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OPERATION PLAN FOR THE

DATA 100/LARS TERMINAL SYSTEM

Prepared By

Lockheed Engineering and Management Services Company, Inc.
Systems and Services Division
Houston, Texas

Contract NAS 9-15800

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16. Abstract

This document provides an understanding of the environment in which the Data 100/LARS Terminal System is operated and supported. The general support responsibilities, procedural mechanisms, and training that have been established for the benefit of the system users are defined.

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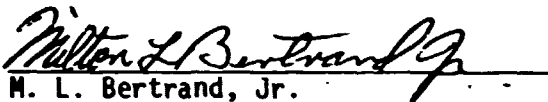A. J. Bowen, Jr.

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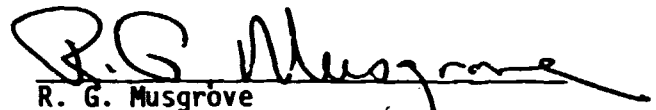| LOCKHEED	NASA

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1. PURPOSE

This document provides the basis for understanding the environment in which the Data 100/LARS Terminal System is operated and supported.

2. SCOPE

This plan discusses the Data 100/LARS Terminal System related to its' availability
and functions. It describes the general support responsibilities and defines
the procedural and training mechanisms that have been established for the
benefit of the system users.

3. REFERENCE DOCUMENTS

User Manual for the Data 100 Model 78-3 Programmed Terminal - RMT 360 M/L Mode Parameter Control Language - Version 2, Release 2 Publication No. 21515526, Rev. B

Data 100/Terminal System "Operational Policy" - September 25, 1979

Data 100 Operating Procedures (Informal)

User Training - LARS System - September 27, 1979

Minutes of LARS User Meeting - October 23, 1979

Earth Observations Division Version of the Laboratory for Applications of Remote Sensing System (EOD-LARSYS) User Guide for the IBM 370/148. Volume I - System Overview JSC-13821 Revision A, LEMSCO-12563 Revision A, May 1980.

4. INTRODUCTION

The primary purpose of the Data 100/LARS Terminal System is to provide an interface for processing on the IBM 3031 computer system at Purdue University's Laboratory for Applications of Remote Sensing (LARS). It is also possible to provide an interface to other remote hosts. Finally, defined off-line functions are provided for user convenience.

The Data 100/LARS Terminal System configuration exists in an "open shop" environment. In this regard the individual user must perform various equipment operation functions for the Data 100, as well as the interactive terminals that are available for the LARS interface.

Since there is no assigned operator for the Data 100 system, operating procedures and training are provided to the users of the system to ensure that their work may be effectively accomplished. Additionally, a Data 100/LARS Terminal System Coordinator/SF6 has been established to aid users in the accomplishment of administrative activities, special processing needs, and as a point of contact for problem reporting.

This plan provides the basis by which the Data 100/LARS Terminal System will be operated and maintained. The subjects discussed in this document include the following:

- o Equipment List
- o Equipment Availability and Scheduling
- o Principal Functions
- o User Coordination
- o Operating Procedures
- o User Training
- o Equipment Maintenance
- o Operating Supplies

Information provided in this document is not intended as procedural documentation, but only in support of or as a result of such documentation.

5. EQUIPMENT LIST

This section provides the list of equipment comprising the Data 100/LARS Terminal System. See figure 5.1-1 for the configuration of the Data 100/LARS Terminal System and its' interface to the LARS and other remote host computer systems.

5.1 Data 100 - System "A" ("JSCTEXAS")

This system contains the following equipment:

- o Data 100 Model 76 Remote Job Entry Terminal Controller
- o CRT Operator Console Monitor
- o Card Reader (Rated at 250 cpm)
- o Line Printer (Rated at 400 lpm)
- o Codex Modem (9600 bps)
- o Bell Telephone Modem (7200 bps)(Alternate hosts)

5.2 Data 100 - System "B" ("HOUSTON")

This system contains the following equipment:

- o Data 100 Model 76 Remote Job Entry Terminal Controller
- o CRT Operator Console Monitor
- o Card Reader (Rated at 300 cpm)
- o Line Printer (Rated at 400 lpm)
- o Codex Modem (9600 bps)
- o Codex Modem (Alternate) (7200 bps)

5.3 Data 100 Shared Equipment

This equipemnt is shared between the Data 100 System A and System B

- o Peripheral Switch
- o Card Punch (Rated at 200 cpm)
- o Tape Unit (9 Track - 800 bpi)
- o Tape Unit (9 Track - 1600 bpi)

DATA 100/LARS TERMINAL SYSTEM CONFIGURATION AND REMOTE INTERFACES
(AS OF AUGUST 1980)

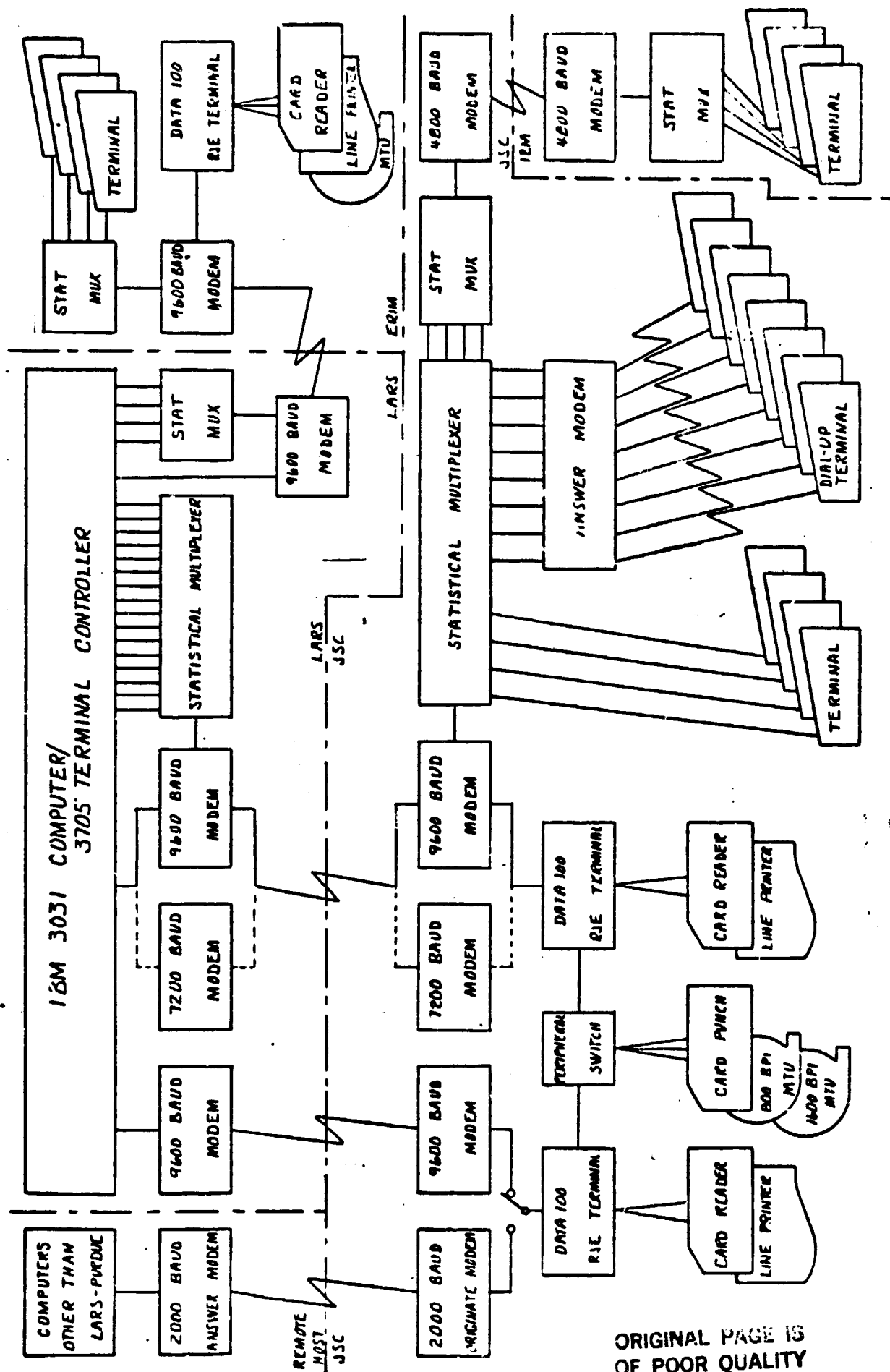Figure 5.1-1

5.4 LARS Terminal System

- o Codex 6010 Multiplexer
- o 4 Hazeltine CRT Terminals (at IBM)
- o 2 Hazeltine CRT Terminals (in-house)
- o 2 Trendata Hardcopy Terminals (in-house)
- o 8 Codex 5000 Answer Modems
- o 8 Dial-up Terminals (at various locations)

6. PRINCIPAL FUNCTIONS

This section defines the functions and processes available on the Data 100/ LARS Terminal System.

6.1 LARS Interface

The primary function of this system is to provide a remote interface with the IBM 3031 system located at LARS. Input to LARS is accomplished through interactive terminals, the Data 100 card readers, and/or the Data 100 tape units. Output from processing may be directed to an interactive terminal station, the Data 100 card punch, the Data 100 line printers, and/or the Data 100 tape units.

6.2 Alternate Host Interface

The Data 100 System "A" ("JSCTEXAS") may be used to provide a remote interface with sites other than LARS. The input and output capability is the same as that for LARS except that only the peripherals attached or switchable to System "A" may be used. The alternate host interface function must be scheduled and coordinated in advance through the Data 100/LARS Terminal System Coordinator. Access to remote hosts other than LARS is available through a 2000 bps dial-up communication link. These alternate hosts include Suitland, Maryland (NOAA) and Florida (USDA).

6.3 Background Functions

The following on-line functions are available on the Data 100 Systems;

- o Card to print
- o Card to card
- o Card to tape
- o Tape to card
- o Tape to tape
- o Tape to print

Each of these functions is available with different variations. Only the tape to tape function must be scheduled and coordinated in advance with the Data 100/ LARS Terminal System Coordination. This is necessary due to this function requireing a dedicated system. A code conversion is available for ASCII to EBCDIC and EBCDIC to ASCII as a variation of the tape to tape capability.

7. EQUIPMENT AVAILABILITY

This section defines the principal periods of availability for support of the Data 100/LARS Terminal System.

7.1 Data 100

These systems are powered-up from 0800 to 1630 each day, Monday through Friday, with the exception of scheduled holidays. This is designated as the facility supported period. Individual users, with knowledge of the power-on, power-off, and general operation procedures are permitted to use the equipment outside the facility supported period.

7.2 LARS Terminal System

The terminals are available for use 24 hours a day, 7 days a week. Support is provided during the same period as the facility supported period previously defined. The Data 100's are not required to be operational in order to use the LARS terminal system. However, the functions provided by the Data 100 would not be available outside of the supported period.

7.3 LARS Computer

The IBM 3031 system is generally available for use from 1500 on Sunday to 1700 on Saturday each week. The exception to this schedule would include recognized holidays and the weekly preventive maintenance (P.M.) period which normally occurs from 0700 to 0900 each Friday morning.

8. EQUIPMENT SCHEDULING

This section discusses the Data 100/LARS Terminal System scheduling policy.

8.1 Standard Functions and Support Periods

Since this system is operated in an "open shop" environment, users are to provide self scheduling of the Data 100/LARS Terminal System. Generally, all activity is considered to be done on a first come, first serve basis.

8.2 Special Functions

Functions which require a dedicated system or an alternate interface host must be scheduled through the Data 100/LARS Terminal System Coordinator.

8.3 Non-Standard Periods

Use of the Data 100 equipment outside the normal facility support period (0800-1630) each day or on weekends is to be coordinated through the Data 100/LARS Terminal System Coordinator. No coordination is required for use of the LARS Terminal System.

9. USER COORDINATION AND ASSISTANCE

This section defines the coordination and assistance provided to the Data 100/
LARS Terminal System users by the Data 100/Terminal System Coordinator.

9.1 Data 100/LARS Terminal System

The Data 100/LARS Terminal System Coordinator will provide the following support:

- o Coordinate the connection to alternate interface hosts.
- o Coordinate the processing of off-line background jobs requiring a dedicated or special configuration system.
- o Coordinate the off hours and weekend operation of equipment.
- o Change line printer and terminal print ribbons.
- o Provide and coordinate equipment upgrades.
- o Operate and configure communication lines, modems, and multiplexer.
- o Provide general hardware and software consultation to users.

9.2 LARS Interface

The Data 100/Terminal System Coordinator will provide the following support:

- o Coordinate the renewal or issuance on LARS user ID's. (See LARS Computer User Action Form - Figure 9.2-1).
- o Coordinate new or additional tape requirements at LARS.
- o Maintain, print, and distribute LARS accounting reports to user groups.
- o Coordinate print output which exceeds 15,000 lines.

LARS COMPUTER USERID ACTION FORM

TO: DATA 100/LARS TERMINAL SYSTEM COORDINATOR /SF6/ SYSTEMS & FACILITIES BRANCH

SUBJECT: LARS COMPUTER USERID ACTION REQUEST

---

(1) ☐ NEW   ☐ RENEWAL   ☐ CHANGE   ☐ DELETE ID. (Please check)

(2) DATE OF REQUEST ____/____/____   ORGANIZATION:_____
                   (MO) (DAY) (YR)   (IBM, LEC, NASA, ETC.)

(3) REQUESTOR NAME:_____   MAIL CODE:_____
                   (PLEASE PRINT)

    PHONE NUMBER:_____ EXT:_____

    PROJECT NAME:_____   PROJECT BRANCH:_____
                                              (SF3, SF4, SF5, ETC.)

(4) I HAVE ESTIMATED THAT_____ CPU HRS. WILL BE UTILIZED PER MONTH.

(5) THE FOLLOWING PERSON(S) WILL ALSO BE USING THIS ID:_____
_____

(6) MAX.CORE STORAGE (default = 768K bytes):_____

(7) PERMANENT DISK STORAGE DESIRED (Megabytes):_____

(8) I WILL BE USING THE FOLLOWING: (PLEASE CHECK)

          ☐ CMS370 ☐ SPSS ☐ IMSL ☐ EOD-LARSYS ☐ OTHER

(9) SPECIAL EQUIPMENT NEEDED or COMMENTS:_____
_____

(10) APPROVALS:

    X_____   **X**_____
    NASA TECH. MONITOR   BRANCH CHIEF or
    (required for non-NASA personnel   BRANCH LARS MANAGER

              X_____
                   SF6 APPROVAL

-------------------------THIS AREA IS FOR SYSTEM USE ONLY-------------------------

USERID ASSIGNED:___JSC___ PASSWORD:_____ READ PASSWORD:_____

WRITE PASSWORD:_____ MAX. CORE STORAGE:_____ DISK STORAGE:_____

Date User ID requested at LARS:_____   Initial:_____
                              (MO) (DAY) (YR)

10. OPERATING PROCEDURES

This section discusses the availability and provision of Data 100/LARS Terminal System user operating procedures.

10.1 Data 100

A Data 100 Operating Procedures document has been constructed and is identified as a reference in Section 3 of this plan. Additional user instruction exists in the "Operational Policy" (9/25/79) document and the "Minutes of LARS User Meeting" (10/23/79). These are also identified in Section 3 as references. A copy of this documentation should be posted in the Data 100 room. Additional copies should be requested through the Data 100/LARS Terminal System Coordinator.

10.2 LARS Terminal System

Documentation relating to terminal operation and set-up has been provided and is identified in Section 3 as a reference (User Training - LARS System - September 27, 1979). Additional user instruction exists in the "Operational Policy" document and the "Minutes of LARS User Meeting" (10/23/79). These are also identified in Section 3 as references. A copy of this documentation should be posted in the Data 100 room. Additional copies should be requested through the Data 100/LARS Terminal System Coordinator.

11. USER TRAINING

This section provides for the availability of training for users of the Data 100/LARS Terminal System.

11.1 Data 100/LARS Terminal System

General instruction on the operation of this system was provided to users in September 1979. Subsequent training for new users has been accomplished on an individual basis. The need to schedule and hold additional general sessions is determined by the Data 100/LARS Terminal System Coordinator. Training documentation is available through the Data 100/LARS Terminal System Coordinator.

11.2 LARS Interface

User consultation sessions are scheduled and held in the Data 100 room approximately once each month. Instruction is provided by LARS personnel. The schedule of activities related to these sessions should be posted in the Data 100 room.

12. EQUIPMENT MAINTENANCE

This section defines the provision for equipment maintenance relative to the Data 100/LARS Terminal System.

12.1 Preventive Maintenance (P.M.)

Maintenance of this nature is performed on a periodic basis. This is done in order to detect and eliminate conditions which could result in eventual equipment failure. The Data 100/LARS Terminal System Coordinator is responsible for providing maintenance functions which primarily include the general cleaning of equipment. Due to the nature of these activities, they may be performed on a noninterference basis to the operation of equipment.

A monthly P.M. is performed on the Data 100 systems by the Northern Telecommunications Systems Corporation. This time is coordinated by the Data 100/LARS Terminal System Coordinator to minimize the impact to user access to the equipment.

12.2 Emergency Maintenance

Maintenance of this nature is provided in the event of equipment failure, inhibiting use of the system or component. Whenever such a failure occurs, the user is to contact and notify the Data 100/LARS Terminal System Coordinator. The Coordinator provides an analysis of the problem to determine its' type and location. Based on this analysis, the appropriate vendor or maintenance agent is contacted and a request for maintenance activity is made. These equipment and respective maintenance agents are as follows:

- o Data 100 Systems and peripherals - Northern Telecommunications Systems Corporation
- o Hazeltine CRT's and Acoustic Couplers - Ford Aerospace (Building 30)*
- o Trendata Hardcopy Terminals - Trendata
- o Leased Telephone Lines - Bell Telephone
- o Centrex Dial-up Lines - JSC Communications
- o Codex Multiplexer and Modems - Codex

(*Note - Users are responsible for reporting these problems directly to Ford at extension 2353.)

The Data 100/LARS Terminal System Coordinator assists LARS in troubleshooting problems that may occur in the IBM 3031 hardware/software communications system.

13. OPERATING SUPPLIES

This section provides for the availability of operating supplies in support of the Data 100/LARS Terminal System.

13.1 Responsibility

The Data 100/LARS Terminal System Coordinator will maintain responsibility for ensuring availability of operating supplies for system users. A review of supplies will be made on a periodic basis. As the need to replenish supplies exists, they will be obtained by the Coordinator from the Building 17 Data Techniques Laboratory (DTL) stock supply room. These supplies will be placed in the cabinets in the Data 100 room provided for that purpose.

13.2 Supply List

The supplies that are provided include the following:

     o Printer Paper (single copy)
     o Terminal Paper
     o Printer Ribbons
     o Terminal Ribbons
     o Blank Cards·