) Notify PCO for a customer credit allowance or maintenance of service charge.
- (k) Input to SSS plan.
- (l) Assist in the investigation of formal complaints.
- (m) Perform service analysis.
- (n) Refer troubles to the proper office for repair.

**D. Collection Hub Office**

**3.13** Collection hub offices are offices that pass on to an SVB hub or hub office circuits that enter the office over T1 lines, data port channels, or over local loops. There may be one or more collection hubs within a DSA passing circuits to a hub or SVB hub in the same DSA. There may also be just a collection hub in a DSA passing all circuits to a hub or SVB hub in a distant DSA for testing. It has the same DDS equipment as does the hub or SVB hub office with the exception of remote testing access. It has no SVB responsibilities. The collection hub office has the potential of becoming a hub or SVB hub office.

**3.14** The collection hub office assists the hub, SVB hub, and/or CTC offices in carrying out their responsibilities. This office manually tests, assists, and accepts maintenance responsibilities for equipment under its jurisdiction.

**3.15** The installation responsibilities for the collection hub office are as follows:

- (a) Establish and/or coordinate cross-connects.
- (b) Follow the ISC procedures.

## SECTION 660-230-100

(c) Notify SVB hub or CTC of preservice completion.

(d) Establish office records.

**3.16** The maintenance responsibilities of the collection hub office are as follows:

(a) Accept referred in trouble reports from hub, SVB hub, and/or CTC offices.

(b) Respond to office alarms and restore failures.

(c) Report status of troubles to hub, SVB hub, and/or CTC offices.

(d) Report clear of troubles to hub, SVB hub, and/or CTC offices.

(e) Assist other offices in the sectionalization of trouble as required.

### E. End Office

**3.17** End offices are local offices in a DSA that pass on toward a hub, SVB hub, or collection hub circuits that entered it over local loops only. It does not have the equipment to receive circuits over T1 lines of data port facilities.

**3.18** The end office has the same installation and maintenance responsibilities as that of a collection hub office.

## 4. SELECTION AND RESPONSIBILITIES OF PLANT CONTROL OFFICES (PCO)

**4.01** In addition to the general responsibilities of all offices, this part provides the responsibilities of a plant control office (PCO), network control office (NCO), and a subcontrol office (SCO). Selection of these offices is also given.

### A. Plant Control Office (PCO)

**4.02** The PCO is the designated office responsible for overall installation and maintenance of a DDS circuit. Generally assigned by marketing, this responsibility usually goes to the hub office nearest the customer principal location. The PCO is always responsible for the quality of the end-to-end service. The PCO must exercise all precautions against inadvertently interrupting service.

**4.03** The responsibilities of the PCO with respect to installation are as follows:

(a) Coordinate all universal service order (USO) activity as outlined in the ISC procedures.

(b) Schedule preservice tests.

(c) Report completions of USOs to assigned order completion bureaus.

(d) Issue jeopardy reports to ISC, NCO, and departments instrumental in solving the problem.

(e) Schedule and coordinate overall system test.

(f) Verify that trouble numbers and circuit IDs have been posted at all customer locations.

(g) Turn up circuit to the customer.

(h) Verify that data base information is correct and has been submitted to DBMTC if equipped with ABATS.

**4.04** The responsibilities of the PCO with respect to maintenance are as follows:

(a) Maintain end-to-end service.

(b) Monitor and coordinate all maintenance activities.

(c) Notify the NCO of trouble as soon as practical, and maintain status reports as the trouble repair progresses.

(d) Initiate CCA or MSC when necessary.

(e) Investigate formal complaints.

(f) Analyze overall circuit performance.

(g) Maintain a trouble history record of each circuit.

(h) Insure the service objectives as outlined in this section are followed and escalate as necessary.

**B. Network Control Office (NCO)**

**4.05** An NCO may be assigned for a certain customer network. This responsibility is generally assigned by agreements between the customer, marketing, and plant. The NCO is the designated office responsible for service of a customer network. It is the principal customer interface in providing assistance and answering questions on service problems. The NCO does not normally accept trouble reports.

**4.06** The function of an NCO does not relieve the PCOs of their responsibilities. Should the NCO also be the PCO of a circuit, it must fulfill both responsibilities.

**4.07** The responsibilities of the NCO in respect to the installation of all circuits in its network are as follows:

- (a) Monitor USO progress through the PCO.
- (b) Establish office and maintain network circuit order layout records (COLR).
- (c) Establish input to SSS on a network basis.

**4.08** The responsibilities of the NCO in respect to the maintenance of all circuits in its network are as follows:

- (a) Maintain close contact with all PCOs and SCOs.
- (b) Keep a trouble history record on a network basis.
- (c) Cooperate with the customer in providing assistance and answering questions on service problems.
- (d) Investigate formal complaints.

**C. Subcontrol Office (SCO)**

**4.09** An SCO may be designated by the PCO to assist in carrying out responsibilities on a complex circuit. This is done where circuit arrangements make it impractical for the PCO to fulfill its responsibilities directly. Large multipoint circuits are likely to have SCOs assigned.

**4.10** Ordinarily, the PCO determines the need for SCOs, obtains their approval, and designates the portion of the circuit to be controlled by each SCO. In all cases, the PCO remains responsible for end-to-end service. The analog private line testboard nearest the off-net extension bay automatically assumes SCO responsibilities for the analog portion of an analog extension service. The analog portion is defined as that part of the circuit from the customer EIA interface to the DSU in the off-net extension bay. The SCO responsibilities are basically the same as those of the PCO but are limited to a specific portion of the circuit.

**4.11** The SCO responsibilities with respect to its assigned portion of a circuit for installation are as follows:

- (a) Coordinate all USO activity for its portion of the circuit.
- (b) Follow ISC procedures.
- (c) Perform preservice tests, actually overall tests, for its assigned portion of the circuit.
- (d) Report completion to PCO.
- (e) Notify PCO of all jeopardy conditions.
- (f) Verify trouble reporting number and circuit ID have been posted at the customer location.

**Note:** The trouble reporting number for an analog extension is the DDS trouble reporting number of the SVB hub or CTC. The analog private line testboard should not receive C1 reports.

**4.12** The SCO responsibilities of the SCO with respect to its assigned portion of a circuit for maintenance are as follows:

- (a) Maintain service within its assigned portion of the circuit.
- (b) Act as PCO for its assigned area of responsibility.
- (c) Maintain close contact with PCO.

## 5. ESCALATION PROCEDURES

**5.01** Formal and uniform escalation procedures are necessary to bring the proper resources to bear on DDS service problems. Complex problems encountered by the field forces, such as incompatibility between the data apparatus and the customer method of operation, programming difficulties in the business machine, or poor performance due to an unusual transmission impairment, often require expert assistance for a fast resolution of the problem. To improve the installation and maintenance of DDS services and to help avoid long service delays and customer complaints, the field forces must be provided with rapid access to technical personnel who can assist in resolving these problems.

**5.02** There are two basic kinds of escalation for DDS service problem cases: administrative and technical. These two types of escalation and the conditions under which they apply are outlined in the following paragraphs.

### Administrative Escalation

**5.03** Administrative escalation is the normal organizational technique for resolving problems that is fairly well defined in most companies. This procedure refers problem cases through the chain of command successively higher until a supervisory level is reached that can resolve the problems on an intra- or interdepartmental basis. This type of escalation is effective in dealing with administrative problems but is not always the most effective method of rapidly resolving difficult technical problems.

**5.04** Administrative escalation is appropriate and effective in dealing with the following kinds of DDS service problems:

- Basic deficiencies in planned customer service
  - Service order deficiencies—orders late, incomplete, too many supplements, etc
  - System design—physical equipment layout, circuit design deficiencies, normal DSU option assignment, known interface incompatibilities
  - Field personnel availability
- Component availability and supply—data service units, channel service units, central office units
  - Inadequate test equipment—quantity, quality, availability
  - Difficulty in coordinating personnel for end-to-end testing
  - Customer training deficiencies
  - Local loop troubles—lack of nonloaded pairs.

### Technical Escalation

**5.05** Technical escalation is the direct referral of data service problems to DATEC support personnel by field force supervisors and subsequent referral by support personnel to higher levels of technical assistance as required. These technical escalation procedures are intended to supplement existing administrative procedures and standard Bell System Practices by assisting the normal work groups in fulfilling their responsibilities but not supplanting them.

**5.06** There are three levels of DATEC support available for assisting field forces on data service problems. The first level of technical support is the DATEC support personnel in an area or division organization. The second level of technical assistance is from DATEC support personnel at the company headquarters. The third level of support is available as assistance from AT&T headquarters.

**5.07** Technical escalation of data service problems is appropriate under the following conditions:

- (1) The service meets Bell System specifications but does not meet customer performance expectations.
- (2) The service does not meet Bell System specifications, and the problem source cannot be identified.
- (3) The service has generated a high incidence of trouble reports.

**Technical Escalation Timing**

**5.08** Technical escalation will only work successfully if a time limit for required actions is established and observed. Meeting the time limit will require local procedures to keep field supervision informed of the status and expected disposition of DDS service problems.

**5.09** The following time limits for escalation are intended as a Bell System objective:

- (1) When a service meets Bell System specifications but fails to meet customer performance expectations, **escalate immediately**.
- (2) When a service does not meet Bell System test requirements and the problem source cannot be identified, **escalate within 4 hours** of the discovery of the problem.
- (3) When three similar trouble reports on the same service are received within 30 days and have been closed out as "test OK," "came clear," "found OK," "no trouble found," etc, **escalate immediately** when the third report is received.

**5.10** Situations, such as those indicated in paragraph 5.09(1), may occur at times of installation or repair when the customer attempts to use the service for the first time. The test results must be available when escalating to DATEC support personnel.

**5.11** In the case of paragraph 5.09(2), the **within 4 hours** limit means that escalation can occur before 4 hours have elapsed but must not exceed this time period if a resolution of the problem is not in sight. These hours are usually considered to be working hours but could be continuous hours in the case of a severe data service problem.

**5.12** The requirement for escalation in paragraph 5.09(3) may be difficult to oversee without the aid of local maintenance groups. A local procedure should be implemented to assist in this area.

**6. FORMAL COMPLAINT PROCEDURES**

**6.01** Formal complaints are customer criticisms, either oral or written, where there are

indications that the customer may refer the problem to higher management or to regulatory bodies. The complaint can be a general network criticism or a specific complaint restricted to a particular locality. Day-to-day troubles received in the standard trouble reporting procedure are not considered as formal complaints.

**6.02** All communications in connection with formal complaints should be handled in the most expeditious manner practicable in order to avoid delay of remedial action. In this connection, when letter criticisms or replies to letter criticisms are handled by telephone, they should be confirmed promptly by written communication.

**6.03** All complaints will be forwarded to the responsible district operations manager by the sales office responsible for the customer's account.

**6.04** All formal complaints received directly from customers by operations offices should be acknowledged promptly, either by personal interview, telephone, or in writing. The acknowledgment should indicate that the case will be given prompt action and that the complaint will be answered by the sales office handling the customer's account.

**6.05** The complaint information, or original letter, should be forwarded to the sales office responsible for the customer's account for use in replying to the customer. The sales office responsible for the customer's account is shown on the circuit layout record card and on the service order establishing the service.

**6.06** When a formal complaint is received directly from the customer by an operations office, the case should be referred to the district operations manager and should indicate the sales office which will answer the complaint.

**6.07** Criticisms of a general nature regarding unsatisfactory overall circuit or network operation will be forwarded by the sales office handling the account to the district operations manager responsible for the PCO or NCO.

**6.08** When a complaint is referred by a sales office, the district operations manager assumes the responsibility of supervising the investigation. The case must be referred to other district operations managers concerned in order that remedial action

## SECTION 660-230-100

can be started immediately, unless sufficient information is already available to permit answering the criticism.

**6.09** The district operations managers should see that the necessary investigation is undertaken and the results forwarded promptly to the originating district manager. The facts necessary to answer all points raised by the customer should be forwarded. Points which should be covered are outlined in paragraph 6.11.

**6.10** The responsible district operations manager will collate the replies from the offices and other districts concerned and reply promptly to the sales office giving sufficient details to answer the complaint satisfactorily. In cases where a full report cannot be made to the sales office within 7 business days of receipt of criticism by the district operations manager, a preliminary telegraphic report should be forwarded giving the information available. Thereafter, reports should be made weekly or at intervals agreed to by plant and sales until the case is closed. If the case involves problems which are beyond control of the operations office, such as tariff regulations, rates, or policy, and further action is required, the sales organization shall be notified for resolution.

**6.11** Information to sales for their use in replying to formal complaints should contain all pertinent information with regard to the following features:

- (a) Each criticism mentioned by the customer must be covered.
- (b) All facts bearing on the case should be stated.
- (c) Information relating to quality of service as determined from service records and circuit maintenance tests, if necessary, should be assembled and presented in terms that can be readily understood by representatives of the customer.
- (d) Where log records appear essential, they should be summarized and clarified in a way that is readily understood by those not acquainted with plant operating terms. In general, it is not desirable to quote log records but instead to state the facts in narrative form.

(e) Remedies which have been applied in order to improve service conditions should be mentioned.

(f) Information regarding results of interviews with the customer concerning the complaint should be included. In this connection, it is not intended that operations offices be restricted in dealing directly with the customer when investigating the complaint. While the sales office will make the formal reply to the customer, it is expected that plant people will contact the customer and exchange information that may assist in closing the case. It is essential that close coordination with the sales office on all aspects of customer criticism or investigation procedures be followed.

## 7. MEASUREMENT PLAN

**7.01** The special service system (SSS) plan is the measurement plan used to indicate the level of DDS service offered by an office. In BSPs referencing the SSS, the CTCs and SVB hub offices assume the SVB responsibilities. The SVB responsibilities supersede serving test center (STC) responsibilities. The primary objectives in the use of the measurement plan are as follows:

- (a) Reflect customer satisfaction by using the number of trouble reports and the associated duration time as indicators.
- (b) Reflect plant performance by using the frequency and type of troubles and their associated clearing times.
- (c) Summarize statistical results data for use in determining areas where service improvement is required.
- (d) Provide indexes representing customer satisfaction and plant performance.
- (e) Identify design, hardware, or software system problems.

## 8. OFFICE RECORDS

**8.01** Each DDS office should maintain an up-to-date COLR file at some location readily accessible to test personnel. The file should contain a record for every DDS circuit and should be updated immediately upon change in circuit assignment.

**8.02** The SVB hub and CTC must also have access to information not recorded on the COLR. This information may be obtained from other files located in the SVB hub office. This information is available in the following forms:

- SVB customer line cards
- Circuit detail cards (office wiring)
- Equipment location records
- Facility order layout record (FOLR)
- Trouble history file.

## 9. SERVICE OBJECTIVES

**9.01** The DDS overall availability objective is to provide circuit availability 99.96 percent of the time for the path between the master station on a circuit and any one of its slave stations. In order to meet this objective, the following maintenance goals have been established:

- (a) Isolation of a trouble to one of the following areas within 15 minutes after the receipt of a customer trouble report:
  - Four-wire local cable pairs including 56-kb/s repeaters
  - DSU or CSU
  - Facilities between the hub office and the end office
  - Interhub facilities.
- (b) Maximum outage intervals for the various DDS transmission facilities should not exceed the following:
  - TD/TH radio terminated in the 1A radio digital terminal (1A RDT)—20 minutes
  - T1 line terminated in the T1 data multiplexer (T1DM), T1 voice-data multiplexer (T1WB4/B5), or data port—30 minutes
  - Private line 4-wire local cable and office channel unit (OCU) and local channel (including DSU—CSU)—120 minutes

**9.02** The DDS performance objective is to provide a level of efficiency of 99.5 percent error free second performance or greater.

**9.03** Maintenance responsibility for the various DDS facilities is assigned to a number of maintenance centers which may be administered by either an operating telephone company or a Long Lines maintenance organization. These centers are the SVB, T carrier restoration control center (TRCC), T carrier administration center (TCAC), the regional operations control center (ROCC), and the regional facility management center (RFMC). For a description of these maintenance center responsibilities and functions, refer to Section 314-900-300.

## 10. BELL INDEPENDENT RELATIONS (BIR)

**10.01** The DDS CTC establishes with independent companies and the Bell System independent relations group procedures for the following when in ICO territory:

- (a) Adding customers to and removing customers from the DDS
- (b) Customer trouble reporting procedures
- (c) Testing procedures
- (d) Trouble clearing procedures.

## 11. GLOSSARY OF TERMS

**11.01** A listing of some of the more commonly used terms relating to the DDS is presented with a brief description. Refer to Section 314-900-100 for a more complete listing of commonly used DDS terms.

**ABATS**—Automated Bit Access Test System is a system for testing automatically on the DDS. The KS-21899 Data Test System and the Automated Loop Access Test System make up ABATS.

**ALATS**—Automated Loop Access Test System, a subsystem of ABATS, performs loop tests on conductor pairs.

**AVAILABILITY**—Percentage of time that satisfactory data communication service is available.

**COLLECTION HUB OFFICE**—An office that passes on toward the SVB hub or hub office circuits that entered it over T1 lines, data port facilities, or local loops.

**CROSS-CONNECT**—A piece of hardware used to interconnect multiplexers with line terminating equipment and other multiplexers.

**CTC**—Centralized test center is 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.

**CSU**—Channel service unit is a unit located on the customer premises that provides an EIA interface.

**DATA PORT**—A family of special service channel units for the D3 and D4 channel banks that provide the use of ordinary T carrier facilities for DDS. Data port allows for a single local loop to be served via a data port end office or multiple local loops to be served via a hybrid end office.

**DDS**—Digital Data System.

**DOWNTIME**—Time during which data communication is not available or is unsatisfactory (see AVAILABILITY) due to TELCO equipment malfunction. Time required for preventive maintenance is not included.

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

**DSAU**—Digital service access unit provides 1.544-Mb access for the ABATS.

**DSU**—Data service unit is a terminal located on the customer premises for the purpose of accessing the DDS through a standard Electronic Industries Association (EIA) or International Telephone and Telegraph Consultative Committee (CCITT) interface.

**DS-0**—Digital signal at the 0 level is a bipolar nonreturn-to-zero signal at the 64-kb/s rate.

**DS-1**—Digital signal at the first level is a bipolar return-to-zero signal at the 1.544-Mb/s rate.

**DSX0**—Digital cross-connect used to interconnect equipment at the DS-0 level.

**DSX0A**—(SVB X-conn) is the digital cross-connect at a DDS hub office where individual customer circuits are properly routed and where test access (the SVB) is available.

**DSX0B**—(Multiple X-conn) is the digital cross-connect at a DDS hub office used to connect T1DM and T1WB4 ports with SUBMUXs and to connect T1DM and/or T1WB4 ports together for through or bypass circuits.

**END OFFICE**—A local office within a DSA that passes on toward the hub only circuits that entered the office over local loops or data port.

**FACILITY OFFICE**—An office that provides access to DDS long-haul facilities and contains DS-0-level equipment. If the SVB and DSX0A are also located here, it becomes an SVB hub or hub. It can also be called a "long-haul entrance point" into a city.

**FOUR-WIRE CIRCUIT**—A facility which provides two full-time, independent channels for transmission in opposite directions. Historically associated with two wires for transmitting and two wires for receiving.

**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 by means of an SVB hub or CTC.

**ISC**—Intercompany service coordination plan is a plan for coordinating the activities of operating companies during installations that involve more than one company or operating area.

**LOCAL CHANNEL (LOOP)**—The cable pairs between a DDS office and customer premises.

**LOCAL OFFICE**—A DDS serving office that concentrates on-net customer circuits into T1 streams that can be transmitted to a hub office.

**LONG HAUL**—Transmission distances usually beyond 50 miles utilizing, for example, TD or TH facilities.

**MJU**—Multipoint junction unit is a unit employed at a DDS hub office to link together three or more segments of a multipoint circuit.

**MULTIPLEX CROSS-CONNECT**—See DSX0B.

**MULTIPOINT**—A customer circuit with more than two end points. Usually one end point is the “control” station.

**OCU**—Office channel unit is a terminal located in the central office to terminate the local loop and provide remote loopback features.

**OFF-NET**—An analog location beyond the primary serving area of the DDS.

**1A RDS**—1A Radio Digital System.

**1A RDT**—1A radio digital terminal.

**OUTAGE**—Any disruption of service that persists for more than 1 second.

**RFMC**—Regional facility management center coordinates the restoration of failed TD/TH radio routes.

**SHORT HAUL**—Refers to transmission distances on the average less than 50 miles utilizing cable or T carrier.

**SSC**—Special service center coordinates installation and maintenance activity.

**SVB**—Serving bureau is a test location and/or control center established to control and maintain COLR, receive customer trouble reports, assist in the checkout of newly installed stations, perform trouble isolations, and coordinate service restorals.

**T1ASU**—T1 automatic standby unit.

**TCAC**—T carrier administration center is a center with responsibility for the maintenance and restoration of the T carrier facilities on an automated basis.

**T1DM**—T1 data multiplexer.

**T1WB4/B5**—T1 data-voice multiplexer.

**TRCC**—T1 carrier restoration and control center performs the same functions as the T carrier administration center but on a manual basis.

**X-conn**—Cross-connect.

## 12. REFERENCES

**12.01** The following sections provide additional information on facilities and equipment associated with the installation and maintenance of the DDS.

SECTION	DESCRIPTION
010-520-137	Intercompany Service Coordination Plan (ISC)
010-521-100	Data Technical (DATEC) Support
314-900-100	Digital Data System—Private Line Service—Overall Description
314-900-300	Digital Data System—Overall Maintenance
314-900-901 LL	Digital Data System Automated Bit Access Test System (ABATS)—Description and Operation
314-901-300	Digital Data System—STC Maintenance Procedures
314-901-500	Digital Data System—STC Test Procedures
314-917-500	Digital Data System—Multipoint Junction Units and Auxiliary Circuits—Test Procedures
595-100-300	Digital Data System—Private Line Local Channel Maintenance Procedures

**SECTION 660-230-100**

595-100-500	Digital Data System—550A-Type Channel Service Unit—Test Procedures	660-200-301	Private Service Protection and Safeguarding
595-200-300	Digital Data System—Data Service Unit Maintenance	666-600-100	Digital Data System—950A Data Testboard
595-200-500	Digital Data System—500A-Type Data Service Unit—Test Procedures	666-600-101	Digital Data System—950B Testboard—Description and Operations
660-005-011	Office Responsibilities—Special Services	666-230-300	Digital Data System—Cable Failure Restoration Procedures