ORDER **6500.15A**

DOWN SCOPE RADIO CONTROL EQUIPMENT (DSRCE)
PROJECT IMPLEMENTATION PLAN

OCTOBER 22,1993

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

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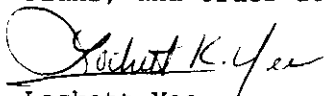
DIRECTIVE NO. **6500.15A**

CHANGE TO BASIC	SUPPLEMENT			OPTIONAL	CHANGE TO BASIC	SUPPLEMENTS			OPTIONAL

FOREWORD

This order provides guidance and direction for the orderly program implementation of the Down Scoped Radio Control Equipment (DSRCE) at designated Air Route Traffic Control Centers (ARTCC), Airport Traffic Control Tower/Terminal Radar Approach Control (ATCT/TRACON) facilities, Automated Flight Service Stations (AFSS), and associated Remote Center Air-Ground (RCAG), Remote Transmitter/Receiver (RTR) and Remote Communications Outlet (RCO) sites.

This order also establishes program management, prescribes project implementation, and describes related activities at each organization level. It identifies and describes specific activities required to facilitate program implementation. Management responsibility for the DSRCE project has been assigned to the Program Manager for Air/Ground Communications and Control Program Office, ANC-300 and, in particular, the Associate Program Manager for Engineering (ANC-700). The format and content of this order have been prepared in accordance with FAA-STD-036, Preparation of Project Implementation Plans, and Order 1320.1D, FAA Directives System.



Lockett Yee
Program Manager for Air/Ground Communications and Control

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CHAPTER 1. GENERAL

1. PURPOSE. This order provides Down Scoped Radio Control Equipment (DSRCE) project planning and implementation guidance for all levels of the Federal Aviation Administration (FAA) that are responsible for DSRCE implementation. The DSRCE will be installed at designated Air Route Traffic Control Centers (ARTCC) and associated Remote Center Air-Ground (RCAG) facilities; at Airport Traffic Control Tower/Terminal Radar Approach Control (ATCT/TRACON) facilities and associated Remote Transmitter/Receiver (RTR) sites; and Automated Flight Service Stations (AFSS) and associated Remote Communications Outlet (RCO) facilities. This order will provide information useful to regional personnel in the development of regional Project Implementation Plans (PIP). These regional PIP's will identify site-specific implementation requirements and unique operational characteristics.

2. DISTRIBUTION. This order is distributed to branch level in the Office of the Program Director for Communications and Aircraft Acquisition and Systems Management Service; to division level in the Office of Flight Standards, Training and Higher Education, Airport Planning and Programming, and Air Traffic Plans and Requirments Service; to branch level at the regional Airway Facilities, Air Traffic, Flight Standards, and Logistics divisions; to branch level at the FAA Academy and FAA Logistics Center at the Mike Monroney Aeronautical Center; to division level at the FAA Technical Center; and standard distribution to the Airway Facilities sectors.

3. CANCELLATION. Order 6500.15, Radio Control Equipment Project Implementation Plan, dated July 19, 1990, is hereby canceled.

4. ACRONYMS AND DEFINITIONS.

a. Acronyms.

ACF	Area Control Facility
AF	Airway Facilities
AFSS	Automated Flight Service Station
A/G	Air-Ground
ACT	FAA Technical Center
AMC	Mike Monroney Aeronautical Center
APME	Associate Program Manager for Engineering
APMT	Associate Program Manager for Testing
ARTCC	Air Route Traffic Control Center
ATCT	Airport Traffic Control Tower
ATE	Automatic Test Equipment
CCB	Configuration Control Board
CCD	Configuration Control Decision
CDRL	Contract Data Requirements List
CO	Contracting Officer
CPMIS	Consolidated Personnel Management Information System
DOD	Department of Defense
DRR	Deployment Readiness Review
DSRCE	Down Scoped Radio Control Equipment
EEM	Electronic Equipment Modification
EMI	Electromagnetic Interference
FAA	Federal Aviation Administration
FAT	Factory Acceptance Testing
F&E	Facilities and Equipment
FRDF	Facility Reference Data File
FSR	Fiscal Status Reports
FY	Fiscal Year

GDIS	Government Designated Installation Site
ICD	Interface Control Document
ICSS	Integrated Communications Switching System
IDF	Intermediate Distribution Frame
IRD	Interface Requirements Document
ISSAC	Initial Supply Support Allowance Chart
IWG	Implementation Working Group
LRU	Line Replaceable Unit
M/S	Main/Standby
MDFM	Materials Delivery Forecast Module
MDS	Master Demarcation System
MDT	Maintenance Data Terminal
MPS	Maintenance Processor Subsystem
MTBF	Mean Time Between Failure
MTP	Master Test Plan
MTTR	Mean Time To Repair
NAILS	National Airspace Integrated Logistics Support
NAILSMT	NAILS Management Team
NAS	National Airspace System
NCP	NAS Change Proposal
OAG	Operational Advisory Group
OCT	Operational Capability Testing
ORD	Operational Readiness Demonstration
OT&E	Operational Test and Evaluation
PAT&E	Production Acceptance Test & Evaluation
PCA	Physical Configuration Audit
PCB&T	Personnel, Compensation, Benefits, and Travel
PDSR	Program Director Status Review
PIP	Project Implementation Plan
PML	Project Materiel List
PTT	Push-to-Talk
QRO	Quality and Reliability Officer
RCAG	Remote Center Air-Ground
RCL	Radio Communications Link
RCO	Remote Communications Outlet
RML	Radar Microwave Link
RMM	Remote Maintenance Monitoring
RMMS	Remote Maintenance Monitoring System
RMS	Remote Monitoring Subsystem
RTR	Remote Transmitter/Receiver
SAT	Site Acceptance Test
SOW	Statement of Work
TO	Technical Officer
TOR	Technical Onsite Representative
TPS	Test Program Set
TRACON	Terminal Radar Approach Control
TSSC	Technical Support Services Contract
UHF	Ultra High Frequency
VDF/DSRCE IDF	VSCS Distribution Frame/DSRCE IDF
VFCS	Voice Frequency Control System
VG	Voice Grade
VHF	Very High Frequency
VSCE	Voice Switching and Control Equipment
VSCS	Voice Switching and Control System

b. Definitions.

(1) Channel. A communication path providing full duplex transmission between two terminations. It provides the capability to transmit and receive voice and radio control signals for up to two air-to-ground (A/G) frequencies (UHF and/or VHF) over a single four-wire transmission path. One frequency at

a time may be controlled, or both frequencies may be controlled simultaneously.

(2) Configuration. Refers to a physical arrangement and connection of equipment.

(3) Control Facility. A manned installation housing the equipment and personnel required to perform the control functions of an A/G radio channel.

(4) DSRCE. In this order, DSRCE refers to the FAA program, DSRCE, appointed to provide radio control equipment for installation in control facilities and remote sites.

(5) Dual Control. The radio transmitters and receivers (main and standby) for one frequency at the remote facility (RCAG, RTR, or RCO) are accessible by two separate control facilities is defined as "Dual Control." When a primary facility (in the *priority mode*) requires use of the shared (dual-controlled) frequency, the secondary facility is immediately disconnected and denied access (locked out) to the radio transmitters (the secondary facility can receive but cannot transmit on the shared frequency) until the primary facility release the frequency.

(6) Line Replaceable Unit (LRU). An LRU is the line unit to be replaced within the system during site maintenance. It is a separate physical package performing a single function or group of closely related functions.

(7) Main. Refers to equipment normally on-line as opposed to equipment normally off-line or in a standby status.

(8) Operational Command. Operational commands are those signals that initialize and control an air-ground communications frequency.

(9) Physical/Mechanical Interface. Denotes those points where two or more elements are connected together to provide mechanical fastening. It is generally located at a mounting plate or other connection where mechanical compatibility is required.

(10) Priority and Non-Priority Mode. Priority mode refers to the operation of a DSRCE channel by two or more control facilities, and one control facility is assigned as primary, and the others are assigned as secondary. Non-priority mode refers to equal (or first come, first serve) priority over a single DSRCE channel.

(11) Radio Cabinet Distribution Block. The distribution block is the demarcation point between the radio equipment and the DSRCE at remote locations (the radio equipment/DSRCE interface) and is comprised of WECO Type 66 Blocks or equivalent.

(12) Receiver. An electronic device that detects and demodulates radio transmissions on specific frequencies.

(13) Remote Site. An unmanned installation housing the radio equipment associated with one or more A/G radio channels.

(14) Separated Transmitter and Receiver Site Configuration. A control facility operates a channel using transmitters and receivers that are located at separate sites and are linked to the control facility via separate Government provided transmission paths.

(15) Standby. Refers to equipment normally off-line or in a backup status as opposed to equipment normally on-line.

(16) Transmitter. An electronic device that modulates, amplifies, and transmits audio signals on frequency carrier waves.

(17) Transmission Media. The DSRCE uses a four-wire transmission media to connect a control facility with its associated air-ground remote radio sites. This transmission media is either leased from a common carrier or provided by the FAA. The transmission media can be provided by any type of link, i.e., Trunk, Satellite, Fiber Optics, Radio Microwave Link (RML), Radio Communication Link (RCL).

(18) Trunk. The DSRCE specification dictates the use of unconditioned four-wire Voice-Grade (300-3000 Hz bandwidth) type VG-6 trunks or equivalent. The circuit trunk will be a standard 0/0 Transmission Level Point (TLP) circuit (no loss) in accordance with NCP 15274 as approved by the March 3, 1993, NAS Configuration Control Board. See paragraph 4b(17) Transmission Media.

(19) Voice Switching and Control System Distribution Frame (VDF)/DSRCE Intermediate Distribution Frame (IDF). This distribution frame is the control facility demarcation point between DSRCE, Voice Switching and Control Equipment (VSCE), and all other related communications systems. It provides the drop and insert point for the Master Demarcation System (MDS)/FAA interface. The VDF/DSRCE IDF is comprised of AT&T Type 110 blocks or equivalent.

(20) Voice Switching and Control Equipment (VSCE). VSCE is a generic term that represents all switching and control equipment types located at a control facility. The Voice Switching and Control Equipment (VSCS), the Integrated Communications Switching System (ICSS), and the four-channel control equipment are VSCE.

5. AUTHORITY TO CHANGE THIS ORDER. The Program Manager for A/G Communications, ANC-300, has the authority to issue changes to this order that does not assign responsibility, delegate authority, or establish policy.

6.-19. RESERVED.

CHAPTER 2. PROJECT OVERVIEW

20. SYNOPSIS. The DSRCE project will replace existing tube-type tone control equipment at designated ARTCC's, ATCT-TRACON's, AFSS's, and at associated RCAG, RTR, and RCO facilities. The DSRCE project will also provide for the expansion in existing and new facilities. The DSRCE will interface with solid-state air-ground radios at remote sites (RCAG's, RTR's and RCO's) and VSCE at control facilities (ARTCC's, ATCT-TRACON's, and AFSS's).

21. PURPOSE. The DSRCE project provides an integrated system approach to satisfy the requirements of remote radio control. It will replace existing tube-type control equipment to improve the operational end-to-end system performance and reduce maintenance cost. The DSRCE is a modular design and accommodates the FAA size requirements for ARTCC's, ATCT/TRACON's, Area Control Facilities (ACF's), AFSS's and associated remote radio facilities.

22. HISTORY.

a. The existing tone signaling and control equipment is located at both control facilities and remote radio sites, enabling air traffic personnel to remotely control A/G radio transmitters and receivers. Early models of tone signaling and control equipment were designed in the mid-1950's and utilize vacuum tube and electromechanical relay technology ("tube-type" equipment). The rationale for the DSRCE Program is as follows:

(1) Replacement of the present obsolete tube-type tone signaling and control equipment is required due to operational and functional deficiencies. These include: push-to-talk (PTT) keying delays, false transferring between main and standby (M/S) radio equipment, lack of radio equipment M/S status, and improper impedance matching.

(2) Difficulty of maintenance is significant.

(3) Reliability is poor and continues to decline.

(4) Spare parts for the existing tube type control equipment are difficult to obtain and very expensive. Replacing some parts, such as the relays used in relay timing chains, is extremely difficult. These relays are based on 1950's electromechanical technology. This technology has been replaced by solid-state technology. Replacement relays currently available must be specifically tailored to meet the existing system timing requirements.

(5) Technology utilized in the existing equipment is outdated (40 years old). Applicable technical courses relating to vacuum tubes, relays and relay maintenance, are no longer taught. As a result, technical skill levels related to the older equipment are declining, further escalating the maintainability problems.

b. The DSRCE project will replace the existing tube-type tone signaling and control equipment utilized in voice radio A/G air traffic control operations, and will be implemented on a channel-by-channel basis at the designated control facilities and remote sites.

c. At remote radio sites, the DSRCE will interface with the existing solid-state radio transmitters and receivers and with the transmission facilities which connect these sites to the control facility. At the control facilities, the DSRCE will interface with the transmission facilities and the Voice Frequency Control System (VFCS) installed in en route and terminal facilities, the ICSS installed in terminal and AFSS facilities, and the VSCS installed in ARTCC's.

23.-29. RESERVED.

CHAPTER 3. PROJECT DESCRIPTION

30. FUNCTIONAL DESCRIPTION. The DSRCE will provide the following functions and capabilities (some functions are interface dependent). The DSRCE Specification, FAA-E-2885, provides an indepth discussion of each.

a. PTT control signaling.

b. The DSRCE operates either a single A/G frequency or a pair of A/G frequencies (individually, or simultaneously) over a single channel.

c. Return of a PTT confirmation signal to the DSRCE/VSCE interface.

d. Selective muting of remote receivers.

e. Dual Control over a single frequency by two separate control facilities. The DSRCE provides the capability to operate in Priority or Non-Priority Mode (at the contractor's option).

f. Protection against high line voltages and spikes due to lightning strikes, surges, line noise, or electromagnetic interference (EMI).

g. Selection and operation of remote main or standby radio transmitters and receivers.

h. Transmission of control messages over an Unconditioned Transmission Path from the control facility to the remote site.

i. Transmission of Remote Maintenance Monitoring (RMM) data from the remote site to the control facility (at the contractor's option).

j. Standard interfaces with VSCE at the control facility (Type B, and C) and with solid-state radio transmitters and receivers at the remote sites.

31. PHYSICAL DESCRIPTION. A single DSRCE unit is comprised of a standard set of generic modules and a power supply. The physical dimensions of a single DSRCE unit is no greater than 19"Wx19"Dx12¼"H. A DSRCE channel provides the interface between the VSCE and the remote radio equipment via trunks to support A/G communications between control facilities (ARTCC's, ATCT/TRACON's and AFSS's) and remote sites (RCAG's, RTR's, and RCO's). The DSRCE operational functional diagram and a typical DSRCE channel configuration are shown in figures 3-1, and 3-2, respectively.

32. SYSTEM REQUIREMENTS. The DSRCE is a set of integrated voice/data communications units that, in conjunction with other equipment, enables air traffic controllers and flight service specialists to communicate with pilots over A/G radios. A DSRCE channel provides the capability to transmit and receive voice and radio control signals for up to two related A/G frequencies over a single four-wire voice grade (VG) transmission path. The DSRCE is used to allow control over either frequency one at a time, or over both frequencies simultaneously. The DSRCE will be located in both control facilities and remote sites. The control facility DSRCE will interface with the VSCE, while the remote site DSRCE will interface with the A/G radios.

33. EXTERNAL INTERFACES. The DSRCE will interface with solid-state radio transmitters and receivers and Government power at the remote radio sites, and will interface with the VSCE (VSCS, ICSS, and four-channel equipment) at control facilities. The DSRCE, at the contractor's option, will provide an external user interface at remote and control facilities. Both the control and remote DSRCE will interface with the interconnecting four wire (4-wire) VG telephone circuits. The DSRCE status and transmission status indicators will be displayed on the front panel of the equipment. As a contractor option, status indicators will be monitored on a centralized maintenance terminal. This centralized maintenance terminal will be compatible with the FAA's maintenance data terminal (MDT), and at the contractor's option, will interface (in accordance with NAS-MD-790, Remote Maintenance Monitoring System (RMMS) Interface Control Document (ICD)) with the FAA's maintenance processor subsystem (MPS).

34.-39. RESERVED

FIGURE 3-1 DSRCE OPERATIONAL FUNCTIONAL DIAGRAM

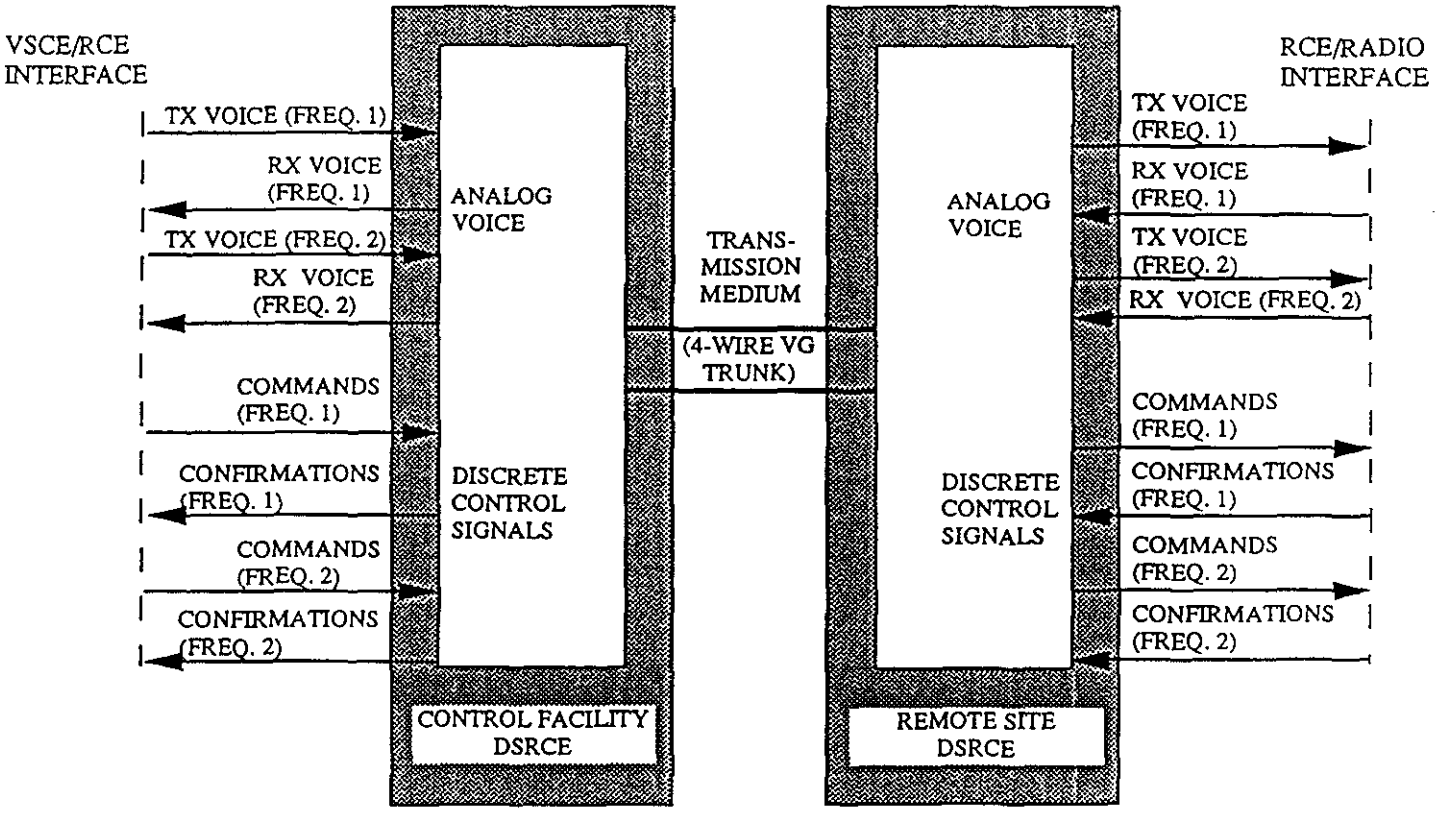
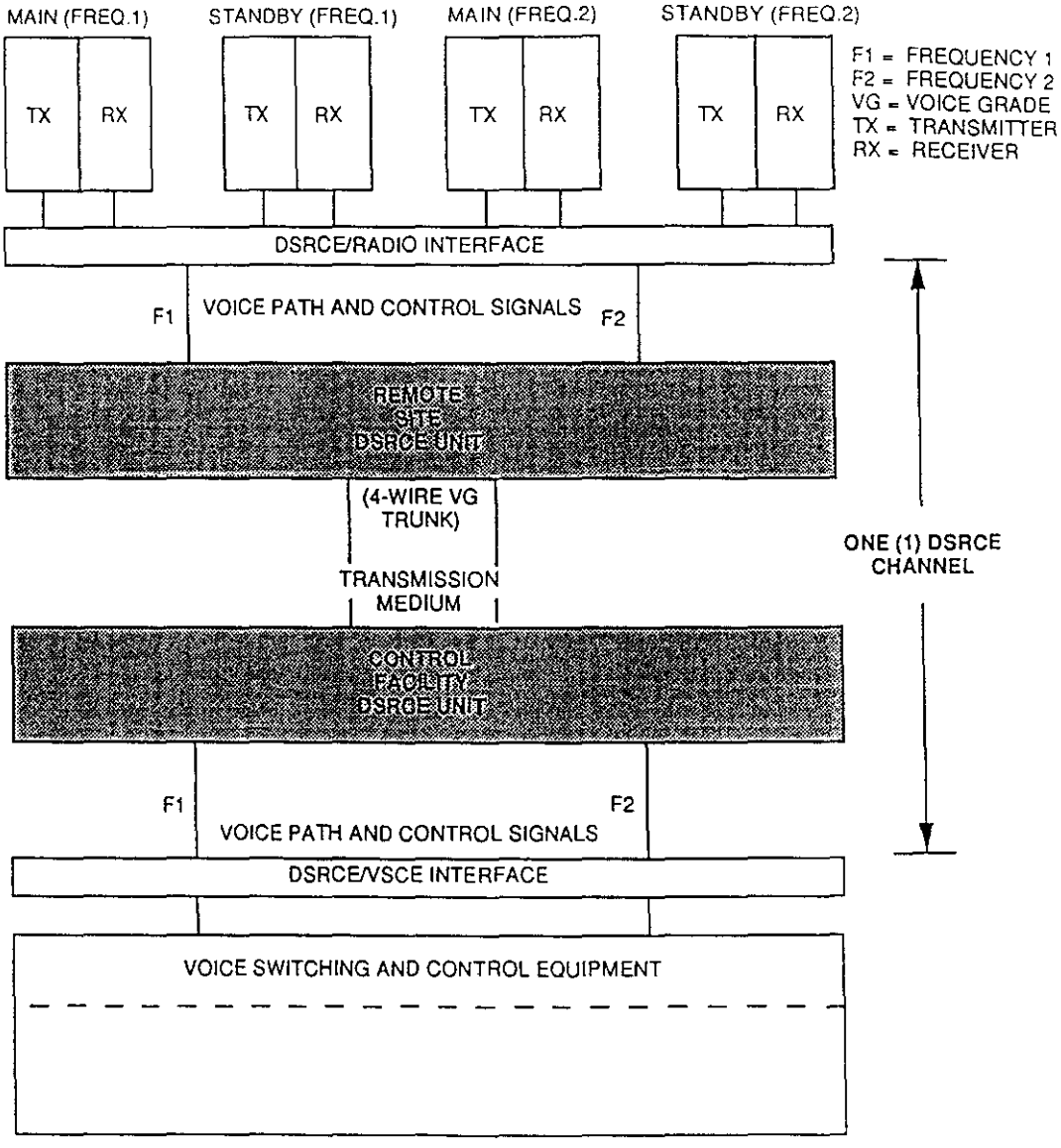


FIGURE 3-2 TYPICAL DSRCE CHANNEL CONFIGURATION



CHAPTER 4. PROJECT SCHEDULE AND STATUS

40. PROJECT SCHEDULE AND GENERAL STATUS. The DSRCE scheduling concept includes site preparation, and regional planning for installation, testing, and operational cut-over of the DSRCE. Current project schedules should be acquired through ANC-700, Air/Ground Communications and Control Division.

41. MAJOR MILESTONE SCHEDULE. 1/

a.	Request for Proposal	8/93
b.	Contract Award	8/94
c.	Provisioning Guidance Conference	9/94
d.	Delivery of LSAR (Increment A - CDRL F02)	11/94
e.	Factory Acceptance Test	11/94
f.	First Equipment Delivery	12/94
g.	Deployment Readiness Review (DRR) Complete	2/95
h.	First Operational Readiness Demonstration (ORD)	3/95

42. INTERDEPENDENCIES AND SEQUENCE.

a. FAA Master Demarc Program (ASM-310). 2/

b. Raised Floor Project (ANS-220).

c. Grounding, at Remote Sites (ANS-230).

d. VSCS Program Schedule (AAP-400). DSRCE can be installed prior to, or after installation of the VSCS, without any effect on the (cost or delay) DSRCE project.

43.-49. RESERVED.

NOTES:
1/ Working Dates - Contact the DSRCE Program Office or consult the Material Delivery Forecast Module (MDFM) for current dates.

2/ The ARTCC Master Demarc Program is associated with but NOT essential to DSRCE implementation. The DSRCE can be installed and commissioned with either the old or new demarc tie-in.

CHAPTER 5. PROJECT MANAGEMENT

50. PROJECT MANAGEMENT.

a. The overall technical management of the DSRCE project is the responsibility of the Program Director for Communications and Aircraft Acquisition, ANC-1, and specifically, the Program Manager for Air/Ground Communications and Control, ANC-300. This organization will accomplish management tasks within the guidelines provided by FAA policies, procedures, and directives.

b. The Contracting Officer (CO) will perform the general contract management activities and will assure that the terms of the contract are being satisfied. The CO (ASU-330) is the only person authorized to make changes that will affect prices, deliverables, or schedules.

c. The Technical Officer (TO), designated by the program manager, is responsible for all aspects of design, production, testing, delivery, and management of the DSRCE installations within the defined parameters of the contract.

d. The Implementation Lead Engineer is responsible for overseeing all aspects of implementation and maintaining close liaison with regional Technical Onsite Representatives (TOR).

e. The TOR, designated by the regional Airway Facilities division manager, is responsible for communication, coordination, and reaction to the responsibilities of the Implementation Lead Engineer. The TOR will submit periodic technical reports describing progress at each site within the region to the Implementation Lead Engineer.

f. The Associate Program Manager for Logistics (ANS-420) has the responsibility for ensuring that all National Airspace Integrated Logistics Support (NAILS) requirements are addressed in each procurement.

g. The regional Associate Program Managers are responsible for the planning and installation activities. The regional Associate Program Managers have the responsibility to interface with the designated ANC-700 DSRCE Project Manager/Implementation Engineer on the following implementation and coordination activities:

(1) Installation planning.

(2) Project funding.

(3) Scheduling.

(4) Testing/site acceptance testing support.

(5) Training.

(6) Maintenance.

(7) Logistic support.

(8) Site configuration management.

(9) Update documentation.

51. PROJECT CONTACTS.

a. FAA Headquarters Staff.

(1) Program Manager for Air/Ground Communications and Control Program, ANC-300.

(2) Deputy Program Manager for Air/Ground Communications and Control Program, ANC-301.

(3) Business Manager, Air/Ground Communications and Control Program, ANC-302.

(4) Air/Ground Communications and Control Division, ANC-700.

(5) Associate Program Manager of Engineering for DSRCE, ANC-700.

(6) Implementation Project Engineer for DSRCE, ANC-700.

(7) Associate Program Manager of Engineering for RSE, ANC-700.

(8) Associate Program Manager for Contracts, ASU-330.

(9) Associate Program Manager for Quality, ASU-420.

(10) Associate Program Manager of Testing for DSRCE, ACW-300.

(11) Associate Program Manager of Systems Engineering, ASE-200.

(12) Associate Program Manager of Logistics, ANS-420.

b. Regional Associate Program Managers.

(1) Alaskan Region, AAL-420.

(2) Central Region, ACE-420.

(3) Eastern Region, AEA-420.

(4) Great Lakes Region, AGL-420.

(5) New England Region, ANE-420.

(6) Northwest Mountain Region, ANM-420.

(7) Southern Region, ASO-420.

(8) Southwest Region, ASW-420.

(9) Western Pacific Region, AWP-420.

c. FAA Organization Support.

(1) FAA Technical Center (ACT), ACW-400

(2) Mike Monroney Aeronautical Center (AMC), AOS-240

(3) FAA Logistics Center, AML-1.

52. PROJECT COORDINATION. The DSRCE will interface with the following National Airspace System (NAS) programs and systems. Close coordination with these programs is being accomplished to properly integrate DSRCE in the NAS, define the hardware/software interface requirements, and prepare the necessary interface documents.

a. AAP-400, Voice Switching and Control System Program.

b. ANS-220, Facility Structures Program, coordination of raised floors at ARTCC's.

c. ANA-200, Maintenance Processor Subsystem.

d. ASM-300, Master Demarcation System.

e. ANC-600, Voice Switching/Recording and Data Link Division.

f. ANC-700, Air/Ground Communications and Control Division.

g. ACW-400, FAA Technical Center.

53. PROJECT RESPONSIBILITY.

a. Washington Headquarters.

(1) ANC-300/ANC-700, DSRCE Program Office.

(a) Provide program guidance to all offices, services, centers, and regions on the implementation of DSRCE.

(b) Prepare specifications and other documentation leading to contracts for DSRCE production units and associated equipment and services (ANC-700).

(c) Provide surveillance of Contractors in the development, production, and testing of the DSRCE (ANC-700).

(d) Provide site preparation standards to the regions, ACT and AMC.

(e) Ensure the baseline configuration for all hardware and software items that make up the DSRCE and provide suitable documentation to appropriate services upon delivery to the users of the DSRCE.

(f) Coordinate quarterly telecons for program status updates.

(g) Provide DSRCE status briefings to the regions.

(h) Initiate Deployment Readiness Review (DRR) 12 months prior to the first DSRCE delivery.

(i) Coordinate, participate in, and conclude the National Airspace Integrated Logistics Support Management Team (NAILSMT).

(j) Provide ASM-230 with data as required to ensure staffing standards and facility definitions are developed.

(k) Provide materials from Project Materiel List (PML) (i.e., racks, relay panels, etc.).

(2) Air Traffic Plans and Requirements Service (ATR-1).

(a) Ensure that operational requirements are met prior to field deployments.

(b) Identify and document changes to operational requirements.

(c) Provide Air Traffic personnel to participate in the DRR process.

(3) Associate Administrator for Contracting and Quality Assurance (ASU).

(a) Provide all procurement actions necessary to enter into contract(s) for the acquisition of DSRCE and related items.

(b) Provide contract administration at FAA headquarters, in-plant, and onsite.

(c) Provide Quality Reliability Officer (QRO) as appropriate, to assure adequacy of the quality programs and inspection systems.

(d) Provide industrial engineering support and production surveillance of program management and contract administration.

(4) Training and Higher Education (AHT-1).

(a) Analyze training requirements; approve training program development; assign training responsibility; and review and approve all associate DSRCE training schedules, assignments, and programs.

(b) Instruct and advise regions on training programs, schedules, and assignments.

(5) Automation Engineering Division, ANA-700.

(a) Ensure adequate distribution of MDT's to offices responsible for DSRCE maintenance.

(b) Upon receipt of interface control documentation, develop MPS software required to perform RMM of the DSRCE system.

(6) National Airway Systems Engineering Division, AOS-200.

(a) Provide any required radio equipment electronic equipment modifications (EEM) to all regions, in accordance with approved configuration control decisions (CCD) and in coordination with ANC-700.

(b) Develop shakedown plans and procedures and conduct testing.

(c) Assume responsibility for FAA software maintenance upon delivery of software manuals and availability of support equipment.

(d) Develop maintenance handbook critical performance parameters for the equipment.

(e) Provide technical support for resolution of regional system problems; accomplish system modifications through approved FAA procedure after acceptance and commissioning, configuration management, and system monitoring improvements; and define maintenance procedures for the system.

(f) Assume hardware configuration management responsibility upon commissioning of the installed equipment, and delivery of an FAA approved technical instruction manual for DSRCE.

(7) Telecommunications Management and Operations Division, ASM-300.

(a) Coordinate trunk and/or circuit additions/deletions/changes.

(b) Provide policy and procedural guidance to Airway Facilities (AF) and the AMC for appropriate DSRCE property controls and records maintenance prior to certification.

(c) Provide procedures for the disposal or utilization of surplus material.

b. Regional AF Divisions and Sectors.

(1) Prepare site-specific implementation plans.

(2) Ensure completion of site preparation activities prior to DSRCE delivery. Coordinate site preparations for remote sites in adjoining regions.

(3) Perform required EEM.

(4) Identify Associate Program Managers and TOR's.

(5) Provide regional support to the DSRCE Program Office.

(6) Provide for adequate staffing to receive training and to provide for the operational needs of the system.

(7) Witness system testing in accordance with the requirements of the test plans.

(8) Accomplish preliminary contractual acceptance of those items delivered to appropriate facilities as directed by the CO and the DSRCE Program Office.

(9) Provide coordination, direction, and guidance necessary for effective and timely accomplishment of all phases of the overall project as required by the DSRCE contract.

(10) Perform other responsibilities as described in Order 6030.45, Facility Reference Data File (FRDF).

c. Regional Air Traffic Divisions.

(1) Participate in DSRCE implementation planning.

(2) Identify and document site-specific operational requirements.

(3) Provide, as needed, feedback to regional AF divisions on aspects of system implementation as they affect operations.

(4) Provide Air Traffic personnel to participate in the DRR.

(5) Provide changes in operational requirements to the System Plans & Programs Division, ATR-100.

(6) Perform other responsibilities as described in Order 6030.45.

d. Mike Monroney Aeronautical Center (AML).

(1) Provide logistics support service and planning and accomplish cataloging and provisioning for DSRCE.

(2) Attend provisioning conferences for the DSRCE Program.

(3) Develop, in conjunction with ASU, AOS, and the DSRCE Program Office, logistics policies and plans for support of the system.

(4) Participate in planning activities for the transition of the system equipment into the logistics inventory.

(5) Establish facilities and item management control, and accountability for all agency property received at AMC.

(6) Provide for replenishment support.

(7) Provide second level repair contracts.

e. FAA Academy (AMC-900). Develop and conduct training programs as assigned by the Office of Training and Higher Education.

f. FAA Technical Center, ACW-400.

(1) Develop and perform NAS integration test plans and procedures.

(2) Provide technical support for first article testing.

(3) Support the DSRCE installations as required.

(4) Perform Operational Capabilities Testing (OCT).

(5) Develop FAA Master Test Plan (MTP) (co-authored with ANC-300).

g. FAA Technical Center, ACN-100D.

(1) Provide RMMS inputs to the FAA MTP.

(2) Provide technical support for RMMS Interface Control Document (ICD) development, Operational Test & Evaluation (OT&E)/Shakedown, and other test activities.

(3) Develop procedures for, and perform RMMS NAS OT&E/Integration Testing and NAS OT&E/Operational Testing.

(4) Support and participate in the DRR process as Associate Program Manager of Testing (APMT) for RMMS.

h. Contractor.

(1) Provide all contract deliverables as specified in the Statement of Work (SOW).

(2) Deliver the DSRCE project equipment per the contract.

54. PROJECT MANAGERIAL COMMUNICATIONS. The project managerial communications is provided monthly to ANC-1 through a monthly Program Director Status Review (PDSR). Status information is distributed to regional personnel, Associate Program Managers, TOR's, and Air Traffic representatives, through program office sponsored mediums. The following mediums provide for the exchange of technical and administrative information:

a. Semiannual National Conference.

b. Quarterly *Squelch Break*, the DSRCE newsletter.

c. Weekly staff meetings (ANC-700).

d. Teleconferences with regional and staff personnel.

e. Operational Advisory Group (OAG)/Implementation Working Group (IWG) - act in advisory capacity for the resolution of implementation issues.

55. IMPLEMENTATION STAFFING. This paragraph identifies headquarters, regional personnel directly involved in the implementation of the DSRCE. This paragraph also suggests minimum personnel requirements and does not preclude the regions from assigning additional implementation personnel.

a. FAA headquarters personnel (and quantity). Headquarters will provide a project implementation lead responsible for overseeing all implementation activities, including installation coordination with regional Associate Program Managers.

b. Regional personnel (and quantity).

(1) The designated Associate Program Manager is responsible for all implementation activities within the region.

(2) Technicians are present to ensure the DSRCE system installation is not disruptive to facility operations and coordinate connection to trunks and/or operational facilities as needed.

56. PLANS, REPORTS, AND CONFERENCES.

a. Plans.

(1) DSRCE Acquisition Plan (FAA provided).

(2) Integrated Logistics Support Plans (FAA provided).

(3) Project management (contractor provided).

(4) FAA MTP for DSRCE (FAA provided).

(5) MTP (contractor provided).

(6) Site specific implementation plans (FAA provided).

(7) Configuration management plan (contractor provided).

(8) Training plans (contractor provided).

(9) Capital Investment Plan (FAA provided).

(10) Depot Maintenance Transition Plan (contractor provided).

(11) Production test plans.

(12) Obsolete Equipment Distribution Plan.

(13) Integrated Support Plans (contractor provided).

(14) PIP.

b. Reports.

(1) Periodic technical reports.

(2) Quarterly project status reports.

(3) DRR report.

(4) Test evaluation reports.

(5) Summary and analysis reports.

(6) Personnel Qualifications Report.

c. Conferences.

(1) Logistics/Provisioning Guidance Conference (within 30 days of contract award).

(2) Training Guidance Conference (within 30 days of contract award).

(3) Provisioning Conference (no later than 60 days after Government receipt of preliminary approval of Parts Master File and Supplementary Provisioning Technical Documentation).

(4) Semiannual National Conference.

57. APPLICABLE DOCUMENTS.

a. FAA-E-2885, DSRCE Specification.

b. FAA-STD-019a, Lightning Protection, Grounding, Bonding and Shielding Requirements for Facilities.

c. FAA-STD-020a, Transient Protection, Grounding, Bonding and Shielding Requirements for Equipment.

d. FAA-STD-021, Configuration Management.

e. FAA-STD-024, Preparation of Test and Evaluation Plans and Test Procedures.

f. FAA-STD-036, Preparation of Project Implementation Plans.

g. MIL-STD-1388-1A, Logistics Support Analysis.

h. MIL-STD-1388-2B, Department of Defense (DOD) Requirements for Logistics Support Analysis Record.

i. MIL-STD-1561, Provisioning Procedures.

j. NAS-MD-790, Remote Maintenance Monitoring (RMM) System Interface Control Document (ICD), Maintenance Processor Subsystem (MPS) to Remote Monitoring Subsystem (RMS) and RMS Concentrators, June 10, 1986.

k. NAS-SS-1000, NAS System Specification.

l. Order 1320.1D, FAA Directives System.

m. Order 1800.8F, National Airspace System (NAS) Configuration Management.

n. Order 1800.58A, NAILS Policy.

o. Order 1810.4B, FAA NAS Test and Evaluation Policy.

p. Order 3400.17, Certification of Personnel Engaged in the Maintenance of Airway Facilities Systems/Subsystems/Equipment.

q. Order 4250.9B, Field Materiel Management and Control.

r. Order 4400.56, Acquisition Review and Approval.

s. Order 4620.3C, Initial Support for New or Modified Equipment Installation.

t. Order 4630.2A, Standard Allowance of Supplies and Working Equipment for National Airspace System Facilities.

u. Order 4650.7A, Management of NAS F&E Project Materiel.

v. Order 4800.2B, Utilization and Disposal of Excess and Surplus Personal Property.

w. Order 6030.45A, Facility Reference Data File (FRDF).

x. Order 6500.1, Communication Facilities and Equipment Modification Handbook - General.

58.-59. RESERVED.

CHAPTER 6. PROJECT FUNDING

60. PROJECT FUNDING STATUS, GENERAL. Implementation of the DSRCE Program follows the policies and guidelines established in Order 4400.56, Acquisition Review and Approval. Planning and programming estimates for fiscal years 1984, 1985, 1986, and 1987 were submitted by the DSRCE Program Office with no regional input. Fiscal year 1988 and beyond are based on DSRCE Program Office estimates in conjunction with regional coordination. Regional funding will be provided in block assignments based on regional estimates provided to the DSRCE Program Office. Regional responsibility will include site surveys, site preparation, cut-over, activities associated with acceptance of the DSRCE, and removal of surplus equipment.

a. Estimated total program cost for this phase of the program is $15.9 million from FY 1993 through FY 1996. The funding profile is shown in subparagraphs 60a(1) through 60a(5). This estimate is based upon tone control equipment procurement unit costs listed in the General Services Administration (GSA) schedule. The estimated facilities and equipment (F&E) costs from FY 1993 through FY 1996 include approximately:

(1) $14.7 million for hardware acquisition.

(2) $1.5 million for site preparation, test, and installation.

(3) $13.1 million for initial logistics (NAILS) support.

(4) $5.0 million for program management support.

(5) $5.0 million for follow-on additional hardware requirements.

b. Funding Allocations vs. Funding Requirements

F&E funds required: ($ millions)

FY	93	94	95	96	97	98
	$8.0	14.9	11.6	6.0	6.0	0.0

F&E funds available/programmed: (as of October 1, 1992)

$3.0	0.0	8.0	14.9	11.6	51.7	33.5	23.1

c. Site survey funding has already been provided. Some regions have allowed FY-1985 funds to expire without completing site surveys. In those regions, site surveys must be completed using regional personnel who are funded under budget activity 5, Personnel, Compensation, Benefits, and Travel (PCB&T).

d. Site preparation funding for Seattle ARTCC, Fort Worth ARTCC, and Jacksonville ARTCC has been provided in full. Partial funding has been provided for other ARTCC's. The DSRCE Program Office policy is to fund for required materials. Technical Support Services Contract (TSSC) personnel will be funded from budget activity 5 (PCB&T).

e. Funding for the upgrading of facility grounding, bonding, and lightning protection for RCAG sites associated with the installation of DSRCE is no longer within the scope of the DSRCE Program. Funding for grounding at the first three DSRCE ARTCC installation sites (Seattle, Fort Worth, and Jacksonville) was previously provided by the DSRCE Program Office. This was done in order to ensure completion of site preparation activities for these sites at the start of the program. Funding for this effort was based on a SOW provided by ANC-700 and coordinated with ANS-230. The SOW contains the minimum requirements of FAA-STD-019a, Lightning Protection, Grounding, Bonding and Shielding Requirements

for Facilities, and FAA-STD-020a, Transient Protection, Grounding, Bonding, and Shielding Requirements for Equipment, needed to ensure successful implementation of DSRCE at RCAG facility sites. The DSRCE Program Office and ANS-200 are identifying funding for the remaining RCAG sites which require an upgrading of grounding, bonding, and lightning protection during FY-1993 and FY-1994. Labor cost provided for by PCB&T and TSSC in FY-1993 will be taken into account. Cost estimates should be submitted to the Power Systems Program through the normal budget call for estimates for other RTR and RCO locations requiring an upgrade of grounding, bonding, and lightning protection to meet FAA-STD-019a and -020a during FY-1993 and beyond.

f. Funding required to pay for the growth beyond the contract baseline of replacement equipments identified in the DSRCE contract will require Fiscal Status Reports (FSR) actions to be initiated by the regions. The regions were surveyed in 1985 to determine the requirements for replacement systems. The regions will be provided information on additional known requirements that need FSR actions. This action is necessary to reprogram dollars from regional and national sources so funds may be provided to pay for growth. FSR actions required for this purpose should be initiated at least 14 months prior to DSRCE delivery. A target date to complete required contract modifications for this purpose is approximately 10 months prior to DSRCE delivery.

61. DSRCE SELECTION PLAN. DSRCE will be acquired through the contracts division (ASU-300) of the Office of Contracting and Quality Assurance, ASU-1. The DSRCE system will be acquired from a single contractor through ANC-300. Associated installation hardware and interface equipment will be regionally procured.

62.-69. RESERVED.

CHAPTER 7. DEPLOYMENT

70. GENERAL DEPLOYMENT ASPECTS.

a. General. The DSRCE contractor will deliver the equipment and any documentation to the designated FAA facility within each region. All contractor activities will be coordinated with the regional engineer assigned to the DSRCE Program and the Implementation Lead Engineer (ANC-700) for the DSRCE contract.

b. The DSRCE Specification, FAA-E-2885. This specification requires that the DSRCE interface be operationally compatible with several other systems. These include the four-channel equipment, solid-state radios, the VSCS, and the ICSS.

c. Interface Requirements Documents (IRD). IRD's exist that identify the interface requirements between the DSRCE and various systems. Most of the applicable IRD's are available in the DSRCE specification FAA-E-2885 appendixes, and should be consulted for a detailed description. These IRD's are: the DSRCE/VSCE, (Appendix A), DSRCE/Solid State Radio Equipment (Appendix B). Additionally, the Transmission Equipment: Analog Interface Document (NAS-IR-44010002) provides the DSRCE/Transmission Line Interface Requirements.

d. Transition Concept. The general transition plan will implement cut-over on a channel-by-channel basis. It is anticipated that cut-over will occur during the evening hours, or at a time that will cause the least impact to Air Traffic operations. The regional personnel responsible for installation must coordinate channel cutovers at the control facility with the corresponding channel cutovers at the associated remote sites. A channel that is being cutover will not be available for Air Traffic use until that channel is certified.

e. DSRCE Hardware/Distribution Frames. DSRCE hardware will be installed at control facilities and at remote sites. A distribution frame, the VSCS/DSRCE-IDF, supplied by AT&T under a separate contract, will be installed by the regions at ARTCC's. All connections between the DSRCE and the existing communications equipment will be made at their respective IDF's and VDF/DSRCE IDF's. Regions are responsible for the purchase and installation of cables from the IDF's and VDF/DSRCE-IDF to the existing equipments during the site preparation and preinstallation phase.

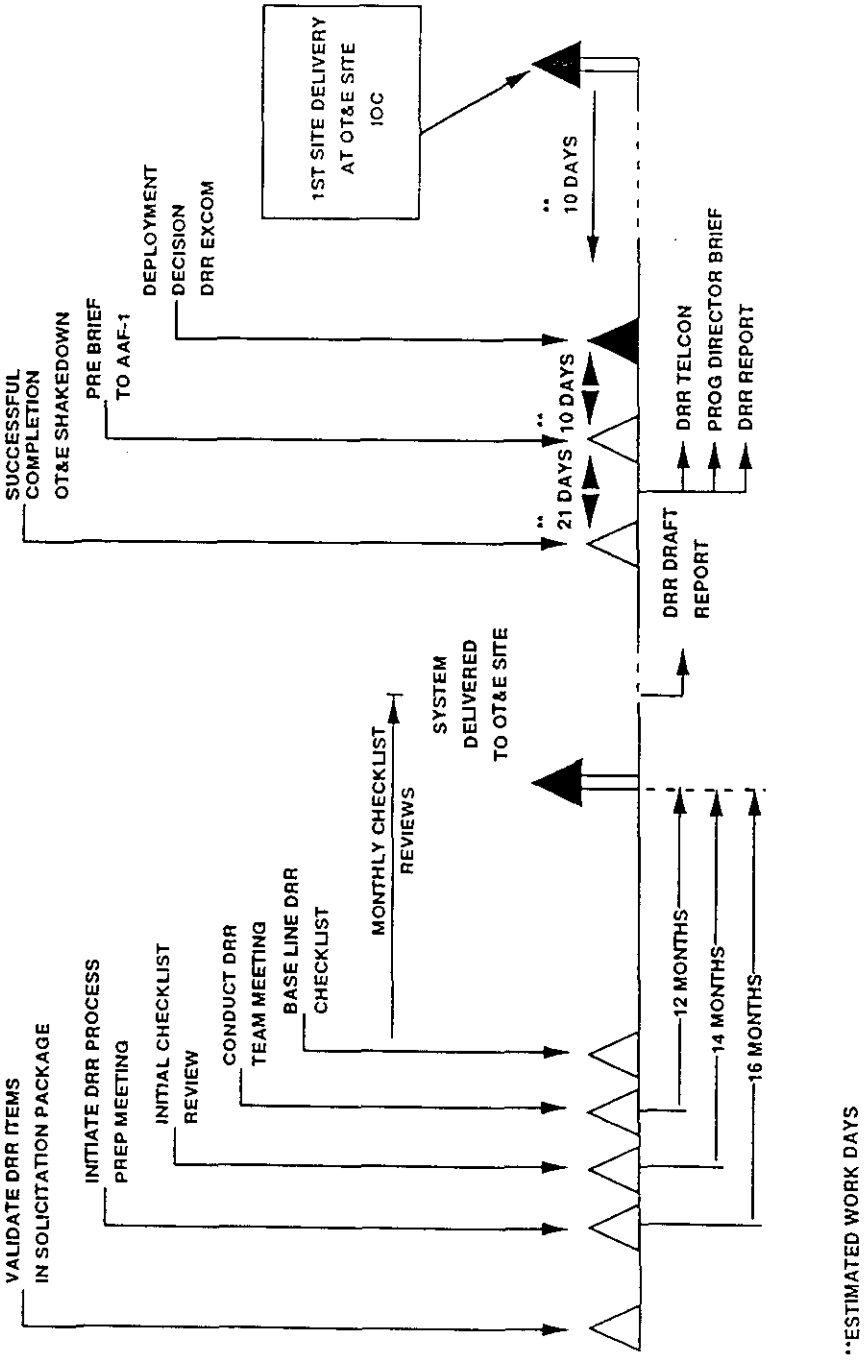
f. Deployment Readiness Review (DRR). The DRR will commence 12 months prior to the first DSRCE delivery where shakedown testing occurs. The DRR schedule is provided in subparagraph 70f(1). See figure 7-1.

(1) DRR PROCESS -- TIMETABLE.

(a)	Initial Review	12 months prior to first DSRCE delivery where shakedown testing occurs currently, shakedown testing is scheduled at the first production site.
(b)	Initiate DRR Process/ Announce Team Meeting 1/	2 weeks (or more)
(c)	DRR Team Meeting Convened	one month (or more)
(d)	Delivery of DSRCE to First Shakedown Test Site (First Production Site)	
(e)	Shakedown Testing Completed	
(f)	DRR Report Submitted 1/ 2/	(one week after test)
(g)	DRR Briefing/Deployment Decision	
(h)	Delivery of DSRCE to Second Production Site 1/	

NOTES:
1/ Milestone in Master Schedule System
2/ Interim report which will describe the test and the critical exceptions found

FIGURE 7-1 DRR PROCESS FOR HARDWARE ACQUISITION.



71. SITE PREPARATION AND PREINSTALLATION ACTIVITIES. During the preinstallation phase, DSRCE Program representatives will meet with designated regional personnel to discuss resources and potential problems. For regions to establish new sites or channels of DSRCE, which are not included in the DSRCE data base, regions should follow the FSR process as outlined in paragraph 60f.

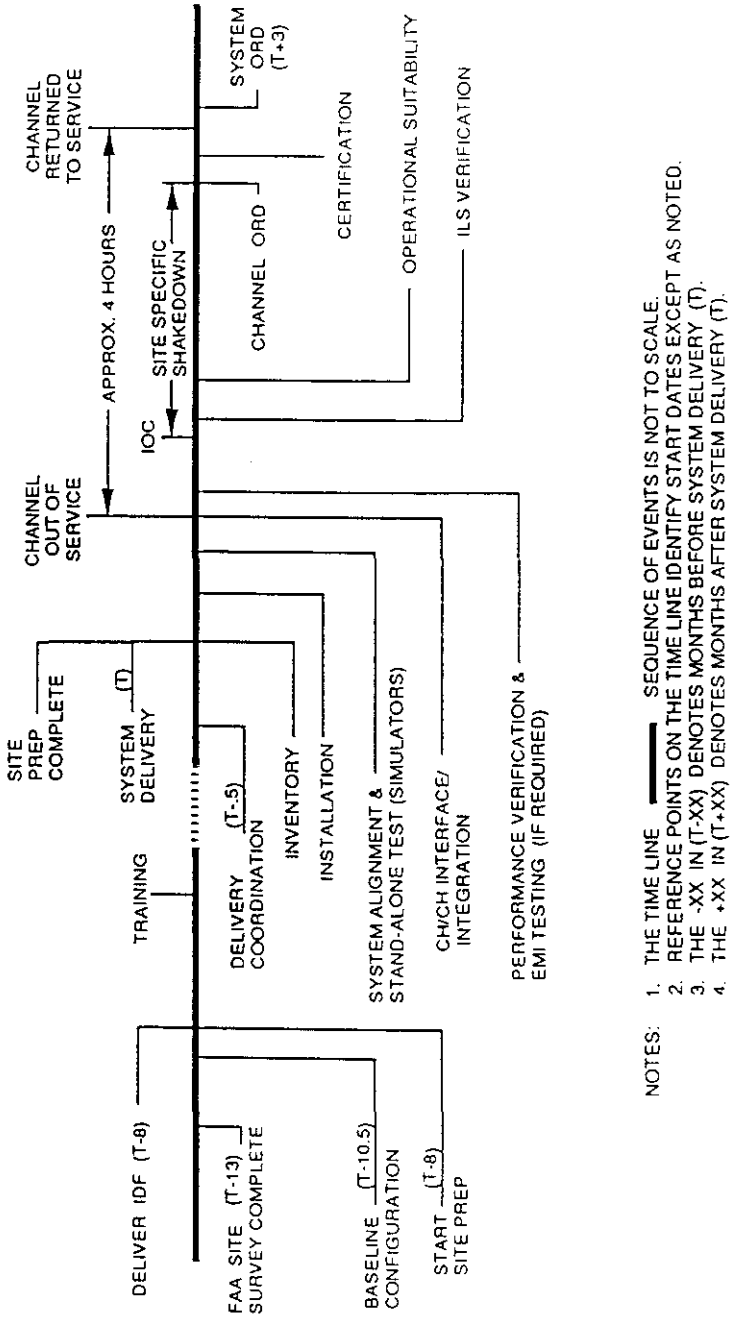
a. Control Facility Site Preparations. The VDF/DSRCE-IDF will be installed by the regions prior to the DSRCE delivery. The regions will be responsible for the cabling from the existing equipment to the VSCS/DSRCE-IDF.

b. Remote Site Preparations. The regions will be responsible for connecting cabling from the existing equipment to the DSRCE IDF. The remote site IDF will be located on the radio rack and will be comprised of WECO Type 66 Terminal Blocks or equivalent. In addition, verify that EEM's have been completed per Order AF P 6500.1, Communication Facilities and Equipment Modification Handbook - General (i.e., Installation of Inboard Monitor/Keyer (A3 Card) in GRT-21 and GRT-22; Chapter 341R, Change 392).

72. DELIVERY. The DSRCE will be shipped in accordance with the DSRCE contract, to designated FAA regional facilities. The regions will coordinate all DSRCE deliveries between the contractor and the sectors involved. See Figure 7-2, DSRCE Site Implementation Time Line.

73.-79. RESERVED.

FIGURE 7-2. DSRCE SITE IMPLEMENTATION TIME LINE



CHAPTER 8. TESTING

80. VERIFICATION. The verification and testing of the DSRCE is the responsibility of the DSRCE Program Manager. The ACT will provide an Associate Program Manager for Test (APMT) to aid the program manager in test and verification of the DSRCE system. Test policy and planning will observe the guidelines set forth in Order 1810.4b, FAA NAS Test and Evaluation Policy. The program manager will ensure that the DSRCE contractor develops a test and evaluation program to ensure compliance of all requirements stated in FAA-E-2885 and as demonstrated at OCT. The DSRCE contractor will provide Government approved test plans and procedures in accordance with the Contract Data Requirements List (CDRL) and SOW. The three major categories of DSRCE testing are:

a. OCT.

b. NAS OT&E, Integration, Operational and Shakedown Tests.

c. Production Acceptance Test & Evaluation (PAT&E).

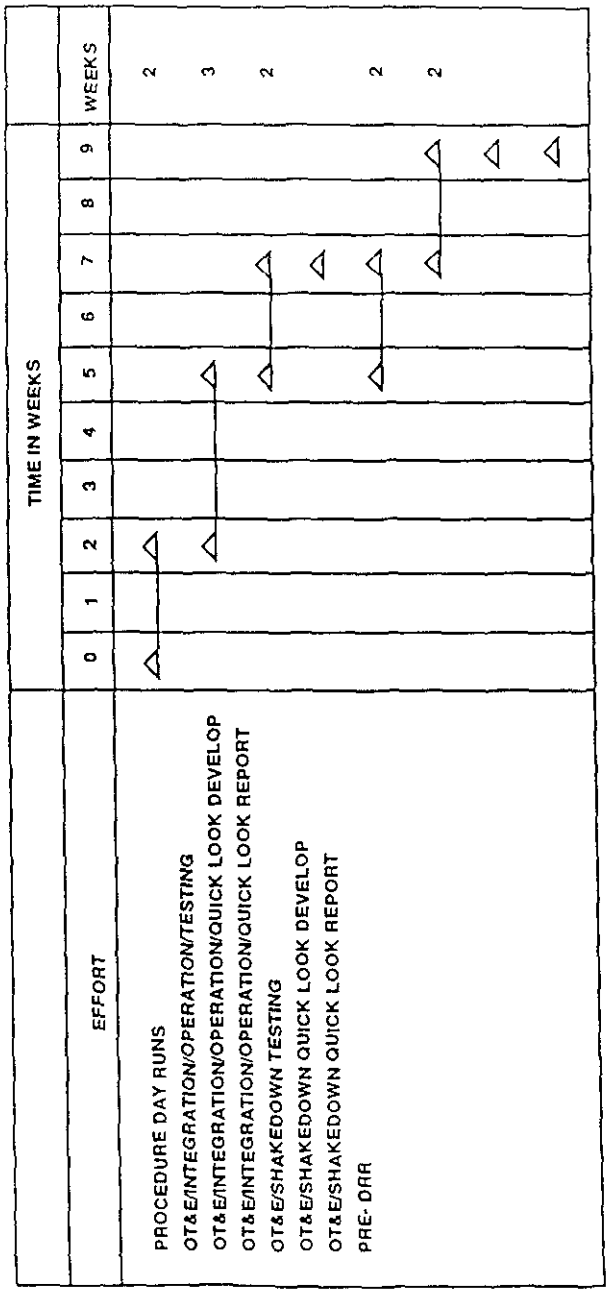
81. OPERATIONAL CAPABILITIES TESTING (OCT). OCT will be performed by the FAA personnel at the ACT as part of the technical evaluation of DSRCE contractor proposals. This test phase will provide the Government the opportunity to perform tests using contractor provided DSRCE and analyze the test results. This phase allows the FAA to determine whether the contractor's equipment functions and performs in compliance with the DSRCE specification before contract award. Each DSRCE OCT will be performed using automated test equipment, programmed to execute standard test scenarios, on a test bed in a laboratory environment.

82. NAS OT&E, INTEGRATION, OPERATIONAL AND SHAKEDOWN TESTS. OT&E will be conducted by the respective FAA organizations in accordance with the guidelines set forth by Order 1810.4B. See figure 8-1.

a. OT&E Integration Test. The APMT will conduct OT&E integration testing at ACT. OT&E integration tests will verify the ability of the DSRCE to interface with and function without degradation to the NAS environment. OT&E integration testing will consist of end-to-end system performance evaluations of the requirements delineated within NAS-SS-1000, volumes I-V. OT&E Integration Test Plans and Procedures will be developed under the supervision of the APMT.

b. OT&E Operational Test. The APMT will conduct OT&E operational testing at the ACT and at the first operational field site. OT&E operational testing will ensure that the DSRCE system operates within the NAS environment without degradation to operational requirements and procedures. User participation will be required to address such issues as reliability, availability, human factors, and stress testing of inter-operable systems. OT&E Operational Test Plans and Procedures will be developed under the supervision of the APMT.

FIGURE 8-1 OPERATIONAL TEST AND EVALUATION TESTING



c. OT&E Shakedown Test. AOS-200 is responsible for development of the test plans and procedures to support shakedown testing. During system shakedown, operational effectiveness and suitability tests will be conducted on the DSRCE to verify that DSRCE functions properly meet Air Traffic operational requirements, and is maintainable.

83. PRODUCTION ACCEPTANCE TEST & EVALUATION (PAT&E). PAT&E will be performed by the DSRCE Contractor to assure compliance with the provisions of the specification, FAA-E-2885, the DSRCE contract, and the Contractor's MTP. PAT&E will consist of the following tests phases:

a. First Production Unit Testing. The first DSRCE produced after contract award will undergo a **First Production Unit Test** using Government approved Factory Acceptance Test Procedures. The purpose of First Production Unit Test is to demonstrate full compliance of the equipment to the procurement specification. First Production Unit Testing will be conducted in the presence of a designated Government representative who will validate the test results.

b. Factory Production Testing. The Factory Production Test will provide for production line testing of assembled components (or sub-assemblies) of the DSRCE during the manufacturing process to ensure quality.

c. Factory Acceptance Testing. Factory Acceptance Testing will be performed at the contractor's facility on all DSRCE units before shipment to the Government Designated Installation Site (GDIS). The contractor shall provide all test equipment, test tools, and emulators necessary to simulate the DSRCE external operating environment.

84.-89. RESERVED.

CHAPTER 9. NATIONAL AIRSPACE INTEGRATED LOGISTICS SUPPORT (NAILS)

90. MAINTENANCE CONCEPT.

a. General. The DSRCE has been designed to meet the following reliability and maintainability requirements of FAA-E-2885:

(1) Availability. The DSRCE system will possess a minimum specified availability of .99992942 which is an inherent availability equal to the quantity mean time between failure minus mean time to repair (MTBF - MTTR) divided by MTBF. No single hardware failure can cause the loss of more than 1 channel between a manned and remote facility.

(2) Maintainability. Following the failure of any LRU, removal and replacement of the failed LRU will be accomplished within 30 minutes (.5 hours) from the time of technicians arrival. This time includes detection, isolation, and LRU replacement. Time to repair does not include travel time to a facility and assumes immediate availability of a spare module.

b. Maintenance Procedures. Preventive maintenance for the DSRCE site will not be required more often than once a quarter. At the contractor's option, RMMS will be used to conduct remote monitoring and control, and site maintenance procedures. The DSRCE will be supported by two levels of maintenance (site and depot).

(1) Site Maintenance. Consists of trouble shooting to the failed LRU and replacing it with a serviceable LRU. Site maintenance will be performed by FAA maintenance personnel.

(2) Depot Maintenance. Depot level maintenance, at the option of the Government, will be performed by the contractor.

c. Maintenance Responsibilities. The following subparagraphs describe the maintenance responsibilities.

(1) Site Maintenance. Maintenance tasks at the site level will be:

(a) Perform preventive and corrective maintenance on the DSRCE.

(b) Configure the DSRCE for normal operation in accordance with manufacturer's instructions and FAA handbook specifications.

(c) Measure and analyze subsystem parameters using assigned test equipment as maintenance aids and determine whether measured parameters meet specified tolerances.

(d) Troubleshoot and repair (by removal and insertion) any malfunction in the system using diagnostic aids, software test patterns, and standard troubleshooting methods associated with digital and analog circuits.

NOTE: Some limited removal and replacement of expendable components such as indicator lamps and fuses may be performed. The mean-time-to-repair (MTTR) for any single maintenance action shall not exceed 1/2 hour. Site maintenance personnel will requisition and return faulty LRU's in accordance with Order 4250.9A, Field Inventory Management and Replenishment Handbook.

(2) Interim Contractor Depot Logistics Support (ICDLS). At the option of the Government, the contractor will provide contractor supply support to include issuing, receipting, and repairing LRU's, until such time as the Government elects not to exercise the ICDLS option.

91. TRAINING.

a. Training for FAA technicians will be conducted at the FAA Academy. Details of the DSRCE Training Program will be described in the DSRCE Subsystem Training Plan. The initial training quota will be distributed to the regions through the standard Consolidated Personnel Management Information System (CPMIS) data base. The DSRCE contractor will conduct the first five (5) hardware maintenance courses and one (1) Depot Level Maintenance course.

b. Technician certification will be in accordance with Order 3400.17, Certification of Personnel Engaged in the Maintenance of Airway Facilities Systems/Subsystems/Equipment. The DSRCE contractor will prepare a concepts examination that could be used as a substitute for successful completion of the DSRCE course examination. A lead region will be appointed to prepare a performance examination in conjunction with the development of the maintenance technical handbook.

92. SUPPORT TOOLS AND TEST EQUIPMENT.

a. The DSRCE contractor will provide a list of common tools and test equipment for review at the provisioning conference. The required tools and test equipment will be identified in schedule A and B listings that will be published as a new appendix to Order 4630.2, Standard Allowance of Supplies and Working Equipment for NAS System Facilities. If a special tools or test equipment procurement is necessary, the required equipment will be procured by the DSRCE Program Office and distributed through the FAA Logistics Center using the project materiel list as described in Order 4650.7, Management of Project Materiel.

b. Special tools and test equipment will be furnished by the DSRCE contractor with the DSRCE hardware. This includes automatic test equipment (ATE) fixtures and test program sets (TPS). These equipments will be used by the contractor during factory testing and production.

93. SUPPLY SUPPORT. Spare modules and other critical LRU's will be located at site level. These items will be delivered to the sites concurrently with the DSRCE. Low cost expendable items such as lamps and fuses will be furnished as initial supply support allowance chart (ISSAC) items. The FAA Logistics Center will maintain replenishment stock for all parts required to support the DSRCE and will be the source of supply for the field.

94. VENDOR DATA AND TECHNICAL MANUALS.

a. Reprocurement Data Package (RDP). The RDP shall contain a complete set of technical data documentation, not limited to items procured under this contract, with updates as generated, including proprietary information, which would provide the Government the ability to repair, maintain, or reproduce the equipment. The RDP shall be placed in escrow. The RDP shall include equipment engineering drawings, software documentation, associated lists and corresponding circuit descriptions narrating the production drawings, and master patterns to support follow-up sparing, equipment procurement, quality control, production and repair tests procedures, and tolerances for each replaceable component, and other associated documentation which will facilitate the FAA Logistics Center's assumption of depot maintenance or reprocurement of parts.

b. Technical Manuals. The contractor will provide a complete set of technical documentation, with updates as generated, including proprietary information. The program office will ensure that one set of instruction books will be delivered to each facility receiving DSRCE, each work center supporting DSRCE, and each sector office supporting DSRCE. Two sets will be provided to each regional office (one each for the establishment and maintenance branches). One set will be provided to AOS-240 for second level engineering support.

95. EQUIPMENT REMOVAL. Obsolete tone signaling and control equipment will be disposed of in accordance with Order 4800.2A, Utilization and Disposal of Excess and Surplus Personal Property. Limited quantities of the old tone signaling and control equipment will be shipped to the FAA Logistics Center for support of the remaining inventory.

96. FACILITIES. DSRCE hardware will be configured to fit within existing facilities. The DSRCE is designed to be a direct replacement for existing equipment.

97. NATIONAL AIRSPACE INTEGRATED LOGISTICS SUPPORT (NAILS) PLANS. A NAILS Plan has been developed by the FAA. This plan provides detailed information on logistics support planning for the DSRCE.

98.-99. RESERVED.

CHAPTER 10. CONFIGURATION MANAGEMENT

100. CONFIGURATION MANAGEMENT. Configuration management is the process used to identify and document the functional and physical characteristics of a configuration item, control changes to those characteristics, and record and report change processing and implementation status. Configuration items of concern for this implementation are the hardware, software, and associated documentation which comprise the DSRCE baseline. The configuration management discipline will be applied to all configuration items included in the DSRCE baseline. The contractor shall maintain a Configuration Control Board (CCB) to support baseline management. All additions and changes to the DSRCE after the baseline has been established, which provides the same form, fit and function, will not require formal approval by the Government. All other changes will require Government approval. The RDP shall be updated to reflect all changes. All changes to the interfacility communications baselines will be controlled by ANC-1 CCB.

a. Acquisition Phase Configuration Management.

(1) ANC CCB controls the establishment of, and changes to, the DSRCE hardware and software baselines during the acquisition phase. For DSRCE matters, the ANC CCB will include members from headquarters NAILS Implementation Branch, Contracts, Air Traffic, Systems Engineering, and Configuration Management. The ANC CCB is responsible for ensuring that the functional performance and interface requirements allocated to the DSRCE hardware and software subsystems are reflected in the baseline documentation, and controls any changes to that documentation. The ANC CCB retains this configuration management responsibility until the last ORD.

(2) The contractor will plan and execute the configuration management functions associated with the development of DSRCE hardware and software during contract performance, in accordance with the applicable DOD and FAA standards cited in the SOW. This will include configuration identification, control, and status accounting.

(3) As a prerequisite to establishing the product baseline, the contractor is required to conduct Physical Configuration Audits (PCA) with FAA participation.

(4) Upon successful completion and approval of the configuration audits, the DSRCE product baseline can be established in accordance with Order 1800.8F, NAS Configuration Management.

b. Transition of Hardware/Software Configuration Management. The configuration management responsibility associated with the DSRCE hardware and software will transition from ANC-300 to AOS-200 after the last ORD. Subsequently, approval authority of all DSRCE NAS Change Proposal (NCP) activity will transition from the ANC CCB to the Maintenance Engineering CCB. A handoff package for DSRCE will be prepared by ANC-700 consisting of all hardware, technical and provisioning documentation, all software magnetic tapes, and supporting documentation and site installation documentation.

c. Operational Support Phase Configuration Management. During the operational support phase, and for the entire life-cycle of the implemented DSRCE hardware and software, configuration management functions will consist of maintenance and change control management to ensure the integrity of the approved product baseline.

101.-109. RESERVED.