CHANGE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

6430.2 CHG. 42

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SUBJ: MINUTES OF DOD/FAA JOINT RADAR PLANNING GROUP (JRPG)

1. **PURPOSE.** This change transmits Attachment 84 to Order 6430.2, Minutes of DOD/FAA Joint Radar Planning Group (JRPG). This Attachment is the minutes of the JRPG meeting number 84 conducted December 5 - December 7, 2000.

2. **DISTRIBUTION.** This change is distributed to the Assistant Administrator for Civil Aviation Security; to the division level within Airway Facilities, Air Traffic, Offices of Communications, Navigation and Surveillance Systems; and Office of System Architecture and Investment Analysis, in Washington; to the branch level in the regional Airway Facilities and Air Traffic Divisions; to the branch level at the FAA Logistics Center; and to all Airway Facilities and Air Traffic field offices with a Supervisory distribution. Special distribution will be made to select groups within the DOD and other Agencies.

3. **FILING INSTRUCTIONS.** File this attachment immediately following Change 41, Attachment 83 of this order.

Richard A. Thoma
Acting, Program Director for
NAS Operations

Distribution: A-W(CS)-1; A-W(AF/AT/SD)-3: A-Y(ML)-3; A-FAF-3(SUPV); A-FAT-1(SUPV); DOD

Initiated By: AOP-1000

MINUTES OF DOD/FAA
JOINT RADAR PLANNING GROUP
(JRPG)
MEETING #84

DECEMBER 5 – DECEMBER 7, 2000

CLEARWATER, FLORIDA

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1. ADMINISTRATIVE ITEMS.

a. The Federal Aviation Administration hosted the 84th formal meeting of the DOD/FAA Joint Radar Planning Group (JRPG) in Clearwater Beach, Florida, during the week of December 4, 2000.

b. Mr. John G. Mauck, FAA AOP-1000-JRPG, introduced Mr. Ray Weimer, Manager Inservice Engineering Division AOP-1000. Mr. Weimer officially opened the 84th formal meeting of the JRPG. Special introductions were extended to Mr. Felix Enriquez, Deputy, Airway Facilities Division, Southern Region ASO-401. Mr. Kenneth H. Kingsmore, USAF ACC/DOR-JRPG Manager, led the introductions of all other personnel present.

c. The dates for the next for the formal JRPG conference for 2001 are:

In-House JRPG	October 16-18, 2001
Formal JRPG	December 4-6, 2001*

*The JRPG formal meeting for 2001 will be hosted by DOD.

d. Attachment 1 contains a List of the Attendees for JRPG meeting #84.

e. Attachment 2 contains the current DOD/FAA Address List.

f. Attachment 3 contains a list of the current FAA Regional JRPG Coordinators.

g. Attachment 4 contains a list of the current DOD Organizational JRPG Coordinators.

h. Attachment 5 contains an updated list of Joint Surveillance System (JSS) Site Configuration List as of December 2000.

i. Attachment 6 contains an updated list of Joint Use Site Data as of December 2000.

2. JRPG GENERAL

a. Coordination. Both JRPG Cochairmen reemphasized the need for coordination, communication, and cooperation between all personnel associated with the joint use program. Attendees were reminded that JRPG policy dictates that any action, which affects a joint use site, must be coordinated with all concerned. Also, all were reminded that any intent to change/modify/alter joint use site configurations/operating procedures, etc., must be formally submitted to their respective counterparts and/or headquarters. All were reminded to make every reasonable effort to resolve issues at the lowest possible level. However, do not hesitate to escalate issues to the JRPG Cochairmen as required.

b. Subgroups.

(1). Communications. The Communications Subgroup cochairmen are Mr. David Bell, ACC/SCCC, for DOD and Mr. Sam Krishnan, AOP-400, for the FAA. The Communications Subgroup did not brief at the JRPG meeting.

(2). Logistics. The Logistics Subgroup Cochairmen are Mr. Mark Sage, OO-ALC/LHE, for DOD, and Mr. John Bartels, AML-2000 FAA. The Logistics Subgroup did not brief at the JRPG meeting.

(3). Radar Operations. The Radar Network Subgroup has been changed to Radar Operations Subgroup. CMSgt Tim Millard, 1 AF/DOY, is the cochairman for the DOD. Mr. Mark Hidinger, ATP-400, is the FAA cochairman. The operations subgroup did not brief at the JRPG meeting.

(4). Radar Engineering and Analysis. The Radar Analysis Software Subgroup (RASS) has been changed to the Radar Engineering and Analysis Subgroup. This subgroup will be responsible for development of engineering analysis and solutions for hardware and software problems related to the JSS systems. Mr. Dallas Stone, 84 RADES, is the DOD Cochairman. The FAA Cochairman is Mr. Mike Hensley, AOS-230. Much of the work of this subgroup is being briefed as reports concerning a variety open issues from last year's minutes.

(5). Joint Technical Inspection. The Joint Technical Inspection Subgroup cochairman for DOD is MSgt Chris Campbell, 1AF/SCMA. The FAA cochairman for this sub group is Ms. Lorraine Neal, AOP-200. The JTI subgroup provided a report on this year's meeting in Chicago, IL.

(6). JRPG Facility Engineering. The JRPG agreed to establish a JRPG Facility Engineering Subgroup to coordinate engineering efforts, drawings, and specifications for the JRPG. Mr. Terry Partee, 38EIG/GC, is the cochairman for DOD. The FAA cochairman for this sub group is Mr. Hugh Mulholland, ANI-90.

c. Briefings. The following briefings of general interest were provided during this JRPG meeting.

JRPG Background Briefing. The DOD JRPG Cochairman presented a briefing that provided the history of this program, its congressional mandate, scope, and organizational structure. Also depicted in this briefing were the geographical locations of the joint use sites. The briefing is presented in Attachment 7.

NAS Operations Planning Briefing. Mr. Bill Newman, FAA, Manager, Mid-States Operations Control Center, (OCC) provided a briefing of FAA's plans to establish three OCCs. The OCCs will become the focal points for geographically managing the National Airspace (NAS) facilities. The OCCs are scheduled to be operational by mid 2001.

Representatives from each OCC along with the JRPG Cochairmen will visit each of the USAF Air Defense Sectors to coordinate plans for the OCC operations as they apply to the JSS facilities. Copies of the briefing were provided at the meeting and will not be included in the minutes.

US Customs Mission Brief. US Customs presented a brief describing its Drug War mission of disrupting and disabling the importation and transportation of illegal drugs into the United States and Puerto Rico. The brief emphasized how JRPG radar surveillance and command and control assets enhance Customs operations, particularly in the realm of domestic air interdiction. The brief also described the operation of the Air Marine Interdiction Coordination Center (AMICC).

d. Item. 83-2.d, 82-2.d. Rewrite of NAT-914. The JRPG National Agreement NAT-914 was signed 1/3/95 with the proviso that it would remain in force for a period of five years. NAT-914 requires an update to include changes due to commissioning of ARSR-4s and reimbursement of services performed by FAA for the USAF. Due to budgetary constraints and the need for policy guidance, a draft replacement agreement has not been completed. By mutual agreement NAT-914 was extended in 1999 for a period of two years. A second request is being prepared by FAA to extend NAT-914 for two additional years.

OPR: AOP-1000-JRPG
ACC/DOR-JRPG OPEN

e. Explanation of Item Numbering. The following items document discussions during the JRPG meeting. Items preceded by references were discussed in previous JRPG meetings. The first two digits in each reference indicate the meeting number. The alphanumeric after the hyphen indicates the paragraph in those particular JRPG minutes. Those items without reference are new items discussed by the JRPG. Several action items are CLOSED, yet some minor actions remain to be completed. Offices of Primary Responsibility (OPRs) assigned are as indicated and are responsible for ensuring remaining actions are completed.

3. RADAR EVALUATION/INSPECTION / ANALYSIS / CERTIFICATION.

Briefings:

Review of Last Year's Joint Surveillance System (JSS) Maintenance Quality Feedback. First Air Force presented a review of 14 Joint Technical Inspections (JTIs) performed this year. Overall radar, beacon, common digitizer, and Mode IV processors were in very good condition and provided reliable service to support the DOD and FAA missions. However, key performance parameters for the USAF radios were found to be out of tolerance at 6 locations. Sites that exceed the 10% criteria are considered to be candidates for a special JTI within the next 12 months. The need to conduct reinspections during the next 12 months considerably impacts the ability of both agencies to conduct new inspections. The high percentage of out of tolerance parameters raises considerable concern that FAA is not performing the prescribed

maintenance or not complying with the maintenance actions published in USAF Technical Orders for the radios. The briefing is at Attachment 8.

Joint Surveillance System Performance 2000. The 84 RADES presented a graphical analysis of the performance of the radar and beacon equipment. Copies of the briefing were provided at the meeting and will not be included in these minutes.

JSS Radar Program Review Briefing. The 84 RADES presented a condensed review of the tasks they performed over the past year in support of the JSS sites. The briefing provided details of baseline evaluations performed; application of lessons learned based on special evaluations and site surveys completed. The 84 RADES conducted a special evaluation at North Truro, MA, Jedburg, SC, Slidell, LA, and Rainbow Ridge, CA, to determine the source of excessive data loss after cut over to ACCE. The briefing included numerous recommendations to mitigate future data-line errors. The 84th RADES included a coordinated evaluation schedule for the next three years as a part of the briefing. The briefing is at Attachment 9.

Issues:

a. Item. 83-3a, 82-3.a, 81-3.b, 80-3.b, 79-3.b, 78-3.b, 77-3.b, 76-3.b, 75-3.c, 74-3.e (2), 73-3.e, 72-3.e, 71-3.d, 70-2.f, 69-2.h, 68-2.a, 67-3.bb. Inter-Agency Ground Inspection Manual Revision. An interagency working group has prepared a draft FAA Order 6000.6 for coordination. The general policy and guidance contained in this order are necessary for working with the joint use sites.

OPR: FAA/AOP-300 OPEN

b. Item. 83-3.c, 82-3.c. Joint Technical Inspections for Non Contiguous JSS sites. The JRPG recommends that Hawaii, and other areas where data is shared or FAA maintains DOD equipment, initiate a joint technical inspection agreement between the FAA and other users. The provisions of Order 6040.5E should be used for general guidance.

OPR: FAA/HIP SMO
154 OG/MAE
FAA/AOP-200
HQ PACAF/SCMB OPEN

c. Item. 83-3.d. ARSR-4 Data Loss Test Status. ACC/SCC presented an overview briefing on the background and current status of joint efforts to solve this multi-faceted problem that has plagued a number of ARSR-4 sites and USAF Air Defense Sectors. The 84 RADES and AOS-230 provided a detailed briefing on results of research work and recent tests on ARSR-4 hardware and software modifications. It is believed these modifications will

improve the ARSR-4's ability to cope with corrupt data on the Mode-4 request data path and thus eliminate the suspected causes of SIO port reconfigurations and ARSR-4 cold starts. The 738 EIS/EEET briefed the results of tests accomplished at the request of ACC/SCC. They evaluated two methods for eliminating timing drift between the ACCE network and the Q-93 string's clock that is believed to be a primary cause of corrupt data. The results of these tests indicate that a combination of a larger data buffer and use of ACCE network clock to stabilize the Q-93 clock will greatly reduce the timing slips. This should reduce the incidence of corrupt data on the Mode 4 request data path. Further studies are required to develop specific methods to implement both the AOS-230/84 RADES fix at the ARSR-4 and the 738 EIS fix at the SAOC/Q-93. In both cases system configuration changes must be approved in order to do multi-site evaluations of these fix actions and ultimately implement them. The briefings are at Attachments 10, 11, 12 and 13.

OPR: ACC/SCCC
84 RADES/TOY
FAA/AOS-230 OPEN

d. Item. Add San Clemente Island (SCI) to the JTI schedule. FACSFAC San Diego in coordination with the WADS request that the ARSR-4 at San Clemente Island be added to the JTI schedule. The JRPG endorsed this request. Preliminary schedules indicated that SCI will be inspected September 2001.

OPR: USN/FACSFAC San Diego CLOSED

4. MAJOR PROGRAMS

Briefings:

NONE

Issues:

a. Item. 83-4.a, 82-4.a, 81-4.a, 80-4.a (1). CI-13 Remote Rekeying Program. Installation of the CI-13 has been completed at all radar sites having rekeying requirements. The CI-13 is being used on a daily basis to perform remote rekeying. Motorola has redesigned the CI-13 software to run under Windows NT operating system. This change will require modification of the RCEs by replacing several EPROMs. Testing of the modified CI-13 was started at several sites in the SEADS. Due to some equipment problems the testing was not completed. Additional testing will be accomplished after January 1, 2000.

OPR: ESC/SRCM OPEN

b. Item. 83-4-b, 82-4.b, 81-4.c, 80-4.a (3), 79-4.b, 78-4.c, 77-4.d, 76-4.d. CI-13 Maintenance Concept. The draft maintenance concept has been finalized.

OPR: FAA/AOP-1000-JRPG
ACC/SCCX CLOSED

c. Item. 83-4.c, 82-4.d, 81-4.f. Upgrade of Non ARSR-4 Sites. With the completion of the FAA Air Force Radar Replacement (FARR) program there are some JSS sites that have not been upgraded with the new three-dimensional radar (ARSR-4). Under the provisions of NAT-914 the FAA will seek modernization of these sites to improve reliability and implement remote maintenance monitoring and control. These sites are Dansville, NY, Detroit/Canton, MI, Grand Bay/Citronelle, AL, and Keno, OR. The JRPG recommends replacement of the old FPS/ARSR radars with ARSR-3 removed as part of the FARR program. FAA has included these sites in an overall long-range radar evaluation. FAA is currently analyzing the most cost-effective means of providing continued surveillance service where required.

OPR: FAA/ARN-300
FAA/AOP-1000
FAA/AOP-1000-JRPG
NORAD/J3WS
1 AF/DOYR OPEN

d. Item. Troubleshooting Guide for CI-13. SEADS is developing a guide for the CI-13 that will assist repair technicians with equipment familiarization, tests available to determine performance, and proper troubleshooting techniques.

OPR: SEADS/SCLQ
1AF/SCMA OPEN

5. JOINT USE SITES.

Briefings:

Joint Surveillance System Alaska (JSSA). An update of activities and accomplishments of the JSSA was briefed by 611 ASUS/LGA.

Issues:

a. Item. 83-5.b, 82-5.b, 81-5.d. Mode-4 (AIMS) Target Message. AOS-230 has submitted a written report to the Navy detailing the results of tests conducted at the Tyndall ARSR-4, San Clemente Island ARSR-4, and FACSFAC San Diego. The test showed that

providing the Mode-4 information to the Navy via the ARTCC would result in the loss of beacon run length data. AOS-230 recommends FACSFAC receive the Mode-4 target information directly from the radar via dedicated lines and ports. See Attachment 14 for a copy of the report.

OPR: USN/SPAWARSYSCEN San Diego
USN/FACSFAC VACAPES
FAA/AOS-230 CLOSED

b. Item. 83-5.d, 82-5.f. Use of San Clemente Island Radar Data by FAA. FAA Western Pacific Region at the Los Angles ARTCC has been receiving data from the San Clemente Island ARSR-4 for test purposes since January 1999. No decision has been made to make this a permanent data connection. Should the FAA desire to accept the data on a permanent basis, a formal written request will be submitted to the Navy and JRPG. A MOU will be established if data is used by the FAA.

OPR: AWP-473
USN/SPAWARSYSCEN San Diego OPEN

c. Item. 83-5.e. Request for Radar Data from the Tyndall Radar. The Miami ARTCC has taken the Warning Area 151/470, NOVA 1/2 from Tyndall RAPCON. The FAA Miami ARTCC requires the Tyndall RAPCON to radar monitor and provide real-time airspace management for Warning Areas 151/470, NOVA 1/2 when they are released to RAPCON control. The RAPCON GPN-20 RADAR does not provide adequate coverage for these areas. Additional radar coverage (primary and secondary) from the Tyndall ARSR-4 JSS has been provided.

OPR: ACC/DOR-JRPG
325 FW/OSS
FAA/AOP-1000-JRPG CLOSED

d. Item. 83-5.f. Request for data from the Ajo Radar. The 56th Fighter Wing, 607th Air Control Squadron, 107th Air Control Squadron and Luke AFB Radar Approach Control has completed a MOU with the FAA for receipt of real time, unfiltered ARSR-4 data from the Ajo JSS radar.

OPR: 56 FW/RMO
FAA/AOP-1000-JRPG
FAA/AOP-300
ACC/DOR-JRPG CLOSED

e. Item. 83-5.h. Request For Recorded Radar Data. HQ ACC/DOR has verbally submitted a request to acquire radar data from one or more JSS radars. The data will be provided under the provisions of FAA Draft Order 1200.22c, Use of National Airspace System (NAS) Computer and Radar Data or Equipment by Outside Interest.

OPR: HQ ACC/DOR-JRPG
HQ ACC/DOR CLOSED

f. Item. 83-5.j. Keno (Klamath Falls) LRR Full Mode-S. The Keno (Klamath Falls) LRR is a joint use site operating under the NAT 614/914 MOAs. Under these agreements the FAA provides military formatted search and beacon target messages to the USAF at the WADS. Presently, the site is configured with Mode-S equipment operating in the Interim Beacon Interrogator Mode (IBI). The Mode-S utilizes output of the CD-2C Military Interface Group (MIG) to provide military formatted search and beacon reports to the USAF at the WADS. In the full Mode-S operation the beacon data is no longer made available to the CD-2/MIG. FAA desires to proceed with full Mode-S service at the Seattle ARTCC, but without a major equipment modification, the site can not proceed with the full Mode-S operations. When the Mode-S equipment was installed at Keno, the FAA and USAF agreed that the beacon would operate in the IBI mode until the operation of the Mode-S was made compatible with the USAF mode of operations.

AOS-230 has indicated that a modification to the Mode S/CD-2 MIG would be very difficult to accomplish, requiring extensive hardware modifications. The FAA is planning to install FAA type approved, COTS, data reformatting equipment into the site automation. This will take data from the Mode-S and convert the data to a properly formatted military radar message from the site. Formal documentation is being prepared for coordination. Installation of the data reformatting equipment is expected by summer of 2001. An excerpt of the briefing is provided in Attachment 15.

OPR: FAA-ANM-460
FAA-AOS-230
NORAD/J33W
ACC/DOR-JRPG
FAA-AOP-1000-JRPG OPEN

g. Item. 83-5.k. Radar Interrogator Set (RIS) (OX-60 Upgrade). USAF has initiated a project to replace the OX-60 IFF system with a state of the art radar beacon interrogator system. A demonstration of a new beacon system was conducted in February 2000. Representatives from FAA viewed the demonstration at SMALC. A Memorandum of

Agreement is being prepared for USAF and FAA to participate in a cost sharing procurement Mode-S upgrade capabilities.

OPR: OO-ALC/LHE
FAA-AND-440
AAL-470
FAA-AOS-230
ACC/DOR-JRPG
FAA-AOP-1000-JRPG OPEN

h. Item. Replace Pico del Este Radar Equipment. In Puerto Rico the FAA has expressed concern that the FPS-67A radar is rapidly approaching the end of its service life. The FAA and US Navy have agreed that the radar is a critical to the operations of all users. The Navy investigated several options for replacement of the FPS-67A, to include installing a surplus ARSR-3. The study group found that the US Forest Service will not allow any major modifications to the site as they want the equipment removed and the site restored to it's original condition. The ARSR-3 cannot be installed in the existing buildings and towers unlike the FPS-117. The US Navy has undertaken an effort to locate an FPS-117 radar for installation at this site. Preliminary investigation indicates there are no FPS-117 radars available. The Navy has received preliminary cost estimates from Lockheed Martin. Purchase of a new FPS-117 and accompanying beacon system will cost more than the Navy has programmed. A proposal for cost sharing will be submitted to the FAA for consideration. An interagency team will be formed to oversee the replacement effort.

OPR: CINCLANTFLT Norfolk
USN/SPAWARSYSCEN San Diego
COMNAVAIRSYSCOM PMA-248
FAA/AOP-1000-JRPG
ACC/DOR-JRPG OPEN

i. Item. GATR Inspections and Maintenance Schedule. USAF proposed a change in GATR PMI schedule from a 330-day frequency to 180 days. 1AF/SCMA will provide the proposal to the JRPG Cochairmen, who will distribute to FAA regional JRPG coordinators for comments and feasibility.

OPR: 1AF/SCMA
FAA/AOP-1000-JRPG
ACC/DOR-JRPG OPEN

j. Item. 30 RANS Request for Radar Data from Paso Robles JSS Site. The 30 RANS has submitted a request that the Vandenberg AFB Air Traffic Control Tower be authorized permanent use of radar data from the Paso Robles ARSR-4 radar via the approved 30th Space

Wing (Frontier Control) ARSR-4 radar feed. The Vandenberg tower will use data from Vandenberg and Paso Robles ARSR-4s as a replacement for a GPN-12 Airport Surveillance Radar that is being decommissioned. The Paso Robles data will be used to fill in gaps in coverage from the Vandenberg ARSR-4.

OPR: 30 RANS/DOUN
HQ ACC/DOR-JRPG OPEN

6. EQUIPMENT.

Briefings:

Air Traffic Control Beacon Interrogator Model 6 (ATCBI-6). AND-450 provided a brief overview and status of the ATCBI-6 program as it affects the JRPG. The ATCBI-6 is a monopulse secondary surveillance radar with selective interrogation capability. The new ATCBI-6 will replace older ATCBI models 4 and 5 as part of the NAS modernization effort. There are provisions in the contract to purchase additional systems beyond those identified to meet FAA requirements. A design approach for providing Mode-4 interrogation capability into the BI-6 has been selected. The design approach selected will allow factory development without an ARSR-4 being provided to the ATCBI-6 manufacturer. Estimated completion of Mode-4 development and testing will take 21-24 months after task order execution. An installation schedule will be provided and coordinated with the regions and all JRPG JSS users. Excerpts of the briefing are at Attachment 16.

En Route Communications Gateway (ECG). AUA-200 presented a briefing on FAA's plans to replace the Peripheral Adapter Module Radar Interface (PAMRI) with a new state of the art interface between the Host Computer at the ARTCC and external data sources. The ECG will be legacy tolerant and embrace new protocols such as TCP/IP and ASTERIX formats.

Issues:

a. Item. 83-6.a, 82-6.a, 81-6.b, 80-6.b(1), 79-6.b(1), 78-6.b(1), 77-6.b(1), 76-6.c(2), 75-6.c(2). Height Finder Radars (HFR) Removal/Radio Relocation. ACC/DOR has provided funding to the FAA for removal of four JSS Height Finder Radar (HFR) towers. Funds were provided to FAA to keep the cost low and to allow one contractor to accomplish all site cleanups as a single effort. Raytheon has been given a task order for removal of the old HFR towers at Fort Lonesome, FL, Cross City, FL, Riverhead, NY, and Finley, ND. A removal

schedule will be coordinated with the affected regions and Air Force property managers. All towers are schedule for removal by mid year 2001.

OPR: FAA/AOP-1000-JRPG
ACC/DOR OPEN

b. Item. 83-b, 82-6.b, 81-6.c(1)(b), 80-6.c(3), 79-6.c(3), 78-6.c(4), 77-6.c(6), 76-6.e(7), 75-6.e(7). AN/GRC-171 Training. The AN/GRC-171 training originally offered by the USAF at Keesler AFB has been discontinued. However, FAA technicians have a recurring need for this training. The USAF has agreed to combine the AN/GRC-171 and the AN/GRC-211 into a single course. FAA needs to identify an annual requirement for the training complete with the anticipated number of technicians to be trained each year. FAA will provide guidance for requesting the training. USAF will provide reimbursement for 3-5 technicians at each site.

OPR: FAA/AFZ-100
1 AF/SCMA
ACC/SCCX OPEN

c. Item. 83-6.d, 82-6.d, 81-6f. ARSR-4 Anomalous Propagation. AOS-230 presented a briefing on the status of efforts to reduce the number of cold starts related to excessive anomalous propagation. They presented an approach that requires a modification to the STC beam to control target count to around 300 per scan sector. Target control will take affect only when target level per sector exceeds a set parameter. AOS-230 in conjunction with 84 RADES will implement the STC algorithm into a test version of the ARSR-4 software. A maximum cross section of 10 square meters is directed for Angel Desensitization. Small target detection will be degraded until a permanent solution is found.

OPR: FAA AOS-230
84 RADES/TOY OPEN

d. Item. 83-6.e, 82-6.g. ARSR-4 Frequency Reallocation Crystal Oscillator Changes. Due to the Frequency Spectrum Auction the ARSR-4 lost 15 MHz of the assigned frequencies between 1385-1400 MHz. This reallocation of the spectrum has impacted the frequencies needed for proper frequency agility at most sites. The ARSR-4 radars at those sites no longer have the full complement of 16 frequency pairs necessary for full frequency agility. AOS-230 is developing an engineering change for replacement of the oscillator crystals and addition of RFI filters at ARSR-4 sites. The new RFI filters will also eliminate erroneous strobes caused by FM radiators. Testing of the new filters will be conducted at Vandenberg, AFB CA.

OPR: FAA/AOP-230
84 RADES/TOY OPEN

e. Item. 83-6.g, 82-6.i. Transmitter Cooling. The air handling equipment located in the transmitter equipment room pulls in outside filtered air. The filtration system does not remove sufficient amounts of contamination in the form of particulate matter and salt fog environment. This is causing corrosion and dirt to accumulate within the transmitter. A continuation of this condition will result in early failure of transmitter components. AOS-220 has designed an air-conditioning system to replace the existing air handling system to eliminate entry of any contaminants. The modification will be tested at the Key West, FL ARSR-4 site. Should the test prove to be successful, a program will be initiated to install air-conditioning at the most effected sites.

OPR: FAA/ AOS-220
FAA/ AND-440 OPEN

f. Item. 83-6.h, 82-6.j. USAF Radio Test Sets. USAF/ACC provided funding for the FAA Logistics Center for the purchase of Marconi communication test equipment similar to those used by FAA. The test equipment will be calibrated prior to shipment to the sites. The Marconi test sets are to be stored at the ARSR-4 sites and used primarily for maintenance of USAF radios at the GATR sites. All equipment has been delivered.

OPR: 1 AF/SCMA
FAA Regional Coordinators
FAA SMO Managers CLOSED

g. Item. 83-6.i. Location of AVIU Equipment. ESC/SRCM requested that they be provided a list showing the location of the ten AVIU units purchased as a part of the FARR program. Several organizations have expressed an interest in using the AVIU to obtain data from some of the ARSR-4 sites. ESC/SRCM has been provided a list of the location of the AVIUs.

OPR: AML-630
ESC/SRCM CLOSED

h. Item. 83-6.j. Ajo Radio Installation Status Briefing. 38 EIS/DRC briefed the status of the radio installation program at Ajo ARSR-4 site. All radios have been installed at Ajo.

OPR: 38EIS/DRC
FAA/AWP-470
WADS JRPG Coordinator
1 AF/SCX CLOSED

i. Item. Combined ARSR-4 Site Drawings. Agreement between the FAA and USAF dictates that the site drawings be corrected and sent to the USAF engineering support group in Oklahoma City. The USAF has reorganized and no longer has an engineering office at Oklahoma City capable of receiving and storing the drawings. A team will be established to determine the best place to maintain the drawings for the USAF.

OPR: 38EIG/GC
FAA/ANI-90 OPEN

j. Item. AVIU Interface for ATCBI-6. The existing ARSR-4/ATCBI-5/AVIU system will be incompatible with the current design of the ATCBI-6. The FAA is drafting a white paper investigating possible solutions. All affected agencies will have input on the final solution. JRPG policy is to provide equal to or better than existing capability during any JSS equipment upgrade, at no additional cost to the affected agency. The AVIU system is used at five sites: Mt. Kaala, San Clemente Island, Oceana, Whitehouse, and the training unit at Tyndall.

OPR: FAA/AND-450
ESC/SRCM
SPAWARSYSCEN, San Diego OPEN

k. Item. Lightning Protection at JSS Sites. Numerous reports have been logged of incidence of lightning surges causing outages at JSS sites. Lightning surges entering via the USAF telco lines have been suspected due to the types of failures experienced. The JSS-CS contractor (General Dynamics) has investigated the issue and confirmed that significant loss and damage has been experienced at sites receiving lightning damage. The next step is to install Ferri-Shields on cables in the telco room. After monitoring the before and after results for approximately 6 months, the results will be reviewed for overall JSS-CS impact.

OPR: 1AF/SCXC OPEN

l. Item. Coordination Prior to Configuration Changes. Due to numerous tests planned for the JSS systems during the next year, there are several anticipated changes in system configuration. All parties involved are reminded that the JRPG Ground Rules require coordination (normally via a NCP) between all affected agencies prior to any configuration change. The coordination process may be lengthy, depending on the number of agencies involved and the extent of the configuration change. Agencies planning changes to the configuration should anticipate this delay for coordination and plan for enough time to prevent postponement of their project.

OPR: ACC/DOR-JRPG
FAA/AOP-1000-JRPG CLOSED

7. LOGISTICS.

Briefings:

NONE.

Issues:

a. Item. 83-7.a, 82-7.a. Radio Test Equipment Turn in Procedures. Procurement of new radio test equipment will eliminate the need for older USAF test equipment to be retained on site. The USAF has provided the FAA with detailed procedures for returning the unneeded equipment to the USAF.

OPR: 1 AF/LGMS
1 AF/SCMA
Each SAOC/LGM
FAA/JRPG Regional Coordinators CLOSED

b. Item. 83-7.b, 82-7.b. Maintenance of Technical Order File. Recent Joint Technical Inspections have found that the USAF Technical Orders (TOs) have not been kept up to date. The FAA Depot at Oklahoma City has agreed to establish and lead a working group to design a process for ordering and distributing new and revised TOs to the radar and communications sites where FAA maintains USAF equipment. Initial indications show that the USAF TOs can be ordered and distributed through the FAA depot system. FAA depot has not initiated the process. When the FAA process is in place the USAF sectors can cancel their TO accounts.

OPR: AML-630
1AF/LGMS OPEN

8. COMMUNICATIONS.

Briefings:

NONE

Items:

NONE

9. SECURITY.

Briefings:

COMSEC Management at JSS Sites Using Mode-4. AOP-300 provided a briefing on the new process for management of COMSEC at JSS sites having Mode-4 capabilities. Two COMSEC management positions have been established at FAA Headquarters for the purpose of overseeing COMSEC at JSS sites. FAA has established a new COMSEC account for purposes of managing the inspection and training of technicians at the JSS COMSEC sites. All 29 JSS COMSEC site have been visited and the security procedures reviewed.

Items:

a. Item. 83-9.a. Access to JSS Sites by Contractors. FAA/ACO-400 presented a briefing detailing security protective measures for ARSR-4 facilities and procedures for granting access to the radar sites by contractors. ACO-400 has reviewed a variety of products on the market for providing remote access. No changes will be made to the security protective measures for ARSR-4 facilities until a meeting between FAA, USAF and NSA can be conducted in early 2001.

OPR:	FAA/ACO-400	
	ACC/DOR-JRPG	
	FAA/ACS-300	
	FAA/AOP-1000	
	AOP-1000-JRPG	OPEN

10. OPERATIONS.

Briefings:

NONE

Issues:

a. Item. 83-10.a, 82-10.b, 81-10.c, 80-10.e. Callback Requirement. NAT-914 states "during those periods that a certifying technician is not available at the site, two-hour call back procedures will be provided..." USAF has routinely accepted the restoration criteria established by FAA Air Traffic Control. FAA is requested to clarify FAA Air Traffic Control requirements for restoration (from detection of failure to full return to service) of equipment

at ARSR-4 sites. FAA is also requested to provide USAF with an opportunity to coordinate on the latest draft of Order 6030.31.

OPR: FAA/ AOP-300
FAA/ATP-400 OPEN

b. Item. 83-10.c, 82-10.d. First Air Force Request for Remote Maintenance Monitoring System (RMMS) for SAOCs. First Air Force presented a request for read only access of JSS radar status data via the FAA RMM system. Several meetings were held between the USAF and FAA to design a test of providing the RMM data to 84 RADES and each SAOC, for operations, maintenance and quality assurance. Use of this data will provide for better coordination of radar site performance while reducing the workload of the FAA NAS Operations Managers (NOMs). FAA/AOS-230 and 1 AF/DOYI have prepared a draft MOU that is currently being coordinated within the USAF for signature.

OPR: FAA/ AOP-1000-JRPG
1 AF/DOYI
FAA/AOS-230 OPEN

c. Item. 83-10.d, 82-10.e. Standard Coordination Procedures. The FAA, USAF, and other users of the JSS radars often use different terms to describe the same situation. Development of standardized terms to describe the same situation will assist in reporting outages, describing procedures and parameter settings will assist the USAF and FAA in exchanging information as it relates to operations and maintenance of the ARSR-4s. SEADS/DOY has prepared a draft National Coordination Agreement for review by FAA. Wording from the draft agreement has been put into the RMM MOU.

OPR: SEADS/DOY
84 RADES/TOY
AOP-200
FAA Regional Coordinators.
Each SAOC/DOY CLOSED

d. Item. 83-10.e, 82-10.f. JSS Radar, Beacon and Height Finder Outage Reporting. 1AF/DOYI presented a request for FAA to provide outage data to each SAOC regarding outages from the JSS radar sites. FAA currently collects and provides information on the primary radar and the beacon, but does not report the height finder outages. FAA will implement procedures for the technicians and NOMs to record and report primary radar,

beacon, and height finder outage data. AOP-200 needs to establish procedures for the exchange of outage information between FAA and USAF.

OPR: AOP-200
1 AF/DOYI
Each SAOC OPEN

e. Item. 83-10.f. US Customs Radio Restoral. Response time to restore the US Customs UHF radio and ancillary equipment at specific sites has become excessive. Response times are clearly defined in FAA Order 6430.2 (dated 5/14/98) Change 39, Page 9, Paragraph 6 and in the briefing slide on page 135 titled USAF/US Customs Radio Restoral Requirements. NOTE 1 reads, "If a US Customs radio experiences an outage, immediate response is required." The US Customs reimbursement agreement, totally separate from the USAF reimbursement agreement, covers the single channel UHF radio at each location. Since Customs is reimbursing for an immediate restoral, maintenance priority should rise to a sufficient level to enact restoral within normal duty hours in most instances. If outages occur after normal duty hours the US Customs personnel are willing to discuss the possibility of next day restoral. "Overtime" should never be a question unless Customs, after consultation, requests immediate restoral after normal duty hours.

OPR: US Customs/DIACC
FAA AXX-470
FAA Regional Coordinators
FAA/AOP-1000-JRPG
ACC/DOR-JRPG CLOSED

f. Item. 83-10.g. Frequency Agility Mode of the ARSR-4. NORAD requests the Frequency Agility Mode of the ARSR-4 be included in the formal NOM (NAS Operations Manager) Course. This frequency-hopping mode of the ARSR-4 is not permitted during normal operation, thus, there is no on the job familiarization. To better be prepared during a time of a National Security Emergency, NOMs should be formally trained and remain familiar with the actions required to select the appropriate Frequency Agility Mode. FAA/AFZ-100 agreed to include the training in the formal course. FAA JRPG Regional coordinators must work with AFZ-100 to provide the number in each region to be trained.

OPR: FAA/AFZ-100
FAA/JRPG Coordinators CLOSED

g. Item. 83-10.h. Update of FAA Order for Release of Data to Other than FAA Organizations. AOP-300 gave a briefing of FAA's efforts to update Order 1200.22B, Use of National Airspace System (NAS) Computer and Radar Data or Equipment by Outside Interest. The updated order will become 1200.22C and will contain revised guidance for

requesting any data from the FAA. 1200.22C is planned to establish a Data Release Review Board to review and approve or reject requests. Until the new order is signed request for data from the joint use long-range radars should be submitted to the JRPG for review. USAF, US Navy, US Customs, 84 RADES, and NORAD request that they be given a chance to formally review and comment on the revised 1200.22C.

OPR: AOP-300
ACC/DOR-JRPG
US Customs/DIACC
SPAWARSYSCEN San Diego
NORAD/J33W
FAA/AOP-1000-JRPG OPEN

h. Item. 83-10.i. ARSR-4 Facility Configuration Management. The configuration of the ARSR-4 facilities is under the Regional Change Control Boards. Any changes to the ARSR-4 facilities must be submitted as a NAS Change Proposal (NCP) and approved prior to implementation. USAF, US Navy, US Customs, 84 RADES, and NORAD request that they be given a chance to formally review and comment on NCPs before they are approved.

OPR: ACC/DOR-JRPG
US Customs/DIACC
84 RADES/CA
SPAWARSYSCEN San Diego
NORAD/J33W
FAA/AOP-1000-JRPG CLOSED

i. Item. DOD/FAA MOU on Prior Coordination for Mode-4 Use. The DOD AIMS (ATCRBS, IFF, Mark-12 System) Mode-4 program office, Joint Spectrum Center (JSC), and the FAA Spectrum Management Office, ASR-100, gave a combined brief to address an MOA in draft concerning coordination of Mode-4 usage. In recent years the FAA has experienced interference to the use of ATCRBS Modes A and C, which has had an impact on safety of flight. This interference has been the result of increasing congestion in the frequency band, due to the addition of new systems (Mode S, TCAS), larger numbers of ATCRBS interrogators, and an increase in the Mode-4 training requirements. The outlook does not improve with the potential of adding ADS-B and TLS, two new systems in development that use the 1030/1090 MHz pair. The DOD-AIMS and the JSC has responded with a draft Mode 4 IFF/SIF MOA whose goal is to streamline the process of Mode-4 coordination. A meeting was conducted at the JSC, Annapolis, MD, on October 16, 2000, to discuss the MOA and to better define the requirements and procedures for prior coordination/approval of the use of Mode-4. Despite the lack of such provisions in the current draft MOA, joint use radars under the JRPG umbrella should be eligible for a one-time, permanent approval with no change to current Mode 4 operations. In accordance with the current standard operational and training procedures dictated by the Joint Chiefs of Staff, which directed the military to "train as it will

fight", daily, regular use of Mode-4 is essential to military operations. As such, the DOD expects that any agreement will not place limitations on the use of Mode-4, but simply to make the coordination procedure easier for both users and managers. A new draft MOA is being developed and follow-on meetings will be conducted early next year.

OPR: AIMS/PO
FAA/ASR-100
DOD PBFA
1AF/DOYS
NORAD/J33W
ACC/DOR-JRPG OPEN

j. Item. DOD Radio Restoral/Restoration Priority on Reduced Services. There have been numerous discussions/questions concerning DOD radio restoral policy. Due to added equipment installed at JSS sites, 1AF/DOY, in consultation with NORAD, was requested to revise the radio restoral plan and to include a section on the restoral of services concerning Height Finder Radar and Mode 4 outage reporting.

OPR: 1AF/DOYS
NORAD/J33W
ACC/DOR-JRPG OPEN

k. Item. NAS Change Proposal (NCP) Process. AOS-230 and the 84th RADES asked for a clarification of the NCP Process. Both reminded the conferees that several years ago the JRPG had agreed the 84th RADES would be listed as a direct "must evaluator" on NCPs that impacted or could impact joint use sites. The DOD JRPG Cochairman agreed to work with the DOD PBFA for a possible change in procedure and/or clarification.

OPR: ACC/DOR-JRPG
FAA/APO-1000-JRPG OPEN

11. SIGNATURES

The minutes of DOD/FAA Joint Radar Planning Group (JRPG) #84 are directive upon the USAF after authentication and directive upon the FAA after signature of the FAA change order.

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LIST OF ATTENDEES

ATTACHMENT 1

FAA/DOD JRPG Formal Conference Attendees

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	Matos	Angel	AFWTF	(787) 865-3319	831-3319	(787) 865-0440	matosa@afwtf.navy.mil
Capt	Matus	John	611 ASUS/PMA	(907) 552-1989	(317) 552-1989	(907) 552-9706	john.matus@elmendorf.af.mil
	Maust	Mickey	FAA/Tampa SMO	(813) 243-5819		(813) 243-5811	mickey.maust.faa.gov
Capt	McDonald	Dion	HQ ACC/SCCC	(757) 764-4001	574-4001		dion.mcdonald@langley.af.mil
	McGrath	William	US Customs HQ AMIP	(202) 927-5488		(202) 927-5466	william.f.mcgrath@customs.treas.gov
	McNally	Marilyn	HQ ACC/DOR	(757) 764-4661	574-4661	(757) 764-6009	marilyn.mcnally@langley.af.mil
	Meirose	John	CLF	(757) 836-0081			meirosejf@naval.navy.mil
	Melton	James	FAA/AOP-400/QUASARS	(202) 314-5921			jim.ctr.melton@faa.gov
	Metty	Diane	FAA/AOP-200	(202) 267-8581		(202) 267-5130	diane.metty@faa.gov
	Moe	Jim	J. Moe & Assoc./AND-450	(352) 564-9516			jimmoe3@hitter.net

FAA/DOD JRPG Formal Conference Attendees

Rank/ Grade	Last Name	First Name	Organization	Commercial Phone	DSN/FTS Phone	FAX Number	E-Mail
	Motley	James	FAA/AWP-473	(310) 725-7445		(310) 725-6866	james.motley@faa.gov
	Mulholland	Hugh	FAA/ANI-90	(202) 493-0776		(202) 366-3462	hugh.mulholland@faa.gov
MSgt	Neveldine	Tim	NEADS	(315) 334-6722	587-6722	(315) 334-6244	tneveldine@neads.ang.af.mil
	Newman	William	FAA/AOP-30 MOCC	(913) 254-8001		(913) 254-8026	bill.newman@faa.gov
	Nielsen	Kathy	FAA/AGL-471	(847) 294-8294		(847) 294-7128	kathy.nielsen@faa.gov
	Notestine	Lucinda	SEADS/LG/CE	(850) 283-5456	523-5456	(850) 283-5411	lucinda.notestine@1staf.tyndall.af.mil
Maj	Parker	Chris	HQ NORAD/J33W	(719) 554-3986	692-3986	(719) 554-6204	christopher.parker@peterson.af.mil
	Parker	J.E.	38 EIG/GC	(405) 734-7596	884-7596	(405) 734-7518	j.parker@tinker.af.mil
	Partee	Terry	38EIG/GC	(405) 734-7609	884-7609	(405) 734-7518	terry.partee@tinker.af.mil
	Payne	Gary	SEADS/SCX	(850) 283-5416	523-5416	(850) 283-5234	gary.payne@1staf.tyndall.af.mil
	Pena	Anthony	FAA/DMS-SMO	(651) 463-5619		(651) 463-5466	anthony.pena@faa.gov
	Pierce	Joseph	NEADS/SCX	(315) 384-6778			piercej@neads.ang.af.mil
Maj	Pittman	Todd	84 RADES	(801) 777-2047	777-2047		todd.pittman@hill.af.mil
	Pleus	Henry	FAA/AEA-510	(718) 553-4511		(718) 995-5692	
	Reyes	Susan	FAA/HIP SMO	(808) 394-4076		(808) 394-4099	susan.h.reyes@faa.gov
	Riccono	August	FAA/ASW-472	(817) 222-4722		(817) 222-5976	gus.riccono@faa.gov
	Roarty	James	FAA/Mid-States/OCC	(913) 254-8019		(913) 254-8025	james.roarty@faa.gov
SMSgt	Robie	Bruce	WADS/DOY	(253) 982-4874	382-4874	(253) 982-4829	robieb@wads.mcchord.af.mil
	Robinson	Timothy	TRIOS Assoc./AND-450	(301) 577-3200		(301) 459-4755	timothy.robinson@triosinc.com
	Rudy	Thomas	SPAWARSC San Diego	(619) 524-3486	524-3486	(619) 524-2100	tarudy@spawar.navy.mil
	Sage	Mark	OO-ALC/LHE	(801) 586-2171	586-2171	(801) 775-5205	mark.sage@hill.af.mil
	Salzman	Alice	FAA/AAL-59	(907) 271-5876		(907) 271-5214	alice.salzman@faa.gov
	Schobel	Walter	30 RANS/DOUN	(805) 606-3602	276-3602	(805) 605-2663	walter.schobel@vandenberg.af.mil
	Silverio	Robert	FAA/AOP-300	(202) 493-4414		(202) 267-5632	robert.silverio@faa.gov
MSgt	Smith	John	SEADS/SLLQ	(850) 283-5598	523-5598		jon.smith@1staf.tyndall.af.mil
	Soper	James	FAA/AGL-470	(847) 294-8480		(847) 294-7417	james.j.soper@faa.gov
	Stohl	Lew	AFCSA5R	(414) 218-7414			
TSgt	Strong	Sandra	WADS/SCXP	(253) 982-4779	382-4779	(253) 982-4804	strongs@wads.mcchord.af.mil
MSgt	Sundet	Vern	NEADS	(315) 334-6717	587-6717	(315) 334-6806	sundet.vern@neads.ang.af.mil
	Sutler	Wayne	FAA/AND-450	(202) 267-7491			wayne.sutler@faa.gov
	Taylor	John	FAA/ANI-300	(404) 305-6435		(404) 305-6540	john.m.taylor@faa.gov
MSgt	Thomas	Roland	WADS	(253) 982-4756	382-4756	(253) 982-4801	thomasr@wads.mcchord.af.mil
	Thompson	Kenneth	FAA/AOP-1000	(202) 267-9734		(202) 267-5207	kenneth.thompson@faa.gov
	Tormanen	Mark	WADS/JRPG	(253) 982-4758	382-4758	(253) 982-4804	tormanenm@wads.mcchord.af.mil
	Trahan	Kerry	FAA/ASW-470	(817) 222-4723		(817) 222-5976	kerry.trahan@faa.gov
	Treacy	John	ESC/SRM(EDSI)	(781) 377-4370	478-4370	(781) 377-4573	john.treacy2@hanscom.af.mil
	Vanbuskirk	James	FAA/AML-2000	(405) 954-7410		(405) 954-1369	james.r.vanbuskirk@faa.gov
SMSgt	Varo	Diana	WADS	(253) 982-4726	382-4726	(253) 982-4804	varodia@wads.mcchord.af.mil
	Volz	David	HQ ACC/DOYG	(757) 764-8380		(757) 764-8346	david.volz@langley.af.mil
	Wallace	Tim	FAA/ARN-300	(202) 366-1297		(202) 493-0703	timothy.s.wallace@faa.gov
	Watts	Conchita	FAA/ASO-472	(404) 305-6611		(404) 305-6553	conchita.watts@faa.gov
	Weimer	Ray	FAA/AOP-1000	(202) 267-9189		(202) 267-5207	ray.weimer@faa.gov

FAA/DOD JRPG Formal Conference Attendees

Rank/ Grade	Last Name	First Name	Organization	Commercial Phone	DSN/FTS Phone	FAX Number	E-Mail
	Wigal	Nancy	FAA/AOP-300	(202) 267-8296			nancy.e.wigal@faa.gov
	Wilkes	Ken	FAA/AOP-30/AOCC	(770) 210-7061			kenneth.wilkes@faa.gov
	Wilkin	Tom	FAA/AOS-230	(405) 954-1595		(405) 954-8371	tom.ctr.wilkin@faa.gov
MSgt	Williams	Scott	HQ 1AF/DOYS	(850) 283-3786	523-3786	(850) 283-3463	scott.williams@1staf.tyndall.af.mil
	Wuest	Matthew	SPAWARSC San Diego	(619) 524-2140	524-2140	(619) 524-3495	wuestmk@spawar.navy.mil
	Yarman	John	84 RADES/TOY	(801) 777-5119	777-5119	(801) 777-3268	john.yarman@hill.af.mil
	Young	Charlie	FAA/CHSSSC	(843) 747-9678		(843) 745-9377	charles.young@faa.gov
	Yu	Hanley	FAA/AEA-472	(718) 977-6619		(718) 977-6548	hanley.yu@faa.gov

DOD/FAA CURRENT ADDRESS LIST

ATTACHMENT 2

DOD/FAA CURRENT ADDRESS LIST
USAF/NAVY/CUSTOMS

MAIL		MESSAGE
SAF/AQID 1060 Air Force Pentagon Washington, DC 20330-1060	(1)	SAF WASH DC//AQID//
HQ USAF/XOOTI/XOOR 1480 Air Force Pentagon Washington, DC 20330-1480	(2)	HQ USAF WASH DC//XOOTI/XOOR//
HQ USAF/XP 1070 Air Force Pentagon Washington, DC 20330-1070	(1)	HQ USAF WASH DC//XP//
NGB/XOPC 2500 Army Pentagon Washington, DC 20310-500	(2)	NGB WASH DC//XOPC//
HQ ACC/DOR-JRPG 205 Dodd Blvd, Ste 101 Langley AFB, VA 23665-2778	(2)	HQ ACC LANGLEY AFB VA//DOR-JRPG//
HQ ACC/CER/CEP/CEV 129 Andrews St, Ste 346 Langley AFB, VA 23665-2769	(3)	HQ ACC LANGLEY AFB VA//CER/CEP/ CEV//
HQ ACC/DOY 205 Dodd Blvd, Ste 101 Langley AFB, VA 23665-2789	(1)	HQ ACC LANGLEY AFB VA//DOY//
AC2ISRC/C2C 130 Andrews Street, Ste 216 Langley AFB, VA 23665	(3)	AC2ISRC LANGLEY AFB VA// C2C//
HQ ACC/SCC 204 Dodd Blvd Ste 303 Langley AFB, VA 23665-2777	(2)	HQ ACC LANGLEY AFB VA//SCC//
ACC Communications Group/CC 37 Elm St, Ste 205 Langley AFB, VA 23665-2091	(1)	ACC COMM GP LANGLEY AFB VA//CC//

DOD/FAA CURRENT ADDRESS LIST
USAF/NAVY/CUSTOMS (CONTINUED)

MAIL		MESSAGE
HQ 1 AF/SCM/SCX/ 590 Suwannee Rd, Ste 14 Tyndall AFB, FL 32403-5546	(2)	HQ 1 AF TYNDALL AFB FL//SCM/SCX//
HQ 1 AF/DOY/DOYS/DOYI 501 Illinois Ave, Ste 2 Tyndall AFB, FL 32403-5548	(3)	HQ 1 AF TYNDALL AFB FL//DOY//
1AF/LGMS 425 Minnesota Ave Ste 3 Tyndall AFB, FL 32403	(1)	HQ 1AF TYNDALL AFB FL//LGMS//
325 TRS/DO 213 Dixie Rd Tyndall AFB, FL 32403-5016	(1)	325 TRS TYNDALL AFB FL// DO//
SEAD Sector/SCX/DOC/DOY/ SCLQ/CE/LG/ DOCO 164 Alabama Ave, Stop 73 Tyndall AFB, FL 32403-5015	(10)	SE AD SECTOR TYNDALL AFB FL//SCX/DOC/ DOY/SCLQ/LG/CE//
NEAD Sector/SC/DO/CE/DOC/ DOY/SC/SCM/SCMQ/LGS/ SCXC/SCX 387 HANGAR RD. Rome NY, 13441-4507	(10)	NE AD SECTOR ROME NY//SC/DO/ CE/DOC/DOY/SC/SCM/SCMQ/LGS/SCXC/SCX//
WAD Sector/DOY/JRPG/ LGS/ DOC/SC 852 Lincoln Blvd, Ste 1 McChord AFB, WA 98438-1317	(10)	WESTERN AIR DEFSX MCCHORD AFB WA//SCX/DOC/DOY/SCM/SCMQ/JRPG/ CE/LGS//
84 RADES/CC/CA/TO// 7976 Aspen Avenue Hill AFB, UT 84056-5846	(3)	84 RADES HILL AFB UT//CC/CA/TO//
738 EIS/EEET 801 Vandenberg Ave, Ste 234 Keesler AFB, MS 39534-2633	(1)	738 EIS KEESLER AFB MS//EEET//
ANGRC/SCMM/DOBC 3500 Fetchet Ave Andrews AFB, MD 20762-5157	(1)	ANGRC ANDREWS AFB MD//SCMM/DOBC//

DOD/FAA CURRENT ADDRESS LIST
USAF/NAVY/CUSTOMS (CONTINUED)

MAIL		MESSAGE
HQ AFFSA/XR/XAE 1535 Command Drive, Ste D-309 Andrews AFB, MD 20331-7002	(2)	HQ AFFSA ANDREWS AFB MD//XR/XAE//
ANG/XPP 1411 Jefferson Plaza #10627 Arlington, VA 22202-3231	(1)	
605 TS/TSH 203 West D Ave, Ste 306 Eglin AFB, FL 32542-6867	(1)	605 TS EGLIN AFB FL//TSH//
HQ AFCA/SYX 203 W. Losey Scott AFB, IL 62225-5219	(1)	HQ AFCA SCOTT AFB IL//SYX//
HQ ESC/SRM 51 Schilling Circle Hanscom AFB, MA 01731-2802	(2)	HQ ESC HANSCOM AFB MA//SRM//
HQ PACAF/DOQS/DOYA/DOYS 25 E St, Ste I232 Hickam AFB, HI 96853-5426	(2)	HQ PACAF HICKAM AFB HI//DOQS/ DOYA/DOYS//
HQ PACAF/SCMB 25 E St, Ste C314 Hickam AFB, HI 96853-5409	(1)	HQ PACAF HICKAM AFB//SCMB/
154 OG/DO/MAI 360 Harbor Drive Hickam AFB, HI 96853-5517	(2)	154OG HICKAM AFB HI//DO/MAI//
169 ACWS/CC/DO/MAI 360 Harbor Drive Hickam AFB, HI 96853-5517	(2)	169 ACWS HICKAM AFB HI//CC/DO/MAI//
HQ NORAD/J3W/J5R/FAA 250 S Peterson Blvd, Ste 116 Peterson AFB, CO 80914-3260	(3)	HQ NORAD PETERSON AFB CO// J3W/J5R/FAA//
US SPACECOM/J6C 150 Vandenberg St, Ste 1105 Peterson AFB, CO 80914-4730	(1)	USSPACECOM PETERSON AFB CO// J6C//

DOD/FAA CURRENT ADDRESS LIST
USAF/NAVY/CUSTOMS (CONTINUED)

MAIL		MESSAGE
SM-ALC/LHE/ 5012 Dudley Blvd (B-269H) McClellen AFB, CA 95652-1038	(2)	DIR SPACE AND C3I MGMT MCCLELLAN AFB CA//LHE//
Tony Joubert OO-ALC/LG-LH 6012 Fir Ave. Bldg # 1239 Hill AFB, UT 84056-5820	(1)	
611 AOG/CC// 9840 Pease Ave., Ste 102 Elmendorf AFB, AK 99506-2130	(1)	611 AOG ELMENDORF AFB AK//CC//
611 AOG/A3/ANFJ 9840 Pease Ave., Ste 223 Elmendorf AFB, AK 99506-2130	(1)	611ACF ELMENDORF AFB AK//SCJ//
611 ASUS/CC/PM/PMC/PMA 10471 20th St., Ste 265H Elmendorf AFB, AK 99506-2270	(3)	611 ASUS ELMENDORF AFB AK//CC/PM/ PMA/PMC//
30 RANS/DOUN 816 13th St, Ste 207 Vandenberg AFB, CA 93437-5233	(1)	30 RANS VANDENBERG AFB CA// DOUN//
38 EIG/GC 4064 Hilltop Road Tinker AFB, OK 73145-2713	(1)	38 EIG TINKER AFB OK//GC//

DOD/FAA CURRENT ADDRESS LIST
USAF/NAVY/CUSTOMS (CONTINUED)

MAIL		MESSAGE
Naval Air Systems Command PMA 2132 Villa Road - Bldg 271 St. Inigoes, MD 20684-0010	(2)	COMNAVAIRSYSCOM WASH DC// PMA 2132//
SPAWARSYSCEN, D335 53560 Hull ST San Diego, CA 92152-5001	(3)	SPAWARSYSCEN SAN DIEGO CA//D335//
Commanding Officer Atlantic Fleet Weapons Training Facility (AFWTF) Attn: Code 70 PSC 1008, Box 3023 FPO AA 34051-9000	(4)	AFWTF ROOSEVELT ROADS PR/00701//
Fleet Area Control and Surveillance Facility, Virginia Capes Plans & Projects Code N4 601 Oceana Blvd Virginia Beach, VA 23460-5105	(1)	FACSFAC VACAPES OCEANA VA//N4//
Fleet Area Control and Surveillance Facility Code 30TD-P.O. Box 357062 San Diego, CA 92135-7062	(2)	FACSFAC SAN DIEGO CA//30TD//
CDR Kelch CNO N785F 2000 Navy Pentagon Washington, DC 20350	(1)	

DOD/FAA CURRENT ADDRESS LIST
USAF/NAVY/CUSTOMS (CONTINUED)

MAIL		MESSAGE
U.S. Customs Service C4I Systems Analyst/AMID 1300 Pennsylvania Ave NW, Room 6.2C Washington, DC 20229	(2)	USCS AMID WASHINGTON DC// C4I SYSTEMS ANALYST//
US CUSTOMS SERVICE AMICC P.O. BOX 6363 March AFB, CA 92518-6363	(3)	USCS AMICC MARCH AFB CA//OPS//
107 ACS/CC 2025 N. 52nd St Phoenix, AZ 85008-3403	(1)	
57 OSS/OSAM 4450 Tyndall Ave Nellis AFB, NV 89191-6067	(1)	57 OSS NELLIS AFB NV//OSAM//
HQ, US Southern Command 3511 NW 91st Ave Attn: SCJ35/I&R Miami, FL 33172	(1)	USCINCSO MIAMI//SCJ3/SCJ35//
HQ CPSG/ZC 230 Hall Blvd Ste 209 San Antonio, TX 78243-7056	(1)	HQ CPSG KELLY AFB TX//ZC/ZCG
140 ADS/CC 200 Carr 165 TOA BAJA, P.R. 00949-3247	(1)	140 ADS SQ PRANG SAN JUAN PR//CC//
DOD Joint Spectrum Center Attn: Rich DeSalvo 2004 Turbot Landing Annapolis, MD 21402	(1)	
DOD International AIMS Program Office 380 2nd St., Ste 104 Robins AFB, GA 31098-1638	(1)	WRALC/LYGO-AIMS

DOD/FAA CURRENT ADDRESS LIST

FAA

MAIL	MESSAGE
FAA/AOP-300-JRPG/AAT-5/ ACO-320/AOP-200/ ASD-100/ ASI-200/AFZ-100/ AND-440/ ASD-140/AOS-100/ARN-300/ 800 Independence Ave., SW Washington, DC 20591-5000	FAA WASH DC//AOP-300/AAT-5/ACO-320/ AOP-200/ASD-100/ASI-200/AFZ-100/ AND-440/ASD-140/AOS-100/ARN-300//
FAA/NISC/ANS-100 400 Virginia Ave. SW Ste 400 Washington, DC 20024	FAA WASH DC//ANS-100//
FAA Technical Center/AOS-520 Atlantic City Airport Atlantic City, NJ 08405-5000	FAA TECH CENTER ATLANTIC CITY NJ//AOS-520//
FAA Aeronautical Center/ AML-2000 RPD P.O. Box 25082 Oklahoma City, OK 73125-4952	FAA AERONAUTICAL CENTER OKLAHOMA CITY OK//AML-2000//
FAA Aeronautical Center/AOS-230 6500 S. MacArthur, Bldg 189 Oklahoma City, OK 73125	FAA AERONAUTICAL CENTER OKLAHOMA CITY OK//AOS-230//
FAA/AEA-472/AEA-510/ANI-220 FAA Eastern Region 1 Aviation Plaza Jamaica, NY 11434	FAA EASTERN RGN NEW YORK NY //AEA-472/AEA-510/ANI-220//
FAA/AGL-471/AGL-510 FAA Great Lakes Region 2300 E. Devon Avenue Des Plaines, IL 60018-5000	FAA GREAT LAKES RGN DES PLAINES IL// AGL-471/AGL-510//
FAA/ZMP-510 FAA/Minneapolis ARTCC 512 Division Street Minneapolis, MN 55024-5000	FAA MINNEAPOLIS ARTCC MINNEAPOLIS MN//ZMP-510//

DOD/FAA CURRENT ADDRESS LIST
FAA (CONTINUED)

MAIL	MESSAGE
FAA/ANI-90 15000 Wilson Blvd. Suite 400 Rosslyn, VA 22209	FAA ENGINEERING CENTER// ANI-090
FAA/ANE-471/ANE-510/ANI-120 FAA New England Region 12 New England Exec Park Burlington, MA 01803	FAA NEW ENGLAND RGN BURLINGTON MA// ANE-471/ANE-510/ANI-120//
FAA/ANM-471SFR FAA Northwest Mountain Region 1601 Lind Ave., SW Renton, WA 98055-4056	FAA//NORTHWEST MOUNTAIN REGION// ANM-471SFR//
FAA/DAK-MIN SMO 508 Division Street Farmington, MN 55024	FAA DAKOTA-MINNESOTA SMO//
FAA/ASO-472/ASO-910/ASO-930/ ASO-920/ASO-510/ASO-420/ ANI-360/ANI-310 FAA Southern Region P.O. Box 20636 Atlanta, GA 30320	FAA SOUTHERN RGN ATLANTA GA// ASO-472/ASO-910/ASO-930/ASO-510/ ASO-420/ANI-360/ANI-310//
FAA/ANI-610/ASW-470/ ASW-510/ASW-702/ASW-710 FAA Southwest Region Ft Worth, TX 76193	FAA SOUTHWEST RGN FT WORTH TX// ANI-610/ASW-470/ASW-510/ASW-710/ ANI-660//
FAA/AWP-473.9/ANI-960/AWP-510/ AWP-910 (AF Representative) Western-Pacific Region P.O. Box 92007 Worldway Postal Center Los Angeles, CA 90009-2007	FAA WESTERN PACIFIC RGN LOS ANGELES CA//AWP-473.9/ANI-960/ AWP-510/AWP-910/AWP-712//
FAA Hawaii-Pacific SMO 6700 Kalanianaole Hwy, Ste 111 Honolulu, HI 96825-1277	FAA HAWAII-PACIFIC SMO HONOLULU HI// HIP-SMO//

DOD/FAA CURRENT ADDRESS LIST
FAA (CONTINUED)

MAIL	MESSAGE
FAA/AAL-470/AAL-510/AAL-59RE FAA Alaska Region 222 West 7th #14 Anchorage, AK 99513	FAA ALASKA RGN ANCHORAGE AK// AAL-470/AAL-500/AAL-50//
FAA/AAT-5 800 Independence Ave., SW Washington DC 20591-5000	FAA WASH DC//AAT-5//
FAA/AND-450 800 Independence Ave. SW Washington DC 20591-5000	FAA WASH DC//AND-450//
FAA Office of Civil Aviation Security Internal Security Division, ACO-400 800 Independence Ave, SW Washington, DC 20591	

FAA REGIONAL JRPG COORDINATORS

ATTACHMENT 3

FAA JRPG COORDINATORS

Name	Organization	Telephone
John M. Bartels	AML-2000	(405) 954-7235
James VanBuskirk	AML-2000	(405) 954-7410
Tim Bosworth	ANE-471	(781) 238-7449
Cylis Glasgow	AEA-472	(718) 977-6615
Conchita Watts	ASO-472	(404) 305-6611
Kathy Nielsen	AGL-471	(847) 294-8294
August Riccono	ASW-472	(817) 222-4722
Steve Riordan	ANM-471SFR	(425) 227-2482
James Motley	AWP-473.9	(310) 725-7445
Anthony Pena	DMS-SMO	(651) 463-5619
Russ Crooks	AAL-470	(907) 271-5293

DOD ORGANIZATIONAL JRPG COORDINATORS

ATTACHMENT 4

DOD JRPG COORDINATORS

Name	Organization	Telephone
Richard (Dick) Constable	NEADS/SCMQJ	(315) 334-6143 DSN 587-6143
William Clemens	SEADS/SCLQ	(850) 283-5481 DSN 523-5481 FAX 523-5234
Mark Tormanen	WADS/JRPG	(253) 982-4758 DSN 382-4758 FAX 382-4804
Jerome Keeney	611ASUS/PM(ANR)	(907) 552-4212 DSN (317) 552-4212
Matthew Wuest	SPAWARSYSCEN San Diego (USN)	(619) 524-2140 DSN 524-2140
Maj Fred Link	PACAF/DOYS	(808) 449-4270 DSN (315) 449-4270
Tony Joubert	OO-ALC/LG-LHE	(801) 777-1816 DSN 777-1816
Mark Sage	OO-ALC/LHE	(801) 586-2171 DSN 586-2171
Lanny Clelland	84 RADES/CA	(801) 777-2035 DSN 777-2035
Lt Col Steve Ruggles	HQ NORAD/J33W	(719) 554-6920 DSN 692-6920

JOINT USE SITE

CONFIGURATION LIST

ATTACHMENT 5

JOINT USE SITE CONFIGURATION CONTIGUOUS US

RADAR SITES WITH MODE 4 AND RADIOS

Oilton	Cross City	Ft Fisher
Salem	Rainbow Ridge	North Truro
Whitehouse	Lake Charles	Makah
Riverhead/Suffolk	Melbourne	Ft Green
Tyndall/Panama City*	Bucks Harbor	Oceana**
Paso Robles	Slidell/New Orleans***	Mt Laguna
Mill Valley	Jedburg	Key West
San Clemente Island**	Eagle Peak	Tamiami
Deming	King Mountain	Ajo

NOTES:
* Radios maintained by USAF
** Radios maintained by USN
*** Additional radios at Cocodrie, LA maintained by FAA

RADAR SITES WITH RADIOS AND NO MODE IV

Lakeside/Kalispell	Remsen/Utica	Mica Peak
Keno/Klamath Falls	Bootlegger Ridge	Watford City
Nashwauk	Finley	

RADAR SITES WITH USN RADIOS AND NO MODE IV

Pico del Este

JOINT USE SITES NO RADIOS/NO MODE IV

The Plains/Wash DC	Phoenix/Humbolt Mtn	Empire
Citronelle/Grand Bay	Dansville	Caribou
Canton/Detroit		

RADAR SITES WITH MODE 4 ONLY

Gibbsboro*	Morales**	Rocksprings***

NOTES:
* Radios located at McGuire AFB; maintained by USAF
** Radios located at Galveston; maintained by FAA
*** Radios located at Laughlin AFB; maintained by USAF

JOINT USE SITE CONFIGURATIONS
ALASKA-HAWAII-GUAM

USAF RADAR SITES WITH MODE 4 AND RADIOS

Barter Island	Fort Yukon	Oliktok
Capt Lisburne	Indian Mountain	Point Barrow
Cape Newenham	King Salmon	Sparrevon
Capt Romanzof	Kotzebue	Tatalina
Cold Bay	Murphy Dome	Tin City
Galena*	Santa Rosa**	Point Lay ***

* Moved to Mt Kokee (Radar only)
** FAA Owned (Mode 4 capable, currently not used)
*** Moved to Punta Salinas, PR (ANG)

RADAR SITES WITH MODE 4 AND RADIOS

Mt Kaala
Mt Kokee

JOINT USE SITES WITH RADIOS

Kenai
St Paul Island*

*Beacon only site

JOINT USE SITES

Biorka*
Middleton Island*

*Beacon only site

JOINT USE SITE DATA

AS OF

DECEMBER 2000

ATTACHMENT 6

JOINT USE SITE DATA
as of Nov. 1999

LOCATION	SINGLE/ MULTI CHANNEL	HAVE QUICK II RADIOS	OTHER RADIOS	CI-13	FAA ARTCC (Controling ARTCC)	USAF AD SAOCC	Other Users or Comments
Ajo	6/0	3	0	1	Albuquerque* Los Angeles	W AD Sector	
Bootlegger Ridge	9/1	0	0	0	Salt Lake City*	W AD Sector	
Bucks Harbor	9/1	3	0	1	Boston*	NE AD Sector	Canada East Sector
Caribou	0/0	0	0	0	Boston*	NE AD Sector	
Citronelle (Grand Bay)	0/0	0	0	0	Houston* Atlanta Jacksonville Memphis	SE AD Sector	
Cocodrie	4 (2 VHF, 2 UHF)/0	4			N/A	SE AD Sector	
Cross City	10 (1 VHF, 9 UHF)/1	3	1 (UHF-USCS)	1	Jacksonville* Miami Houston	SE AD Sector	
Dansville	0/0	0	0	0	Cleveland* Boston	NE AD Sector	
Deming	4/1	2	1 (UHF-USCS)	1	Albuquerque	W AD Sector	White Sands
Detroit/ Canton	0/0	0	0	0	Cleveland*	NE AD Sector	
Eagle Peak	7/1	2	1 (UHF-USCS)	1	Albuquerque	W AD Sector	AICC
Empire	0/0	0	0	0	Minneapolis* Chicago	NE AD Sector	Feed to Traverse City ATCT TARDIS
Finley	9/1	0	0	0	Minneapolis*	W AD Sector	
Ft. Fisher	11(2 VHF, 9 UHF)/1	3	1 (UHF-USCS) 1 (UHF-NAVY) 1 (VHF-NAVY) 3 (UHF-Shaw AFB)	1	Washington* Jacksonville	SE AD Sector	FACSFAC VACAPES, FACSFAC Jacksonville, Shaw AFB
Ft. Green	10 (1 VHF, 9 UHF)/1	3	1 (UHF-USCS)	1	Miami* Jacksonville	SE AD Sector	CARIBROC

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JOINT USE SITE DATA
as of Nov. 1999

LOCATION	SINGLE/ MULTI CHANNEL	HAVE QUICK II RADIOS	OTHER RADIOS	CI-13	FAA ARTCC (Controlling ARTCC)	USAF AD SAOCC	Other Users or Comments
Gibbsboro	0	0	0	1	New York* Washington	NE AD Sector	FACSFAC VACAPES, Shaw AFB
Jedburg	9 (0 VHF, 9 UHF)/1	3	1 (UHF-USCS) 1 (UHF-Shaw AFB)	1	Jacksonville*	SE AD Sector	FACSFAC Jacksonville, SPAWAR SC Charleston, Shaw AFB
Key West	10 (1 VHF, 9 UHF)/1	3	1 (UHF-USCS)	1	Miami* Houston	SE AD Sector	CARIBROC, Navy TARPON, AMICC
King Mountain	4/1	2	1 (UHF-USCS)	1	Fort Worth* Albuquerque Houston	W AD Sector	DIACC
Klamath Falls (Keno)	4/1	0	0	0	Seattle*	W AD Sector	Canada East Sector
Lake Charles	5 (1 VHF, 4 UHF)/1	2	1 (UHF-USCS)	1	Houston*	SE AD Sector	
Lakeside (Kalispell)	6/1	0	0	0	Salt Lake*	W AD Sector	
Makah	9/1 2/0	3	2 (UHF-USN) 2 (VHF-USN)	1	Seattle*	W AD Sector	FACSFAC Whidbey Island, NAS Whidbey Island
Melbourne	9 (0 VHF, 9 UHF)/1	3	1 (UHF-USCS)	1	Miami* Jacksonville	SE AD Sector	FACSFAC Jacksonville, 45th Space Wing
Mica Peak	5/1	0	0	0	Seattle*	W AD Sector	FACSFAC Whidbey Island, NAVCANADA
Mill Valley	11/1	3		1	Oakland*	W AD Sector	30th Space Wing, FACSFAC San Diego
Morales	2/1	9	1 (UHF-USCS)	1	Houston*	SE AD Sector	Radios located at Galveston, TX
Mt. Kaala	12/0	10	0	0	Honolulu*	HIROCC	FACSFAC Pearl Harbor, PMRF Barking Sands
Mt. Kokee (HIANG Maintained)	3/3	6	0	0	Honolulu*	HIROCC	FACSFAC Pearl Harbor PMRF

JOINT USE SITE DATA
as of Nov. 1999

LOCATION	SINGLE/ MULTI CHANNEL	HAVE QUICK II RADIOS	OTHER RADIOS	CI-13	FAA ARTCC (*controlling ARTCC)	USAF AD SAOCC	Other Users or Comments
Mt. Laguna	11/1	3	1 (UHF-USCS)	1	Los Angeles*	W AD Sector	FACSFAC San Diego
Mt. Santa Rosa Guam	0/0	0	0	0	Guam CERAP		
Nashwauk	6/1	0	0	0	Minneapolis*	NE AD Sector	
North Truro	9/1	3	2 (VHF-USAF)	1	Boston* New York	NE AD Sector	FACSFAC VACAPES
Oceana	9/2	3	1 (UHF-USCS)	1	Washington*	NE AD Sector SE AD Sector	NAS Patuxent River, AMICC, FACSFAC VACAPES (RADIOS MAINTAINED BY USN)
Oilton	6/1	2	STET 1 (UHF-USCS)	1	Houston*	W AD Sector SE AD Sector	NAS Kingsville, Feed to Laredo ATCT TARDIS
Paso Robles	9/1	3	1 (UHF-USCS)	1	Los Angeles*	W AD Sector	30th Space Wing, FACSFAC San Diego, NAWC China Lake, AMICC
Phoenix (Humbolt)	0/0	0	1 (UHF-USCS)	0	Albuquerque* Los Angles	W AD Sector	45th Space Wing, Tucson Az, AMICC
Pico del Este					San Juan CERAP*	SE AD Sector	FACSFAC AFWTF, US Customs
Rainbow Ridge	9/1	3	2 (UHF-30 Space Wing)	1	Oakland* Seattle	W AD Sector	FACSFAC San Diego, 30th Space Wing
Remsen (Utica)	6/1	0	3 (UHF-FAA) 2 (VHF-USAF) 5 (VHF-FAA)		Boston* Cleveland Tech Center	NE AD Sector	
Riverhead (Suffolk)	9/1	3	2 (VHF-USN) 4 (UHF-USN) 1 (UHF-USCS)	1	New York* Boston Washington	NE AD Sector	FACSFACS VACAPES
Rocksprings	0/0	0	0	1	Houston* Ft Worth Albuquerque	W AD Sector	
Salem	9/1	3	0	1	Seattle*	W AD Sector	30th Space Wing

JOINT USE SITE DATA
as of Nov. 1999

LOCATION	SINGLE/ MULTI CHANNEL	HAVE QUICK II RADIOS	OTHER RADIOS	CI-13	FAA ARTCC (Controlling ARTCC)	USAF-AD SAOCC	Other Users or Comments
San Clemente Island	9/1	3	47 (UHF-USN) 3 (VHF-USN)	1	Los Angeles	W AD Sector	30th Space Wing, FACSFAC San Diego, USN Pt Mugu (RADIOS MAINTAINED BY USN)
Slidell	4 (0 VHF, 4 UHF)/1	2	1 (UHF-USCS)	1	Houston*	SE AD Sector	FACSFAC Pensacola
Tamiami	10 (1 VHF, 9 UHF)/1	3		1	Miami* Houston	SE AD Sector	CARIBROC
The Plains	0/0	0	0	0	Washington* New York	NE AD Sector	
Tyndall	11(2 VHF, 9 UHF)/1	3	1 (UHF-USCS)	1	Jacksonville* Houston	SE AD Sector	81 RCS Corridor, FACSFAC Pensacola, 325 TRS (RADIOS MAINTAINED BY USAF)
Watford City	4/1	0	0	0	Minneapolis* Salt Lake	W AD Sector	
Whitehouse	11(2 VHF, 9 UHF)/1	3	1 (UHF-USCS)	1	Jacksonville* Miami	SE AD Sector	FACSFAC Jacksonville, 45th Space Wing

JOINT RADAR PLANNING GROUP (JRPG)

BACKGROUND

BRIEFING

ATTACHMENT 7

JOINT RADAR PLANNING GROUP
(JRPG)

December 5, 2000

DEPARTMENT OF DEFENSE
(DOD/USAF)
DEPARTMENT OF TRANSPORTATION
(DOT/FAA)

JRPG BACKGROUND

- 1947 DOD/CAA IDENTIFIED NEED
- 1954 PRESIDENT APPROVED JOINT PROGRAM
- 1956 FIRST JRPG MEETING
- 1956 GROUND RULES APPROVED
- 1958 REVISED/EXPANDED GROUND RULES
- 1974 JOINT SURVEILLANCE SYSTEM EST.
- 1975 NAT - 614 SIGNED
- 1981 & 1988 NAT - 614 AMENDED
- 1995 NAT - 914 SIGNED
- 1996 FIRST ARSR-4 COMMISSIONED

JOINT RADAR PLANNING GROUP

- OBJECTIVE - TO PROVIDE FORMALIZED PLANNING FOR AND MANAGEMENT OF JOINT USE LONG RANGE RADAR FACILITIES
  - FAA PROVIDES
    - CIVIL AIR TRAFFIC CONTROL
  - DOD PROVIDES
    - PEACETIME - SURVEILLANCE AND AIR SOVEREIGNTY
    - WARTIME - LIMITED AIR DEFENSE
  - OTHER AGENCIES

JOINT RADAR PLANNING GROUP

- FUNCTION.
  - Planning for joint-use radar facilities.
  - Develop policies, procedures, and agreements.
  - Coordinating matters which affect joint-use operations.
  - Identifying and resolving joint-use problems.
  - Recommending mutually acceptable joint radar locations.
  - Documenting all actions.

JOINT RADAR PLANNING GROUP

- TWO CHAIRPERSONS
  - DOD COCHAIRMAN - KEN KINGSMORE
    ACC / DOR-JRPG
  - FAA COCHAIRMAN - GIL MAUCK
    FAA / AOP-JRPG

JOINT RADAR PLANNING GROUP

- COCHAIRMEN FUNCTIONS
  - Senior spokesperson for their respective agencies, with authority to commit agency for planning purposes.
  - Initiate planning and agreements as required.
  - Ensure coordination.
  - Develop procedures and policies.
  - Establish JRPG subgroups as necessary.
  - Resolve problems.
  - Document actions.

JOINT RADAR PLANNING GROUP

- GROUND RULES
  - Joint use of radar facilities will be made whenever practical.
  - Other services and agencies will be invited to participate.
  - Funding for items will be the responsibility of the requiring organization.
  - FAA will be responsible for maintenance of radars. (USAF may maintain some.)
  - Radars to provide uninterrupted service.

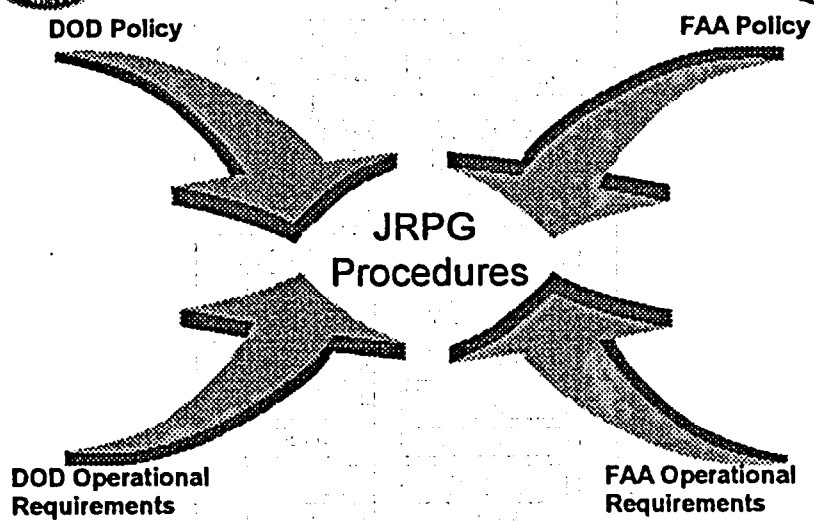
JOINT RADAR PLANNING GROUP

- GROUND RULES (continued)
  - Establishment of a permanent committee to provide continuous coordination of activities.
  - Establishment of subgroups as needed.
  - JRPG will be involved in operational and technical problems.
  - Security requirements will be provided.
  - Radar shut downs will require mutual agreement.
  - Joint baseline of radars will be performed.

JOINT RADAR PLANNING GROUP

- GROUND RULES (continued)
  - Operational controls will be remoted to the FAA Air Route Traffic Control Centers.
  - Technical requirements will be mutually agreed by all users.
  - Diesel power plants will provide back-up.
  - The chain of command will be used for problem solving and resolution.
  - Calibration flight checks will be performed.
  - Technical orders and manuals will be maintained on site.

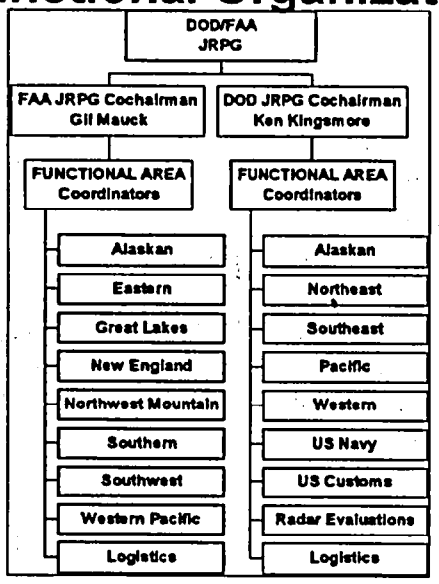
JRPG



JOINT RADAR PLANNING GROUP PARTICIPANTS

- DOD - HQ USAF, NGB, ACC, NORAD, ANG, ESC, PACAF, NAVY, SPACECOM, AFC4A, ANR, SM-ALC, 1 AF, NISE EAST, NRAD, US CUSTOMS, HIANG, CINCUSACOM, SOUTHCOM, 3 AIR DEFENSE SECTORS & USN FACSFAC
- FAA - HQ FAA, FAA REGIONS (NEW ENGLAND, EASTERN, SOUTHERN, SOUTHWEST, WESTERN-PACIFIC, NW MOUNTAIN, GREAT LAKES & ALASKAN), FAA LOGISTICS, FAA TECH CENTER, FAA AERONAUTICAL CENTER

JRPG Functional Organization



JOINT SURVEILLANCE SYSTEM

CONSISTS OF:	DOD CONTROL CENTERS	RADAR SITES
CONUS	3	46
PACAF/ CARRIBEAN	1	4
ALASKA	1	19
TOTAL	5	69

JOINT USE RADAR SITES
(CONTIGUOUS US)

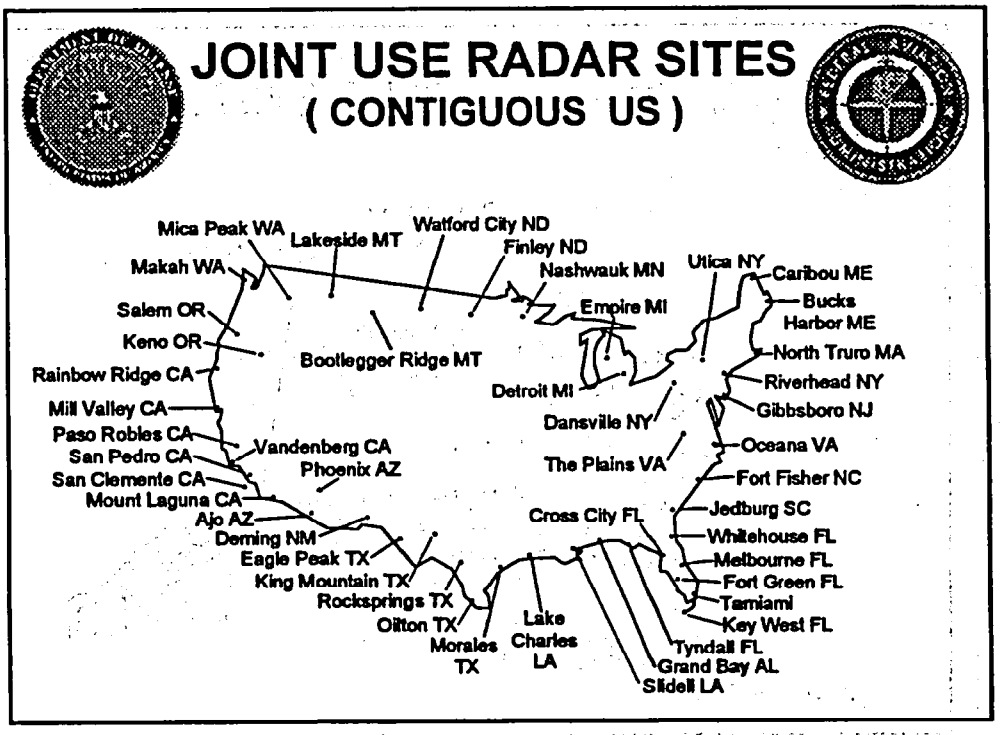
- 46 JOINT USE SITES
  - FAA FACILITIES / FAA MAINTAINS ALL EQUIPMENT
  - DATA SHARED BY USAF / FAA / NAVY / USCS
  - ACC PAYS FOR MAINTENANCE OF USAF EQUIPMENT AT 34 SITES (NAT - 614 & NAT - 914)
  - USAF FACILITIES USAF MAINTAINS EQUIPMENT

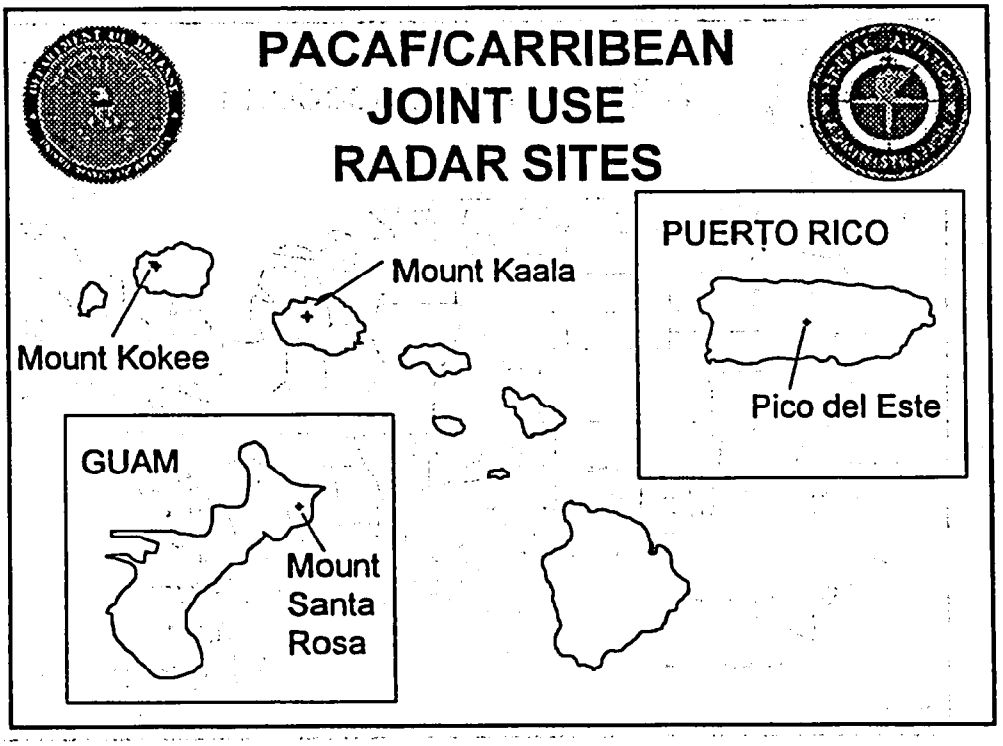
PACAF/CARRIBEAN JOINT USE RADAR SITES

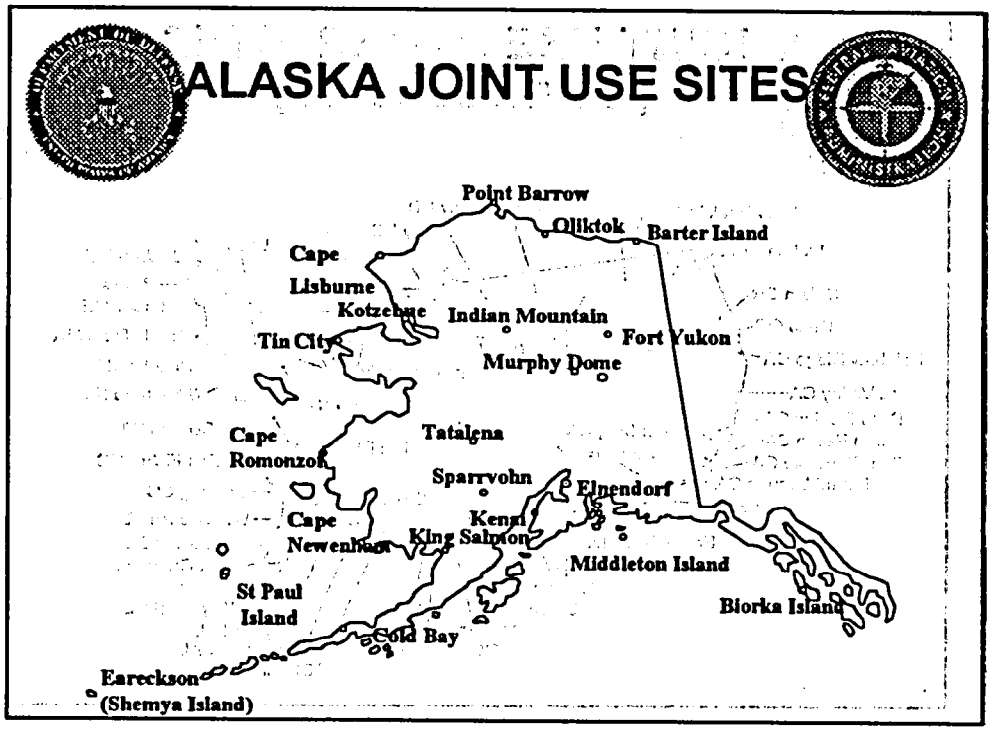
- 4 JOINT USE SITES
  - DATA SHARED BY USAF / FAA / USN
  - 1 FAA/ANG FACILITY - FAA MAINTAINS (MT KAALA)
  - 1 ANG FACILITY - ANG MAINTAINS (MT KOKEE)
  - 1 FAA/PACAF FACILITY - FAA MAINTAINS (MT SANTA ROSA)
  - 1 US NAVY FACILITY - FAA MAINTAINS (PICO DEL ESTE)

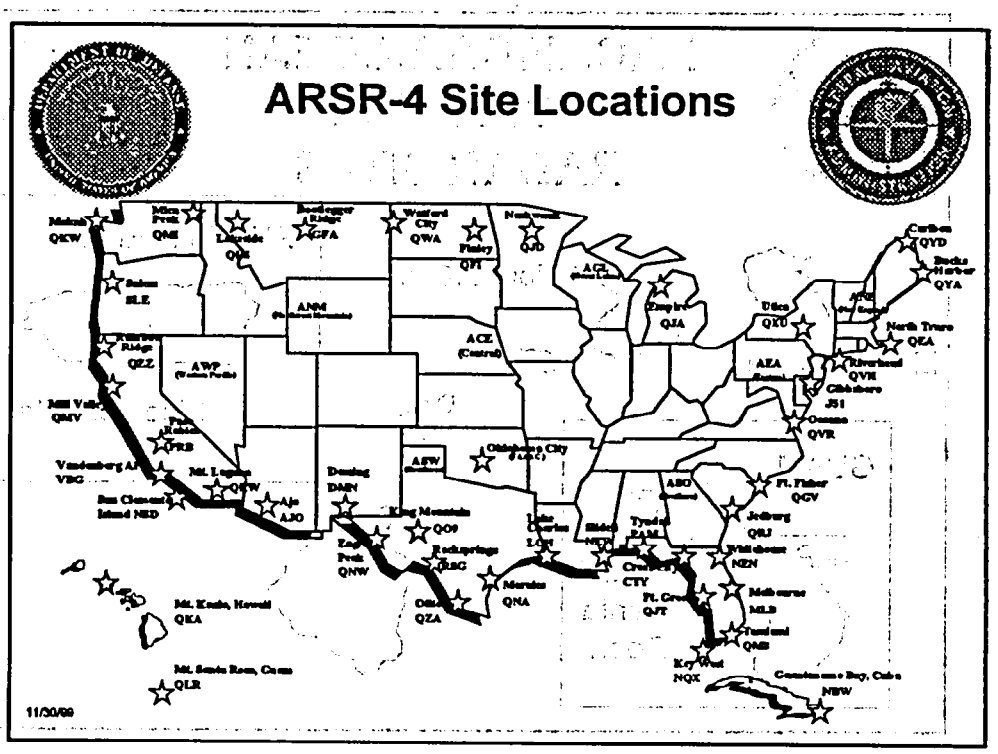
(PACAF) ALASKA JOINT USE SITE

- 19 JOINT USE SITES
  - 15 AN/FPS-117 (USAF OWNED)
  - 1 ARSR-3 (FAA OWNED)
  - 3 ATCBI-5 (FAA OWNED)
- USAF SITES MAINTAINED BY CONTRACTOR
- FAA SITES MAINTAINED BY FAA PERSONNEL


JOINT USE RADAR SITES
(CONTIGUOUS US)
Mica Peak WA
Lakeside MT
Watford City ND
Finley ND
Makah WA
Nashwauk MN
Utica NY
Caribou ME
Salem OR
Empire MI
Bucks Harbor ME
Keno OR
Bootlegger Ridge MT
North Truro MA
Rainbow Ridge CA
Riverhead NY
Detroit MI
Mill Valley CA
Gibbsboro NJ
Dansville NY
Paso Robles CA
Vandenberg CA
Oceana VA
San Pedro CA
Phoenix AZ
The Plains VA
San Clemente CA
Fort Fisher NC
Mount Laguna CA
Jedburg SC
Ajo AZ
Cross City FL
Deming NM
Whitehouse FL
Eagle Peak TX
Melbourne FL
King Mountain TX
Fort Green FL
Rocksprings TX
Tamiami
Olton TX
Key West FL
Lake Charles LA
Morales TX
Tyndall FL
Grand Bay AL
Slidell LA


PACAF/CARRIBEAN
JOINT USE
RADAR SITES
Mount Kaala
Mount Kokee
PUERTO RICO
Pico del Este
GUAM
Mount Santa Rosa


ALASKA JOINT USE SITES
Point Barrow
Oliktok
Barter Island
Cape
Lisburne
Kotzebue
Indian Mountain
Fort Yukon
Tin City
Murphy Dome
Cape
Romonzof
Tatalena
Sparrvohn
Einendorf
Cape
Newenham
Kenai
King Salmon
Middleton Island
St Paul
Island
Biorka Island
Cold Bay
Eareckson
(Shemya Island)


ARSR-4 Site Locations
11/30/99

REVIEW OF LAST YEARS JSS

MAINTENANCE QUALITY FEEDBACK

BRIEFING

ATTACHMENT 8

JOINT SURVEILLANCE SYSTEM (JSS) MAINTENANCE QUALITY FEEDBACK

MSgt Chris Campbell
1 AF/SCMA
Dec 2000

PURPOSE

- Provide the Joint Radar Planning Group feedback on FAA maintenance performed at JSS Long Range Radar Sites
  - Examine search radar availability rates for the entire JSS using Atmospheric Early Warning System (AEWS) standards and metrics
  - Review results of JTIs performed over the past year with special emphasis placed on FAA maintenance of USAF owned equipment

AEWS DEFINITIONS

- *Operational Availability (A sub O):*
  - Shows the percent of time the EQUIPMENT END ITEM is ready to support operational requirements
- *Operational Readiness (O sub R):*
  - Shows the actual readiness of the EQUIPMENT END ITEM; an indicator of how well the equipment is holding up
- *Possessed Hours/Active Hours:*
  - Total number of hours during a given month an item of equipment was possessed/active by an organization equal to 24 hours a day multiplied by the number of days in a month that the equipment was possessed/active by an organization

AEWS FORMULAS AND STANDARDS

✪ *Formulas:*

✪ A sub O = Total active hours minus all RED downtime (scheduled and unscheduled), divided by active hours

✪ O sub R =Active hours minus unscheduled RED hours, divided by active hours

✪ *Standards:*

	Non ARSR-4	*ARSR-4*
✪ A sub O =	90.0%	95.0%
✪ O sub R =	95.0%	98.0%

* Ref: AEWS Integrated System Master Plan and 1AFI 21-1, Equipment Maintenance Status and Inventory Reporting

AEWS Performance Metrics

	A sub O	O sub R
• SEAD SECTOR	99.48%	99.77%
Non ARSR-4	100.00%	100.00%
ARSR-4	99.96%	99.54%
• WAD SECTOR	99.57%	99.16%
Non ARSR-4	99.42%	99.99%
ARSR-4	97.71%	98.32%
• NEAD SECTOR	98.56%	99.21%
Non ARSR-4	98.57%	99.14%
ARSR-4	98.56%	99.28%

* JSS LRR Operational Availability and Equipment Reliability Rates meet or exceed AEWS Standards. Current statistics Aug 99 through Aug 00.

JOINT TECHNICAL INSPECTION PROGRAM

- Quality Assurance inspections of JSS Radar sites
- Performed by FAA Region and USAF Air Defense Sector Maintenance Support
- Inspections governed by FAA order 6040.6F
- Reports are "snapshots"
- FAA prepares the report with USAF input
- JTI out-of-tolerance in excess of 10% results sites highlighted in red

JOINT TECHNICAL INSPECTION PROGRAM

- JSS Radio Work Cards are currently under Revision
  - New cards will include the use of Marconi Test Sets
  - Estimated Jan 2001 publication date
  - PMI schedule expected to coincide with FAA schedule
  - CI-13 Inspections to be included
- JTI Taskforce Met
  - Identified Sites for special National Inspections
  - Identified and approved new Key parameter counts

JTIs THIS YEAR

NORTHEAST AIR DEFENSE SECTOR

SITE	*FAA REGION*	*DATE*
Gibbsboro, NJ (J-51)	Eastern	27 Sep 99
*Canton, MI (J-62)	Great Lakes	17 Mar 00
*Riverhead, NY (J-52)	Eastern	24 Apr 00
The Plains, VA (J-50)	Eastern	15 Jun 00
Bucks Harbor, ME (J-54)	Eastern	2 Aug 00
Empire, MI (J-58)	Eastern	30 Aug 00

JTIs THIS YEAR (con't)

SOUTHEAST AIR DEFENSE SECTOR

SITE	*FAA REGION*	*DATE*
*Ft. Green, FL (J-09)	Southern	6 Aug 99
Whitehouse, FL (J-04)	Southern	6 Oct 99
Citronelle, AL (J-12)	Southern	24 Jan 00
Tamiami, FL (J-06)	Southern	4 May 00

JTIs THIS YEAR (con't)

WESTERN AIR DEFENSE SECTOR

SITE	*FAA REGION*	*DATE*
*Oilton, TX (J-16)	Southwest	20 Mar 00
Kalispell, MT (J-78)	Northwest Mt.	25 Apr 00
Keno, OR (J-82)	Northwest Mt.	6 Jun 00
*Makah, WA (J-80)	Northwest Mt.	29 Jun 00

NORTHEAST AIR DEFENSE SECTOR JTI

SITE	FAA REGION	DATE
☆ Gibbsboro, NJ (J-51)	Eastern	27 Sep 99
☆ 1 of 12 ARSR-4 key-parameters out-of-tolerance (8.33%)		
☆ 1 of 43 ATCBI-5 key-parameters out-of-tolerance (2.33%)		
☆ Canton, MI (J-62) SPECIAL	Great Lakes	17 Mar 00*
☆ 1 of 24 ARSR-1 key-parameters out-of-tolerance (4.16%)		
☆ 1 of 66 ATCRB key-parameters out-of-tolerance (1.52%)		
☆ *Special Inspection due to site's past performance - JTI Task Force recommends another Special*		

NORTHEAST AIR DEFENSE SECTOR JTI

SITE	FAA REGION	DATE
☆ Riverhead, NY (J-52)	Eastern	24 Apr 00*
☆ 1 of 52 ATCBI-5 key-parameters out-of-tolerance (1.92%)		
☆ 29 of 248 GATR key-parameters out-of-tolerance (11.69%)		
☆ The Plains, VA (J-50)	Eastern	15 Jun 00
☆ 2 of 42 ARSR-3 key-parameters out-of-tolerance (4.76%)		
☆ 1 of 48 ATCRB key-parameters out-of-tolerance (2.08%)		
☆ Bucks Harbor, ME (J-54)	Eastern	6 Aug 00
☆ 9 of 239 GATR key parameters out-of tolerance (3.77%)		

SOUTHEAST AIR DEFENSE SECTOR JTI

SITE	FAA REGION	DATE
☆ Ft. Green, FL (J-09)	Southern	6 Aug 99*
☆ 40 of 185 GATR key-parameters out-of-tolerance (21.62%)		
☆ *This site has storage and cleanliness problems Recommend Special Inspection*		
☆ Citronelle, AL (J-12)	Southern	24 Jan 00
☆ 3 of 82 ATCBI-5 key-parameters out-of-tolerance (3.66%)		
☆ Tamiami, FL (J-09)	Southern	4 May 00
☆ 1 of 38 ATCBI-5 key-parameters out-of-tolerance (2.63%)		
☆ 3 of 190 GATR key-parameters out-of-tolerance (1.57%)		

WESTERN AIR DEFENSE SECTOR JTI

SITE	FAA REGION	DATE
☆ Oilton, TX (J-16)	Southwest	20 Mar 00*
☆ No Key parameters were out-of-tolerance		
☆ Kalispell, MT (J-78) Special GATR Only	Northwest Mt.	25 Apr 00
☆ 6 of 91 GATR key parameters were out-of-tolerance (6.59%)		
☆ Keno, OR (J-82) Special GATR Only	Northwest Mt.	6 Jun 00
☆ 2 of 68 key parameter were out-of-tolerance (2.94%)		
☆ Makah, WA (J-80)	Northwest Mt.	25 Apr 00*
☆ 54 of 279 GATR key parameters out-of-tolerance (19.35%)		

Summary

- ☆ 2 sites have an out of tolerance in excess of 10% of key parameters
- ☆ Special Inspections may be conducted within next 12 months
- ☆ Six Sites have been identified for Specials by the JTI Taskforce:
  - ☆ Riverhead, NY - April 2001
  - ☆ Canton, MI - June 2001
  - ☆ Ft. Green, FL - January 2001
  - ☆ Oilton, TX - March 2001
  - ☆ Makah, WA - May 2001
  - ☆ Eagle Peak, TX - November 2001

JOINT SURVEILLANCE SYSTEM

PERFORMANCE 2000

BRIEFING

ATTACHMENT 9

84th RADAR EVALUATION SQUADRON

JRPG 2000

JSS Work Accomplished & Current Issues

Presented by: Mr. John Yarman
john.yarman@hill.af.mil
(801) 777-5119; DSN 777-5119

OVERVIEW

84 RADES INTRODUCTION

JSS WORK ACCOMPLISHED

CURRENT ISSUES

THREE-YEAR EVALUATION PROJECTIONS

Rades Introduction

Commander: Lt Col Mary Gillam

Associate Director: Mr Lanny Clelland

Flight Commander, Test Operations: Maj Todd Pittman

Deputy Director, Test Operations: Mr Dallas Stone

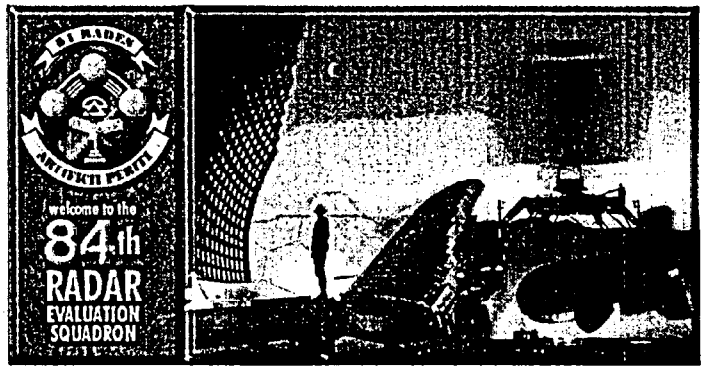
Technical Manager: Mr John Yarman

JSS, CSCS, SRR

Technical Manager: Mr Bob McCaleb

JSS Alaska & NWS, GTACS, FMS

wwwmil.rades.hill.af.mil



For non-government WEB users:

www.rades.hill.af.mil

RADES' JSS Role

- The 84th Radar Evaluation Squadron is an Air Force agent for the operational community
- Primary Focus of 84 RADES:
  - Small Target Detection Preservation
  - ADS Sensor Integration
  - Technical Consultation

Radar Evaluation Class

Five week curriculum includes:

- Math Refresher
- Radar Theory
- Evaluation Management

Visitors Welcome:

Contact RADES/TST (training) for reservations:
Mr Ricky Walker (801)777-5350; DSN 777-5350
(Ricky.Walker@hill.af.mil)

JSS WORK ACCOMPLISHED (FY 00)

- 39 Conferences
- 49 Training Events
- 17 Special/Baseline Evaluations

CONUS JSS Work Accomplished

Event	City	State	Dates
ARSR-4; 2400-4800 Data Line Test	Jedburg	SC	25-28 Oct 99
ARSR-4; RFI Mod Testing	Guantanamo	Cuba	16-24 Nov 99
ATCBI-6; ATCBI-6 TIM	Washington DC	DC	13-15 Dec 99
ARSR-4; Baseline Follow-up	Ajo	AZ	18-23 Jan 00
ARSR-4; Mode 4 Dataline Testing (1)	North Truro	MA	6-14 Mar 00
ARSR-4; AOS-230 Support, SIO Study	Oklahoma City	OK	18-26 Apr 00
ARSR-3; Horizon Screening	The Plains	VA	9-12 May 00
ARSR-4; Special (Revisit & Freq Change)	Bucks Harbor	ME	15-20 May 00

CONUS
JSS Work Accomplished

ATCBI-6 TIM	Oklahoma City	OK	27-30 Jun 00
ARSR-3; Special Evaluation	The Plains	VA	10-21 Jul 00
ARSR-4; 1AF Area CMD Advanced Concept Demo	Oceana	VA	19-29 Sep 00
ARSR-4; Joint ARSR-4 SIO Testing	Rainbow Ridge	CA	10-14 Oct 00
JRPG (Informal - AF Attendees)	Washington	DC	16-20 Oct 00
ARSR-4; Revisit & Data Line Testing	Slidell AFB	LA	30 Oct-15 Nov 00
ARSR-4; RFI Modification Two Part Test with Flights	Vandenberg AFB	CA	12-20 Dec 00 2-12 Jan 01 (Tent.)
JRPG (Formal - AF & FAA Attendees)	Clearwater	FL	4-8 Dec 00

ALASKA
JSS Work Accomplished

Beacon Upgrade Technical Interchange Meeting (TIM) (1)	McClellan AFB	CA	15-18 Feb 00
Beacon Test Procedures (BEXR) (2)	McClellan AFB	CA	10-18 May 00
AN/FPS-117 Baseline Evaluation (10 Yr)	Cape Romanzof	AK	14-29 Jun 00
AN/FPS-117 Baseline Evaluation (10 Yr)	Cape Newenham	AK	18-30 Jun 00
Beacon TIM (3)	Ogden	UT	18 Aug 00
Radar Interrogator Set (RIS) TPWG	Hill AFB	UT	6-7 Sep 00

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ALASKA
JSS Work Accomplished

AN/FPS-117 Baseline Evaluation (10 Yr)	Kotzebue	AK	10-30 Sep 00
AN/FPS-117 Baseline Evaluation (10 Yr)	Tin City	AK	10 Sep – 2 Oct 00
RIS Test Requirements (1)	FAA Tech Cntr Atlantic City	NJ	21-22 Sep 00
RIS Test Requirements	Lockheed Martin Co. Syracuse	NY	25-28 Sep 00

CURRENT ISSUES

Current Issues CONUS

- Air Force Data Lines
  - Mr Dave Baker to brief overall dataline progress

    Also, part of AOS-230/84 RADES Joint Brief
- Critical Search Overload Procedures (i.e., ARSR-4 System Crashes Due to AP)

  Part of AOS-230/84 RADES Joint Brief
- Radio Frequency Interference (RFI) Mod

  Part of AOS-230/84 RADES Joint Brief

Current Issues CONUS

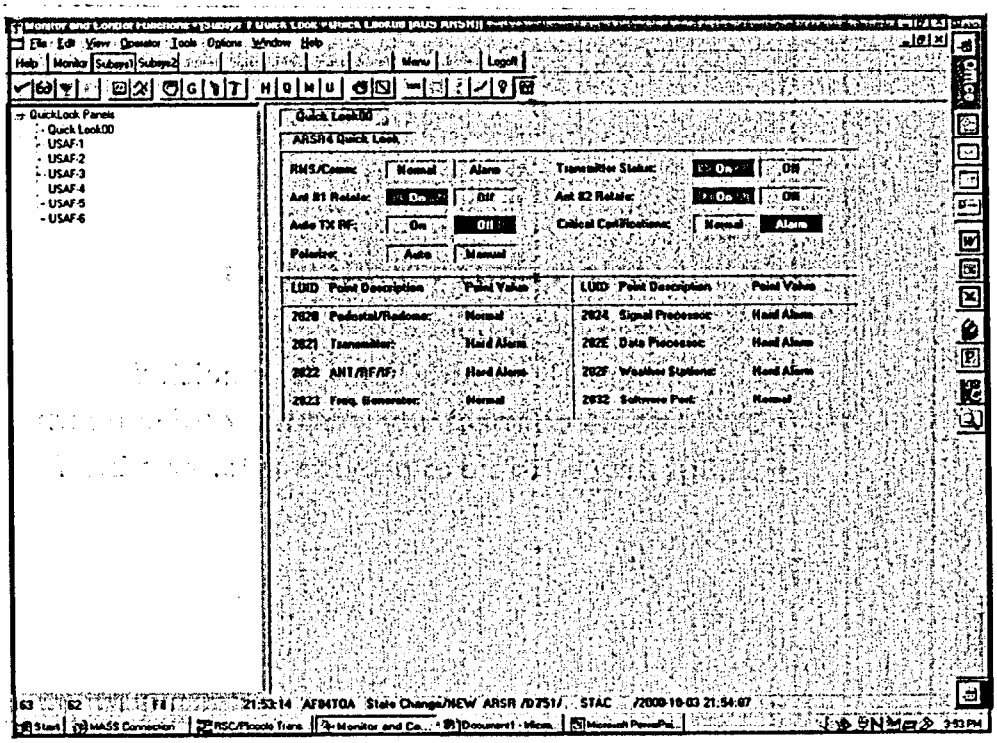
- Remote Maintenance Monitoring
  - Excellent FAA cooperation
  - Air Force screens now being transmitted
  - Dependable connectivity a primary AF concern
  - SMSgt Bruce Robie to provide extensive brief

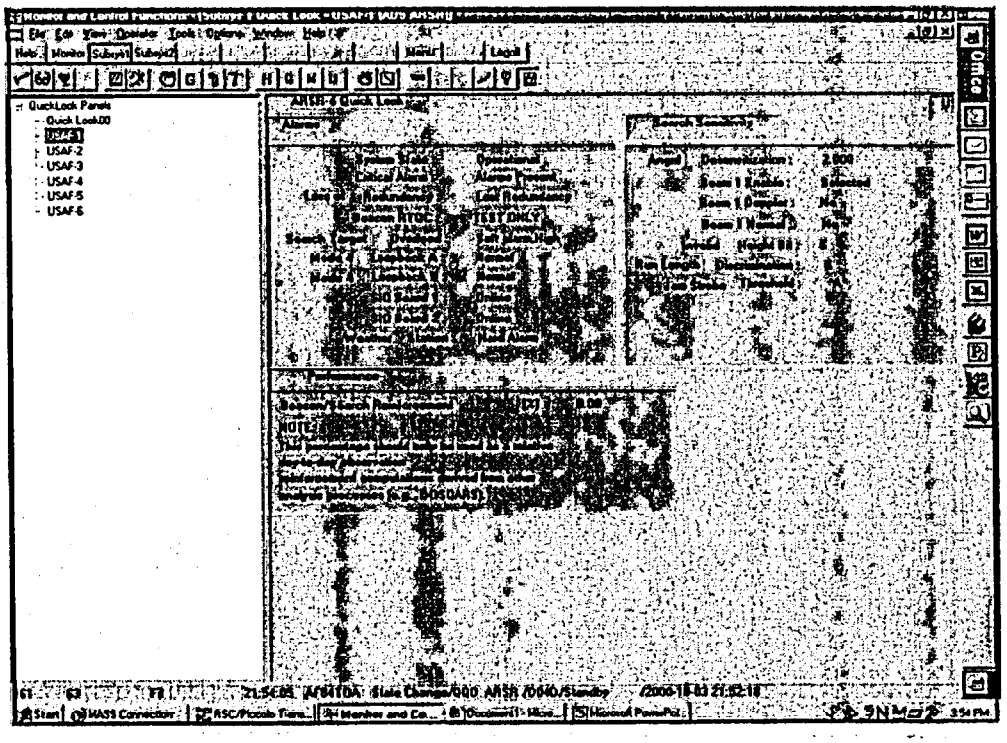
AF RMM Screens

- Key Parameters (Sensitivity)
- 1st/2nd Function Map
- IP Mode
- Frequency Mode
- Polarization
- Freq Pairs Enabled

* Six Matching "Performance Screens" that detail LUID references

Example Follows:

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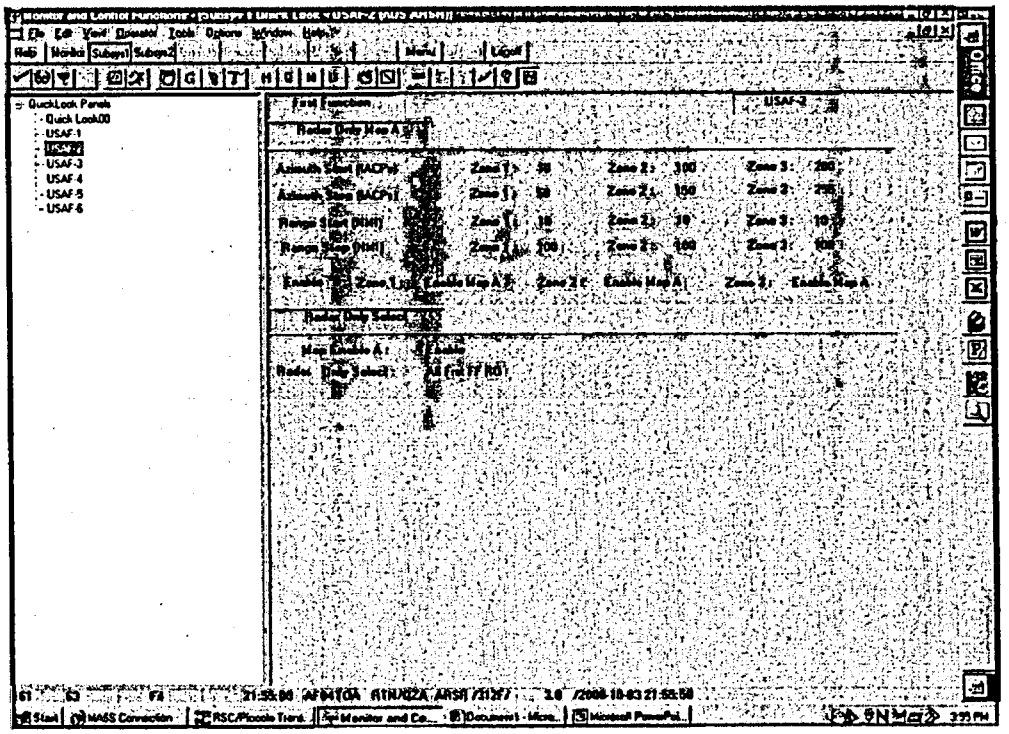
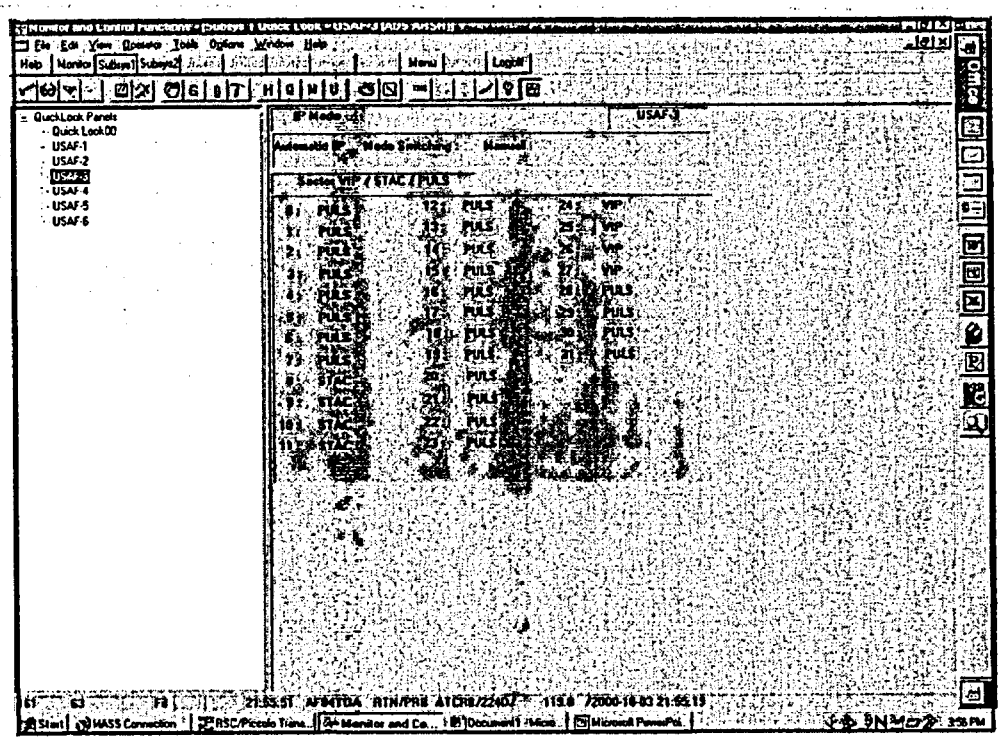
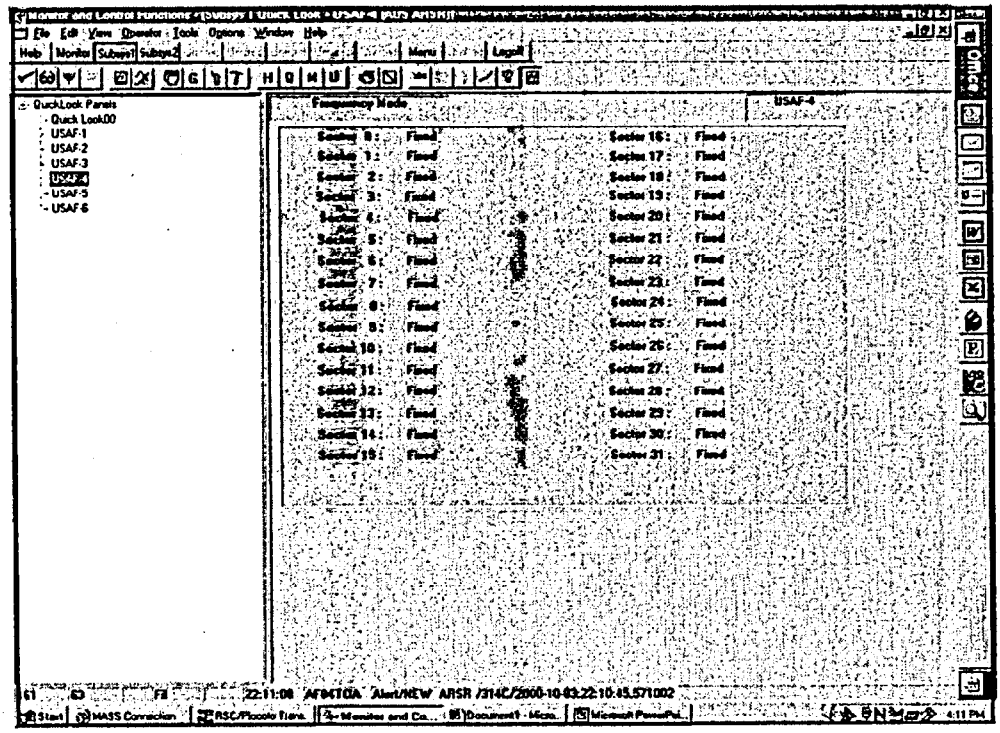
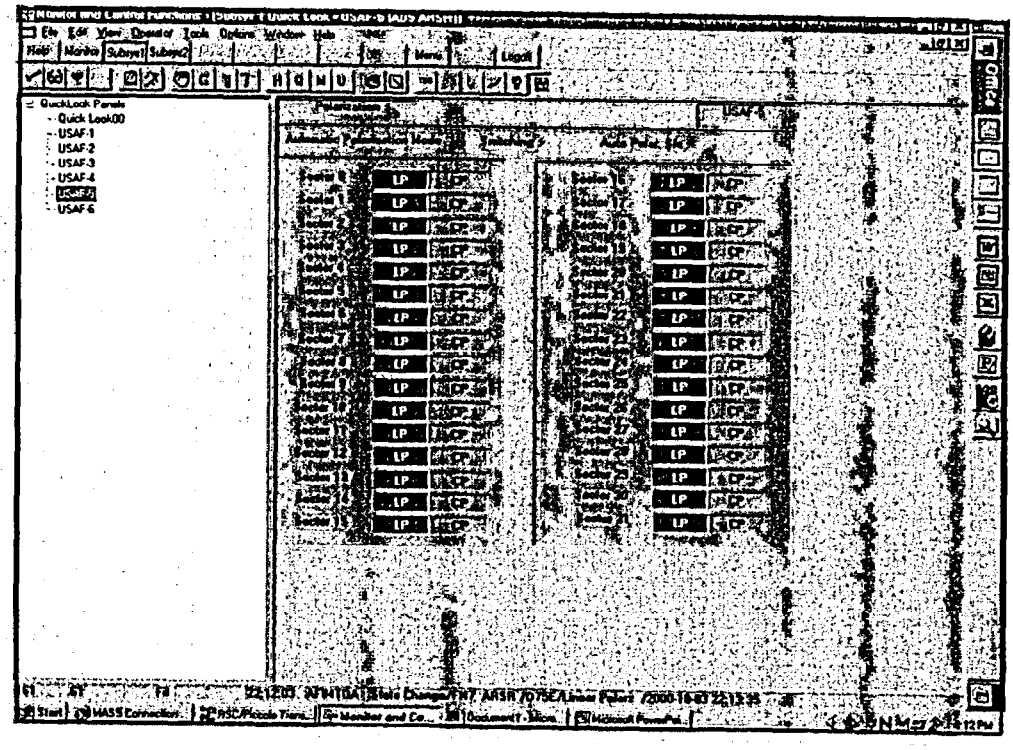
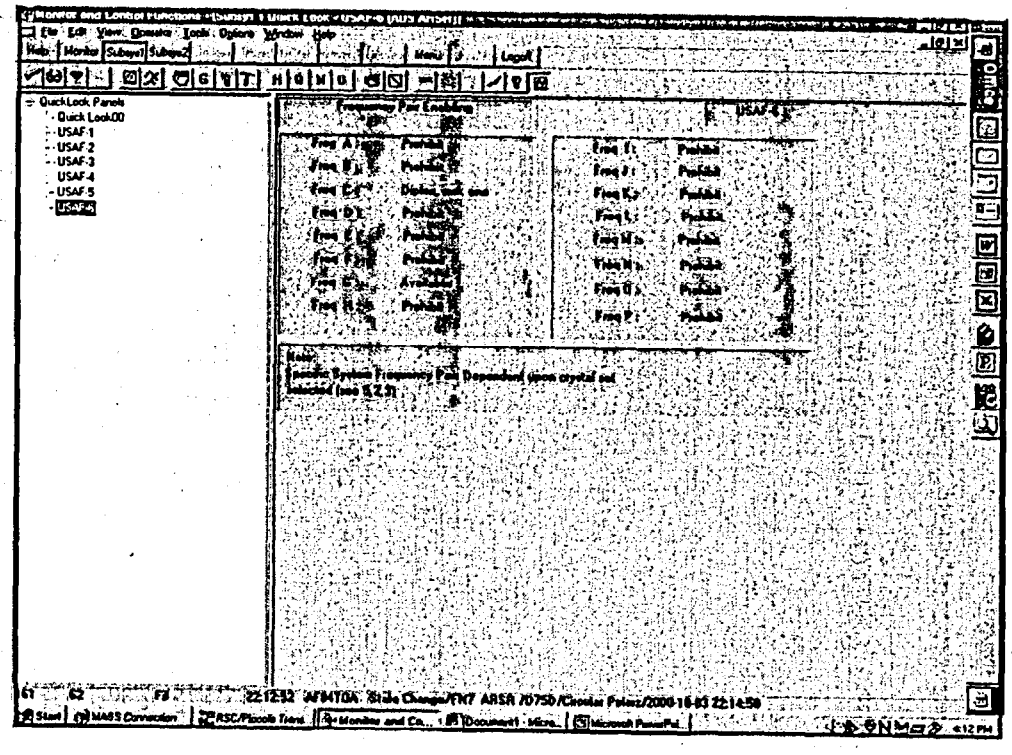
Quick Look00
USAF-1
USAF-2
USAF-3
USAF-4
USAF-5
USAF-6

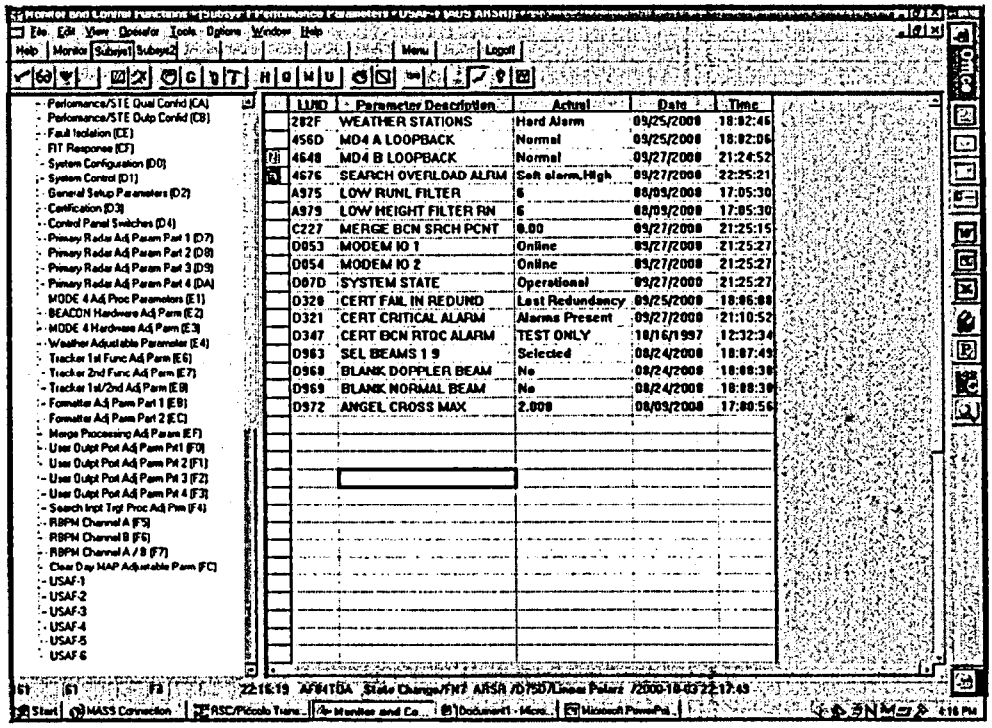

QuickLook Panels
Quick Look00
USAF-1
USAF-2
USAF-3
USAF-4
USAF-5
USAF-6


QuickLook Panels
Quick Look00
USAF-1
USAF-2
USAF-3
USAF-4
USAF-5
USAF-6
USAF-4

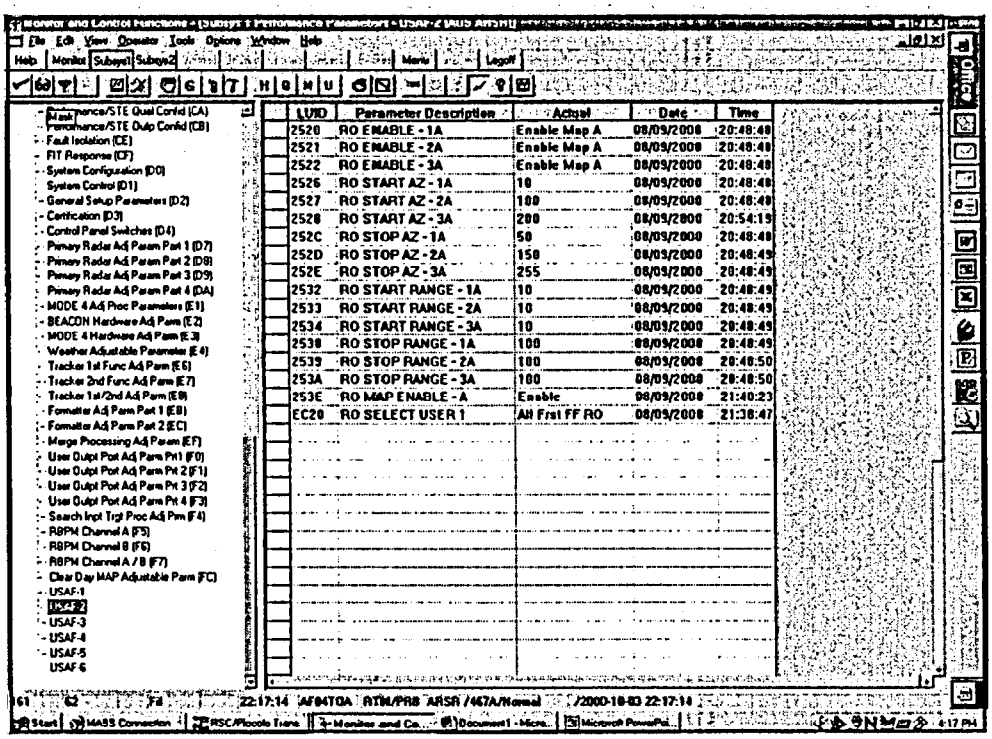

QuickLook Panels
Quick Look00
USAF-1
USAF-2
USAF-3
USAF-4
USAF-5
USAF-6
Frequency Mode
USAF-4


QuickLook Panels
Quick Look00
USAF-1
USAF-2
USAF-3
USAF-4
USAF-5
USAF-6

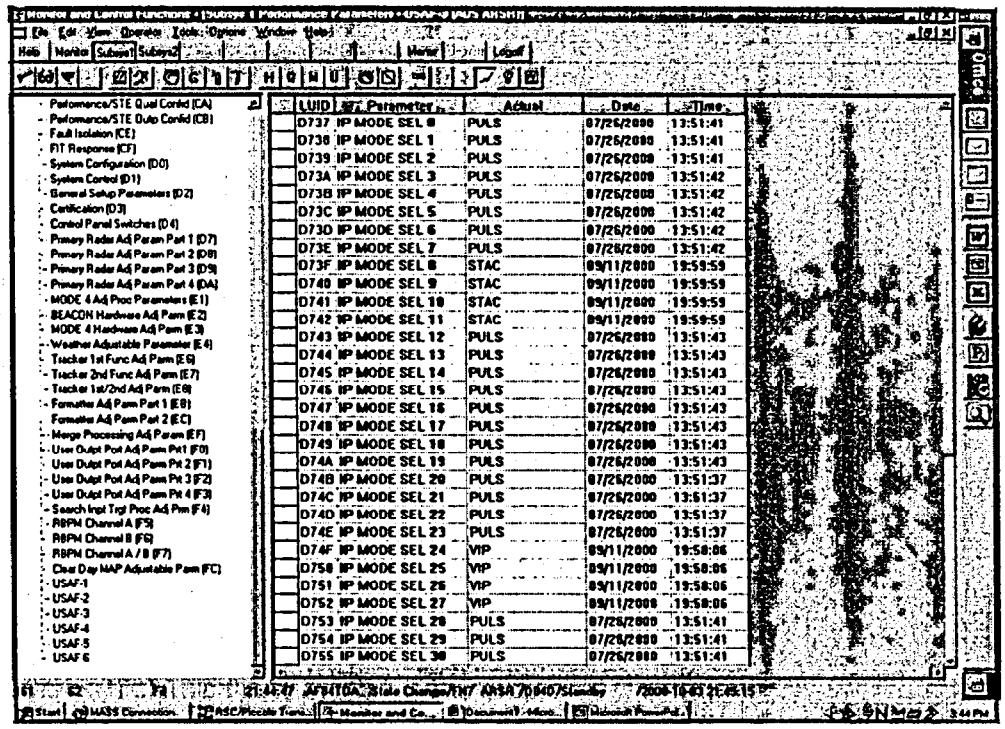

QuickLook Panels
Quick Look00
USAF-1
USAF-2
USAF-3
USAF-4
USAF-5
USAF-6



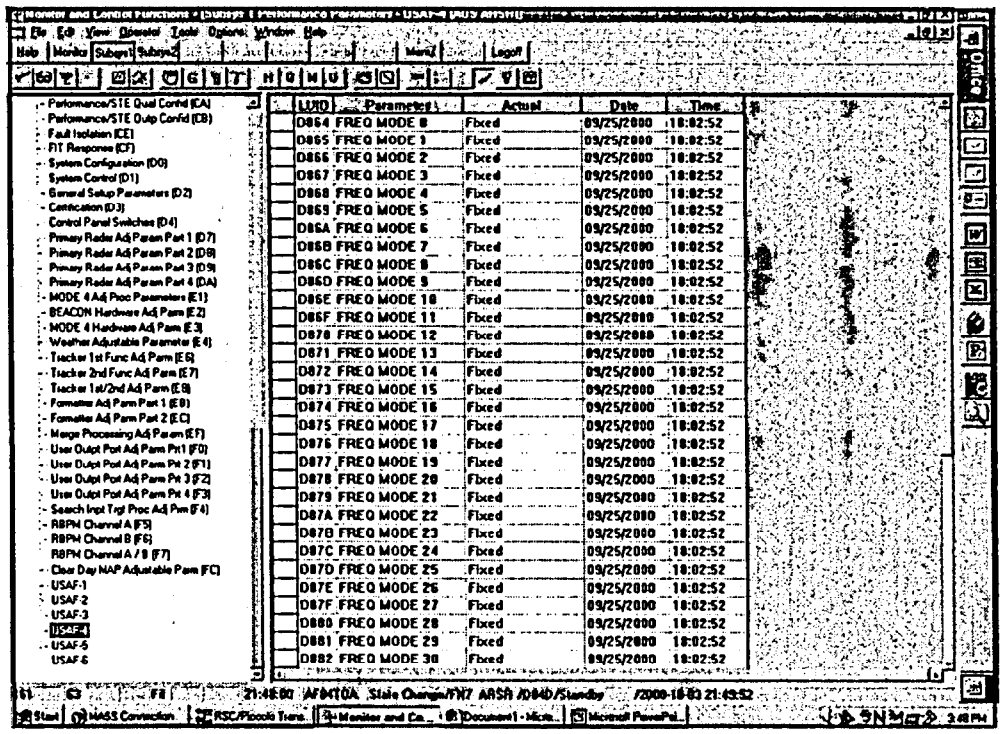
LUID	Parameter Description	Actual	Date	Time
282F	WEATHER STATIONS	Hard Alarm	09/25/2000	18:02:46
456D	MD4 A LOOPBACK	Normal	09/25/2000	18:02:06
4648	MD4 B LOOPBACK	Normal	09/27/2000	21:24:52
4676	SEARCH OVERLOAD ALRM	Soft alarm,High	09/27/2000	22:25:21
A975	LOW RUNL FILTER	6	08/09/2000	17:05:30
A979	LOW HEIGHT FILTER RN	6	08/09/2000	17:05:30
C227	MERGE BCN SRCH PCNT	0.00	09/27/2000	21:25:15
D053	MODEM IO 1	Online	09/27/2000	21:25:27
D054	MODEM IO 2	Online	09/27/2000	21:25:27
D07D	SYSTEM STATE	Operational	09/27/2000	21:25:27
D320	CERT FAIL IN REDUND	Lost Redundancy	09/25/2000	18:06:08
D321	CERT CRITICAL ALARM	Alarms Present	09/27/2000	21:10:52
D347	CERT BCN RTOC ALARM	TEST ONLY	10/16/1997	12:32:34
D963	SEL BEAMS 1 9	Selected	08/24/2000	18:07:49
D968	BLANK DOPPLER BEAM	No	08/24/2000	18:08:30
D969	BLANK NORMAL BEAM	No	08/24/2000	18:08:30
D972	ANGEL CROSS MAX	2.000	08/09/2000	17:00:56



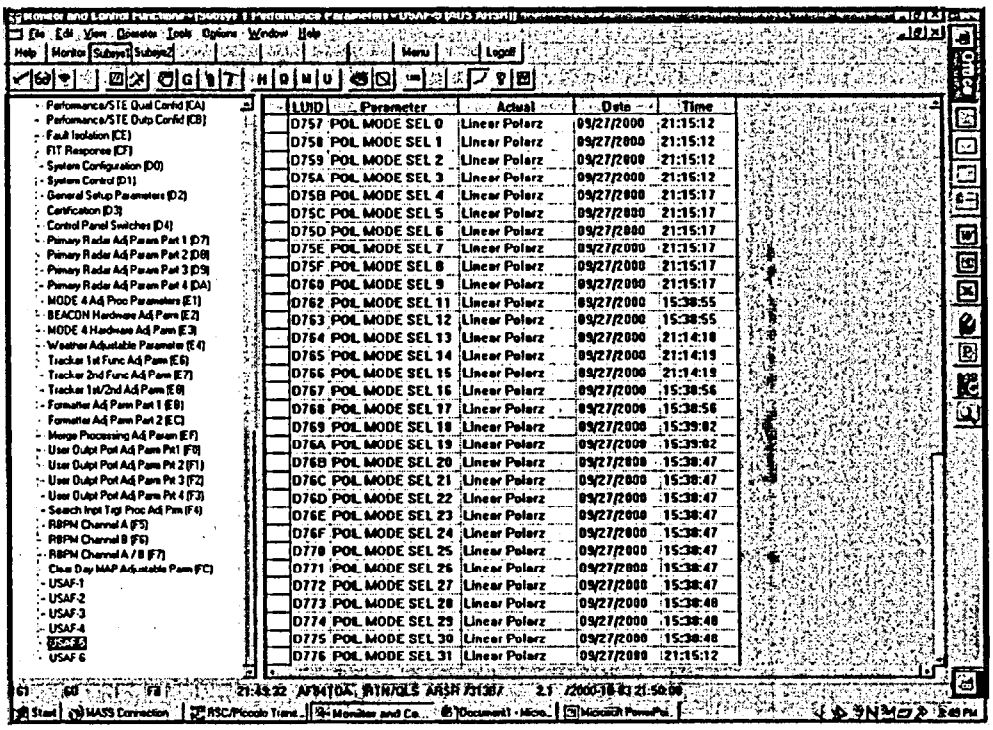
LUID	Parameter Description	Actual	Date	Time
2520	RO ENABLE - 1A	Enable Map A	08/09/2000	20:48:49
2521	RO ENABLE - 2A	Enable Map A	08/09/2000	20:48:49
2522	RO ENABLE - 3A	Enable Map A	08/09/2000	20:48:49
2526	RO START AZ - 1A	10	08/09/2000	20:48:49
2527	RO START AZ - 2A	100	08/09/2000	20:48:49
2528	RO START AZ - 3A	200	08/09/2000	20:54:19
252C	RO STOP AZ - 1A	50	08/09/2000	20:48:49
252D	RO STOP AZ - 2A	150	08/09/2000	20:48:49
252E	RO STOP AZ - 3A	255	08/09/2000	20:48:49
2532	RO START RANGE - 1A	10	08/09/2000	20:48:49
2533	RO START RANGE - 2A	10	08/09/2000	20:48:49
2534	RO START RANGE - 3A	10	08/09/2000	20:48:49
2538	RO STOP RANGE - 1A	100	08/09/2000	20:48:49
2539	RO STOP RANGE - 2A	100	08/09/2000	20:48:50
253A	RO STOP RANGE - 3A	100	08/09/2000	20:48:50
253E	RO MAP ENABLE - A	Enable	08/09/2000	21:40:23
EC20	RO SELECT USER 1	All First FF RO	08/09/2000	21:38:47



LUID	Parameter	Actual	Date	Time
D737	IP MODE SEL 0	PULS	07/26/2000	13:51:41
D738	IP MODE SEL 1	PULS	07/26/2000	13:51:41
D739	IP MODE SEL 2	PULS	07/26/2000	13:51:41
D73A	IP MODE SEL 3	PULS	07/26/2000	13:51:42
D73B	IP MODE SEL 4	PULS	07/26/2000	13:51:42
D73C	IP MODE SEL 5	PULS	07/26/2000	13:51:42
D73D	IP MODE SEL 6	PULS	07/26/2000	13:51:42
D73E	IP MODE SEL 7	PULS	07/26/2000	13:51:42
D73F	IP MODE SEL 8	STAC	09/11/2000	19:59:59
D740	IP MODE SEL 9	STAC	09/11/2000	19:59:59
D741	IP MODE SEL 10	STAC	09/11/2000	19:59:59
D742	IP MODE SEL 11	STAC	09/11/2000	19:59:59
D743	IP MODE SEL 12	PULS	07/26/2000	13:51:43
D744	IP MODE SEL 13	PULS	07/26/2000	13:51:43
D745	IP MODE SEL 14	PULS	07/26/2000	13:51:43
D746	IP MODE SEL 15	PULS	07/26/2000	13:51:43
D747	IP MODE SEL 16	PULS	07/26/2000	13:51:43
D748	IP MODE SEL 17	PULS	07/26/2000	13:51:43
D749	IP MODE SEL 18	PULS	07/26/2000	13:51:43
D74A	IP MODE SEL 19	PULS	07/26/2000	13:51:43
D74B	IP MODE SEL 20	PULS	07/26/2000	13:51:37
D74C	IP MODE SEL 21	PULS	07/26/2000	13:51:37
D74D	IP MODE SEL 22	PULS	07/26/2000	13:51:37
D74E	IP MODE SEL 23	PULS	07/26/2000	13:51:37
D74F	IP MODE SEL 24	VIP	09/11/2000	19:58:06
D750	IP MODE SEL 25	VIP	09/11/2000	19:58:06
D751	IP MODE SEL 26	VIP	09/11/2000	19:58:06
D752	IP MODE SEL 27	VIP	09/11/2000	19:58:06
D753	IP MODE SEL 28	PULS	07/26/2000	13:51:41
D754	IP MODE SEL 29	PULS	07/26/2000	13:51:41
D755	IP MODE SEL 30	PULS	07/26/2000	13:51:41



LUID	Parameter	Actual	Date	Time
D864	FREQ MODE 0	Fixed	09/25/2000	18:02:52
D865	FREQ MODE 1	Fixed	09/25/2000	18:02:52
D866	FREQ MODE 2	Fixed	09/25/2000	18:02:52
D867	FREQ MODE 3	Fixed	09/25/2000	18:02:52
D868	FREQ MODE 4	Fixed	09/25/2000	18:02:52
D869	FREQ MODE 5	Fixed	09/25/2000	18:02:52
D86A	FREQ MODE 6	Fixed	09/25/2000	18:02:52
D86B	FREQ MODE 7	Fixed	09/25/2000	18:02:52
D86C	FREQ MODE 8	Fixed	09/25/2000	18:02:52
D86D	FREQ MODE 9	Fixed	09/25/2000	18:02:52
D86E	FREQ MODE 10	Fixed	09/25/2000	18:02:52
D86F	FREQ MODE 11	Fixed	09/25/2000	18:02:52
D870	FREQ MODE 12	Fixed	09/25/2000	18:02:52
D871	FREQ MODE 13	Fixed	09/25/2000	18:02:52
D872	FREQ MODE 14	Fixed	09/25/2000	18:02:52
D873	FREQ MODE 15	Fixed	09/25/2000	18:02:52
D874	FREQ MODE 16	Fixed	09/25/2000	18:02:52
D875	FREQ MODE 17	Fixed	09/25/2000	18:02:52
D876	FREQ MODE 18	Fixed	09/25/2000	18:02:52
D877	FREQ MODE 19	Fixed	09/25/2000	18:02:52
D878	FREQ MODE 20	Fixed	09/25/2000	18:02:52
D879	FREQ MODE 21	Fixed	09/25/2000	18:02:52
D87A	FREQ MODE 22	Fixed	09/25/2000	18:02:52
D87B	FREQ MODE 23	Fixed	09/25/2000	18:02:52
D87C	FREQ MODE 24	Fixed	09/25/2000	18:02:52
D87D	FREQ MODE 25	Fixed	09/25/2000	18:02:52
D87E	FREQ MODE 26	Fixed	09/25/2000	18:02:52
D87F	FREQ MODE 27	Fixed	09/25/2000	18:02:52
D880	FREQ MODE 28	Fixed	09/25/2000	18:02:52
D881	FREQ MODE 29	Fixed	09/25/2000	18:02:52
D882	FREQ MODE 30	Fixed	09/25/2000	18:02:52



LUID	Parameter	Actual	Date	Time
D757	POL MODE SEL 0	Linear Polarz	09/27/2000	21:15:12
D758	POL MODE SEL 1	Linear Polarz	09/27/2000	21:15:12
D759	POL MODE SEL 2	Linear Polarz	09/27/2000	21:15:12
D75A	POL MODE SEL 3	Linear Polarz	09/27/2000	21:15:12
D75B	POL MODE SEL 4	Linear Polarz	09/27/2000	21:15:17
D75C	POL MODE SEL 5	Linear Polarz	09/27/2000	21:15:17
D75D	POL MODE SEL 6	Linear Polarz	09/27/2000	21:15:17
D75E	POL MODE SEL 7	Linear Polarz	09/27/2000	21:15:17
D75F	POL MODE SEL 8	Linear Polarz	09/27/2000	21:15:17
D760	POL MODE SEL 9	Linear Polarz	09/27/2000	21:15:17
D762	POL MODE SEL 11	Linear Polarz	09/27/2000	15:38:55
D763	POL MODE SEL 12	Linear Polarz	09/27/2000	15:38:55
D764	POL MODE SEL 13	Linear Polarz	09/27/2000	21:14:18
D765	POL MODE SEL 14	Linear Polarz	09/27/2000	21:14:19
D766	POL MODE SEL 15	Linear Polarz	09/27/2000	21:14:19
D767	POL MODE SEL 16	Linear Polarz	09/27/2000	15:38:56
D768	POL MODE SEL 17	Linear Polarz	09/27/2000	15:38:56
D769	POL MODE SEL 18	Linear Polarz	09/27/2000	15:39:02
D76A	POL MODE SEL 19	Linear Polarz	09/27/2000	15:39:02
D76B	POL MODE SEL 20	Linear Polarz	09/27/2000	15:38:47
D76C	POL MODE SEL 21	Linear Polarz	09/27/2000	15:38:47
D76D	POL MODE SEL 22	Linear Polarz	09/27/2000	15:38:47
D76E	POL MODE SEL 23	Linear Polarz	09/27/2000	15:38:47
D76F	POL MODE SEL 24	Linear Polarz	09/27/2000	15:38:47
D770	POL MODE SEL 25	Linear Polarz	09/27/2000	15:38:47
D771	POL MODE SEL 26	Linear Polarz	09/27/2000	15:38:47
D772	POL MODE SEL 27	Linear Polarz	09/27/2000	15:38:47
D773	POL MODE SEL 28	Linear Polarz	09/27/2000	15:38:48
D774	POL MODE SEL 29	Linear Polarz	09/27/2000	15:38:48
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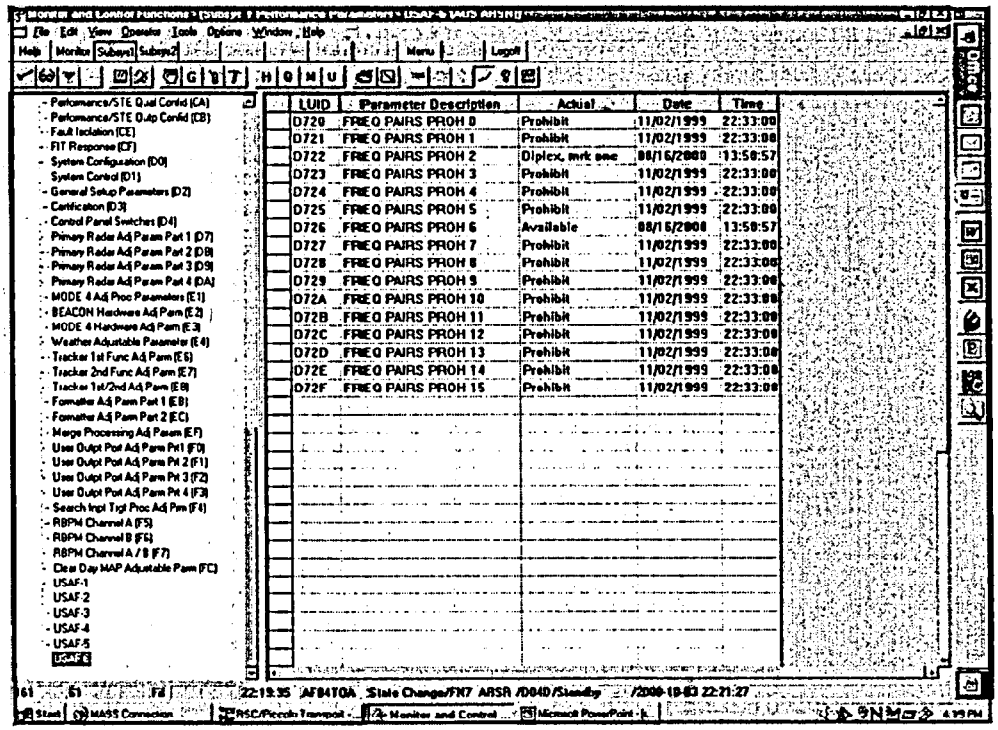


LUID	Parameter Description	Actual	Date	Time
D720	FREQ PAIRS PROH 0	Prohibit	11/02/1999	22:33:00
D721	FREQ PAIRS PROH 1	Prohibit	11/02/1999	22:33:00
D722	FREQ PAIRS PROH 2	Diplex, mrk one	08/16/2000	13:50:57
D723	FREQ PAIRS PROH 3	Prohibit	11/02/1999	22:33:00
D724	FREQ PAIRS PROH 4	Prohibit	11/02/1999	22:33:00
D725	FREQ PAIRS PROH 5	Prohibit	11/02/1999	22:33:00
D726	FREQ PAIRS PROH 6	Available	08/16/2000	13:50:57
D727	FREQ PAIRS PROH 7	Prohibit	11/02/1999	22:33:00
D728	FREQ PAIRS PROH 8	Prohibit	11/02/1999	22:33:00
D729	FREQ PAIRS PROH 9	Prohibit	11/02/1999	22:33:00
D72A	FREQ PAIRS PROH 10	Prohibit	11/02/1999	22:33:00
D72B	FREQ PAIRS PROH 11	Prohibit	11/02/1999	22:33:00
D72C	FREQ PAIRS PROH 12	Prohibit	11/02/1999	22:33:00
D72D	FREQ PAIRS PROH 13	Prohibit	11/02/1999	22:33:00
D72E	FREQ PAIRS PROH 14	Prohibit	11/02/1999	22:33:00
D72F	FREQ PAIRS PROH 15	Prohibit	11/02/1999	22:33:00

Current Issues: ALASKA

- Point Barrow (1)
  - Beacon False Targets
  - FAA installed Beacon False Target Limiter
  - FAA is satisfied with BFTL performance
- IDNX (new communication system) (2)
  - Modem Alarms
  - Majority traced to FYQ-93 Channel Differences

Current Issues: ALASKA

- Beacon Upgrade (1)
  - Referred to as Radar Interrogator Set (RIS)
  - Prime contract let with Litton
  - RADES/FAA Co-Chair TPWG
    - (Ray Alimenti, ACT-310, Atlantic City; Bob McCaleb, 84 RADES, Hill AFB)
  - First system to deploy Hill AFB, FY 02
    - Contractor Testing
  - First Operational System, Murphy Dome
    - Formal FAT Testing

THREE YEAR EVALUATION PROJECTIONS

JSS Evals
Total Projections By Region

(Note: "Other Specials" are generally place-holders)

	FY 01	FY 02	FY 03		FY 01	FY 02	FY 03
EASTERN				SOUTHERN			
BASELINES	0	0	0	BASELINES	1	0	0
ATCBI-6 SPECIAL EVALS	0	1	5	ATCBI-6 SPECIAL EVALS	1	1	7
OTHER SPECIAL EVALS	2	2	2	OTHER SPECIAL EVALS	3 RFI	2	2
GREAT LAKES				SOUTHWEST			
BASELINES	0	0	1	BASELINES	0	0	1
ATCBI-6 SPECIAL EVALS	0	0	4	ATCBI-6 SPECIAL EVALS	0	0	6
OTHER SPECIAL EVALS	2 Alarms	2	2	OTHER SPECIAL EVALS	3 Comm	2	2

JSS Evals
Total Projections By Region

(Note: "Other Specials" are generally place-holders)

	FY 01	FY 02	FY 03		FY 01	FY 02	FY 03
NEW ENGLAND				**WESTERN PACIFIC**			
BASELINES	0	0	0	BASELINES	0	0	0
ATCBI-6 SPECIAL EVALS	0	0	3	ATCBI-6 SPECIAL EVALS	0	0	3
OTHER SPECIAL EVALS	2	2	2	OTHER SPECIAL EVALS	2 Comm	2	2
NORTHWEST MOUNTAIN				**ALASKA**			
BASELINES	2 (1 TBD)	0	0	BASELINES	3	5	2
ATCBI-6 SPECIAL EVALS	0	1 Keno?	5	ATCBI-6 SPECIAL EVALS	0	0	1
OTHER SPECIAL EVALS	2	2	2	OTHER SPECIAL EVALS	1	1	1

Known JSS-CONUS Evals

Location	Program	Region	Radar	FY01	FY02	FY03
Watford	JSS	AGL	ARSR-4	S (Alarms)		
Empire	JSS	AGL	ARSR-4			B (May)
Salem	JSS	ANM	ARSR-4	B (Aug)		
TBD (ANM request)	JSS	ANM	TBD	B (Tentative)		
Tamiami	JSS	ASO	ARSR-4	S (RFI Mod)		
Lake Charles	JSS	ASW	ARSR-4	S (Revisit)		
Slidell	JSS	ASW	ARSR-4	S (Comm)		
Oilton	JSS	ASW	ARSR-4			B (Oct)
Rainbow Ridge	JSS	AWP	ARSR-4	S (Comm)		
Citronelle	JSS	ASO	ARSR-2	B (Post CD2C)		
Canton	JSS	AGL	ARSR-1			B (Aug)
Keno	JSS	ANM	FPS-67	B (Jun)		

Known JSS-ALASKA Evals

Location	Program	Site	ID	Radar	FY01	FY02	FY03
Oliktok	Seek Igloo		OLI	FPS-117	B		
Barter Island	Seek Igloo	BAR-M	BTI	FPS-117	B		
Cape Lisbourne	Seek Igloo		LUR	FPS-117	B		
Cold Bay	Seek Igloo		CDB	FPS-117		B	
King Salmon	Seek Igloo		AKN	FPS-117		B	
Indian Mountain	Seek Igloo		UTO	FPS-117		B	
Murphy Dome	Seek Igloo		MYD	FPS-117		B	
Fort Yukon	Seek Igloo		FYU	FPS-117		B	
Sparrevohn	Seek Igloo		SVW	FPS-117			B
Tatalina	Seek Igloo		TLI	FPS-117			B

ARSR-4 DATA LOSS

BRIEFING

ATTACHMENT 10

ARSR-4 DATA LOSS

- BACKGROUND
- STATUS
- WAY AHEAD

DAVE BAKER, HQ ACC/SCCC(ARINC)
DSN 574-4438/9
EMAIL dave.baker@langley.af.mil

ARSR-4 DATA LOSS
BACKGROUND

- Long standing intermittent data line errors
- Three problems (may be related):
  - ARSR-4 cold starts caused by SIO buffer overflow
  - Sporadic loss of data from ARSR-4
  - Corrupt mode 4 requests from SAOC; Mode 4 auto request programming off

ARSR-4 DATA LOSS
BACKGROUND (cont'd)

- Testing at Oilton TX & Oceana VA (Oct 98)
- Follow-up testing at Rocksprings TX (Sep 99)
  - DSU buffers on...searching for non-avail clock
    - When buffers off, errors virtually ceased
  - Clock drift between Q-93 and ACCE
    - Causes corrupt Mode-4 request messages

ARSR-4 DATA LOSS
BACKGROUND (cont'd)

- Analysis of Auto Mode 4 Request programming off at North Truro, MA (Mar 00)
  - Joint 84 RADES / AOS-230 effort
  - Improper or late ARSR-4 responses to valid Mode 4 requests; attributed to ARSR-4 software problems
    - May cause SIO buffer over flows and cold starts
  - Timing slips continue; not a serious operational impact, but may mask other problems
- Separate tests proved ARSR-4 can correctly process simultaneous MODE-4 requests
  - Secondary users like 56 FW/RMO should be OK

ARSR-4 DATA LOSS
BACKGROUND (cont'd)

- FAA/AOS-230 follow-up tests at OK City to research problems found at No.Truro-(Apr 00)
  - Late or no response to Mode 4 requests
  - Poor SIO recovery from bad Mode 4 requests
- Results:
  - Mode 4 requests dropped in priority, not processed
  - Mode 4 loopback test delay may cause overlap with subsequent request and cause it to be deleted
    - May cause Q-93 to turn off automatic Mode 4 request
- Prospects for fix:
  - FAA doesn't own SW rights to SIO processor chip
  - "Canned" Mode 4 test reply may eliminate delay

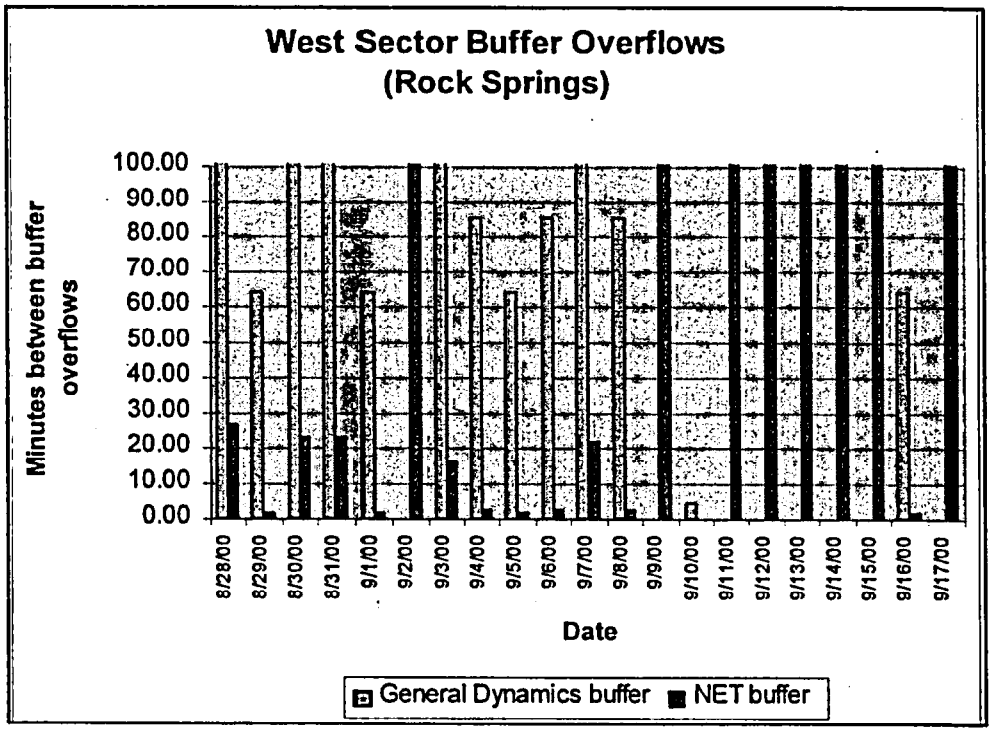
ARSR-4 DATA LOSS
BACKGROUND (cont'd)

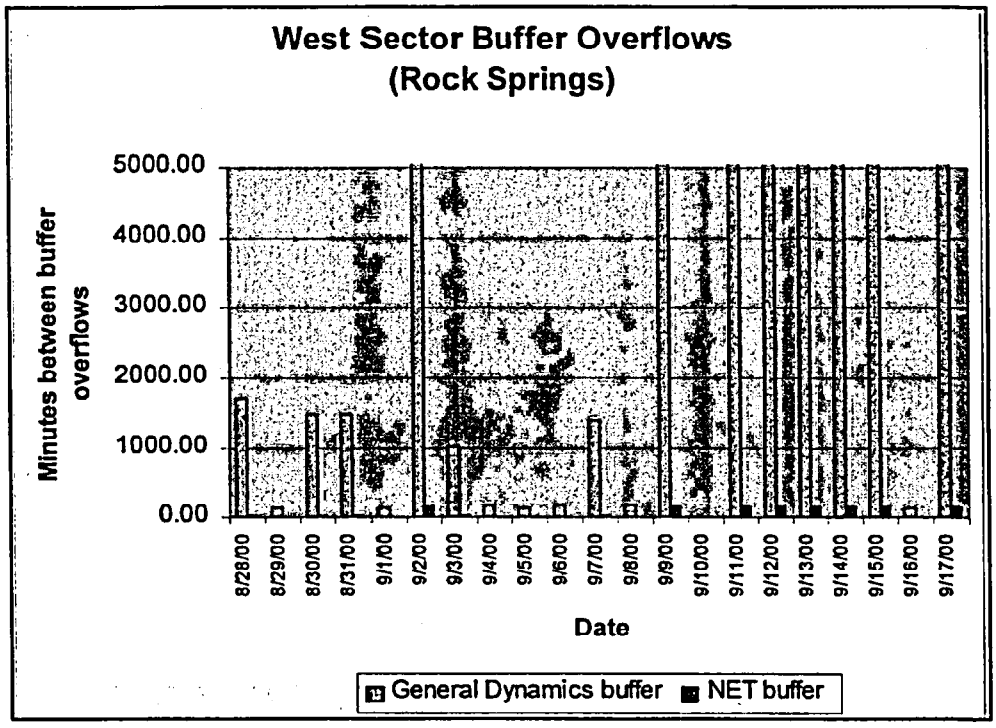
- AOS-230 and 84 RADES Test at Rainbow Ridge (11-12 Oct 00)
- Fix to SIO lock-ups on AF ports
  - HW: AOS-230 proposed "rigged sockets" on 6 FIFO buffers to remove 'buffer-full' lines, allow them to talk to SIO chip when data returns to normal
  - SW: patch to correct SIO response to Mode 4 tests and prevent SIO port alarms from causing cold start
  - Results to be briefed by AOS-230 / 84 RADES

ARSR-4 DATA LOSS

BACKGROUND (cont'd)

- 738 EIS proposed use of ACCE net clock to drive Q-93 clock to eliminate timing slips
- Larger buffer between ACCE IDNX and Q-93
  - Results on WADs-Rainbow Ridge line promising
- ACC/SCC tasked 84 RADES and 738 EIS to test fixes for clock drift at SEADS - 2-9 Nov 00
  - Test halted due to equip problems; follow-up last week; results to be briefed by 738 EIS





ARSR-4 DATA LOSS
WAY AHEAD

- Analyze Rainbow Ridge and Slidell test results
- If errors reduced, do multi-site tests
- If multi-site tests OK, have FAA reactivate SIO port alarms do extended test
- If no cold start problem, implement fix(es) system-wide

JSS RADAR DATA PROBLEMS

BRIEFING

ATTACHMENT 11

738TH ENGINEERING INSTALLATION SQUADRON

KEESLER AIR FORCE BASE
BILOXI, MISSISSIPPI

SPECIALIZED ENGINEERING FLIGHT

Randal L. Blanchard DSN 597-1068 Commercial (228) 377-1068 FAX 3956
E-Mail Randal.Blanchard@keesler.af.mil

738 ENGINEERING INSTALLATION SQUADRON
SPECIALIZED ENGINEERING FLIGHT

[redacted]

738 Engineering Installation Squadron
Specialized Engineering Flight
Randal L. Blanchard

738 ENGINEERING INSTALLATION SQUADRON
SPECIALIZED ENGINEERING FLIGHT

[redacted]

- ***GENERAL***
  - Assist In Resolution Of Multifaceted Radar Data Problems
    - Data timing at SAOCs & possibly at ARSR-4 radar sites
    - ARSR-4 radar hardware & software issues
    - Other possible data problems hidden by known issues
- ***CURRENT SPECIFIC FOCUS***
  - Propose Workable Solutions To The Data Timing Problems At SAOCs

738 ENGINEERING INSTALLATION SQUADRON
SPECIALIZED ENGINEERING FLIGHT

[redacted]

- ***DATA BUFFERS***
  - Install larger data buffers at the Q-93 Equipment String / Promina data port interface
- ***TIMING SYNCHRONIZATION***
  - Synchronize timing of Q-93 Equipment String & ACCE Network

738 ENGINEERING INSTALLATION SQUADRON
SPECIALIZED ENGINEERING FLIGHT

[redacted]

- Comparison of the ACCE network port timing versus the Q-93 equipment string's port timing without buffers
- Timing signals slip one full cycle approximately every 30 to 38 seconds
- Without a buffer in line - each timing slip results in a data error
- Test provides baseline slip time interval for comparison to additional experimental data

738 ENGINEERING INSTALLATION SQUADRON
SPECIALIZED ENGINEERING FLIGHT

[redacted]

- Not A Simple 8 Bit Buffer As Originally Described By NET
- Internal QASD Port Buffer:
  - 64 bit circular buffer with 2 randomly placed pointers
  - Nonlinear characteristics - intervals between slips randomly ranged from 94 to 1115 sec. (1.5 to 18.6 min.)

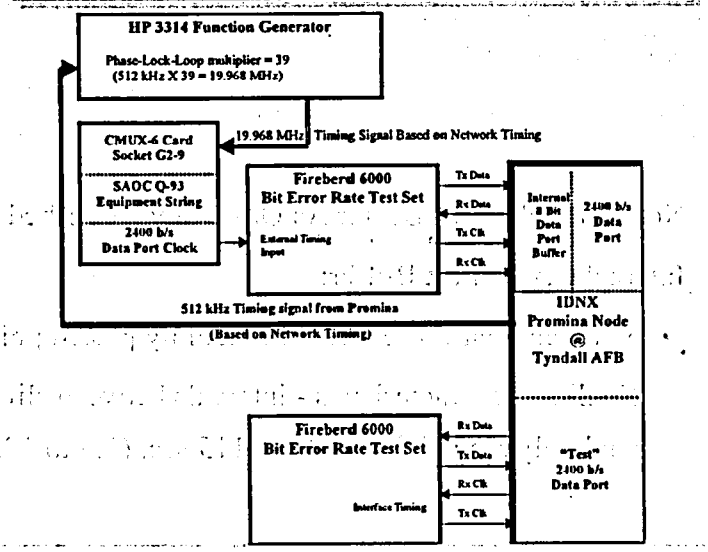
738 ENGINEERING INSTALLATION SQUADRON
SPECIALIZED ENGINEERING FLIGHT

[redacted]

- Use Of Internal & External Buffers Is Mutually Exclusive
- This Type Buffer Extends Interval Between Slips Linearly
- When 512 bit buffer overflow / underflow occurs, pointer is set to middle and buffer acts like a 256 bit buffer
  - (30 sec/slip) X (256 slips) = 7950 sec. = 132.5 min. = 2.2 hrs.

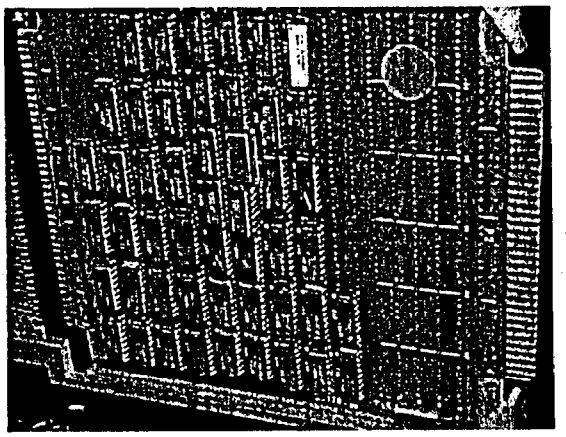
738 ENGINEERING INSTALLATION SQUADRON
SPECIALIZED ENGINEERING FLIGHT

[redacted]



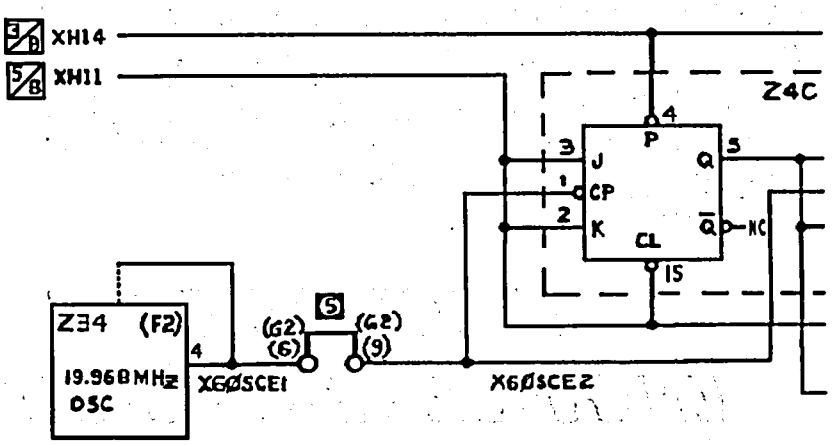
738 ENGINEERING INSTALLATION SQUADRON
SPECIALIZED ENGINEERING FLIGHT

[redacted]



738 ENGINEERING INSTALLATION SQUADRON
SPECIALIZED ENGINEERING FLIGHT

[redacted]



738 ENGINEERING INSTALLATION SQUADRON
SPECIALIZED ENGINEERING FLIGHT

[redacted]

- Timing signal based on ACCE Network node timing
  - Slip interval increased to approximately every 8.68 days
  - With more stable equipment & the standard ACCE Network internal port interface buffer in line, time between actual slips could be extended to better than Stratum 1 timing specifications of 1 slip in 72 days

738TH EIS
WITH PRIDE ... WORLDWIDE

738TH
ENGINEERING
INSTALLATION
SQUADRON

KEESLER AIR FORCE BASE
BILOXI MISSISSIPPI

SPECIALIZED
ENGINEERING FLIGHT

ARSR-4 AREA OF CONCERNS

BRIEFING

ATTACHMENT 12

84 RADES & AOS-230 JOINT BRIEF JRPG 2000

ARSR-4

AREAS OF CONCERN

Mr. John Yarman
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(801) 777-5119; DSN 777-5119

Mr. Mike Hensley
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(405) 954-5141

Overview

- **ARSR-4 System Crashes During AP**
  - FAA Perspective: Critical Search Overload Procedures (CSOP)
  - AF Perspective: Search Radar Degradations
- **SIO/Data Line Problems**
- **RFI Filter Modification**
- **Cooperative Efforts between AOS-230 and 84 RADES**

ARSR-4 SYSTEM CRASHES DURING AP

FAA PERSPECTIVE

CRITICAL SEARCH OVERLOAD PROCEDURES (CSOP)

Problem

- The ARSR-4 experiences overload conditions during periods of AP, sometimes severe enough to take the system down

Suggested Solution

- Modify Software Processing to include manipulation of the digital STC
- Insert control as close to the front end as possible so that processing can remain active

Suggested Solution (Cont)

- Target control will take affect only when target level per sector exceeds a set parameter; research indicates this to be around 300 targets per sector (Level associated with alarms and cold start)

Work Performed

- Digital STC Algorithm implemented into a Test Version of the ARSR-4 Software
- Testing of Manually Controlled Digital STC Attenuation Successfully Performed at Oilton, TX

Tasks Still to be Accomplished

- Incorporate and perform joint testing on all interacting parameters in the automated mode (VIP/STAC, Range Gated Runlength Discrimination, CP/LP)
- Perform System Level Testing at Site Experiencing AP problems

Timeline (Short-Term Fix):

Initial Software Test at Oilton TX	09/00
Incorporate Additional Changes	02/01
Further Software Testing at Cross City FL	03/01
Additional Site Testing	05/01
Final Software Build	08/01
Estimated Engineering Study	09/01
Estimated Release of EEM	12/01

* EEM predicated on success of software changes and USAF concurrence

Timeline (Long-Term Fix):

● High Speed Data Recording Equipment Acquisition	12/00
● System Monitoring Equipment Fabrication	06/01
● Collection of Data	07/01
● Data Replication and Evaluation	12/01
● Follow-on Engineering	TBD

AF PERSPECTIVE

Search Radar Constraints Implemented to Preclude ARSR-4 System Crashes During AP

FAA N 6340.62

- **Angel Desensitization – now set at 10 mtr2 nationally**
- **If necessary (based on detection counts/alarms), after notifying all users:**
  - Second-time-around Clutter (Non-threat Az)
  - Second-time-around Clutter (All Az)
  - Blank Doppler Detections (Beam 1/9)
  - Blank Normal Detections (Beam 1/9)
  - Blank Transmitter (Non Threat Azimuths)

Complications

- **Constraints are NOT all dynamic; most require human intervention**
- **Site staffing, NOM/AF coordination, AF monitoring --> add up to a potential for slow removal of constraints**
- **Positive note: RMM will provide situational awareness**

Impact

- ARSR-4 crashes impact search & beacon
- All temporary "fixes" impact AF mission

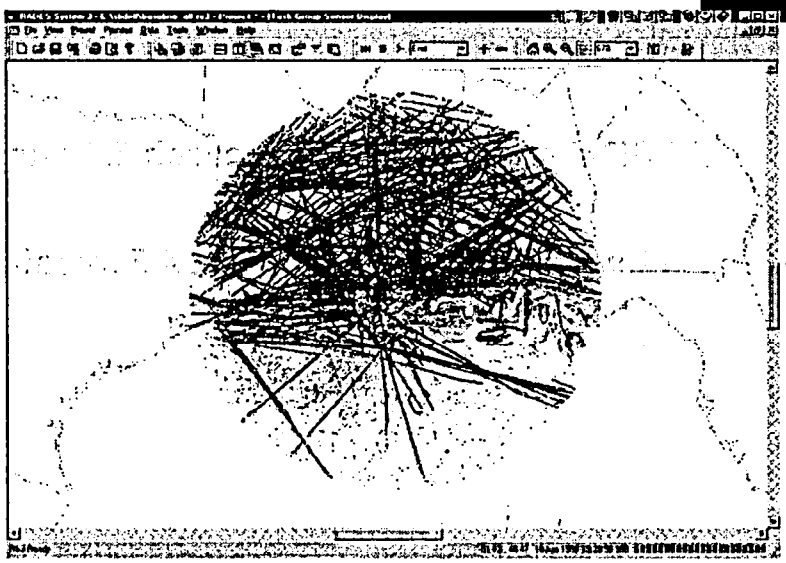
An Example Follows:

Slidell LA

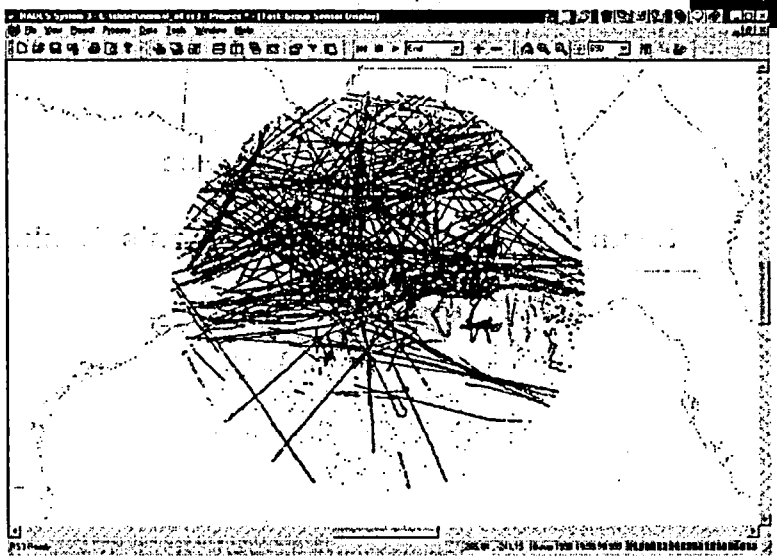
Baseline Performance
vs.
Beam 1 Doppler/Normal Detection's Blanked

12 Jun 98

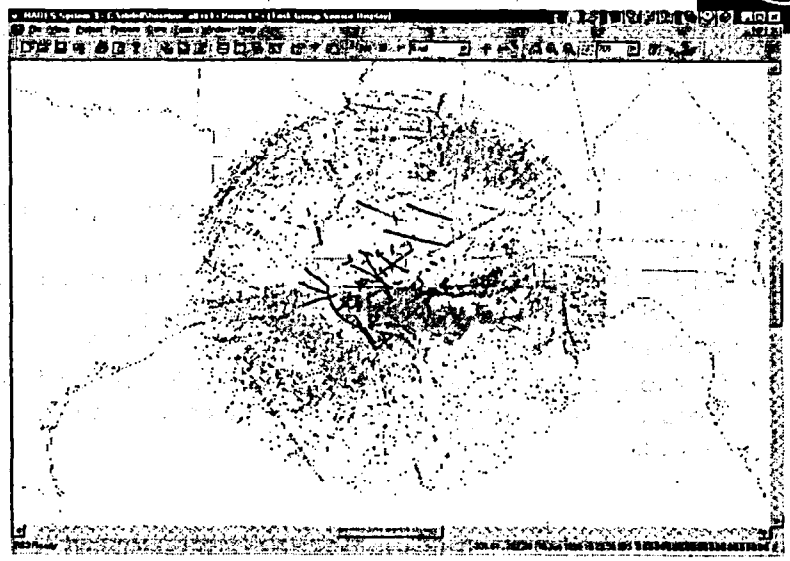
RANDOM TRAFFIC BASELINE CONFIGURATION



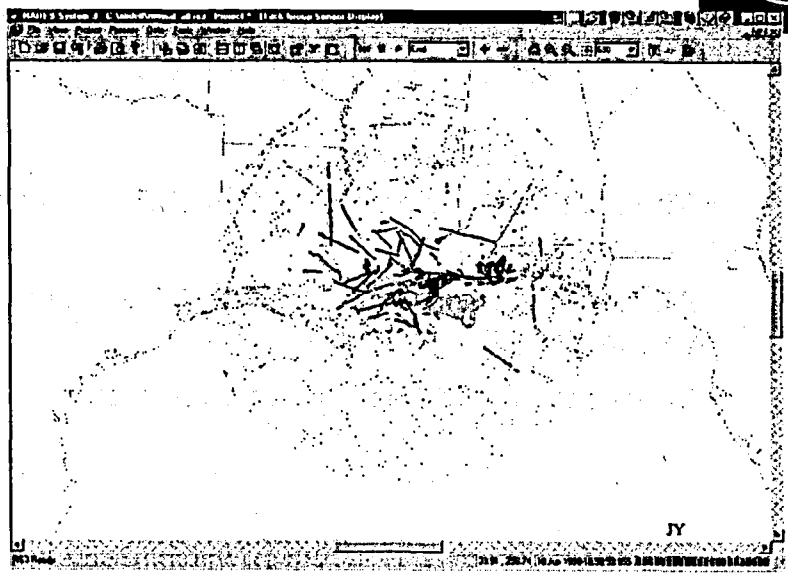
RANDOM TRAFFIC BEAM 1 DOPPLER/NORMAL BLANKED



1200 CODE AIRCRAFT BASELINE CONFIGURATION



1200 CODE AIRCRAFT BEAM 1 DOPPLER/NORMAL BLANKED



Potentially Good "Bandaid" News

- **CSOP under development (AOS-230)**
  - Designed to replace earlier bandaids
  - Focus on search-only target counts at output of merge processing in Data Processor
  - Target Detect thresholds rise in Doppler paths of signal processor for sectors where "search only" counts rise above pre-defined levels (theoretically in the realm of 300)
  - Believe excessive targets may be blocking BIT test targets from processing through Radar Interface Boards at front end of Data Processor

Lingering Concern

- **The root, underlying cause of ARSR-4 system crashes is not yet defined**
- **All fix actions to date (including CSOP) treat the symptoms, not the disease**
- **Impact to small target detection is real**

Recommendations

- **RADES recommends AF continued acceptance of FAA N6340.62 directive to prevent system crashes**
- **Assumptions:**
  - Fix actions accomplished in accordance with directive, particularly pre-coordination
  - Constraints removed ASAP
  - Real progress on CSOP and long-term solution

SIO/DATA LINE PROBLEMS

Problems Identified

- ARSR-4 AF port lockups block radar data to AF
- Mode 4 Loopback Test Message replies getting behind
  - Under certain conditions, results in Mode 4 programming off at Q93 because of incorrect or missing response
- Corrupt data on incoming Mode 4 request line can result in cyclic ARSR-4 SIO hardware reconfigurations, and ultimately a cold start

Status

- FAA implemented Notice to turn off USAF Port Alarms so ARSR-4 would not cold start and halt NAS data
- AOS-230 developed software build that will allow alarms to be turned back on without causing port reconfiguration – used as test tool, but will be installed nationally after fully tested
- AOS-230 developed ARSR-4 software tool that provides a means to closely examine incoming data

Recent Test Results

- **Rainbow Ridge: FAA (AOS-230) tested a hardware modification designed to mitigate SIO lockups caused by corrupt data arriving at the site on the Mode-IV request line**
  - Mod appeared successful, but with reservation – while the port lock-up problem was improved, the Mode-IV loopback test message "one-behind" problem may have been exacerbated
  - Additional testing being planned by AOS-230

Recent Test Results (Cont.)

- **NEADS: 738 EID tested a larger data buffer between Q-93 and Promina (ACCE Network Node) in an effort to mitigate clock slippages**
  - Clock slippages significantly reduced, but not eliminated
  - Alternative Q-93 timing sources being researched by 738 EID; additional testing being accomplished 29 Nov – 1 Dec 00

AOS-230 Timeline

- **Mode 4 Loopback Delay and Data Loss problem:**
  - Additional research/discovery 12/00
  - Formulate ARSR-4 design changes 02/01
  - Test new design at J83 08/01
  - Estimated engineering study 10/01
- **Port Reconfiguration:**
  - Incorporate change into next ARSR-4 software build to fix problems with AF port alarms 01/01
  - Test SW Changes at Watford City ND 02/01
  - Release of SW revision B.01 07/01

Bottom Line

- **Dataline Issues are a two-part problem, with mounting evidence:**
  - Corrupt data on the Mode-IV request path coming into the ARSR-4
  - ARSR-4 inability to deal with the corrupt data
- **Progress is being made on both fronts . . .**

RFI FILTER MODIFICATION

Background

- **RFI Modification specified to preclude ARSR-4 transmission/reception within 1385 – 1400 Mhz**
  - Also designed to eliminate erroneous strobes caused by FM radiators
- **Due to contractor repeated request for spec deviations, FAA (AOS-230) and AF (84 RADES) leery of excessive degradation to search performance**

Planned Test Event

- **Pending approval from 30 RANS/CC; 30 CS/CC, planning extensive joint test at Vandenberg CA ARSR-4**
  - Pre-Mod Installation Testing: 12-20 Dec 00, including dedicated flights
  - Mod Installation and Post-Mod Testing: 2-12 Jan 01, including matching dedicated flights
- **Before/After search radar performance comparison will provide justification for subsequent installations, or prohibiting mod's continuance**

COOPERATIVE EFFORTS BETWEEN AOS-230 AND 84 RADES

Cooperation Rules!

- **Mr Mike Hensley has directed a polling of all ARSR-4 sites to determine current configuration of critical parameters (jointly developed list, primarily relating to clutter control vs. search sensitivity)**
  - AOS-230 and 84 RADES planning round-table discussions once all data is collected
- **84 RADES and AOS-230 will participate in monthly telco exchanges, beginning January 01**
  - 2nd Wednesday every month thereafter
  - 0800 hrs RADES' Time; 0900 hrs AOS-230 Time

LIGHTNING PROTECTION & JSS-CS

BRIEFING

ATTACHMENT 13

Lightning Protection & JSS-CS

Capt Tony Burris
CONUS COR JSS-CS
HQ 1AF/SCXC
Dec 00

Guarding America ... At Home ... and Abroad

Background

- 22 Aug 00 SEADS J-13
  - » msg from jobcntrl ref Lightning Strike
  - » inference levied that AF telco caused SIO failure
  - – SEADS COR notifies HQ1AF CONUS COR
  - – HQ 1AF CONUS COR immediately coordinated assessments
    - » ACCE
    - » General Dynamics
- 23 Aug 00 HQ 1AF CONUS
  - – ACCE response indicates Promina on a UPS and grounded to building ground
  - – ACCE equipment also lost; power supply's, QASD cards

Guarding America ... At Home ... and Abroad

Background cont'd

- 23 Aug 00 HQ 1AF CONUS
  - GD response indicates telco lines have lightning arrestors as they enter the buildings as provided by local telcos
  - GD confirms all equipment racks are grounded with building ground
  - GD confirms that various cards have been lost upon site strike
  - GD proposes additional measures to assure electromagnetic energy does not emit or leak
  - GD to identify historically significant sites with lightning damage

Guarding America ... At Home ... and Abroad

Action Taken

- 30 Aug 00 HQ 1AF/SEADS
  - GD tasked to provide additional lightning protection based on historical data
    - JSS-CS Sites
      - South East: J-06, J-07, J-09, J-10, J-11, J-13, and J-14
      - Western: J-16, J-26, J-25, B-42, G-25/T02, J-30, and J-79
- 5 Oct 00 HQ 1AF
  - GD solution submitted for coordination
- 15 Oct 00 HQ 1AF/FAA
  - JSS-CS CONUS COR telecon with FAA
- 17 Oct 00 HQ 1AF
  - Coordination complete

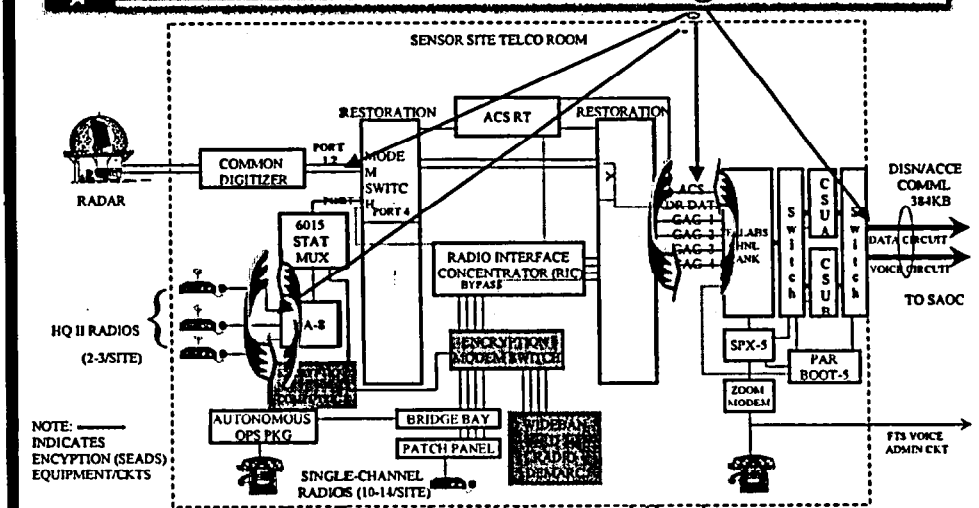
Guarding America ... At Home ... and Abroad

Approach

- Four tier approach for additional protection
  - RS-232 radar data feed ports on radar control junction box
  - Active QASD RS-232 ports on ACCE Promina node
  - External DTE ports of the DA-8 adapters
  - Ferri-shield bundled cable protectors in concert with FAA recommendations
- Telco room rack and equipment grounding under review

Guarding America ... At Home ... and Abroad

Solution



Guarding America ... At Home ... and Abroad

Next Step

- Install connectors
- Monitor for 3-6 months
- Compare before and after results
- Review overall JSS-CS for potential impact areas

Guarding America ... At Home ... and Abroad

AIMS MODE-4

BRIEFING

ATTACHMENT 14

DOD INTERNATIONAL

A
AIR TRAFFIC CONTROL RADAR BEACON SYSTEM

I
IDENTIFICATION FRIEND OR FOE

M
MARK XII

S
SYSTEMS

PROGRAM

RAY CAMPBELL
AIMS PROGRAM MGR
5 DEC 00

OVERVIEW

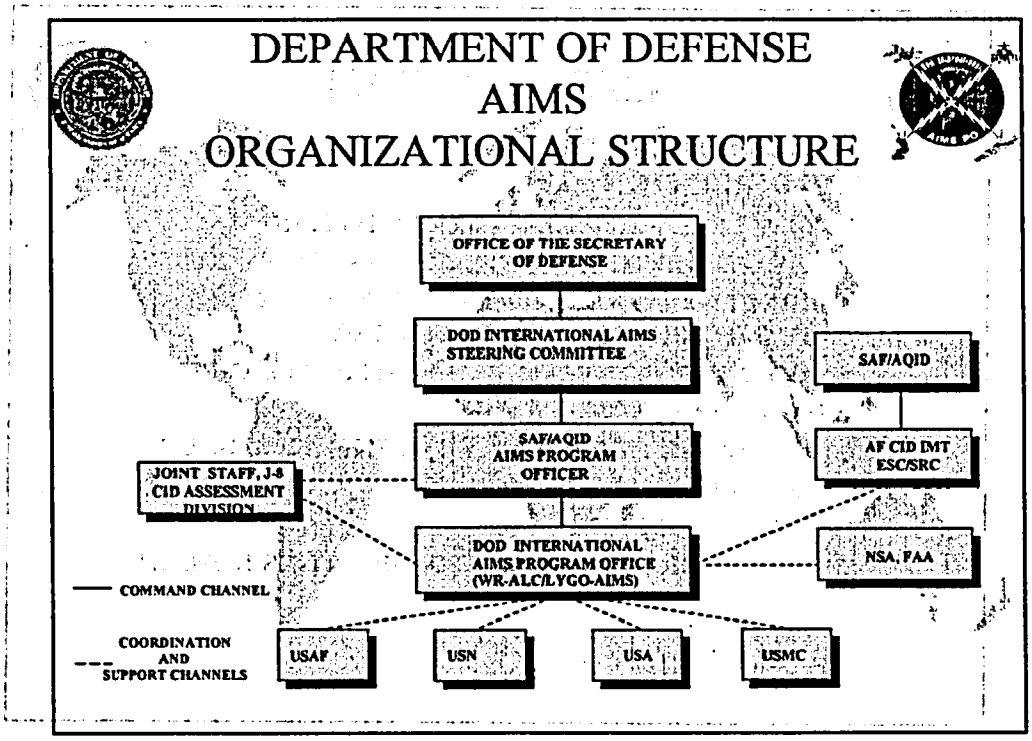
- AIMS PROGRAM
- ORGANIZATIONAL STRUCTURE
- PROGRAM MISSION
- SYSTEM DESCRIPTION
- CURRENT EFFORTS
- MARK XII CONCERNS
- MARK XII ASSESSMENT

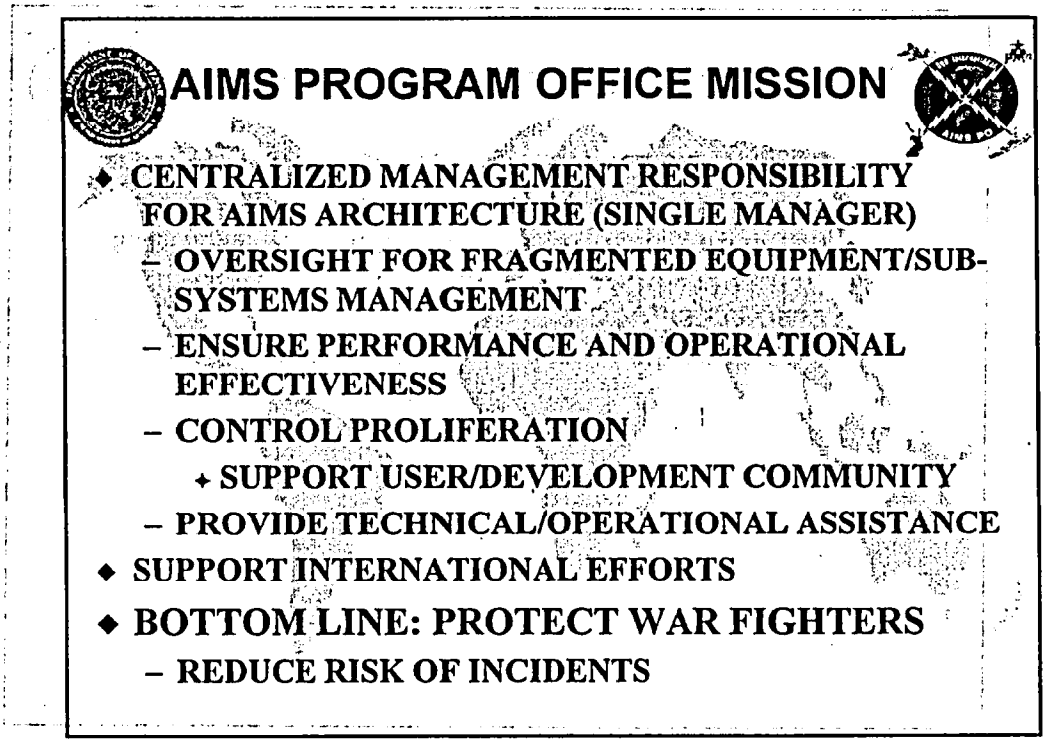
AIMS PROGRAM

- DOD DIRECTION
  - USAF LEAD SERVICE RESPONSIBILITIES
    - SAF/AQID TOOK OVER RESPONSIBILITY 2000
  - DIRECTED ESTABLISHMENT OF STEERING COMMITTEE (SC) AND SC CHARTER
  - DOD INTERNATIONAL AIMS PGM MGT PLAN
  - DATED 29 APR 77
    - ESTABLISHED PROGRAM OFFICE AT WR-ALC
    - STILL IN EFFECT TODAY
    - NEEDS UPDATE
      - BASIC AIMS PO RESPONSIBILITIES REMAIN

AIMS PROGRAM (CONT)

- AIMS PROGRAM OFFICE RESOURCES
  - SAF/AQID PROVIDE MINIMUM BASIC FUNDING
  - WR-ALC/LY PROVIDES TWO MANPOWER POSITIONS
  - OTHER FUNDING REQUIRED FOR PO SPECIFIC EFFORTS/SERVICES
    - OTHER SERVICES/AGENCIES, FMS, VENDORS


DEPARTMENT OF DEFENSE
AIMS
ORGANIZATIONAL STRUCTURE
OFFICE OF THE SECRETARY OF DEFENSE
DOD INTERNATIONAL AIMS STEERING COMMITTEE
SAF/AQID
SAF/AQID AIMS PROGRAM OFFICER
AF CID IMT ESC/SRC
JOINT STAFF, J-8 CID ASSESSMENT DIVISION
DOD INTERNATIONAL AIMS PROGRAM OFFICE (WR-ALC/LYGO-AIMS)
NSA, FAA
COMMAND CHANNEL
COORDINATION AND SUPPORT CHANNELS
USAF
USN
USA
USMC


AIMS PROGRAM OFFICE MISSION
◆ CENTRALIZED MANAGEMENT RESPONSIBILITY FOR AIMS ARCHITECTURE (SINGLE MANAGER)
– OVERSIGHT FOR FRAGMENTED EQUIPMENT/SUB-SYSTEMS MANAGEMENT
– ENSURE PERFORMANCE AND OPERATIONAL EFFECTIVENESS
– CONTROL PROLIFERATION
✦ SUPPORT USER/DEVELOPMENT COMMUNITY
– PROVIDE TECHNICAL/OPERATIONAL ASSISTANCE
◆ SUPPORT INTERNATIONAL EFFORTS
◆ BOTTOM LINE: PROTECT WAR FIGHTERS
– REDUCE RISK OF INCIDENTS

MARK XII SYSTEM

- COOPERATIVE COMBAT IDENTIFICATION PLUS AIR TRAFFIC CONTROL SYSTEM: OPERATIONAL SINCE THE 1960'S
  - MILITARY MODES 1, 2, 4 (ENCRYPTED)
    - CRITICAL PIECE OF CID PICTURE
  - MILITARY/CIVIL MODES 3A, C, S
    - ESSENTIAL FOR PEACE TIME FLIGHT SAFETY
- *MARK XII IS AN ARCHITECTURE, NOT A PRODUCT*
  - INTERROGATORS, TRANSPONDERS, CRYPTO, ANCILLARY EQUIPMENT, SUPPORT EQUIPMENT
  - SUB-SYSTEMS INSTALLED ON MOST MILITARY PLATFORMS
  - COMPATIBILITY, INTEROPERABILITY, SECURITY ASSURED THROUGH COMPLIANCE WITH DOD AIMS PERFORMANCE STANDARDS AND GUIDES
    - MANAGED/IMPLEMENTED BY DOD AIMS PROGRAM OFFICE

CURRENT EFFORTS

- USER TECHNICAL/OPERATOR ASSISTANCE
  - ADVISORIES
  - GUIDANCE
- AIMS CONFERENCE
- SECURITY CLASSIFICATION GUIDE
- MODE 4 HANDBOOK
  - UPDATE/PRINT/DISTRIBUTE
  - POCKET GUIDE
- USER DISTRIBUTION DATA BASE
- PLATFORM INTEGRATION

CURRENT EFFORTS
(CONTINUED)

- SYSTEM/EQUIPMENT EVALUATION
  - RAYTHEON MK XII/MODE S TRANSPONDER
  - AN/TPX-56 INTERROGATOR
  - AN/APX-103 UPGRADE
  - AN/APX-111 (CIT)
  - AN/APX-113 (CIT)
  - AN/APM-480 TEST SET
  - TRW/HONEYWELL TRANSPONDER
  - DIGITAL INTERROGATOR
  - COMMON TRANSPONDER
  - ATCBI-6/ARSR-4

CURRENT EFFORTS
(CONTINUED)

- NATO WORKING GROUPS ON IFF
- MODE 5
- MARK XII IMPROVEMENT
- AIMS PERFORMANCE STANDARDS
- SECURITY ASSISTANCE
  - HUNGARY
  - EGYPT
  - OTHERS
- CRYPTO ISSUES
- MODE 4 MOA
  - DoD/FAA

MARK XII CONCERNS

- NON COMPLIANCE
  - PERFORMANCE/INTEROPERABILITY
    - PRIME MISSION EQUIPMENT
    - SUPPORT EQUIPMENT
- TESTING
  - INADEQUATE
- PROLIFERATION
  - PRIME MISSION EQUIPMENT
  - SUPPORT EQUIPMENT

MARK XII ASSESSMENT

- DEVELOPED IN 60s & 70s
  - DEVELOPED TO LOW RELIABILITY REQUIREMENTS
  - ANALOG TECHNOLOGY
  - SHORTFALLS/DEFICIENCIES
- SOLUTION
  - MIGRATE TO
    - DIGITAL/STATE-OF-ART TECHNOLOGY
      - QUALIFIED PERFORMANCE
    - MORE RELIABLE/ MAINTAINABLE/SUPPORTABLE
    - MODE S
    - GROWTH POTENTIAL
      - MODE 5/MARK XIIA
      - IMPROVED CRYPTO

MARK XII ASSESSMENT
(CONTINUED)

- REQUIREMENT TO UPGRADE TO MODE S OFFERS OPPORTUNITY FOR MODE 5
  - INSTALL MODE S AND MODE 5 (OR GROWTH POTENTIAL) AT SAME TIME
  - RETAIN MARK XII CAPABILITY
- BOTTOM LINE
  - CURRENT SYSTEM RETAINED
    - » NEXT 10 - 20 YEARS

MARK XII + MODE 5
MARK XIIA

- AIMS PO RESPONSIBILITIES
  - SAME AS MARK XII
  - LEVEL OF ACTIVITIES CRUCIAL
    - ENSURING ALL UPGRADES MEET A DEFINED MINIMUM LEVEL OF PERFORMANCE
  - DEVELOP & VALIDATE PERFORMANCE STANDARDS
    - AIMS TEAM MUST FORM IPT WITH SERVICES AND INDUSTRY
    - AIMS TEAM INTEGRAL PLAYER WITH NAVY MODE 5 ACTIVITIES
    - ENSURE NATIONAL STANDARDS MEETS NEED OF ALL SERVICES
    - LIMITED ANALYSES AND STUDIES
    -

MARK XIIA

- REVISE MODE 4 HANDBOOK TO INCLUDE MODE 5
  - MARK XIIA HANDBOOK
- REVISE SCG TO FURTHER ADDRESS MODE 5 ISSUES
- OVERSIGHT/ VERIFICATION/APPROVAL
  - DESIGN, TESTING, INTEGRATION
  - OPERATIONAL PERFORMANCE
  - CRITICAL TO INTEROPERABILITY AND PERFORMANCE
- ACTIVITIES RETURN TO MARK XII LEVEL
  - DESIGN AND INTEGRATION MATURE
  - STANDARDS AND HANDBOOKS MATURE

SUMMARY

- AIMS PO PROVIDES VITAL FUNCTION
  - VALUABLE ASSET FOR MARK XII/MARK XIIA COMMUNITY
  - IMPROVED OPERATIONAL EFFECTIVENESS
  - IMPROVED RETURN ON HARDWARE INVESTMENT
  - SUPPORT USER COMMUNITY
  - REDUCED RISK OF INCIDENTS
    - PROTECT WARFIGHTER

AIMS PO PHONE NUMBERS

- RAY CAMPBELL (478) 926-4661
- JOHN SEEREITER (478) 926-1482
- TRAVIS GRAFTON (CONTRACT) (478) 926-6123
- ROGER SHOEMAKER (CONTRACT) (478) 926-6123
- ALEX HAYNES (CONTRACT) (478) 926-1284

FAX (912) 926-5390 or DSN 468-XXXX FOR ALL

DOD INTERNATIONAL AIMS PROGRAM OFFICE
380 2ND STREET, SUITE 104
ROBINS AFB GA 31098-1638

KLAMATH FALLS, OREGON (J-82)

MODE-S OPERATIONS

BRIEFING

ATTACHMENT 15

Klamath Falls, Oregon (J-82) Mode-S Operation

Steve Riordan
JRPG Coordinator
Northwest Mountain Region

Background

- **Klamath Falls Mode-S system is currently operating in the Interim Beacon Interrogator (IBI) mode**
- **FAA would like to proceed to Full Mode-S operation for better performance**

Why is Full Mode-S Operation important to the FAA ?

- **Full Mode-S provides much better beacon tracking**
- **Full Mode-S has a significant reduction in false targets, especially in terms of beacon range and azimuth splits**

Advantages of Full Mode-S Operation

- **Full Mode-S has better equipment reliability, supportability, and provides increased system redundancy**
- **Full Mode-S allows current and future equipment modifications to be installed**

What is the problem ?

- In Full Mode-S operation, beacon video is no longer available to the Common Digitizer (CD-2) / Military Interface Group (MIG)
- This would not meet terms of the current agreements to supply search and beacon data from J-82 to USAF

How do we get to Full Mode-S Operation at Klamath Falls ?

- Overall concept is to provide transparent radar and beacon service to the USAF
- Use a commercial radar target converter to provide properly formatted military radar messages

Sensis System Interface Unit Converter

- Sensis Converter - $30K
- Sensis Converter is FAA type certified
- Used in both the ASR-11 and STARS Programs

Steps to Full Mode-S Operation at Klamath Falls (J-82)

- National Change Proposal (NCP)
- Funding
- Procurement
- Installation & Testing
- Cutover

Schedule

- NCP submitted / Funding requested
- Once the NCP has been approved, converter can be procured
- Installation, Testing, and Cutover are expected in the summer of 2001

FOR MORE INFORMATION :

Jeff Bogen, ANM-471, (425) 227-1285

ATCBI-6 STATUS OF MODE-4 DESIGN

BRIEFING

ATTACHMENT 16

ATCBI-6 Program Status
Mode 4 Design

Wayne Sutler, Program Lead
Tim Robinson, Technical Support

Joint Radar Planning Group (JRPG) Conference
December 7, 2000

ATCBI-6 Background

- Mission Need Statement approved December 1993; Revalidated Jan 1997:
  - Replace aging ATCBI-4/5s at en route sites
  - Provide monopulse secondary surveillance radars with selective interrogation capability at 124 operational sites and 3 support facilities
  - Leapfrog Mode S systems at ASR-7/8 sites to ASR-9 sites after ASR-11 commissioned
- Acquisition Product Baseline established/approved by FAA Joint Resources Council (JRC), Aug 1997; Schedule rebaselined (due to budget cuts) by JRC in Mar 2000

ATCBI-6 Acquisition Baseline

Milestone	Schedule Baseline JRC Approved Ceiling Date	Revised March 14 2000	
Release First SIR	Oct 1, 1997	Sep 25, 1997 (A)	
First SIR Down Selection	Feb 13, 1998	Feb 9, 1998 (A)	
Release Second SIR	Mar 27, 1998	Mar 25, 1998 (A)	
OCT Complete	Jul 29, 1998	Jun 22, 1998 (A)	
Contract Award	Sep 18, 1998	Aug 3, 1998 (A)	
Factory Test Begin	Jan 18, 1999	May 24, 1999 (A)	
Factory Tests Complete	Aug 25, 1999	Jul 15, 2000 (A)	
Production Opt 1 Exercised	Mar 1, 2000	Aug 2, 2000	Jul 21, 2000 (A)
Deliver System #1 to OT&E Site (Elwood)	Jul 30, 1999	Jun 30, 2000	Mar 30, 2000 (A)
Deliver System #2 to Key Site (Tinker)	Aug 31, 1999	Jul 30, 2000	Apr 30, 2000 (A)
Operational Test Phase 1 Complete (Elwood)	Mar 30, 2000	Oct 30, 2000	Sep 30, 2000 (A)
(IOT&E) OT&E Phase 2 Complete (Tinker)	May 12, 2000	Nov 30, 2000	Sep 30, 2000 (A)
In Service Decision (AAF-1)	Jun 23, 2000	Nov 1, 2001	
First Site Commissioned (Key Site)	Nov 15, 2000	Dec 1, 2001	
First Prod System Commissioned	Sep 1, 2001	Aug 4, 2002	
Organic Depot Established	Sep 18, 2005	Sep 18, 2005	
Last Site Commissioned	Sep 21, 2004	Jan 15, 2006	

ATCBI-6 Acquisition

- Source Information Request (SIR) - 1 initiated September 1997 with Operational Capability Test/Demo (OCT); SIR-2 released March 1998
- Contract Awarded to Raytheon/RSL August 1998 based on results of OCT and evaluation/negotiations of SIR-2; Details included:
  - Delivery and installation of 2 ATCBI-6 Systems
  - Factory and site acceptance testing
  - Development of TOR, HW Maintenance and 2nd Level engineering Training courses
  - Options for procurement of production systems; 2 Production Options (50 systems each); 1 Indefinite Delivery, Indefinite Quantity (IDIQ option)
  - Fixed and provisioned options for procurement of antennas, rotary joints mounting kits, site surveys, installations, spares, depot repair, engineering support, PSF, Interface development (ARSR-3, ARSR-4, GPIB), organic depot

Accomplishments

- Approved Master Test Plan for factory, and site acceptance testing
- Completed Factory testing December 1999
- Delivered/Installed 2 Systems at Elwood NJ; Tinker AFB Apr 2000
- Completed site acceptance testing at Elwood NJ and Tinker AFB Jul 2000
- Completed Operational Test and Evaluation at Tinker AFB Sep 2000
- Completed configuration audits (FCA/PCA)
- Exercised Production option for 50 systems
- Completed development of HW Maintenance Training course including FAA Academy developed computer-based training simulator
- Developed/conducted TOR and 2nd Level Engineering Training classes
- Exercised options for:
  - rotary joints BOS, ARSR-1/2; installation underway by FAA
  - site surveys (56); Site preparation underway by FAA
- Awarded contract for Monopulse Beacon Test Sets (MBTS); contract options available for DOD purchases, if required

ATCBI-6 Operational Test Results

- Probability of Detection (Capacity of 1400 ATCRBS/Mode S Targets)

ORD Requirement	FAATC ATCBI-6	OKC ATCBI-6	OKC ATCBI-4/CD-2	
Pd > 98%	99.8	99.6	99.3	
Code Reliability > 99 %	99.7	99.9	99.9	
False Targets < 0.5 %	0.0	0.07	0.21	
Splits	0.0	0.02	0.19	
Reflections	0.0	0.01	0.01	
Conflict Resolution Pd > 90 %, Code Rel > 85 % (< 1.7 nm; < 2.4 deg)	Pd = 98.9 3/A Rel. = 98.1 Alt. Rel. = 96.7	Pd = 98.1 3/A Rel. = 98.5 Alt. Rel. = 97.2	Pd = 97.2 3/A Rel. = 92.6 Alt. Rel. = 93.4	

- Throughput delay of 1400 target load - out of 200,000 total reports, 170,000 reports measured a throughput delay between 0.75 and 1.0 seconds. The remaining 30,000 reports measured a throughput delay between 0.5 and 0.75 seconds. ORD requirement = 1.5 seconds
- ATCBI-6 met or exceeded FAA operational requirements document

Activities Proposed for FY-01

- Complete and test configuration upgrades to ATCBI-6; retrofit first article systems with upgrades
- Issue/Award a proposal/contract for provisioned site/depot spares
- Procure ancillary test equipment; conduct maintenance training; install/test NIMS interface;
- Commission Tinker AFB
- Test ARSR-3 prototype rotary joint at FAA Academy
- Complete ATCBI-6 to ARSR-3 interface development (FAA)
- Exercise options for antennas, mounting kits, and ARSR-3 rotary joints
- Issue Task Orders for (20) system installations
- Exercise Option #2 for ATCBI-6 Production Systems
- Issue task orders for development of:
  - General Purpose Interface Bus (GPIB); required for MBTS I/F
  - Integration of Mode 4 capability for ARSR-4 sites
- Continue FAA site preparation

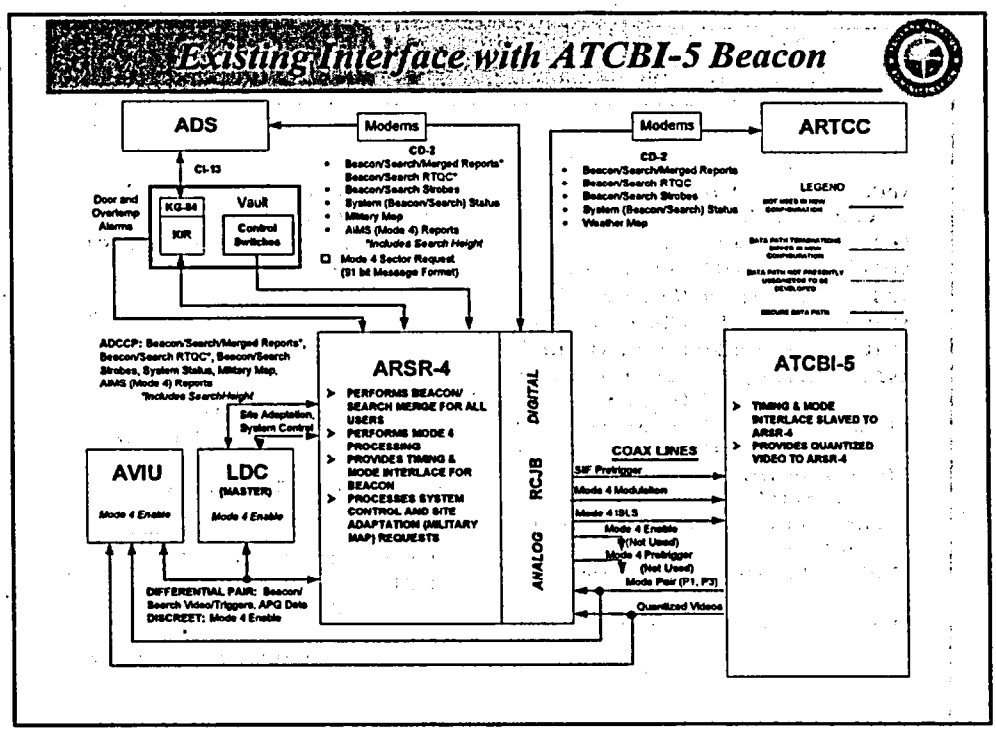
MODE 4
DEVELOPMENT & INTEGRATION

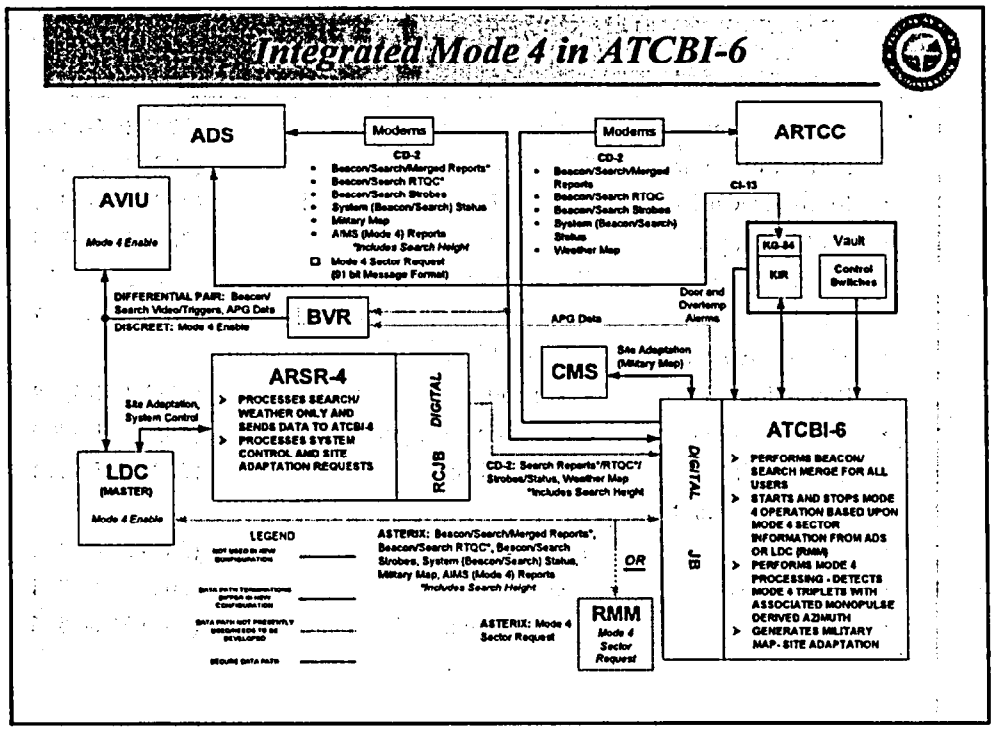
Mode 4 Development/Integration

- Selected design approach involves integrating Mode 4 Processing in ATCBI-6
- Design approach allows factory development/test without an ARSR-4
- Interface Requirement Documents are complete to issue Task Order to Raytheon to begin interface development. IRD's include:
  - ATCBI-6 to ARSR-4
  - ATCBI-6 to ADS (SAOC)
  - ATCBI-6 to Mode 4
  - ATCBI-6 to AVIU
- IRD's have been coordinated with DOD/USAF/USN; issues regarding ATCBI-6 interface to AVIU and LDC are being addressed; FAA will procure/install BVR (for analog signal) if required.
- FAA to establish an MOU with DOD for support and participation in technical reviews, factory and site testing of Mode 4 capability
- CPFF Task Order (TO) includes:
  - System Requirements Review — 45 days after TO Execution
  - Preliminary Design Review — 4 months after TO Execution

Mode 4 Development/Integration

- Task Order for Critical Design Review (CDR) and testing will be issued after PDR
- Parallel development effort required by FAA to modify ARSR-4 systems to remove/disable Mode 4 processing/evaluation
- FAA will begin RFP activity to procure modification kits (for ATCBI-6 Production systems) after CDR approval
- Mode 4 development/integration Testing will include:
  - Factory Testing - Raytheon has KIR-1C simulator for development and factory testing
  - Site Testing - FAA/DOD to decide upon suitable test facility for site testing; special coordination required to temporarily remove/disable Mode 4 processing and evaluation from existing ARSR-4 systems in order to site test ATCBI-6 Mode 4 capability
- Estimated completion of Mode 4 development/testing is 21 - 24 months after task order execution (September - December 2002)


Existing Interface with ATCBI-5 Beacon
ADS
Modems
CD-2
Beacon/Search/Merged Reports*
Beacon/Search RTQC*
Beacon/Search Strobes
System (Beacon/Search) Status
Military Map
AIMS (Mode 4) Reports
*Includes Search Height
Mode 4 Sector Request
(91 bit Message Format)
CI-13
Door and Overtemp Alarms
KG-84
KIR
Vault
Control Switches
Modems
ARTCC
CD-2
Beacon/Search/Merged Reports
Beacon/Search RTQC
Beacon/Search Strobes
System (Beacon/Search) Status
Weather Map
LEGEND
ADCCP: Beacon/Search/Merged Reports*, Beacon/Search RTQC*, Beacon/Search Strobes, System Status, Military Map, AIMS (Mode 4) Reports
*Includes Search Height
Site Adaptation, System Control
ARSR-4
PERFORMS BEACON/ SEARCH MERGE FOR ALL USERS
PERFORMS MODE 4 PROCESSING
PROVIDES TIMING & MODE INTERLACE FOR BEACON
PROCESSES SYSTEM CONTROL AND SITE ADAPTATION (MILITARY MAP) REQUESTS
DIGITAL
RCJB
ANALOG
ATCBI-5
TIMING & MODE INTERLACE SLAVED TO ARSR-4
PROVIDES QUANTIZED VIDEO TO ARSR-4
AVIU
Mode 4 Enable
LDC
(MASTER)
Mode 4 Enable
COAX LINES
SIF Prebrigger
Mode 4 Modulation
Mode 4 IBLS
Mode 4 Enable
(Not Used)
Mode 4 Prebrigger
(Not Used)
Mode Pair (P1, P3)
Quantized Video
DIFFERENTIAL PAIR: Beacon/ Search Video/Triggers, APG Data
DISCREET: Mode 4 Enable


Integrated Mode 4 in ATCBI-6
ADS
Modems
CD-2
Beacon/Search/Merged Reports*
Beacon/Search RTQC*
Beacon/Search Strobes
System (Beacon/Search) Status
Military Map
AIMS (Mode 4) Reports
*Includes Search Height
Mode 4 Sector Request
(91 bit Message Format)
Modems
ARTCC
CD-2
Beacon/Search/Merged Reports
Beacon/Search RTQC
Beacon/Search Strobes
System (Beacon/Search) Status
Weather Map
CI-13
KG-84
KIR
Vault
Control Switches
AVIU
Mode 4 Enable
DIFFERENTIAL PAIR: Beacon/ Search Video/Triggers, APG Data
DISCREET: Mode 4 Enable
BVR
Door and Overtemp Alarms
APG Data
CMS
Site Adaptation (Military Map)
Site Adaptation, System Control
ARSR-4
PROCESSES SEARCH/ WEATHER ONLY AND SENDS DATA TO ATCBI-4
PROCESSES SYSTEM CONTROL AND SITE ADAPTATION REQUESTS
DIGITAL
RCJB
LDC
(MASTER)
Mode 4 Enable
CD-2: Search Reports*/RTQC*/ Strobes/Status, Weather Map
*Includes Search Height
ATCBI-6
PERFORMS BEACON/ SEARCH MERGE FOR ALL USERS
STARTS AND STOPS MODE 4 OPERATION BASED UPON MODE 4 SECTOR INFORMATION FROM ADS OR LDC (RMM)
PERFORMS MODE 4 PROCESSING - DETECTS MODE 4 TRIPLETS WITH ASSOCIATED MONOPULSE DERIVED AZIMUTH
GENERATES MILITARY MAP- SITE ADAPTATION
LEGEND
ASTERIX: Beacon/Search/Merged Reports*, Beacon/Search RTQC*, Beacon/Search Strobes, System (Beacon/Search) Status, Military Map, AIMS (Mode 4) Reports
*Includes Search Height
OR
ASTERIX: Mode 4 Sector Request
RMM
Mode 4 Sector Request

Interface Acronyms List

ADCCP	Advanced Data Communication Control Procedures
ADS	Air Defense Sector
AIMS	ATCRBS IFF Mark XII System
APG	Azimuth Pulse Generator
ARSR-4	Air Route Surveillance Radar Model 4
ARTCC	Air Route Traffic Control Center
ASTERIX	All Purpose Structured Eurocontrol Surveillance Information Exchange
ATCBI- 5	Air Traffic Control Beacon Interrogator Model 5
ATCBI- 6	Air Traffic Control Beacon Interrogator Model 6
ATCRBS	Air Traffic Control Radar Beacon System
AVIU	Analog/Video Interface Unit
BVR	Beacon Video Reconstitutor
CD-2	Common Digitizer Model 2
CI-13	Re-keying Data
CMS	Control and Monitoring System (P/O ATCBI-6)
ISLS	Improved Sidelobe Suppression
JB	Junction Box
KIR	KIR-1C Mode 4 Computer
KG-84	Interface/Encryption Device
LDC	Local Display Console
RCJB	Radar Cable Junction Box
RTQC	Real Time Quality Control
RMM	Radar Maintenance Monitor (P/O ATCBI-6)
SIF	Selective Interrogation Feature

Points of Contact

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• Joseph DeChristopher	Systems Engineering Lead	(202) 493-4028
• Scott Schlegel	Implementation Lead	(202) 267-9345
• Steve Brown	Contracting Officer	(202) 267-7651
• Tim Wallace	AT/AF Requirements Lead	(202) 366-1297
• Thomas Alexander	Logistic Lead	
• Ray Alimenti	Test Lead	(609) 485-5378
• Preston Barber	Engineering Support	(405) 954-5700
• Gil Mauck	JRPG Liaison	(202) 267-8414
Technical Support		
• Tim Robinson	TRIOS Associates	(301) 577-3200
• John Davis	BAE/ARCON	(202) 548-3754
• Jim Moe	James Moe and Associate	(352) 564-9516

ATCBI-6 Delivery Schedule
to
ARSR-4 Sites

Sequence Num	SITE	LID	ST	REGION	SYSTEM DELIV	PRIMARY RAD	CURRENT BEA	SITE SURVEY COMPLETION D	RJ INSTALLATI COMPLETION D	ANTENNA INSTALLATIO COMPLETION D	MAIN ARTCC F	ALTERNATE AR FEED	JOINT FACILIT
56	MICA PEAK	QMI-E	WA	ANM	10/24/02	ARSR-4	BI-6	TBD	N/A	N/A	ZSE	ZLC	YES
63	UTICA/REMSEN	QXU-E	NY	AEA	12/12/02	ARSR-4	BI-6	TBD	N/A	N/A	ZOB	N/A	YES
66	CROSS CITY	QTY-E	FL	ASO	12/26/02	ARSR-4	BI-6	TBD	N/A	N/A	ZJX	ZMA	YES
67	EMPIRE	QJA-E	MI	AGL	1/16/03	ARSR-4	BI-6	TBD	N/A	N/A	ZMP	ZAU	YES
70	OCEANA	QVR-E	VA	AEA	2/16/03	ARSR-4	BI-6	TBD	N/A	N/A	ZDC	ZNY	YES
73	FT. FISHER	QGV-E	NC	ASO	3/9/03	ARSR-4	BI-6	TBD	N/A	N/A	ZJX	ZDC	YES
74	OLTON	QZA-E	TX	ASW	3/16/03	ARSR-4	BI-6	TBD	N/A	N/A	ZHU	N/A	YES
76	MT. KAALA	QKA-E	HI	AWP	4/13/03	ARSR-4	BI-6	TBD	N/A	N/A	ZHN	N/A	YES
77	TYNDALL AFB	PAM-E	FL	ASO	4/20/03	ARSR-4	BI-6	TBD	N/A	N/A	ZJX	ZHU	YES
78	MT. SANTA ROSA	QLR-E	GU	AWP	4/27/03	ARSR-4	BI-6	TBD	N/A	N/A	ZHN	ZUA	YES
79	ROCKSPRINGS	RSG-E	TX	ASW	5/4/03	ARSR-4	BI-6	TBD	N/A	N/A	ZHU	ZFW	YES
80	FINLEY	QFI-E	ND	AGL	5/11/03	ARSR-4	BI-6	TBD	N/A	N/A	ZMP	N/A	YES
81	TAMIAMI	QMS	FL	ASO	5/18/03	ARSR-4	BI-6	TBD	N/A	N/A	ZMA	N/A	YES
82	MILL VALLEY	QMV-E	CA	AWP	5/25/03	ARSR-4	BI-6	TBD	N/A	N/A	ZOA	N/A	YES
83	WATFORD CITY	QWA-E	ND	AGL	6/1/03	ARSR-4	BI-6	TBD	N/A	N/A	ZMP	ZLC	YES
84	CARIBOU	QYD	ME	ANE	6/8/03	ARSR-4	BI-6	TBD	N/A	N/A	ZBW	N/A	YES
86	FT. GREEN	PN7	FL	ASO	6/22/03	ARSR-4	BI-6	TBD	N/A	N/A	ZME	ZJX, ZHU	YES
87	DEMING/MAGDALEN	DMN-E	NM	ASW	6/29/03	ARSR-4	BI-6	TBD	N/A	N/A	ZAB	N/A	YES
88	MALMSTROM AFB (SCOTTLEDGER RD	QFA-E	MT	ANM	7/6/03	ARSR-4	BI-6	TBD	N/A	N/A	ZLC	N/A	YES
89	RAINBOW RIDGE	QZZ	CA	AWP	7/13/03	ARSR-4	BI-6	TBD	N/A	N/A	ZOA	ZSE	YES
90	JEDBURG	QRJ-E	SC	ASO	7/20/03	ARSR-4	BI-6	TBD	N/A	N/A	ZJX	N/A	YES
91	KING MOUNTAIN	CCM	TX	ASW	7/27/03	ARSR-4	BI-6	TBD	N/A	N/A	ZAB	ZHU, ZFW	YES
92	GIBBSBORO	QE-E	NJ	AEA	8/3/03	ARSR-4	BI-6	TBD	N/A	N/A	ZNY	ZDC, ZBW	YES
93	MORALES	QNA-E	TX	ASW	8/10/03	ARSR-4	BI-6	TBD	N/A	N/A	ZHU	N/A	YES
94	NORTH TRURO	QSA-E	MA	ANE	8/17/03	ARSR-4	BI-6	TBD	N/A	N/A	ZBW	ZNY	YES
95	AJO	AJO	AZ	AWP	8/24/03	ARSR-4	BI-6	TBD	N/A	N/A	ZLA	ZAB	YES
96	KEY WEST	NQX-E	FL	ASO	8/31/03	ARSR-4	BI-6	TBD	N/A	N/A	ZMA	N/A	YES
97	LAKE CHARLES	LCH-E	LA	ASW	9/7/03	ARSR-4	BI-6	TBD	N/A	N/A	ZHU	N/A	YES
98	MAKAH	QKW-E	WA	ANM	9/14/03	ARSR-4	BI-6	TBD	N/A	N/A	ZSE	N/A	YES
99	WHITEHOUSE/JACKSONVILLE	NSN-E	FL	ASO	9/21/03	ARSR-4	BI-6	TBD	N/A	N/A	ZJX	ZNY	YES
100	SAN CLEMENTE	NSD	CA	AWP	9/28/03	ARSR-4	BI-6	TBD	N/A	N/A	ACSFA	N/A	YES
101	GUANTANAMO BAY - NSW	NSW	CU	ASO	10/5/03	ARSR-4	BI-6	TBD	N/A	N/A	ZMA	N/A	YES
102	MT. LAGUNA	QRW-E	CA	AWP	10/12/03	ARSR-4	BI-6	TBD	N/A	N/A	ZLA	SOT	YES
103	LAKESIDE	QLS	MT	ANM	10/19/03	ARSR-4	BI-6	TBD	N/A	N/A	ZLC	ZSE	YES
104	NASHWAUK	QJD-E	MN	AGL	10/26/03	ARSR-4	BI-6	TBD	N/A	N/A	ZMP	N/A	YES
105	BUCKS HARBOR	QYA-E	ME	ANE	11/2/03	ARSR-4	BI-6	TBD	N/A	N/A	ROCC	N/A	YES
106	EAGLE PEAK	CNW-E	TX	ASW	11/9/03	ARSR-4	BI-6	TBD	N/A	N/A	ZAB	N/A	YES
109	MELBOURNE	MLB	FL	ASO	11/30/03	ARSR-4	BI-6	TBD	N/A	N/A	ZMA	ZJX	YES
111	PASO ROBLES	PRB-E	CA	AWP	12/14/03	ARSR-4	BI-6	TBD	N/A	N/A	ZLA	ZOA	YES
113	RIVERHEAD/SUFFOLK	QVH-E	NY	AEA	12/29/03	ARSR-4	BI-6	TBD	N/A	N/A	ZNY	ZDC, ZBW	YES
115	SLIDELL	NEW-E	LA	ASW	1/12/04	ARSR-4	BI-6	TBD	N/A	N/A	ZHU	N/A	YES
122	SALEM	SLE-E	OR	ANM	3/8/04	ARSR-4	BI-6	TBD	N/A	N/A	ZSE	N/A	YES