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Test Report for the Direct Access Radar/National Airspace System (DARC/NAS) Bi-Directional Interface Test

Robert V. DiMeo, et al.

January 1989

DOT/FAA/CT-TN89/11

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16. Abstract

The results of the DARC/NAS (HOST) bi-directional interface testing are described in this report. The DARC and NAS systems were physically connected by the General Purpose Output (GPO)/General Purpose Input (GPI) lines. Controller and supervisory messages were entered automatically by time from both the DARC and NAS systems. Both systems used common simulated radar data. Results were examined by analyzing recorded data to determine the transparency of the system.

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PREFACE

This test report, prepared by R. DiMeo, En Route ATC System Branch (ACN-110), and T. C. Mullany, A. Tedford and L. Grossman, En Route Automation Branch/System Engineering and Integration (AAP-313/SEI), is submitted to the Federal Aviation Administration (FAA).

REFERENCED DOCUMENTS

1) DARC/NAS System Interface Specification (SIS), Revision 07, along with RID's, dated January 1988.

2) NAS-MD-300 (series) Computer Program Functional Specifications (CPFS) (with changes for the DARC/NAS I/F).

3) NAS-MD-1300 (series) Computer Program Functional Specifications (CPFS) (with changes for the DARC/NAS I/F).

4) NAS-MD-741 Interface Control Document Central Computer Complex/DARC Control Processor.

5) Interface Test Procedures for the DARC/NAS Level B Interface Test (ACT-120, June 1988).

6) DARC/NAS Interface Test Plan, AAP-310/SEI, June 1988.

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DARC/NAS BI-DIRECTIONAL INTERFACE FINAL TEST REPORT

1. INTRODUCTION

The testing of the DARC/NAS Bi-directional Interface was performed in accordance with FAA Order 1810.4. Three distinct test activities took place (at the Federal Aviation Administration Technical Center, FAATC) prior to the Bi-directional I/F test; they are listed below:

- FAA Acceptance Testing of the DARC RAK03 Software - Conducted primarily by the contractor (Republic Management Services, RMS) and accepted by the Project Technical Officer, Air Traffic Control Display Engineering Branch (ASM-163).

- FAA Acceptance Testing of the NAS Bi-directional I/F Software - Conducted primarily by the contractor (Computer Science Corporation, CSC) and accepted by the Project Alternate Technical Officer, En Route Requirements Section, (ATR-251).

- Regression Testing of the NAS Bi-directional I/F Software - Consisting of a Baseline 500 run and a Host Workload 400 run which were run by CSC.

This report addresses the DARC/NAS Bi-directional Interface Test conducted at the FAATC. The DARC/NAS I/F test efforts were guided by ATR-251, the En Route Automation Branch (AAP-313/SEI) and the En Route ATC Systems Branch (ACN-110). The test was conducted by AAP-313/SEI and supported by ATR-251, ASM-163, ACN-110, RMS and CSC.

1.1 Management Summary

This section contains an overview of the DARC/NAS test period.

Test Criteria for Conducting DARC/NAS Interface Testing - Was based on the successful execution of the following:

- Regression tests utilizing the 500 and workload 400 baselines on the NAS system without the DARC system.

- Acceptance Tests on the RAK03 DARC software and on the Host/CDC system with the rehosted NAS software.

Interface Test Overview - The Interface Test was conducted on the Host/CDC and DARC systems utilizing the rehosted Level B NAS software and DARC's RAK03 system software. Common Digitizer (CD) formatted radar, generated from the Baseline 500 by Simulation Support Section (ACN-313), was distributed to DARC via the DRE's. The Baseline 500 (radar and non-radar) was read in at the appropriate time by the NAS system. DARC R-Control information using Baseline 500 flight data information was read in on the DARC system.

1.1 Management Summary (Cont.)

The test was conducted according to the Test Procedures (ref. 5) using scripted inputs to exercise the functional requirements outlined in the SIS (ref. 1). The test was not intended as a stress/load or shakedown test.

Criteria for Conclusion of the Interface Test

- Successful completion of the Regression Tests and Acceptance Tests.

- Successful execution of the Interface Test using the Baseline 500 as described in the Test Procedures and Test Plan (ref. 6).

- Trouble Problem Reports (Appendix C) not in the HIGH or CRITICAL categories.

Results of the Interface Test

The following table notes that of 171 Interface test cases, 145 passed and 26 failed.

TABLE OF RESULTS

Number of test cases	171	
Number of test cases PASSED	145	85%
Number of test cases FAILED (due to S/W Problems).	3	2%
Number of test cases FAILED (due to SIM Script Problems) . . .	4	2%
Number of test cases FAILED (due to SIM Timing Problems) . . .	5	3%
Number of test cases FAILED (Resolved during analysis)	8	5%
Number of test cases FAILED (Which could not be Resolved*) . .	2	1%
Number of Operation Differences Observed	5	3%

*   These problems could not be resolved because not enough information was given to perform a thorough analysis.

Conclusions

- No items were found during the Interface Testing should preclude inclusion of the DARC/NAS bi-directional Level B Interface function in the A4e0.3 release of the HOST software.

- The test requirements as specified in the SIS were sufficiently addressed during the DARC/NAS Bi-directional Level B Interface testing to support inclusion of the function in a A4e0.3 field release.

1.1 Management Summary (Cont.)

Recommendations

- Handoff the DARC/NAS Bi-directional Level B software to the appropriate air traffic organization.

- Forward Problem Reports to the Air Traffic organization for resolution.

1.2 Purpose

This report presents the results of the tests, and indicates both specific findings and general conclusions regarding the DARC/NAS Bi-directional Interface and recommendations relevant to its inclusion in an A4e0.3 field release of the Host S/W.

1.3 Scope

This report only deals with the results of the DARC/NAS Bi-directional Interface Test and does not refer to results of other DARC/NAS testing activities. The report presents findings and conclusions resulting from the test. It recommends specific areas where additional testing should be conducted during integration into a field release. However, where technical or procedural differences were found, this report makes no definitive recommendations on how to fix these problems.

1.4 Organization of the Report

In addition to this introduction, the report contains the following information, organized as sections and appendices:

- Background - Describes the reasons for and events leading to the DARC/NAS Bi-directional I/F Testing.

- Test Descriptions - Discusses the test procedures in summary form, the test environment, and test administration, data collection, and analyses.

- Results - Presents significant findings based on test observation and DART analysis.

- General Conclusions and Recommendation - Includes the overall conclusion of the DARC/NAS Bi-directional Interface testing effort, an evaluation of results based on the test requirements, identification of problems needing further investigation, and an assessment of the feasibility of inclusion into a A4e0.3 field release.

- Appendices - Supporting Data

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2. BACKGROUND OF DARC AND NAS BI-DIRECTIONAL INTERFACE TESTING

In order to assure that the DARC RAK03 and NAS Bi-directional I/F Software performed according to the System Interface Specification (SIS), string testing was performed by the contractors on their respective systems prior to the Bi-directional Interface test.

2.1 <u>DARC RAK03 Acceptance Testing</u>

The DARC RAK03 system was tested in accordance with test procedures developed by RMS and approved by ASM-163. There were two levels of testing performed on the DARC RAK system prior to the DARC/NAS Bi-directional Interface Test.

<u>FAA Acceptance testing</u> - This entailed testing enhancements individually by casefile/NCP number. When required, RMS employed a simulator to provide stimuli to DARC and to respond to DARC requests with the proper NAS Directive. It was verified that each modification met the criteria identified in the NCP by visual examination and hard copy output.

<u>System Functional Design Qualification (SFDQ) test</u> - Upon successful completion of FAA Acceptance testing, an SFDQ test was performed. This test included regression testing, system throughput and response analysis, peripheral interface testing, capacity testing, etc. Passing criteria was based on both visual observation and hard copy output.

In addition prior to field implementation ASM-163 will perform a final system test. This test is written and performed to verify system operation, and to establish a uniform test procedure which will be successfully performed at each ARTCC prior to field implementation.

2.2 <u>NAS Bi-directional Interface Acceptance Testing</u>

The NAS Bi-directional Interface Software was tested in accordance with test procedures developed by CSC and approved by AAP-313 and ATR-251. The tests consisted of six distinct test runs which are listed below:

- <u>DARC R-Control Inputs</u> - This test run simulated inputs from the DARC R-Control Position. It was designed to ensure that NAS responded correctly to requests from the DARC system.

- <u>NAS R-Control Inputs</u> - This test run simulated inputs from the NAS R-Control Position. It was designed to ensure that entries from this position would be transmitted to the DARC system.

- <u>NAS D-Position Inputs</u> - This test run simulated inputs from the NAS D-Position. It was designed to ensure that entries from this position would be transmitted to the DARC system.

- <u>IOT Inputs</u> - This test run simulated inputs for the NAS IOT device. It was designed to ensure that entries from the IOT would be transmitted to the DARC system.

2.2 NAS Bi-directional Interface Acceptance Testing (Cont.)

- **Error Conditions** - This test run simulated track control and flight plan errors. It was designed to ensure that these errors were transmitted to the DARC system.

- **New Requirements, Startup and Planned Shutdown** - This test run tested all new requirements added to the NAS Bi-directional Software by CSC, the Startup of DARC/NAS mode from DARC only mode, and the Planned Shutdown routine.

2.3 DARC/NAS Bi-directional I/F Test Plans and Test Procedures

During April 1988, AAP-313/SEI completed the development of a Test Plan which stated the roles and responsibilities of the personnel and organizations involved, and an overall structure for the testing of the DARC/NAS Bi-directional Interface. The test plan was approved by AAP-313, ATR-251, ASM-163, and ACN-110.

Simultaneously, ACN-110 and AAP-313/SEI began development of the Test Procedures, Test Script, and data collection forms. The procedures were reviewed and approved by AAP-313, ATR-250, and ACN-110.

One hundred and seventy-one (171) simulated messages were defined in the test script, 109 of these were input from the DARC R-control position, and 62 were identified inputs on the Baseline 500 SIM tape which would satisfy System Requirements. The test script is presented in Appendix A.

3. DESCRIPTION OF DARC/NAS TESTING

This section presents the structure and content of the DARC/NAS Bi-directional Interface testing in summary form. The complete test package (i.e., Test Plan, Test Procedures, data collection forms) is available under separate covers from AAP-313. The presentation is organized in three components, as follows:

- Description of Test Procedures/Scripts

- Description of Test Environment

- Description of Test Administration and Data Collection

3.1 DARC/NAS Test Procedure/Script Description

As stated earlier, the test requirements were addressed with 171 simulated message entries, 109 of which were from the DARC R-control Position and 62 from the NAS R-control and D-Positions.

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3.1 DARC/NAS Test Procedure/Script Description (Cont.)

For this test there was an overall guiding script for each observer to follow. Each scripted input was presented with the time of occurrence, the actual controller input, the pre-input status of the aircraft, and the expected result. A space was also provided after each of the actions for observations to be noted.

Observers were only allowed inputs via the NAS R-control position which would not interfere with the test (e.g., Flight plan readouts and data block offsets).

3.2 DARC/NAS Test Environment

The tests were conducted at the FAATC CDC laboratory. The test configuration is shown in Figure 1 and consisted of the following equipment/software:

Bell & Howell Tape Unit - Using the NAS Simulation Support Facility (NSSF), ACN-313 was able to strip radar data off of the Baseline 500 Simulation Radar Tape and record it on the Bell & Howell. The radar output from this tape was patched into the DARC system during the Interface Test.

DARC Simulation Program - The DARC simulation program was used to simulated DARC R-control position input into the DARC system.

NAS Simulation Program - The Baseline 500 SIM was used to enter D-position, R-control, and IOT entries into the NAS system. In addition the Baseline radar tape was used to create radar data in NAS.

Host machine - The Host was loaded with the A4e0.1 software modified to include the NAS Bi-directional function.

DARC System - DARC was loaded with the RAK03 software.

Several limitations were encountered during the development of the DARC/NAS Bi-directional Interface test. These are listed below:

1. The DARC R-control simulation routine developed by Raytheon did not keep perfect time. The result of this limitation was that not all commands would be entered exactly at the specified time. If an entry was entered later or earlier than expected it is possible the result would be different than the expected result as indicted on the test script.

2. A Technical Center Hardware limitation was encountered which prevented all 13 of the radars on the baseline 500 tape from being transferred to the Bell & Howell Tape. The result of this limitation was that there would be more radar data on the NAS system than on the DARC system. This however, would not effect the functional testing of the two software packages.

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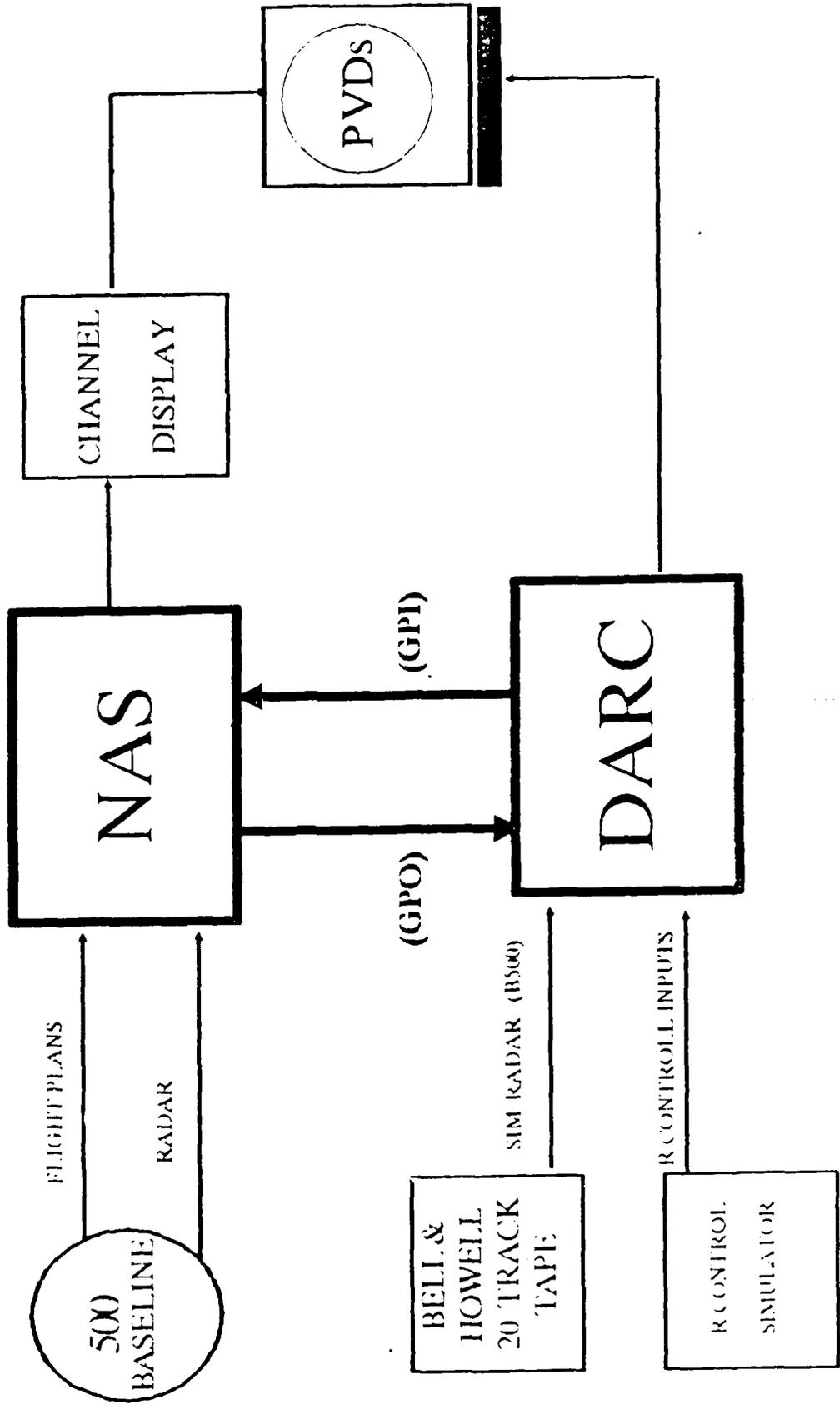
DARC/NAS INTERFACE
FIGURE 1

3.3 DARC/NAS Administration and Data Collection

A Pre-test briefing was held to explain the test setup, objectives and limitations. Test Scripts were handed out to the observers and a detailed explanation was given on how to re-: the test script.

At the end of the test the following data were collected:

1. SAR Tape Numbers were recorded and are listed in Appendix B.

2. The Test scripts with problems were collected from each of the observers and placed in the Analysis Room.

3. The High Speed Printer, Medium Speed Printer, and IOT output were collected and placed in the Analysis Room.

4. The DARC Line Printer Output and GPO/GPI Recording Tape were collected and stored for later use.

Following the test a Post-test meeting was held reviewing all problems that were observed during testing. No attempt was made to resolve the problems observed; the meeting was held so that the analysis team had an understanding of the problem. All observed problems as well as problems found during analysis were entered in a Problem Tracking Database.

4. RESULTS OF THE DARC/NAS TESTING

This section presents the Results of the DARC/NAS Bi-directional Interface testing in summary form. It deals only with the test cases that did not pass, the complete problem report package is presented in Appendix C. This presentation is organized in six components, as follows:

- Problems Related to the Test Script

- Problems Related to SIM Timing

- Problems Found during Testing Which were Resolved during Analysis

- Problems Related to the DARC/NAS Bi-directional S/W

- Findings Related to Air Traffic Control Operations

- Problems that could not be analyzed due to lack of information provided

4.1 Problems Related to the Test Script

There were 4 test cases that did not pass, which were attributed to wrong information in the SIM Script. Each of these are listed below with a short explanation of the problem.

4.1 Problems Related to the Test Script (Cont.)

Problem Number I/F-001

Observed result different than Script Result: A "QZ OTP FLID" was
entered from the DARC R-control Position. The expected result was that
the message would be accepted and the altitude would be changed to OTP,
instead it was rejected.

Explanation

The script should have indicated that this message would be rejected.
According to DART Log at the time of the message entry the entering
sector was not in control of the A/C.

Problem Number I/F-005

Observed result different than Script Result: A "QT 600 S010 00 FLID"
was entered from the DARC R-control Position. The expected result
indicated that the message would be accepted, and a Track would be
started at sector 3. No track was observed at this sector.

Explanation

The script should have indicated that this message would be entered
from sector 19 instead of 3. According to DART Log the message was
entered from sector 19 and a track was started.

Problem Number I/F-006

Observed result different than Script Result: A "QN /OK 07 FLID" was
entered from the DARC R-control Position (Sector 4). The expected
result was that a track controlled by sector 19 would be handed off to
sector 7. This was not observed at sector 4.

Explanation

The script should have indicated that this message would be entered
from sector 4 and observed at sector 19 and 7. According to DART Log
the message was accepted and the correct action was displayed in NAS
and transmitted to DARC.

Problem Number I/F-007

Observed result different than Script Result: A "QN /OK 7104 FLID" was
entered from the DARC R-control Position (Sector 4). The expected
result was that the A/C Beacon code would be changed to 7104. This was
not observed at sector 4.

4.1   Problems Related to the Test Script (Cont.)

Explanation

The script should have indicated that this message would be entered
from sector 4 and observed from sector 1 in the code select list.
According to DART Log the message was accepted and the correct action
was taken in NAS and transmitted to DARC.

4.2   Problems Related to SIM Timing

There were 5 test cases that did not pass, which were attributed to SIM timing
problems. As stated earlier in the Test Environment section we expected that
a small percentage of the messages could be affected by the timing of DARC
inputs. Each of these are listed below with a short explanation of the
problem.

Problem Number I/F-002

Observed result different than script result: A "QX /OK FLID" was
entered from the DARC R-control Position (Sector 1). The expected
result indicated that this message would be accepted and the track
would be dropped; instead the message was rejected (Flight not in
system).

Explanation

The "QX FLID" message was entered at 23:37:45 from the NAS R-control
position, causing the track to be dropped; therefore, when the DARC
message was entered at 23:37:47 (late) the A/C had already been
dropped.

Problem Number I/F-003

Observed result different than script result: A "QH C FLID" was
entered from the DARC R-control Position (Sector 1). The expected
result was that this message would be accepted and the track would be
released from hold; instead the message was rejected (No Hold Stored.

Explanation

This message was entered five (5) seconds too early, the future
position hold had not been entered yet; therefore, the rejected message
was the correct response.

Problem Number I/F-004

Observed result different than script result: A "QH C FLID" was
entered form the DARC R-control Position (Sector 1). The expected
result indicated that this· message would be rejected (No Hold Stored);
however the message was accepted.

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Problems Related to SIM Timing (Cont.)

Explanation

This message was entered five (5) seconds too late, a Present Position Hold was entered for the FLID two (2) seconds prior to the entry of the message; therefore, the system was correct in accepting the entry.

Problem Number I/F-009

Observed result different than script result: A "QP 07 FLID" was entered from the DARC R-control Position (Sector 4). The expected result indicated that this message would be rejected (A/C in Hold Status); instead the message was accepted.

Explanation

This message was entered one (1) second too early, the A/C reached the future position Fix one second after the message was entered; therefore, the system was correct in accepting the entry.

Problem Number I/F-013

Observed result different than script result: A "QR FLID" was entered. Expected result indicated that message would be accepted and FDB would display 400A. Instead showed up as 300A which then changed to 400 (up arrow) 300.

Explanation

Timing problem with script. If QR was entered one and a half minutes (1:30) later, the 400A would have appeared.

4.3   Problems Found during Testing which were Resolved during Analysis

There were 8 test cases that did not pass during testing that were resolved during Analysis of the DR&A output. These were problems which should be demonstrated again to ensure that the software is working according to specifications. Each of these are listed below with a short explanation of the problem.

Problem Number I/F-008

Observed result different than script result: A "QP FLID" was entered from the DARC R-control Position (Sector 4). The expected result indicated that this message would be accepted and the FDB suppressed at sector 4; however, no response was observed.

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Explanation

>According to the DART Log the FDB was suppressed and the correct
directive transmitted to DARC. This should be retested to ensure that
the system is working correctly.

Problem Number I/F-016

>Observed result different than script result: A "QN FLID" was entered
from the DARC R-control Position (Sector 4). The expected result
indicated that this message would be accepted and the FDB forced at
sector 4; however, no response was observed.

Explanation

>According to the DART Log the FDB was forced on the display and the
correct directive transmitted to DARC. This should be retested to
ensure that the system is working correctly.

Problem Number I/F-019

>Observed result different from script: An "AM" message was entered
from NAS. The expected result was that it would be accepted and
the altitude field on the FDB would read 80N120. Observation of the
field failed to show the expected result.

Explanation

>This did not occur because NAS disestablished the Mode C altitude
of the aircraft.

Problem Number I/F-020

>Observed different number of FDB's in DARC and NAS.

Explanation

>A Route Readout was done in NAS causing what would appear
to be another FDB. It was, however, a Field A and vector line
- not a problem.

Problem Number I/F-022

>Observed result different than script result: A "QT /OK FLID" was
entered form the DARC R-control Position (Sector 4). The expected
result indicated that this message would be rejected - Not Your Control
(175); instead the reject was - KBD Timeout Error .

4.3 Problems Found during Testing which were Resolved during Analysis (Cont.)

Explanation

The KBD Timeout Error was sent because at the time of entry the Interface was down.

Problem Number I/F-024

Observed result different than script result: A "QP /OK FLID" was entered from the DARC R-control Position (Sector 19). The expected result indicated that this message would be rejected - Syntax Error Field 2; instead it was accepted, and P-02 appeared in Field-E of DARCs FDB.

Explanation

According to the DARC GPO/GPI line the message was rejected as indicated in the test script. The P-02 appeared because of a Pointout from sector 2 one (1) second later. —

Problem Number I/F-025

Observed result different than script Result: An Accept Handoff was entered from DARC. The expected result was O-XX in Field E. Instead message rejected - "AC NOT IN HANDOFF."

Explanation

DART indicated this function worked according to spec. Might have been missed by observer. Not a problem.

Problem Number I/F-026

NAS shows two departure list entries overlaid on each other.

Explanation

Non interface related problem. Should be looked at by the NAS Enroute Support organization.

4.4 Problems Related to the DARC/NAS Bi-directional S/W

There were 3 test cases that did not pass, which were attributed to problems with either the DARC software or the NAS software. These are the problems which need to be addressed by the FAA or their respective contractors prior to the software being released to the field. Each of these are listed below with a short explanation of the problem.

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Problem Number I/F-015

Observed result different than script result: Command entered resulted in reject but for incorrect reason.

Resolution

Modify DARC software such that when a "QR FLID" is entered DARC places assigned altitude in the reported altitude field.

Problem Number I/F-018

M in AID field when no AID entered in FP. NAS sends "M" in AID field to DARC. DARC required 2-7 character AID field.

Resolution

Discuss problem with ASM-163 and ATR-251 to determine if this causes problem in the operational aspects of the two systems.

Problem Number I/F-027

NAS stoped sending directives, and then severed the Interface during the Test.

Resolution

Modify NAS software such that when bottom of Table DQ is reached it will loop around to the beginning of the table.

4.5   Findings Related to Air Traffic Control Operations

In addition to the test cases that did not pass, display differences were observed between the two systems. No attempt was made to assess the impact on the controller as a result of the display differences, these will be forwarded to Air Traffic Operations (ATO-330) for resolution. A list of these differences is presented below:

Problem Number I/F-010

Operation Display Difference: NAS had FLID blinking "CST" and another FLID not blinking "CST" DARC did not have either track blinking "CST."

Explanation

"CST" will blink in Field-E when track is in COAST status more than TRTI time. DARC should always display the coast symbol blinking.

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4.5 **Findings Related to Air Traffic Control Operations (Cont.)**

Problem Number I/F-012

Operation Display Difference: NAS showed XXXX in altitude field of an A/C FDB while DARC showed 180C in same field.

Explanation

NAS and DARC use different MODE C reasonableness checks.

Problem Number I/F-014

Operation Display Difference: The FDB for FLID displayed the "F" character in NAS, but not DARC.

Explanation

"F" character is a result of ALT/FIX/ALT route which is not supported in DARC.

Problem Number I/F-017

Operation Display Difference: When a caret appears in the FDB either over the A1 character or the A2 character a space will follow the character with the caret (CDC System Only) in NAS; however, DARC does not add a space after the character with the caret.

Explanation

· The DARC specifications did not include the addition of a space following the character with a caret.

Problem Number I/F-021

Operation Display Difference: A/C B2FL09 went into hold (future position) at Fix G3C – no FDB was seen on the PVD when switched to NAS; however, when switched to DARC an FDB appeared for the A/C.

Explanation

The DARC specifications do not have separate requirements for future and present position holds. DARC treats all holds as present position.

4.6 **Problems that could not be analyzed due to lack of information provided**

The final group of test cases that did not pass, display differences were observed between the two systems in which not enough information was obtained to prove whether the difference was a problem or not. A list of these differences is presented here for completeness purposes only.

Problem Number I/F-011

Number of tracks displayed in DARC different than NAS.

Explanation

No information to help trace the problem.

Problem Number I/F-023

FLID appeared on NAS PVD, but not DARC's.

Explanation

No information to help trace the problem.

5. GENERAL CONCLUSIONS AND RECOMMENDATIONS

This section completes the information obtained from the DARC/NAS Bi-directional Interface testing. It includes several general conclusions resulting from the observations during the testing of the function. In addition, it presents a list of activities that still need to be done to support operational evaluation of the DARC/NAS Bi-directional Interface function.

5.1 <u>Overall Conclusion of DARC/NAS I/F Testing</u>

Conclusion:

The DARC/NAS Bi-directional Interface function is ready for inclusion in the A4e0.3 release of the Host Software.

Rationale:

The DARC RAK03 Software is expected to be fielded this fall, this software is able to run both in both Level A mode (one way interface) and Level B mode (two way interface).

The findings presented in Section 4 support this conclusion. Most of the problems encountered during specific test cases were attributable to either SIM problems or SIM timing problems.

Supporting evidence for this conclusion is summarized in the next section which presents an evaluation of the DARC/NAS Bi-directional Interface test with respect to the requirements listed in the System Interface Specification.

5.2 Evaluation of the DARC/NAS Test Results with Respect to the Test Requirements

In the background section of this report, it was mentioned that the System Interface Specification (SIS) was used to ensure that all requirements were string tested prior to the Interface test. One measure of the success of the DARC/NAS Bi-directional Interface test effort concerns whether the test requirements were sufficiently addressed during the testing. Appendix D lists all SIS requirements, and notes which requirements were tested and when the requirement was tested.

After reviewing the test procedures, and the results and observation, we believe that the requirements were well examined. Many of the requirements were specifically addressed many times. Examination of a few was precluded from the test script because they could not be assessed a time when they would happen (e.g., Handoff Attention Indicators, Period Track Check Directives, Track Update Directives, etc.). These were verified using the DART output of the test but are not included in the Verification Requirements Matrix (Appendix D).

Conclusion:

The test requirements as specified in the SIS were sufficiently addressed during the DARC/NAS Bi-directional Interface testing at the FAATC to support the inclusion of the function in a A4e0.3 field release.

5.3 Operational Concerns Requiring Resolution

The following list addresses operational concerns which require resolution prior to a field release of the DARC/NAS Bi-directional Interface Software. No attempt is made to assess whether the display differences could impact control operations.

Future Position Hold - (Display Difference)
When an aircraft reaches a hold fix, NAS drops the Full Datablock (FDB) at the controlling sector; whereas DARC freezes the FDB and places the hourglass symbol in place of the position symbol. In addition, NAS has multiple types of Hold List (i.e., Fix, Present Position); whereas, DARC places all aircraft in the P/P Hold List.

Added Space in Field-A - In NAS when a caret appears in the FDB either over the A1 character or the A2 character, a space will follow the character with the caret (CDC system only). DARC does not add a space after the character with the caret.

Altitude Fix Altitude - (Operational/Display Difference)
In NAS an A/C on an Altitude Fix Altitude route of 100 fix 200 will display 100f200 in the altitude field. DARC currently does not support the Altitude Fix Altitude function and will only display 100 in the alitutde field. When the A/C reaches the fix, NAS will send DARC a Flight Modification Directive informing DARC of the new altitude.

5.3 <u>Operational Concerns Requiring Resolution (Cont.)</u>

    <u>Mode C Disestablishment</u> - (Operational/Display Difference)
    DARC and NAS have different criteria to the disestablishment of Mode C.
    This causes DARC to sometimes display an altitude while NAS is
    displaying xxxx.

    <u>Field-E Displaying "CST"</u> - (Display Difference)
    NAS will blink the contents of Field-E "CST" after the "TRTI" time parameter;
    whereas, DARC will blink the contents of Field-E "CST" as soon as the A/C goes
    into coast.

5.4 <u>Recommendations</u>

    - Handoff the DARC/NAS bi-directional Level B software to the appropriate
      Air Traffic organization.

    - Forward Problem Reports to the Air Traffic organization for resolution.

APPENDIX A

Included in this appendix is the script used for the DARC/NAS Interface
Test. The script is sorted by sector position.

The following describes the format for the attached script.

TIME   The first number in this column approximately defines the
                time in seconds from the previous R-control input at this
                sector. The second number is the approximate time of the
                input (HH:MM:SS.T).

N/D   NAS denotes B500 inputs and DARC denotes an R-control
                scenario inputs.

ACTION   This column defines the input.

INITIAL   The initial status of the FLID before entering the comman
STATUS

EXPECTED   This column contains the expected results. Some of the
RESULTS   expected results are not immediately apparent (i.e., FLA
                tracks becoming FREE).

                There are three types of results:
                a.   DARC rejects the message for syntax errors (note
                     as a 'DARC RSP').
                b.   NAS rejects the message from DARC (noted as a '
                     RSP' with a reject code in parentheses).
                c.   NAS accepts the message.

SECTOR ==>01

TIME	N/D	ACTION	INITIAL STATUS	EXPECTED RESULTS
0 22:51:55.0	DARC	QR /OK 120 DARC010—	SECTOR 19 HAS CONTROL, SECTOR 1 ENTERS COMMAND WITH /OK, ASSIGNED ALT = 600	ACCEPT-FIELD 8 IS REPLACED WITH 120 DB(SCT 19): DARC010, 600$120#, RCID
65 22:53:00.0	DARC	QX /OK DARC012	DROP TRACK AND REMOVE STRIP ON TENTATIVE FP	ACCEPT-DROP TRACK AND FP STORAGE, REMOVE STRIP, REMOVE BEACON CODE FROM PVD LISTS
110 22:54:50.5	NAS	FP 82HDC06 . . .	N/A	ACCEPTED, ON FSP AT SECTOR 01 @ 225452.0
20 22:55:10.5	NAS	QT 82HDC06	INITIATE TRACK WITH TRACKBALL	DB: 82HDC06, 180N, CID
195 22:58:25.0	DARC	QB 82HDC04	FLAT TRACK, DB: 82HDC04, 180N, CID	ACCEPT-ASSIGN BEACON CODE (NAS ASSIGNS BEACON CODE)
66 22:59:31.0	DARC	QX FP 82HDC04	FLAT TRACK, DB: 82HDC04, 180N, CID	ACCEPT-DROP TRACK AND FP STORAGE, REMOVE STRIP, REMOVE BEACON CODE FROM PVD LISTS
66 23:00:37.0	DARC	QX /OK FP 82HDC03	SECTOR 4 HAS CONTROL, SECTOR 1 ENTERS COMMAND WITH /OK	ACCEPT-DROP TRACK AND FP STORAGE, REMOVE STRIP, REMOVE BEACON CODE FROM LISTS
393 23:07:10.5	NAS	QB 83A133	BEACON CODE ASSIGNMENT	BEACON CODE 5004 ASSIGNED, PLACED IN PVD CODE SELECT LIST
20 23:07:30.5	NAS	QB 5601 83A133	MODIFY BEACON CODE FROM 5004 TO 5601	ACCEPT-CODE MOD, 5601 PLACED IN PVD CODE SELECT LIST
400 23:14:10.0	DARC	QT 150 83A134	RE-INITIATE TRACK WITH TB, COORDINATES X=193.00, Y=239.93	ACCEPT-FREE TRACK, ALT = 150 DB: 83A134, 150N, CID
80 23:15:30.0	DARC	QZ OTP 83A101	A/C IN DEPART LST DSPLY WITH ALT = 180	ACCEPT-CHANGE ALT = 180 TO OTP IN DPT LIST
1331 23:37:41.0	DARC	QZ 200 83A145	A/C IN HNDF STAT TO SECT 1(H-01), ALT FIELD = N	DARC RSP--NOT IN YOUR CONTROL
4 23:37:45.0	DARC	QX /OK 81SR01	SECTOR 3 HAS CONTROL, SECTOR 1 ENTERS COMMAND WITH /OK	ACCEPT-DROP TRACK, REMOVE BEACON CODE FROM PVD LISTS

A-2

DARC/NAS INTERFACE TEST SCRIPT AS OF September 19, 1988
DARC R-CONTROLLER COMMANDS AND NAS BASELINE 500 COMMANDS

SECTOR ==>01

TIME	N/O	ACTION	INITIAL STATUS	EXPECTED RESULTS
1427 00:01:32.0	DARC	QN C 83A126	HOLD AT FUTURE POSITION C38 ENTERED, STATUS HOLD	ACCEPT-CANCEL HOLD AT FUTURE POSITION
8 00:01:40.0	DARC	QN C DARC016	NO FP OR TRACK EXISTS FOR THIS AID	DARC RSP--NOT IN YOUR CONTROL
142 00:04:02.0	DARC	QN C 83A126	83A126 IN HOLD LISTS AND DISPLAYING HOLD IN FIELD E	DARC RSP--NO HOLD STORED (142)
296 08:08:58.5	NAS	DM DRT008 /OK	COMMAND ENTERED AT SECTOR 01 WITH /OK, SECTOR 15 HAS CONTROL	ACCEPT-FLT STP PRNTD 28CT 15 a 000900.0, IN SCT 15 DPT LST,D2X6T DEPT DRT008 300

A-3

SECTOR ==>02

TIME	N/D	ACTION	INITIAL STATUS	EXPECTED RESULTS
0 23:01:20.5	NAS	QZ 6 B2FL01	DB OFFSET TO NW: B2FL01, 160C, CID 120	DB OFFSET TO E (NAS & DARC): B2FL01, 160C, CID 120
35 23:01:55.5	NAS	QZ 160 B2FL06	DB: B2FL06, 200N, CID 060	DB ON NAS & DARC: B2FL06, 160N, CID 060
64 23:02:59.0	DARC	QN 300 B2FL01	ATTEMPT TO INITIATE HANDOFF, INTERFACILITY	DARC RSP--SYNTAX ERROR FIELD 3
48 23:03:47.0	DARC	QP B2FL06	DB(SCT 2): B2FL06, 120C, CID, SECTOR 2 ENTERS COMMAND	ACCEPT-DATA BLOCK REDUCED TO POSITION SYMBOL AND VECTOR
18 23:04:05.0	DARC	QB 5315 B2FL05	B2FL05 HAS BEACON CODE QUALIFIER = B (NON-DISCRETE), ATTEMPT DISCRETE ASSGNMNT	DARC RSP--NO DISCR CODE QUAL (139)
25 23:04:30.0	DARC	QP 19 B2FL06	DB: B2FL06, 80C, CID, SECTOR 2 ENTERS COMMAND	ACCEPT-POINTOUT TO SECTOR 19, DB: B2FL06, 80C, CID
2 23:04:32.0	DARC	QP 19 DARC016	NO FP OR TRACK EXISTS FOR THIS ACID	DARC RSP--TRACK NOT IN SYSTEM
4 23:04:36.0	DARC	QP 35 B2FL06	35 IS A NON-ADAPTED SECTOR	DARC RSP--SYNTAX ERROR FIELD 2
4 23:04:40.0	DARC	QP /OK 19 B2FL06	SCT 2 ENTERS COMMAND WITH /OK	DARC RSP--MESSAGE TOO LONG
7 23:04:47.0	DARC	QN 2/1 B2FL07	DATA BLOCK NOT DISPLAYED AT THIS SECTOR	DARC RSP--NOT YOUR CONTROL (175)
33 23:07:00.5	NAS	QP B1C01	SECTOR 2 ENTERS COMMAND DB: B1C01, V600, RCID 010	SUPPRESS DB AT SECTOR 2(DARC & NAS)
190 23:10:10.5	DARC	QB 5709 B2N03	FLAT TRACK, DB: B2N03, 120C, CID 310	DARC RSP--SYNTAX ERROR FIELD 2
445 23:17:35.5	NAS	QX FP B2T06	DB: B2T06, N, 211NONE	REMOVE DB FROM NAS & DARC AT SECTOR 2, REMOVE BEACON CODE 7715 FROM CODE LISTS

A-4

SECTOR ==>02

TIME	N/D	ACTION	INITIAL STATUS	EXPECTED RESULTS
816 23:31:11.0	NAS	TI S02 B21F02	INBOUND TO CENTER (INTERFACILITY)	a233113.0 DB: B21F01, 210A, CIDNS02 a233129.0 DB: B21F01, 210A, CID OLD
0 23:31:11.0	NAS	AUTO (TI S02 B21F01)	INBOUND TO CENTER (INTERFACILITY)	a233113.0 DB: B21F01, 210A, CIDNS02 a233129.0 DB: B21F01, 210A, CID OLD
70 23:32:21.5	DARC	QN A05 B21F03	ATTEMPT INTERFACILITY HANDOFF FROM DARC	DARC RSP--SYNTAX ERROR FIELD 3
0 23:32:21.5	NAS	QZ A05 B21F03	DB: B21F03, 150N, CID 320 INITIATE INTERFACILITY HNDF TO CNT(OUTB)	DB (DARC&NAS): B21F03, 150N, CIDNA05
4 23:32:25.0	DARC	QP CTS000	SECTOR 3 ALREADY ACCEPTED HANDOFF FROM SECTOR 2	ACCEPT-DATA BLOCK DROPPED IMMEDIATELY FROM SECTOR 2 INSTEAD OF TIMING OUT
5 23:32:30.0	DARC	QN B21F03	RETRACT INTERFACILITY HANDOFF TO A05, FLAT TRACK, DB: B21F03, 150N, CIDNA05	ACCEPT-INTERFACILITY HANDOFF TO ADJ CNTR RETRACTED,ATTN IND IS DSPLYED
1697 00:00:47.0	NAS		N/A	DB: B2TE17, 165N, CID 290, ATTN IND = 1, ATTENTION INDICATOR ABOVE FIRST AID CHAR
48 00:01:35.5	DARC	QX FP 83A112	SECTOR 4 HAS CONTROL, SECTOR 2 ENTERING COMMAND	DARC RSP--NOT IN YOUR CONTROL

A-5

'EL XR ==>03

TIME	N/D	ACTION	INITIAL STATUS	EXPECTED RESULTS
0 22:5 :03.5	NAS	QR 220 83CD01	DB: 83CD01, N, CID1201	DB: 83CD01, V220, CID1201 @ 225103.5 NO ASSIGNED ALTITUDE
43 22:51:46.0	DARC	QT 600 S010 00 DARC010	TRACK INITIATED WITH TB, COORDINATES: X=315.00, Y=467.37	ACCEPT-START TENTATIVE TRK-FREE DB: DARC010, 600N, CID
448 22:59:14.0	NAS	QZ 04 81LDB01	INITIATE HANDOFF TO SECTOR 4 DB: 81LDB01, V190, CID 300	DB: 81LDB01, V190, CIDH-04 AT SECTORS 3 AND 4
4 22:59:18.5	NAS	QP 81LDB01	DB: 81LDB01, V190, CIDH-04(320) SUPPRESS DATA BLOCK, SCT 3 ENTERS COMMAND	DARC RSP--SYNTAX ERROR FIELD 2
1947 23:31:45.5	NAS	QQ 200 81SR01	DB: 81SR01, 600$300 CID 030	DB (DARC&NAS): 81SR01, 200T300, CID 030
30 23:32:15.5	NAS	QQ 500 81SR01	DB: 81SR01, 200T300, CID 010	DB(DARC & NAS): 81SR01, 500T300, CID 010
175 23:35:10.5	DARC	QX 81SR01	DROP TRACK ONLY, FREE TRACK, FIELD B = 500Txxx	ACCEPT-DROP TRACK, REMOVE BEACON CODE FROM PVD LISTS
109 23:36:59.0	DARC	QR OTP 84A101		DARC RSP--SYNTAX ERROR FIELD 3
84 23:38:23.0	DARC	QT D8C06	D8C06 IN COAST-ASSIGN ALT = 150,	ACCEPT-TRACK BECOMES FREE
179 23:41:22.5	NAS	QP 04 CTS037	DB @ SCT3: CTS037, N, CID CST POINTOUT TO SECTOR 4 FROM SECTOR 3	DB @SCT 4 (NAS&DARC): CTS037, N, CID CST
50 23:42:12.5	NAS	QN /OK CTS037	DB @CTS3&4(NAS&DARC):CTS037, N, CIDH-04 SCT 3 ENTERS COMMAND WITH /OK	DB (NAS&DARC): CTSC37, N, CIDK-03
103 23:43:55.0	DARC	QP CTS037	DB: CTS037, N, CIDH-05	DARC RSP--AC IN HANDOFF (2)
70 23:45:05.5	DARC	QN CTS016	CTS016 IN HANDOFF TO SECTOR 4 FROM SECTOR 3	ACCEPT-RETRACT HANDOFF, FIELD E = 0-05

A-6

SECTOR --->03

TIME	N/D	ACTION	INITIAL STATUS	EXPECTED RESULTS
10 23:45:15.0	DARC	QN CTS037	DB: CTS037, N, CIDCST	DARC RSP--TENTATIVE FP STG (184)
70 23:46:25.5	DARC	QB CTS018	NO DISCRETE CODE QUALIFIER	DARC RSP--NO DISCR CODE QUAL (139)
15 23:46:40.5	NAS	RS CTS014 /OK	DB: CTS014, 200N, CIO	DROP DB AND FP FROM DARC & NAS(SECTOR 4) REMOVE BEACON CODE xxxx FROM BCN CD LSTS
25 23:47:05.5	DARC	QN CINS23A	A/C NOT IN HNDF STAT, FLAT TRACK, SCT 4 NAS CNTL, SCT 3 ENTERS COMMAND	ACCEPT-DATA BLOCK FORCED ON SECTOR 3
83 23:48:28.0	DARC	QZ /OK 200B300 CTS026	FIELD B = 210A, CST MODE, SECTOR 4 HAS CONTROL, SCT 3 ENTERS COMMAND WITH /OK	ACCEPT-FIELD B = 200B300
152 23:51:00.0	DARC	QZ 200 DARC016	NO FP OR TRACK EXISTS FOR THE AID	DARC RSP--NOT IN YOUR CONTROL
155 23:53:35.0	DARC	QN /OK CTS026	ATTEMPTING TO ACCEPT HANDOFF ON AIRCRAFT NOT HANDED TO YOU	DARC RSP--NOT HANDED TO YOU (143)
630 00:04:05.5	DARC	QN /OK 83A126	COMMAND ENTERED AT SECTOR 3 WITH /OK, SECTOR 1 HAS CONTROL	ACCEPT-TRACK PLACED IN PRESENT POSITION HOLD AND IN HOLD LIST, FIELD E = HOLD

SECTOR ==>04

TIME	N/D	ACTION	INITIAL STATUS	EXPECTED RESULTS
0 22:51:00.5	NAS	QT /OK 82SC02	INITIATE TRACK WITH TRACKBALL	DB: 82SC02, 120N, CID @ 225102.5
60 22:52:00.0	DARC	QN /OK DARCO10	TRACK INITIATED AS TENTATIVE FP AT 225146.5	DARC RSP--TENTATIVE FP STG (184)
30 22:52:30.5	NAS	AM 82SC02 05 221	AMMEND FIELD 5-SPEED IN FP FROM 120 @ 225015.5	FIELD 05 AMMENDED TO 221 @ 225231.0
270 22:57:00.0	DARC	QN /OK 07 DARCO10	INITIATE HANDOFF TO SCT 7 FROM SCT 19 ON TENTATIVE FP, SCT 4 ENTERS CMD WITH /OK	ACCEPT-FIELD E WILL BLINK H-07 @ SECTORS 7 AND 19
60 22:58:00.0	DARC	QN /OK DARCO10	DARCO10 IN HNDF TO SCT 7 FRM SCT19; SCT 4 ENTERS CMD WITH /OK, NO DB @ SCT 4	ACCEPT-SECTOR 4 ACCEPTS CONTROL K-04 DB: DARCO10, 600A, CIDK-04
30 22:58:30.0	DARC	QB 82HDC04	COMMAND ENTERED AT SECTOR 4 WITHOUT /OK, SECTOR 1 HAS CONTROL	DARC RSP--NOT YOUR CONTROL (175)
30 22:59:00.0	DARC	QB /OK 7104 82HDC04	SCT 1 HAS CNTL, CMD ENTERED @ SCT4 (/OK) FLAT TRACK, DB(SCT1): 82HDC04, 180N, CID	ACCEPT-BEACON CODE MODIFIED FROM ____ TO 7104 @ SECTOR 1
28 22:59:28.5	NAS	QP 81LDB01	DB: 81LDB01, V190, CIDN-04(320), IN HNDF FROM SCT 3 TO 4, SCT 4 ENTERS COMMAND	DB SUPPRESSED ON SECTOR 04 :N NAS & DARC
130 23:01:38.5	NAS	QP 81LDB01	DB: 81LDB01, V190, CID 280 SCT 4 HAS CONTROL, SCT 4 ENTERS COMMAND	DB SUPPRESSED FROM SECTOR 04 ON NAS & DARC
936 23:17:14.5	DARC	QP 07 83A125	FIELD E = HOLD, @ F4G @ 231658.5, AIRCRAFT NOT TRACKING	DARC RSP--AC IN HOLD STATUS (8)
1081 23:35:15.0	DARC	QX 82HLD02	82HLD02 IS UNDER SECTOR 2 CONTROL, SCT 4 ENTERS COMMAND	DARC RSP--NOT IN YOUR CONTROL
5 23:35:20.0	DARC	QX DARCO16	NO FP OR TRACK EXISTS FOR THIS AID	DARC RSP--NOT IN YOUR CONTROL
416 23:42:16.5	NAS	QB /OK C*S005	BEACON CODE ASSIGNMENT WITH /OK	BEACON CODE ADDED TO BEACON CODE LISTS AT NAS & DARC, SECTOR 4

SECTOR ==>04

TIME	N/D	ACTION	INITIAL STATUS	EXPECTED RESULTS
147 23:44:43.0	DARC	QB CTS005	DB: CT2005, 250$80, CIDNA16 FREE TRACK	DARC RSP--TRACK IN XTELL STATUS (191)
106 23:46:29.5	DARC	QN 15 CTS044	HANDOFF TO SECTOR 15, FLAT TRACK, UNDER SECTOR 4 CONTROL	ACCEPT-FIELD E = N-15 (BLINKING)
121 23:48:30.5	NAS	QZ 200$300 CTS026	DB: CTS026, 210A, CID CST	DB (NAS&DARC): CTS026, 200$300, CID CST
90 23:50:00.0	DARC	QR 200 CTS028		DARC RSP--NOT IN YOUR CONTROL
30 23:50:30.0	DARC	QN 2/3 CTS028	CTS028 HAS NO DATA BLOCK ASSIGNED	DARC RSP--TRACK NOT IN SYSTEM
130 23:52:40.5	NAS	QR CTS028	DB: CTS028, 400$300, CID 460	DB (NAS&DARC): CTS028, 400A, CID 460
10 23:52:50.5	NAS	QZ OTP CTS028	DB: CTS028, 400A, CID 460	DB (NAS&DARC): CTS028, OTP/400, CID 450
6 23:52:56.0	DARC	QR CTS028	ASSIGNED ALT ON CTS028 IS OTP, DB: CTS028, OTP/400, CID 460	DARC RSP--ALT FORMAT (10)
35 23:53:31.0	DARC	QN 03 CTS028	ATTEMPT TO HANDOFF CTS028 FROM SECTOR 4 TO SECTOR 3, A NON-ACTIVE SECTOR	DARC RSP--SECTOR NOT ACTIVE
4 23:53:35.0	DARC	QN 45 CTS028	ATTEMPT TO HANDOFF CTS028 FROM SECTOR 4 TO SECTOR 45, A NON-ADAPTED SECTOR	DARC RSP--SYNTAX ERROR FIELD 2
35 23:54:10.0	DARC	QZ 200$100 CTS042	LOWER BLOCKED ALTITUDE LARGER THAN UPPER ALTITUDE	DARC RSP--SYNTAX ERROR FIELD 2
7 23:54:17.0	DARC	QN 04 CTS042	ATTEMPT HANDOFF TO YOURSELF	DARC RSP--YOUR SECTOR (207)
355 00:00:12.5	NAS	QN CTS006	FORCE DATA BLOCK ON SECTOR 4 PVD	DB (DARC&NAS): CTS006, 100;300, CIDCST

OR ==>06

TIME	N/O	ACTION	INITIAL STATUS	EXPECTED RESULTS
108 00:03:00.0	DARC	ON CTS006	CTS006 IN HOLD LIST	ACCEPT-NO ACTION
123 00:04:03.0	DARC	ON AB110	FLIGHT NOT ACTIVE, PROPOSED DEPARTURE 0005	DARC RSP--NOT IN YOUR CONTROL

:CTOR ==>09

TIME	N/O	ACTION	INITIAL STATUS	EXPECTED RESULTS
0 23:01:15.5	NAS	QN 82FL07 /OK 2301 OTP	DEPARTURE LIST FOR SECTOR 5 DOES NOT LIST 82FL07	82FL07 OTP PUT IN SECTOR 5 DEPARTURE LST (NAS & DARC), FSP AT SECTOR 5
110 23:03:05.5	NAS	AM 82FL07 08 808120	FIELD 8 = OTP/80	FIELD 8 (ALT) AMMENDED TO 808120 DB: 82FL07, 80N120, CID 170
95 23:04:40.0	DARC	QN 2/1 82FL07	DATA BLOCK = E DIRECTION, FREE TRACK, UNDER SECTOR 5 CONTROL AND DISPLAYED	ACCEPT-CHANGE TO N WITH LEADER LENGTH = .625" (32) FROM (CI)
2 23:04:42.0	DARC	QN /OK 2/1 82FL07	/OK NOT PART OF MESSAGE FORMAT	DARC RSP--SYNTAX ERROR FIELD 3
3 23:04:45.0	DARC	QN 0/1 82FL07	"0" IS NOT A VALID CODED DIRECTION	DARC RSP--SYNTAX ERROR FIELD 2
5 23:04:50.0	DARC	QN 2/2 DARC016	NO FP OR TRACK EXISTS FOR THIS AID	DARC RSP--TRACK NOT IN SYSTEM
147 23:07:17.0	DARC	QT 195 DARC017	TRACK INITIATED WITH TB, COORDINATES X=346.00, Y=310.00, TENTATIVE FP	ACCEPT-START TENTATIVE TRACK-FREE, DB: DARC017, 195N, CID
283 23:12:00.5	NAS	QT 82FL09	INITIATE TRACK	DB: 82FL09, 195C, CID
310 23:17:10.5	NAS	QH 82RM07	DB: 82RM07, 200C, CID 210	DB (NAS & DARC): 82RM07, 200C, CG8HOLD, 82RM07 200 IN HOLD LISTS
40 23:17:50.5	NAS	QH C 82RM07	82RM07 IN PRESENT POSITION HOLD @ 231710.5	TRACK AUTO RE-INITIATE AT 231813.0, REMOVED FROM NAS & DARC HOLD LISTS
457 23:25:27.5	NAS	AUTO(QH G3C 82FL09)	QH @ 231600.5, DB: 82FL09, 195C, CID 360	DB: 82FL09, 195C, CID HOLD IN BOTH NAS & DARC HOLD LISTS
1256 23:46:23.5	DARC	QN 03 82CR14	SECTOR 5 DOES NOT HAVE CONTROL AND ENTERS COMMAND	DARC RSP--NOT IN YOUR CONTROL
2 23:46:25.0	DARC	QN 03 DARC016	NO FP OR TRACK EXISTS FOR THIS AID	DARC RSP--NOT IN YOUR CONTROL

TIME	N/O	ACTION	INITIAL STATUS	EXPECTED RESULTS
155 23:49:00.0	DARC	QN 6713 83A10B	SCT 7 HAS CNTRL, CMD ENTERED @ SCT 05, FREE TRACK, DB: 83A90B, 180C, CID 310	DARC RSP--FLIGHT NOT LISTED
730 00:01:10.0	DARC	QN CTS006	SECTOR 4 HAS CONTROL, COMMAND ENTERED AT SECTOR 5 WITHOUT /OK	DARC RSP--NOT IN YOUR CONTROL

A-12

SECTOR ==>07

TIME	N/D	ACTION	INITIAL STATUS	EXPECTED RESULTS
0 22:56:10.5	DARC	QT S010 27 DARCOT@	TRACK INITIATED WITH TB, COORDINATES X=411.00, Y=356.00	ACCEPT-NO RADAR,TRACKING MODE,SHOULD GO TO COAST, DB: DARCO18, N, CID
517 23:04:47.0	DARC	QN /6 B2RM03	"6" IS NOT A VALID CODED LENGTH	DARC RSP--SYNTAX ERROR FIELD 2
3 23:04:50.0	DARC	QN 2 B2RM03	DIRECTION = E, FREE TRACK, UNDER SECTOR 7 CONTROL AND DISPLAYED	ACCEPT-CHANGE DIRECTION TO N WITH SAME LEADER LENGTH (CI)
70 23:06:00.5	NAS	PR B2RM01 N2@	N/A	RECOMPUTE TIMES, FSP SECTORS 4 & 5
173 23:08:53.0	DARC	QT S100 B2ST02	TRACK INITIATED WITH TB FP STRD	ACCEPT-SPEED = 100 IN DB DB: B2ST02, N, CID 100
88 23:10:21.0	DARC	QB 1310 B2ST02	ATTEMPTED BEACON CODE MODIFICATION FROM 1311 TO 1310	DARC RSP--BC USED BY OTHER AC (18)
338 23:15:59.0	DARC	QZ 02 150 B2RM08	ATTEMPT TO INITIATE HANDOFF AND MODIFY ALTITUDE IN THE SAME MESSAGE	DARC RSP--SYNTAX ERROR FIELD 2
302 23:21:01.0	DARC	QT /OK B2T02	RE-INITIATE TRCK HLD STAT,PRSNT POS HOLD @232001.0 @SECTOR 1,ASSIGNED ALT=160	DARC RSP--NOT YOUR CONTROL (175)
1925 23:53:06.0	DARC	QN 6000	6000 IS NON-DISCRETE	DARC RSP--SYNTAX ERROR FIELD 2
524 00:01:50.0	DARC	QN C /OK CTS006	CTS006 IN HLD LST,FIELD E=HOLD,SECT 4 HS CNTL, COMMAND ENTERED AT SCT 7 WITH /OK	DARC RSP--SYNTAX ERROR FIELD 3
129 00:03:59.0	DARC	QN C B3A126	SECTOR 1 HAS CONTROL, COMMAND ENTERED AT SECTOR 7 WITHOUT /OK	DARC RSP--NOT IN YOUR CONTROL
18 . . .:. 5	DARC	QN C DISP01	NO HOLD DATA STORED FOR THIS FLIGHT	DARC RSP--NOT IN YOUR CONTROL

SECTOR ==>15

TIME	H/O	ACTION	INITIAL STATUS	EXPECTED RESULTS
0 22:54:00.0	DARC	QB DARC015	NO FP OR TRACK WITH AID = DARC015	ACCEPT-TENTATIVE FP ESTABLISHED (NAS ASSIGNS BEACON CODE)
303 22:59:01.5	NAS	QD 000B200	SET ALTITUDE LIMIT ON SECTOR 15 OLD LIMITS: _____	NAS CRD AND DARC BILLBOARD REFLECT NEW LIMITS OF 000,200 ON SECTOR 15
2625 23:42:46.0	NAS	TI A016 CINS20A	INITIATE INTERFACILITY HANDOFF (INBOUND)	DB @ SECTOR 15 (DARC&NAS): CINS20A, 300A, CIDHS15
0 23:42:46.0	NAS	AUTO(TI S15 CINS20A)	INITIATE INTERFACILITY HANDOFF (INBOUND)	DB: CINS20A, 300A, CIDHS15
145 23:45:11.5	NAS	NO ACTION REQUIRED —	DB: CINS20A, 300A CIDOS15	DB (DARC&NAS): CINS20A, 300A, CIDFAIL
109 23:47:00.0	DARC	QN CTS044	DATA BLOCK ON CTS044, FIELD E BLINKING H-15	ACCEPT-HANDOFF ACCEPTED BY SECTOR 15' FIELD E = O-15
161 23:49:41.0	DARC	QN 4BFL01	ATTEMPT TO ACCEPT HANDOFF	DARC RSP--SYNTAX ERROR FIELD 2

ECTOR ==>17

TIME	N/D	ACTION	INITIAL STATUS	EXPECTED RESULTS
0 23:49:40.5	OARC	QZ /OK 410 FDPRO10	ERROR ON AM MSG AT 234935.5, SECTOR 17 ENTERS COMMAND WITH /OK	OARC RSP--CORR PEND AT SOURCE (26)
307 23:54:47.5	NAS	QN CINS13	DB @ SCTS 17&19: CINS13, N, CIDNONE ALTERNATING WITH CIDH-17	DB @ SCTS 17&19: CINS13, N, CIDO-17

SECTOR ==>19

TIME	N/D	ACTION	INITIAL STATUS	EXPECTED RESULTS
0 22:50:36.5	DARC	QT 600 S010 00 DARC012	TRACK INITIATED WITH TB, COORDINATES: X=245, Y=212, TENTATIVE FP	ACCEPT-START TENTATIVE TRACK-FREE DB: DARC012, 600N, CID
21 22:50:57.0	DARC	QB DARC012	INITIATED TRACK ON TENTATIVE FP AT 225036.5	ACCEPT-ASSIGN BEACON CODE,PLACED IN LIST (NAS ASSIGNS BEACON CODE)
6 22:51:03.5	DARC	QR 200 83CD01	SECTOR 3 HAS CONTROL, SECTOR 19 ENTERS COMMAND WITHOUT /OK	DARC RSP--NOT IN YOUR CONTROL
2 22:51:05.0	DARC	QX a(X=320.00,Y=395.00)	ATTEMPT DROP TRACK WITH LISTED COORDI- NATES, BUT NO DATA BLOCK AT THAT POINT	DARC RSP--NO TB ID CAPTURE
5 22:51:10.0	DARC	QT 600 S100 00 DARC020	ATTEMPT TO START TRACK WITH TB AT COORDINATES X=287.00, Y=128.12	ACCEPT-START TENTATIVE TRACK DB: DARC020, 600N, CID
30 22:51:40.0	DARC	QB 7103 DARC012	CODE MOD OF BEACON CODE ASSIGNED AT 225100.0	ACCEPT-ON TENTATIVE FP,CODE MODIFICATION FROM ___ TO 7103, ADDED TO LIST
5 22:51:45.5	NAS	QT 050 S010 00 B1R022	INITIATE TRACK WITH TRACKBALL	DB: B1R022, 50N, CID
3 22:51:48.0	DARC	QN B3CD01	SCT 3 HAS CNTL,SCT 19 ENTRS CMD,FREE TRK REPORTED ALT = 160	ACCEPT-FORCE DATA BLOCK ON SECTOR 19 DB: 83CD01, V160, RCID
0 22:52:06.5	NAS	QX B1R014	DROP TRACK ONLY, TENTATIVE FP STORAGE	REMOVE DB FROM SECTOR 19 PVD
2 22:51:50.0	DARC	QN DARC016	NO FP OR TRACK EXISTS FOR THIS AID	DARC RSP--TRACK NOT IN SYSTEM
10 22:52:00.0	DARC	QB 7110 DARC016	NO FP OR TRACK WITH AID = DARC016, ATTEMPTING MODIFICATION TO 7110	DARC RSP--FLIGHT NOT LISTED
10 22:52:10.0	DARC	QR DARC010	DARC010 IS A TENTATIVE FP WITH ASSIGNED ALTITUDE = 600	ACCEPT-ASSIGNED ALTITUDE BECOMES REPORTED ALTITUDE (600A)
40 22:52:50.0	DARC	QN B3CD01	SECTOR 3 HAS CONTROL, SECTOR 19 ENTERS COMMAND, FREE TRACK, REPORTED ALT = 160	ACCEPT-UNFORCE DATA BLOCK BEING DSPLYED ON SECTOR 19

SECTOR -->19

TIME	N/D	ACTION	INITIAL STATUS	EXPECTED RESULTS
21 22:53:11.0	DARC	QN 03 81R026	INITIATE HANDOFF TO SECTOR 3 FROM SECTOR 19	ACCEPT-FIELD E WILL ALTERNATE WITH GSP AND H-03 (BLINKING)
12 22:53:23.0	DARC	QN 81R026	81R026 IN HNDF TO SCT 3 BY SCT 19(CMD ENTRD @ SCT19),ATTN IND DSPLYD IN ALL DB	ACCEPT-HANDOFF RETRACKED BY SECTOR 19, H-03 REMOVED,O-19 DISPLAYED
623 23:03:46.0	DARC	QP 82FL06	SCT 2 HAS CNTL, SCT 19 ENTERS CMD, FLAT TRACK, DB: 82FL06, 120C, CID	ACCEPT-REQUEST DISPLAY DB AT SECTOR 19 DB: 82FL06, 120C, RCID
24 23:04:10.0	DARC	QP 82FL06	SECTOR 2 HAS CONTROL, FLAT TRACK, DB: 82FL06, 80N, CID	ACCEPT-SUPPRESS DISPLAY DB AT SECTOR 19
5 23:04:15.0	DARC	QP /OK 82FL06	SECTOR 2 HAS CONTROL, SECTOR 19 ENTERS COMMAND WITH /OK	DARC RSP--SYNTAX ERROR FIELD 2
5 23:04:20.0	DARC	QP DARC016	NO FP OR TRACK EXISTS FOR THIS ACID	DARC RSP--TRACK NOT IN SYSTEM
460 23:12:00.0	DARC	QZ /OK 500 DARC017	ASSIGNED ALT=195, SECTOR 5 HAS CONTROL, SECTOR 19 ENTERS COMMAND WITH /OK	ACCEPT-ASSIGN ALTITUDE 500, DB: DARC017, 500N, CST
1423 23:35:43.5	NAS	DQ CINS03		ACCEPT-ASSIGN DISCRETE BEACON CODE AND PLACE IN CODE SELECT LISTS
118 23:37:41.0	DARC	QX CINS04	DB: CINS04, V600, CID 010	ACCEPT-DROP TRACK, REMOVE BEACON CODE FROM PVD LISTS
6 23:37:47.0	DARC	QT CINS04	NO DATA BLOCK FOR THIS AIRCRAFT IN NAS OR DARC	DB IN DARC AND NAS: CINS04, V600, CID
120 23:39:47.5	DARC	QN CINS05	FIELD E = 0-17, BEING TIMED-OUT AT SECTOR 19	ACCEPT-DATA BLOCK DROPPED FROM SECTOR 19 IMMEDIATELY
498 ??:??:??:??	DARC	QN AA7 CINS23A	ATTEMPT TO HANDOFF CINS23A FROM SCT 19 TO A7, AA7 IS NOT A LEGITIMATE SECTOR ID	DARC RSP--SYNTAX ERROR FIELD 3
385 23:54:30.5	DARC	QT SC00 36 CINS60	N/A	DARC RSP--ZERO SPEED (209)

APPENDIX B

SAR TAPES FOR DARC/NAS INTERFACE TEST

	TIME	TAPE NUMBER
SAR1	224500-235959	AC8923
SAR2	000000-001500	AC5375

APPENDIX C

This appendix includes all the problem reports written during the DARC/NA
Interface Test and those found during analysis of test results.

REPORT OF PROBLEMS BY NUMBER

PROBLEM #: I/F-001   -ORIGINATOR: E. JOHNSON   DATE OPENED: 09/20/88

STATUS: CLOSED   DATE CLOSED: 09/21/88   REFERENCE:

SYSTEM: NAS   TEST: ATR/ACT I/F TEST   PRIORITY: UNASSIGNED

DOCUMENT CHANGE REQ: NO   RETEST REQ: NO   RETEST COMPLETE: NO

DESCRIPTION: OBSERVED RESULT DIFFERENT THAN SCRIPT RESULT:
@23:15:30 A "QZ OTP B3AI01" WAS ENTERED FROM THE DARC
R-CONTROL POSITION. THE EXPECTED RESULT INDICATED THAT THIS
MESSAGE WOULD BE ACCEPTED AND THE ALTITUDE CHANGED TO OTP;
INSTEAD THE MESSAGE WAS REJECTED.

ASSIGNED TO: SEI

RESOLUTION: THIS MESSAGE WAS REJECTED BY DARC - NOT IN YOUR CONTROL -
@23:15:25 A FLIGHT DATA ASSIGNMENT DIRECTIVE IS SENT TO
SECTOR 10. NO CONTROL WAS TRANSFERRED PROIR TO 23:15:30
THEREFORE, THE ERROR GIVEN IS CORRECT. (SCRIPT PROBLEM)

COMMENTS:
- -

PROBLEM #: I/F-002   ORIGINATOR: E. JOHNSON   DATE OPENED: 09/20/88

STATUS: CLOSED   DATE CLOSED: 09/21/88   REFERENCE:

SYSTEM: NAS   TEST: ATR/ACT I/F TEST   PRIORITY: UNASSIGNED

DOCUMENT CHANGE REQ: NO   RETEST REQ: NO   RETEST COMPLETE: NC

DESCRIPTION: OBSERVED RESULT DIFFERENT THAN SCRIPT RESULT:
@23:37:45 A "QX /OK B1SR01" WAS ENTERED FROM THE DARC
R-CONTROL POSITION. THE EXPECTED RESULT INDICATED THAT THIS
MESSAGE WOULD BE ACCEPTED AND THE TRACK WOULD BE DROPPED;
INSTEAD THE MESSAGE WAS REJECTED (FLIGHT NOT IN SYSTEM).

ASSIGNED TO: SEI

RESOLUTION: THIS MESSAGE WAS REJECTED BY DARC - FLIGHT NOT IN SYSTEM -
@23:37:45.5 A "QX B1SR01" WAS ENTERED FROM THE NAS R-CONTROL
POSITION DELETING THE TRACK. THUS WHEN THE MESSAGE CAME
FROM THE DARC SYSTEM (LATE) AT 23:37:46 THE TRACK HAD
ALREADY BEEN DROPPED. (SIM TIMING PROBLEM)

COMMENTS:
- -

REPORT OF PROBLEMS BY NUMBER

PROBLEM #: I/F-003   ⁻ORIGINATOR: E. JOHNSON   DATE OPENED: 09/20/88

STATUS: CLOSED   DATE CLOSED: 09/22/88   REFERENCE:

SYSTEM: NAS   TEST: ATR/ACT I/F TEST   PRIORITY: UNASSIGNED

DOCUMENT CHANGE REQ: NO   RETEST REQ: NO   RETEST COMPLETE: NO

DESCRIPTION: OBSERVED RESULT DIFFERENT THAN SCRIPT RESULT:
@00:01:32 A "QH C B3AI24" WAS ENTERED FROM THE DARC
R-CONTROL POSITION. THE EXPECTED RESULT INDICATED THAT THIS
MESSAGE WOULD BE ACCEPTED AND THE TRACK WOULD BE RELEASED;
NO HOLD WAS SEEN IN THE HOLD LIST.

ASSIGNED TO: SEI

RESOLUTION: THIS MESSAGE WAS ENTERED AT 00:01:27.5, FIVE (5) SECONDS
TO EARLY, THE FUTURE POSITION HOLD IS NOT ENTERED UNTIL
00:01:30 ; THEREFORE, THE RESPONSE NOT HOLD STORED (142)
IS CORRECT - (SIM TIMING PROBLEM)

COMMENTS:

PROBLEM #: I/F-004   ORIGINATOR: E. JOHNSON   DATE OPENED: 09/20/88

STATUS: CLOSED   DATE CLOSED: 09/22/88   REFERENCE:

SYSTEM: NAS   TEST: ATR/ACT I/F TEST   PRIORITY: UNASSIGNED

DOCUMENT CHANGE REQ: NO   RETEST REQ: NO   RETEST COMPLETE: NO

DESCRIPTION: OBSERVED RESULT DIFFERENT THAN SCRIPT RESULT:
@00:04:02 A "QH C B3AI26" WAS ENTERED FROM THE DARC
R-CONTROL POSITION. THE EXPECTED RESULT INDICATED THAT THIS
MESSAGE WOULD BE REJECTED (NO HOLD STORED-142). INSTEAD THE
ENTRY WAS ACCEPTED AND THE A/C PLACED IN THE HOLD LIST AND
HOLD WAS DISPLAYED IN FIELD-E

ASSIGNED TO: SEI

RESOLUTION: THIS AIRCRAFT IS PLACED IN PRESENT POSITION HOLD AT
00:04:00.5; THERFORE AT 00:04:03 WHEN A HOLD CANCEL IS
ENTERED FROM THE DARC POSITION IT WILL BE ACCEPTED.
(SIM TIMING PROBLEM)

COMMENTS:
. . . .

REPORT OF PROBLEMS BY NUMBER

PROBLEM #: I/F-005   ORIGINATOR: A. TEDFORD   DATE OPENED: 09/20/88

STATUS: CLOSED   DATE CLOSED: 09/22/88   REFERENCE:

SYSTEM: NAS   TEST: ATR/ACT I/F TEST   PRIORITY: UNASSIGNED

DOCUMENT CHANGE REQ: NO   RETEST REQ: NO   RETEST COMPLETE: NO

> DESCRIPTION: OBSERVED RESULT DIFFERENT THAN SCRIPT RESULT:
> @22:51:46 A "QT 600 S010 00 DARC010" WAS ENTERED FROM THE
> DARC R-CONTROL POSITION. THE EXPECTED RESULT INDICATED THAT
> THE MESSAGE WOULD BE ACCEPTED AND A TRACK BE STARTED ON BOTH
> DARC AND NAS. THE INPUT MESSAGES WAS NOT SEEN AND NO TRACK
> WAS OBSERVED.

ASSIGNED TO: SEI

> RESOLUTION: THE CORRECT SECTOR IS 19; THERFORE THE TRACK WOULD NOT BE
> SEEN AT SECTOR 1. (SIM SCRIPT PROBLEM)

COMMENTS:
- -

PROBLEM #: I/F-006   ORIGINATOR: S. LEVINE   DATE OPENED: 09/20/88

STATUS: CLOSED   DATE CLOSED: 09/22/88   REFERENCE:

SYSTEM: NAS   TEST: ATR/ACT I/F TEST   PRIORITY: UNASSIGNED

DOCUMENT CHANGE REQ: NO   RETEST REQ: NO   RETEST COMPLETE: NO

> DESCRIPTION: OBSERVED RESULT DIFFERENT THAN SCRIPT RESULT:
> @22:57:00 A "QN /OK 07 DARC010" WAS ENTERED FROM SECTOR 4 OF
> THE DARC R-CONTROL POSITION. THE EXPECTED RESULT IS NOT
> OBSERVABLE FROM SECTOR 4.

ASSIGNED TO: SEI

> RESOLUTION: DART OUTPUT SHOWED THAT THIS ENTRY RECIEVED BY NAS AND THE
> CORRECT DIRECTIVE WAS SENT TO DARC. REF. 22:57:03.0 DARC
> OUTPUT. (SIM SCRIPT PROBLEM)

COMMENTS:
- -

REPORT OF PROBLEMS BY NUMBER

PROBLEM #: I/F-007   ⎺ORIGINATOR: S. LEVINE   DATE OPENED: 09/20/88

STATUS: CLOSED   DATE CLOSED: 09/22/88   REFERENCE:

SYSTEM: NAS   TEST: ATR/ACT I/F TEST   PRIORITY: UNASSIGNED

DOCUMENT CHANGE REQ: NO   RETEST REQ: NO   RETEST COMPLETE: NO

    DESCRIPTION: OBSERVED RESULT DIFFERENT THAN SCRIPT RESULT:
            @22:59:00 A "QB /OK 7104 B2MD04" WAS ENTERED FROM SECTOR 4
            OF THE DARC R-CONTROL POSITION. THE EXPECTED RESULT IS NOT
            OBSERVABLE FROM SECTOR 4.

ASSIGNED TO: SEI

    RESOLUTION: ACCORDING TO THE DARC OUTPUT THIS MESSAGE WAS RECIEVED FROM
           NAS AND THE CORRECT RESPONES SENT TO DARC. REF. 22:58:48__
           DARC LOG. (SIM SCRIPT PROBLEM)

COMMENTS:

PROBLEM #: I/F-008   ORIGINATOR: S. LEVINE   DATE OPENED: 09/20/88

STATUS: CLOSED   DATE CLOSED: 09/22/88   REFERENCE:

SYSTEM: NAS   TEST: ATR/ACT I/F TEST   PRIORITY: UNASSIGNED

DOCUMENT CHANGE REQ: NO   RETEST REQ: YES   RETEST COMPLETE: NO

    DESCRIPTION: OBSERVED RESULT DIFFERENT THAN SCRIPT RESULT:
            @22:59:28 A "QP B1LDB01 " WAS ENTERED FROM SECTOR 4 OF THE
            DARC R-CONTROL POSITION. THE EXPECTED RESULT INDICATED THAT
            THE FDB WOULD BE SUPPRESS AT SECTOR 4; HOWEVER IT WAS NOT.

ASSIGNED TO: SEI

    RESOLUTION: THE DARC LOG SHOWED THE FDB BEING SUPPRESSED IN NAS AND THE
           CORRECT DIRECTIVE WAS SENT TO DARC.

COMMENTS:

REPORT OF PROBLEMS BY NUMBER

PROBLEM #: I/F-009   - ORIGINATOR: S. LEVINE   DATE OPENED: 09/20/88

STATUS: CLOSED   DATE CLOSED: 09/22/88   REFERENCE:

SYSTEM: NAS   TEST: ATR/ACT I/F TEST   PRIORITY: UNASSIGNED

DOCUMENT CHANGE REQ: NO   RETEST REQ: NO   RETEST COMPLETE: NO

DESCRIPTION: OBSERVED RESULT DIFFERENT THAN SCRIPT RESULT:
             @23:17:14 A "QP 07 B3AI25 " WAS ENTERED FROM SECTOR 4 OF
             THE DARC R-CONTROL POSITION. THE EXPECTED RESULT INDICATED
             THAT THE MESSAGE WOULD BE REJECTED - A/C IN HOLD STATUS (8).
             INSTEAD THE MESSAGE WAS ACCEPTED.

ASSIGNED TO: SEI

RESOLUTION: AIRCRAFT B3AI25 REACHED FIX 4FG AND WENT INTO HOLD AT
            23:17:14.5 THREE (3) SECONDS AFTER THE ENTRY WAS MADE FROM
            THE DARC POSITION; THUS THE ACTION TAKEN BY NAS WAS CORRECT.
            (SIM TIMING PROBLEM)

COMMENTS:

PROBLEM #: I/F-010   ORIGINATOR: S. LEVINE   DATE OPENED: 09/20/88

STATUS: CLOSED   DATE CLOSED: 09/25/88   REFERENCE:

SYSTEM: NAS   TEST: ATR/ACT I/F TEST   PRIORITY: UNASSIGNED

DOCUMENT CHANGE REQ: NO   RETEST REQ: NO   RETEST COMPLETE: NO

DESCRIPTION: OPERATIONAL/DISPLAY DIFFERENCE:
             @23:01:38 NAS HAD DARC010 BLINKING "CST" AND B2RM06 NOT
             BLINK "CST"; DARC HOWEVER DID NOT HAVE EITHER OF THE TRACKS
             BLINKING "CST"

ASSIGNED TO: SEI

RESOLUTION: OPERATIONAL/DISPLAY DIFFERENCE - CST WILL BLINK IN FIELD-E
            OF A FDB WHEN THE TRACK IS IN COAST STATUS FOR MORE THAN
            TRTI SECONDS. DARC SHOULD ALWAYS DISPLAY THE COAST SYMBOL
            BLINKING.

COMMENTS:

REPORT OF PROBLEMS BY NUMBER

PROBLEM #: I/F-011   ¯ORIGINATOR: S. LEVINE   DATE OPENED: 09/20/88

STATUS: OPEN   REFERENCE:

SYSTEM: NAS   TEST: ATR/ACT I/F TEST   PRIORITY: UNASSIGNED

DOCUMENT CHANGE REQ: NO   RETEST REQ: YES   RETEST COMPLETE: NO

> DESCRIPTION: NUMBER OF TRACKS DISPLAYED IN DARC DIFFERENT THAN NAS:
> @23:24:00 NAS HAD 4 FULL DATA BLOCKS BEING DISPLAYED WHILE
> DARC ONLY HAD 2 FDBs.

ASSIGNED TO: SEI

> RESOLUTION: _____
> _____
> _____
> _____
> _____
> _____
> _____

COMMENTS:
- -

PROBLEM #: I/F-012   ORIGINATOR: S. LEVINE   DATE OPENED: 09/20/88

STATUS: CLOSED   DATE CLOSED: 09/25/88   REFERENCE:

SYSTEM: NAS   TEST: ATR/ACT I/F TEST   PRIORITY: UNASSIGNED

DOCUMENT CHANGE REQ: NO   RETEST REQ: NO   RETEST COMPLETE: NO

> DESCRIPTION: OPERATIONAL/DISPLAY DIFFERENCE:
> @23:42:16 NAS SHOWED XXXX IN THE ALTITUDE FIELD OF AN A/C
> FDB; WHERAS DARC SHOWED 180C IN THE SAME FIELD.

ASSIGNED TO: SEI

> RESOLUTION: OPERATIONAL/DISPLAY DIFFERENCE - THE TWO SYSTEMS HAVE
> DIFFERENT MODE C REASONABLENESS CHECKS. DARC HAS ONE (1)
> CLIMB/DECENT RAT WHILE NAS USES AIRCRAFT TYPE TO
> DISESTABLISH MODE C.

COMMENTS:
- -

REPORT OF PROBLEMS BY NUMBER

PROBLEM #: I/F-013   ORIGINATOR: S. LEVINE   DATE OPENED: 09/20/88

STATUS: CLOSED   DATE CLOSED: 09/25/88   REFERENCE:

SYSTEM: NAS   TEST: ATR/ACT I/F TEST   PRIORITY: UNASSIGNED

DOCUMENT CHANGE REQ: NO   RETEST REQ: NO   RETEST COMPLETE: NO

    DESCRIPTION: OBSERVED RESULT DIFFERENT THAN SCRIPT RESULT:
                @23:52:50 A "QR CTS028" WAS ENTERED AT THE NAS R-POSITION.
                THE EXPECTED RESULT INDICATED THAT THE MESSAGE WOULD BE
                ACCEPTED AND THE FDB WOULD DISPLAY 400A; HOWEVER, THE FDB
                SHOWED 300A WHICH THEN CHANGED TO 400(UP ARROW)300.

ASSIGNED TO: SEI

    RESOLUTION: THIS MESSAGE WAS ENTER LATER THAN EXPECTED. NAS INPUTS A
              "QR 300" PRIOR TO THE SIM SCRIPT ENTERING A "QR 400".
              (SIM TIMING PROBLEM)

COMMENTS:

PROBLEM #: I/F-014   ORIGINATOR: S. LEVINE   DATE OPENED: 09/20/88

STATUS: CLOSED   DATE CLOSED: 09/26/88   REFERENCE:

SYSTEM: NAS   TEST: ATR/ACT I/F TEST   PRIORITY: UNASSIGNED

DOCUMENT CHANGE REQ: NO   RETEST REQ: NO   RETEST COMPLETE: NO

    DESCRIPTION: OPERATIONAL/DISPLAY DIFFERENCE:
                @23:56:00 THE FDB FOR CTS028 DISPLAYED 200F THE "F"
                CHARACTER WAS NOT DISPLAYED IN DARC.

ASSIGNED TO: SEI

    RESOLUTION: OPERATIONAL/DISPLAY DIFFERENCE - THE "F" CHARACTER IS THE
              RESULT OF A ALTITUDE/FIX/ALTITUDE ROUTE WHICH IS NOT
              SUPPORTED IN THE DARC SYSTEM.

COMMENTS:

REPORT OF PROBLEMS BY NUMBER

PROBLEM #: I/F-015   - ORIGINATOR: S. LEVINE   DATE OPENED: 09/20/88

STATUS: CLOSED   DATE CLOSED: 09/25/88   REFERENCE:

SYSTEM: NAS   TEST: ATR/ACT I/F TEST   PRIORITY: UNASSIGNED

DOCUMENT CHANGE REQ: NO   RETEST REQ: YES   RETEST COMPLETE: NO

DESCRIPTION: OBSERVED RESULT DIFFERENT THAN SCRIPT RESULT:
@23:52:56 A "QR CTS028" WAS ENTERED AT THE DARC R-CONTROL
POSITION. THE EXPECTED RESULT INDICATED THAT THE MESSAGE
WOULD BE REJECTED - ALT FORMAT (10) - THE REJECT; HOWEVER,
WAS -MESSAGE TOO SHORT.

ASSIGNED TO: SEI,RMS

RESOLUTION: MODIFIY THE DARC SOFTWARE SUCH THAT WHEN A "QR FLID" IS
ENTERED DARC PLACES THE ASSIGNED ALTITUDE IN THE REPORTED
ALTITUDE FIELD OF THE REQUEST.

COMMENTS:

PROBLEM #: I/F-016   ORIGINATOR: S. LEVINE   DATE OPENED: 09/20/88

STATUS: CLOSED   DATE CLOSED: 09/25/88   REFERENCE:

SYSTEM: NAS   TEST: ATR/ACT I/F TEST   PRIORITY: UNASSIGNED

DOCUMENT CHANGE REQ: NO   RETEST REQ: YES   RETEST COMPLETE: NO

DESCRIPTION: OBSERVED RESULT DIFFERENT THAN SCRIPT RESULT:
@00:00:12 A "QN CTS006" WAS ENTERED AT THE NAS R-CONTROL
POSITION. THE EXPECTED RESULT INDICATED THAT THE MESSAGE
WOULD BE ACCEPTED AND THE FDB FORCE ON SECTOR 4; HOWEVER,
NO RESPONSE WAS OBSERVED.

ASSIGNED TO: SEI

RESOLUTION: THIS TEST CASE WORKED ACCORDING TO THE DART OUTPUT AND THE
DARC GPO/GPI OUTPUT.

COMMENTS:

REPORT OF PROBLEMS BY NUMBER

PROBLEM #: I/F-017   ORIGINATOR: S. LEVINE   DATE OPENED: 09/20/88

STATUS: CLOSED   DATE CLOSED: 09/22/88   REFERENCE:

SYSTEM: DARC/NAS   TEST: ATR/ACT I/F TEST   PRIORITY: UNASSIGNED

DOCUMENT CHANGE REQ: NO   RETEST REQ: NO   RETEST COMPLETE: NO

> DESCRIPTION: OPERATIONAL/DISPLAY DIFFERENCE:
> WHEN A CARRAT APPEARS IN THE FDB EITHER OVER THE A1
> CHARACTER OR THE A2 CHARACTER A SPACE WILL FOLLOW THE
> CHARACTER WITH THE CARRAT (CDC SYSTEM ONLY) IN NAS; HOWEVER,
> DARC DOES NOT ADD A SPACE AFTER THE CHARACTER WITH THE
> CARRAT.

ASSIGNED TO: SEI

> RESOLUTION: OPERATIONAL/DISPLAY DIFFERENCE - THIS ITEM WILL BE ADDED
> TO THE LETTER TO ATO-330.

COMMENTS:

PROBLEM #: I/F-018   ORIGINATOR: S. LEVINE   DATE OPENED: 09/20/88

STATUS: OPEN   REFERENCE:

SYSTEM: DARC/NAS   TEST: ATR/ACT I/F TEST   PRIORITY: UNASSIGNED

DOCUMENT CHANGE REQ: NO   RETEST REQ: YES   RETEST COMPLETE: NO

> DESCRIPTION: M IN AID FIELD WHEN NO AID IN ENTERED IN THE FLIGHT PLAN:
> NAS IS SENDING DARC A "M" IN THE AID FIELD, INDICATING THAT
> NO AID WAS ENTERED WITH THE FLIGHT PLAN. DARC REQUIRES THAT
> THE AID FIELD BE 2 TO 7 CHARACTERS LONG.

ASSIGNED TO: SEI

> RESOLUTION: THIS PROBLEM WILL BE DISCUSSED WITH ASM-160 AND ATR-250 TO
> DETERMINE IF THIS CAUSES A PROBLEM IN THE OPERATION OF THE
> TWO SYSTEMS.

COMMENTS:

REPORT OF PROBLEMS BY NUMBER

PROBLEM #: I/F-019   - ORIGINATOR: G. CRAVEN   DATE OPENED: 09/20/88

STATUS: CLOSED   DATE CLOSED: 09/27/88   REFERENCE:

SYSTEM: DARC/NAS   TEST: ATR/ACT I/F TEST   PRIORITY: UNASSIGNED

DOCUMENT CHANGE REQ: NO   RETEST REQ: YES   RETEST COMPLETE: NO

DESCRIPTION: OBSERVED RESULT DIFFERENT THAN SCRIPT RESULT:
@23:03:05 AN "AM B2FL07 08 80B120" WAS ENTERED FROM THE NAS
D-POSITION. THE EXPECTED RESULT INDICATED THAT THE MESSAGE
WOULD BE ACCEPTED AND THE ALTITUDE FIELD AMENDED TO 80N120.
NO OBSERVATION OF THIS WAS SEEN AT SECTOR 5.

ASSIGNED TO: SEI

RESOLUTION: THIS DID NOT OCCUR, BECAUSE NAS DISESTABLISHED THE MODE C__
ALTITUDE OF THE AIRCRAFT.

COMMENTS:

PROBLEM #: I/F-020   ORIGINATOR: G. CRAVEN   DATE OPENED: 09/20/88

STATUS: CLOSED   DATE CLOSED: 09/25/88   REFERENCE:

SYSTEM: DARC/NAS   TEST: ATR/ACT I/F TEST   PRIORITY: UNASSIGNED

DOCUMENT CHANGE REQ: NO   RETEST REQ: NO   RETEST COMPLETE: NO

DESCRIPTION: NUMBER OF FDBs DISPLAYED IN DARC DIFFERENT THAN NAS:
@23:17:00 TWO DATABLOCKS WERE OBSERVED ON NAS FOR B2RM07
DARC ONLY HAD ONE.

ASSIGNED TO: SEI

RESOLUTION: THIS IS NOT A PROBLEM - A ROUTE READOUT WAS DONE IN THE
NAS BASELINE 500 SIM SCRIPT CAUSING WHAT WOULD APPEAR TO BE
ANOTHER DATABLOCK BUT INFACT ONLY FIELD-A AND A VECTOR
LINE.

COMMENTS:

REPORT OF PROBLEMS BY NUMBER

PROBLEM #: I/F-021   ‾ORIGINATOR: G. CRAVEN   DATE OPENED: 09/20/88

STATUS: CLOSED   DATE CLOSED: 09/22/88   REFERENCE:

SYSTEM: DARC/NAS   TEST: ATR/ACT I/F TEST   PRIORITY: UNASSIGNED

DOCUMENT CHANGE REQ: NO   RETEST REQ: NO   RETEST COMPLETE: NO

    DESCRIPTION: OPERATIONAL/DISPLAY DIFFERENCE:
                @23:25:27 A/C B2FL09 WENT INTO A HOLD (FUTURE POSITION) AT
                FIX G3C - NO DATABLOCK WAS SEEN ON NAS# PVD; DARC HOWEVER,
                HAD A FDB ON ITS DISPLAY.

ASSIGNED TO: SEI

    RESOLUTION: OPERATION/DISPLAY DIFFERENCE - BOTH SYSTEMS ARE WORKING TO
                SPEC. THIS ITEM WILL BE INCLUDED INTHE LETTER TO ATO-330.

COMMENTS:

PROBLEM #: I/F-022   ORIGINATOR: D. TAYLOR   DATE OPENED: 09/20/88

STATUS: CLOSED   DATE CLOSED: 09/22/88   REFERENCE:

SYSTEM: DARC/NAS   TEST: ATR/ACT I/F TEST   PRIORITY: UNASSIGNED

DOCUMENT CHANGE REQ: NO   RETEST REQ: NO   RETEST COMPLETE: NO

    DESCRIPTION: OBSERVED RESULT DIFFERENT THAN SCRIPT RESULT:
                @23:21:01 A "QT /OK B2T02" WAS ENTERED FROM THE DARC
                R-CONTROL POSITION. THE EXPECTED RESULT INDICATED THAT THE
                MESSAGE WOULD BE REJECTED - NOT YOUR CONTROL (175). INSTEAD
                THE REJECT WAS - KBD TIMEOUT ERROR -

ASSIGNED TO: SEI

    RESOLUTION: THE "KBD TIMEOUT ERROR" WAS SENT BECAUSE THE I/F WAS DOWN.

COMMENTS:

REPORT OF PROBLEMS BY NUMBER

PROBLEM #: I/F-023   - ORIGINATOR: D. TAYLOR   DATE OPENED: 09/20/88

STATUS: OPEN   REFERENCE:

SYSTEM: DARC/NAS   TEST: ATR/ACT I/F TEST   PRIORITY: UNASSIGNED

DOCUMENT CHANGE REQ: NO   RETEST REQ: YES   RETEST COMPLETE: NO

DESCRIPTION: OPERATIONAL/DISPLAY DIFFERENCE:
@00:01:50 B3AI50 APPEARED ON NASs PVD BUT NOT ON DARCs PVD.

ASSIGNED TO: SEI

RESOLUTION: _____

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COMMENTS:
- -

PROBLEM #: I/F-024   ORIGINATOR: R. P. SMITH   DATE OPENED: 09/20/88

STATUS: CLOSED   DATE CLOSED: 09/22/88   REFERENCE:

SYSTEM: DARC/NAS   TEST: ATR/ACT I/F TEST   PRIORITY: UNASSIGNED

DOCUMENT CHANGE REQ: NO   RETEST REQ: NO   RETEST COMPLETE: NO

DESCRIPTION: OBSERVED RESULT DIFFERENT THAN SCRIPT RESULT:
@23:03:46 A "QP /OK B2FL06" WAS ENTERED FROM THE DARC
R-CONTROL POSITION. THE EXPECTED RESULT INDICATED THAT THE
MESSAGE WOULD BE REJECTED - SYNTAX ERROR FIELD 2 - HOWEVER
IT WAS ACCEPTED, BUT P-02 APPEARED IN FIELD-E OF DARCs FDB.

ASSIGNED TO: SEI

RESOLUTION: ACCORDING TO THE DARC GPO/GPI LINE OUTPUT THE MESSAGE WAS
REJECTED AS INDICATED IN THE TEST SCRIPT. THE P-02
APPEARED BECAUSE OF A POINTOUT FROM SECTOR 2, ONE (1)
SECOND LATER.

COMMENTS.
- -

REPORT OF PROBLEMS BY NUMBER

PROBLEM #: I/F-025   - ORIGINATOR: R. P. SMITH   DATE OPENED: 09/20/88

STATUS: CLOSED   DATE CLOSED: 09/22/88   REFERENCE:

SYSTEM: DARC/NAS   TEST: ATR/ACT I/F TEST   PRIORITY: UNASSIGNED

DOCUMENT CHANGE REQ: NO   RETEST REQ: NO   RETEST COMPLETE: NO

    DESCRIPTION: OBSERVED RESULT DIFFERENT THAN SCRIPT RESULT:
                  @00:09:00 A "QN B5CA75" WAS ENTERED FROM THE DARC
                  R-CONTROL POSITION. THE EXPECTED RESULT INDICATED THAT THE
                  MESSAGE WOULD BE ACCEPTED AND FIELD-E CHANGED TO O-XX
                  INDICATING AN ACCEPT HANDOFF. INSTEAD THE MESSAGE WAS
                  REJECTED WITH - AC NOT IN HANDOFF -

ASSIGNED TO: SEI

    RESOLUTION: ACCORDING TO THE DART THIS WORKED. AFTER TALKING WITH
                R. SMITH HE AGREED THAT HE MIGHT OF MISSED THIS TEST CASE
                BECAUSE OF TIMING OF THE NEXT MESSAGE.

COMMENTS:

PROBLEM #: I/F-026   ORIGINATOR: R. P. SMITH   DATE OPENED: 09/20/88

STATUS: CLOSED   DATE CLOSED: 09/26/88   REFERENCE:

SYSTEM: DARC/NAS   TEST: ATR/ACT I/F TEST   PRIORITY: UNASSIGNED

DOCUMENT CHANGE REQ: NO   RETEST REQ: NO   RETEST COMPLETE: NO

    DESCRIPTION: DISPLAY PROBLEM IN NAS:
                  @23:39:00 NAS SHOW TWO DEPARTURE LIST ENTRIES OVERLAY ON
                  EACH OTHER.

ASSIGNED TO: SEI

    RESOLUTION: THIS IS A NON-INTERFACE RELATED PROBLEM, AND SHOULD BE
                LOOKED AT BY THE NAS EN-ROUTE SUPPORT ORGANIZATION.

COMMENTS:

REPORT OF PROBLEMS BY NUMBER

PROBLEM #: I/F-027   ORIGINATOR: A. TEDFORD   DATE OPENED: 09/20/88

STATUS: CLOSED   DATE CLOSED: 09/27/88   REFERENCE:

SYSTEM: NAS   TEST: ATR/ACT I/F TEST   PRIORITY: UNASSIGNED

DOCUMENT CHANGE REQ: NO   RETEST REQ: NO   RETEST COMPLETE: NO

    DESCRIPTION: NAS STOPPED SENDING DARC DIRECTIVES AND THEN SEVERED THE
             INTERFACE.

ASSIGNED TO: CSC

    RESOLUTION: RFA INCORRECTLY SETTING DQNBR TO 248. FIXED RFA TO SET
           DQNBR TO 1 IF THE DQ CURRENTLY BEING USED IS 247.

COMMENTS:

APPENDIX D

The attached report of the script sorted by SIS references details how each SIS reference was tested or not tested during the DARC/NAS Interface Test.

The following describes the format of the report:

SIS REFERENCE   The specific paragraph number and appropriate title from the SIS.

TESTED?   YES indicates that this requirement was tested. NO indicates that this requirement was not tested.

NAS/DARC   NAS indicates that the entry was from the Baseline 500 scenario. DARC indicates that the entry was from the R-control scenario.

TIME   The approximate time that the input was entered.

ACTION   The appropriate action for this test case.

P/F   PASS indicates that this test case responded according to the SIS. FAIL indicates that this test case did not respond according to the SIS. This field is left blank for those cases not tested (TESTED? = NO) and for those tests that did not respond appropriately due to SIM timing problems.

COMMENTS   If the requirement was not tested (TESTED? = NO), an explanation for not testing the requirement is noted. If the requirement failed (P/F = FAIL), the PTR number is referenced.

DARC/NAS BIDIRECTIONAL INTERFACE:
VERIFICATION OF SYSTEM REQUIREMENTS
September 30, 1988

SIS REFERENCE	TESTED?	NAS/DARC	TIME	ACTION	P/F	COMMENTS
3.1.1.1 : ACCEPT HANDOFF (QZ, QN)	NO	DARC	: :			TESTED BY SIS PARAGRAPH 4.1.1
3.1.2.1 : TRACK INITIATE (QT)	NO	DARC	: :			TESTED BY SIS PARAGRAPH 4.1.5
3.1.3.1 : BEACON CODE MODIFICATION (QB)	YES	DARC	22:59:00	QB /OK 7104 B2MDC04	FAIL	PTR#- 1/F-007
3.1.3.1 : BEACON CODE MODIFICATION (QB)	YES	DARC	22:52:00	QB 7110 DARC016	PASS	
3.1.3.1 : BEACON CODE MODIFICATION (QB)	YES	DARC	22:51:40	QB 7103 DARC012	PASS	
3.1.3.1 : BEACON CODE MODIFICATION (QB)	YES	DARC	00:08:26	QB /OK 7105 AB090	PASS	
3.1.3.1 : BEACON CODE MODIFICATION (QB)	YES	DARC	23:10:10	QB 5709 B2N03	PASS	
3.1.3.1 : BEACON CODE MODIFICATION (QB)	YES	DARC	23:10:21	QB 1310 B2ST02	PASS	
3.1.3.1 : BEACON CODE MODIFICATION (QB)	YES	DARC	23:04:05	QB 5315 B2FL05	PASS	
3.1.3.1 : BEACON CODE MODIFICATION (QB)	YES	DARC	23:49:00	QB 6713 B3A108	PASS	
3.1.3.2 : BEACON CODE MODIFICATION (QB)	YES	NAS	23:07:30	QB 5601 B3A133	PASS	
3.1.4.1 : PROGRESS REPORT (PR)	NO	DARC	: :			DARC POSITION INELIGIBLE
3.1.4.2 : PROGRESS REPORT (PR)	YES	NAS	23:06:00	PR B2RN01 H2G	PASS	
3.1.5.1 : ASSIGNED ALTITUDE (QZ)	YES	DARC	23:15:59	QZ 02 150 B2RN08	PASS	
3.1.5.1 : ASSIGNED ALTITUDE (QZ)	YES	DARC	23:12:00	QZ /OK 500 DARC017	PASS	
3.1.5.1 : ASSIGNED ALTITUDE (QZ)	YES	DARC	23:15:30	QZ OTP B3A101	FAIL	PTR#- 1/F-001
3.1.5.1 : ASSIGNED ALTITUDE (QZ)	YES	DARC	23:37:41	QZ 200 B3A145	PASS	
3.1.5.1 : ASSIGNED ALTITUDE (QZ)	YES	DARC	23:48:28	QZ /OK 2008300 CTS026	PASS	
3.1.5.1 : ASSIGNED ALTITUDE (QZ)	YES	DARC	23:51:00	QZ 200 DARC016	PASS	
3.1.5.1 : ASSIGNED ALTITUDE (QZ)	YES	DARC	23:49:40	QZ /OK 410 FDPR010	PASS	
3.1.5.1 : ASSIGNED ALTITUDE (QZ)	YES	DARC	23:54:10	QZ 2008100 CTS042	PASS	
3.1.5.2 : ASSIGNED ALTITUDE (QZ)	YES	NAS	23:01:55	QZ 160 B2FL06	PASS	
3.1.5.2 : ASSIGNED ALTITUDE (QZ)	YES	NAS	23:48:30	QZ 2008300 CTS026	PASS	

DARC/NAS BIDIRECTIONAL INTERFACE:
VERIFICATION OF SYSTEM REQUIREMENTS
September 30, 1988

SIS REFERENCE	TESTED?	NAS/DARC	TIME	ACTION	P/F	COMMENTS
3.1.5.2 : ASSIGNED ALTITUDE (QZ)	YES	NAS	23:52:50	QZ OTP CTS028	PASS	
3.1.6.1 : CODE DELETE/INSERT (QB)	NO	DARC	: :			NO DARC/NAS INTERFACE
3.1.7.1 : CODE REQUEST (QB, DQ)	YES	DARC	22:58:25	QB B2NDC04	PASS	
3.1.7.1 : CODE REQUEST (QB, DQ)	YES	DARC	22:58:30	QB B2NDC04	PASS	
3.1.7.1 : CODE REQUEST (QB, DQ)	YES	DARC	22:50:57	QB DARC012	PASS	
3.1.7.1 : CODE REQUEST (QB, DQ)	YES	DARC	22:54:00	QB DARC015	PASS	
3.1.7.1 : CODE REQUEST (QB, DQ)	YES	DARC	23:44:43	QB CTS005	PASS	
3.1.7.1 : CODE REQUEST (QB, DQ)	YES	DARC	23:46:25	QB CTS018	PASS	
3.1.7.2 : CODE REQUEST (QB, DQ)	YES	NAS	23:07:10	QB B3A133	PASS	
3.1.7.2 : CODE REQUEST (QB, DQ)	YES	NAS	23:42:16	QB /OK CTS005	PASS	
3.1.8.1 : PRESENT POSITION HOLD (QH)	YES	DARC	22:52:00	QH /OK DARC010	PASS	
3.1.8.1 : PRESENT POSITION HOLD (QH)	YES	DARC	00:02:00	QH CTS006	PASS	
3.1.8.1 : PRESENT POSITION HOLD (QH)	YES	DARC	00:01:10	QH CTS006	PASS	
3.1.8.1 : PRESENT POSITION HOLD (QH)	YES	DARC	00:08:58	QH B5CA75	PASS	
3.1.8.1 : PRESENT POSITION HOLD (QH)	YES	DARC	00:08:50	QH DARC018	PASS	
3.1.8.1 : PRESENT POSITION HOLD (QH)	YES	DARC	00:04:05	QH /OK B3A126	PASS	
3.1.8.1 : PRESENT POSITION HOLD (QH)	YES	DARC	00:04:03	QH A8110	PASS	
3.1.8.1 : PRESENT POSITION HOLD (QH)	YES	DARC	23:45:15	QH CTS037	PASS	
3.1.8.2 : PRESENT POSITION HOLD (QH)	YES	NAS	23:17:10	QH B2RM07	PASS	
3.1.9.1 : PRESENT POSITION HOLD (HM)	NO	DARC	: :			DARC POSITION INELIGIBLE
3.1.10.1 : FUTURE POSITION HOLD (QH)	NO	DARC	: :			DARC POSITION INELIGIBLE
3.1.11.1 : FUTURE POSITION HOLD (HM)	NO	DARC	: :			DARC POSITION INELIGIBLE
3.1.12.1 : CANCEL PRESENT POSITION HOLD (HM)	NO	DARC	: :			DARC POSITION INELIGIBLE

DARC/NAS BIDIRECTIONAL INTERFACE:
VERIFICATION OF SYSTEM REQUIREMENTS
September 30, 1986

SIS REFERENCE	TESTED?	NAS/DARC	TIME	ACTION	P/F	COMMENTS
3.1.13.1 : CANCEL PRESENT POSITION HOLD (QH)	YES	DARC	00:04:02	QH C B3A126	FAIL	PTR#- I/F-004
3.1.13.1 : CANCEL PRESENT POSITION HOLD (QH)	YES	DARC	00:01:50	QH C /OK CTS006	PASS	
3.1.13.1 : CANCEL PRESENT POSITION HOLD (QH)	YES	DARC	00:03:59	QH C B3A126	PASS	
3.1.13.1 : CANCEL PRESENT POSITION HOLD (QH)	YES	DARC	00:04:17	QH C DISP01	PASS	
3.1.13.1 : CANCEL PRESENT POSITION HOLD (QH)	YES	DARC	00:01:32	QH C B3A124	FAIL	PTR#- I/F-003
3.1.13.1 : CANCEL PRESENT POSITION HOLD (QH)	YES	DARC	00:01:40	QH C DARC016	PASS	
3.1.14.1 : REMOVE STRIP (RS)	NO	DARC	: :			DARC POSITION INELIGIBLE
3.1.14.2 : REMOVE STRIP (RS)	YES	NAS	23:46:40	RS CTS014 /OK	PASS	
3.1.15.1 : REMOVE STRIP (QX)	YES	DARC	22:59:31	QX FP B2NDC04	PASS	
3.1.15.1 : REMOVE STRIP (QX)	YES	DARC	00:01:35	QX FP B3A112	PASS	
3.1.15.1 : REMOVE STRIP (QX)	YES	DARC	23:00:37	QX /OK FP B2NDC03	PASS	
3.1.15.2 : REMOVE STRIP (QX)	YES	NAS	23:17:35	QX FP B2T06	PASS	
3.1.16.1 : DROP TRACK ONLY (QX)	NO	DARC	: :			TESTED BY SIS PARAGRAPH 4.1.3
3.1.17.1 : INITIATE HANDOFF (QH, QZ)	NO	DARC	: :			TESTED BY SIS PARAGRAPH 4.1.4
3.1.18.1 : AMENDMENT (AM)	NO	DARC	: :			DARC POSITION INELIGIBLE
3.1.18.2 : AMENDMENT (AM)	YES	NAS	22:52:30	AM B2SC02 05 221	PASS	
3.1.18.2 : AMENDMENT (AM)	YES	NAS	23:03:05	AM B2FL07 08 B0B120	FAIL	PTR#- I/F-019
3.1.19.1 : FLIGHT PLAN (FP, FPL)	NO	DARC	: :			DARC POSITION INELIGIBLE
3.1.19.2 : FLIGHT PLAN (FP, FPL)	YES	NAS	22:54:50	FP B2NDC06	PASS	
3.1.20.1 : STEREO FLIGHT PLAN (SP)	NO	DARC	: :			DARC POSITION INELIGIBLE
3.1.21.1 : MISSION FLIGHT PLAN (MP)	NO	DARC	: :			NO DARC/NAS INTERFACE
3.1.22.1 : REPORTED ALTITUDE (QR)	YES	DARC	22:51:55	QR /OK 120 DARC010	PASS	
3.1.22.1 : REPORTED ALTITUDE (QR)	YES	DARC	22:54:10	QR DARC010	PASS	

DARC/NAS BIDIRECTIONAL INTERFACE:
VERIFICATION OF SYSTEM REQUIREMENTS
September 30, 1988

SIS REFERENCE	TESTED?	NAS/DARC	TIME	ACTION	P/F	COMMENTS
3.1.22.1 : REPORTED ALTITUDE (QR)	YES	DARC	22:51:03	QR 200 83CD01	PASS	
3.1.22.1 : REPORTED ALTITUDE (QR)	YES	DARC	23:36:59	QR OTP 84A101	PASS	
3.1.22.1 : REPORTED ALTITUDE (QR)	YES	DARC	23:50:00	QR 200 CTS028	PASS	
3.1.22.1 : REPORTED ALTITUDE (QR)	YES	DARC	23:52:56	QR CTS028	FAIL	PTR#- 1/F-013
3.1.22.2 : REPORTED ALTITUDE (QR)	YES	NAS	22:51:03	QR 220 83CD01	PASS	
3.1.22.2 : REPORTED ALTITUDE (QR)	YES	NAS	23:52:40	QR CTS028	FAIL	PTR#- 1/F-015
3.1.23.1 : DEPARTURE MESSAGE (DM)	NO	DARC	: :			DARC POSITION INELIGIBLE
3.1.23.2 : DEPARTURE MESSAGE (DM)	YES	NAS	23:01:15	DM 82FL07 /OK 2301 OTP	PASS	
3.1.23.2 : DEPARTURE MESSAGE (DM)	YES	NAS	00:08:58	DM DRT008 /OK	PASS	
3.2.1 : AUTOMATIC HANDOFF INITIATION	NO	DARC	: :			REACTS TO NAS DIRECTIVE(4.2.6)
3.2.2 : AUTOMATIC TRACK INITIATES	NO	DARC	: :			NOT TESTABLE (4.2.1)
3.2.3 : FUTURE POSITION HOLD	YES	NAS	23:25:27	AUTO(QN 63C 82FL09)	PASS	
3.2.3 : FUTURE POSITION HOLD	NO	DARC	: :			REACTS TO NAS DIRECTIVE
3.2.4 : AUTOMATIC TRACK TERMINIATION	NO	DARC	: :			REACTS TO NAS DIRECTIVE(4.2.3)
3.2.5 : AUTOMATIC FLIGHT PLAN TERMINATION	NO	DARC	: :			NOT TESTABLE
3.2.6 : AUTOMATIC ASSIGNED ALTITUDE UPDATE	NO	DARC	: :			NOT TESTABLE
4.1.1.1 : ACCEPT HANDOFF (QZ, QN)	YES	DARC	00:09:05	QN DARC016	PASS	
4.1.1.1 : ACCEPT HANDOFF (QZ, QN)	YES	DARC	23:49:41	QN 48FL01	PASS	
4.1.1.1 : ACCEPT HANDOFF (QZ, QN)	YES	DARC	23:53:06	QN 6000	PASS	
4.1.1.1 : ACCEPT HANDOFF (QZ, QN)	YES	DARC	22:53:23	QN 81R026	PASS	
4.1.1.1 : ACCEPT HANDOFF (QZ, QN)	YES	DARC	22:58:00	QN /OK DARC010	PASS	
4.1.1.1 : ACCEPT HANDOFF (QZ, QN)	YES	DARC	23:47:00	QN CTS044	PASS	
4.1.1.1 : ACCEPT HANDOFF (QZ, QN)	YES	DARC	23:53:35	QN /OK CTS026	PASS	

DARC/NAS BIDIRECTIONAL INTERFACE:
VERIFICATION OF SYSTEM REQUIREMENTS
September 30, 1988

SIS REFERENCE	TESTED?	NAS/DARC	TIME	ACTION	P/F	COMMENTS
4.1.1.2 : ACCEPT HANDOFF (QZ, QH)	YES	NAS	23:54:47	QH CINS13	PASS	
4.1.1.2 : ACCEPT HANDOFF (QZ, QH)	YES	NAS	23:42:12	QH /OK CTS037	PASS	
4.1.1.4 : ACCEPT HANDOFF (QZ, QH)	YES	DARC	00:09:00	QH BSCA75	FAIL	PTR#- 1/F-025
4.1.1.4 : ACCEPT HANDOFF (QZ, QH)	YES	DARC	23:32:30	QH B21F03	PASS	
4.1.1.5 : ACCEPT HANDOFF (QZ, QH)	YES	NAS	23:33:07	TA B21F03 (AUTOMATIC)	PASS	
4.1.1.5 : ACCEPT HANDOFF (QZ, QH)	YES	NAS	23:45:02	TA CINS20A (AUTOMATIC)	PASS	
4.1.2.1 : COAST TRACK (QT)	NO	DARC	: :			NO DARC/NAS INTERFACE
4.1.3.1 : DROP TRACK ONLY (QX)	YES	DARC	22:53:00	QX /OK DARC012	PASS	
4.1.3.1 : DROP TRACK ONLY (QX)	YES	DARC	23:35:10	QX B1SR01	PASS	
4.1.3.1 : DROP TRACK ONLY (QX)	YES	DARC	23:35:15	QX B2HLD02	PASS	
4.1.3.1 : DROP TRACK ONLY (QX)	YES	DARC	23:35:20	QX DARC016	PASS	
4.1.3.1 : DROP TRACK ONLY (QX)	YES	DARC	23:37:45	QX /OK B1SR01	FAIL	PTR#- 1/F-002
4.1.3.1 : DROP TRACK ONLY (QX)	YES	DARC	22:51:05	QX B(X=320.00,Y=395.00)	PASS	
4.1.3.1 : DROP TRACK ONLY (QX)	YES	DARC	23:37:41	QX CINS04	PASS	
4.1.3.2 : DROP TRACK ONLY (QX)	YES	NAS	22:52:06	QX B1R014	PASS	
4.1.4 : INITIATE HANDOFF (QZ, QH)	YES	DARC	23:02:59	QH 300 B2FL01	PASS	
4.1.4 : INITIATE HANDOFF (QZ, QH)	YES	DARC	23:32:21	QH A05 B21F03	PASS	
4.1.4.1 : ACCEPT HANDOFF (QZ, QH)	YES	DARC	23:53:31	QH 03 CTS028	PASS	
4.1.4.1 : ACCEPT HANDOFF (QZ, QH)	YES	DARC	23:53:35	QH 45 CTS028	PASS	
4.1.4.1 : INITIATE HANDOFF (QZ, QH)	YES	DARC	23:48:05	QH AA7 CINS23A	PASS	
4.1.4.1 : INITIATE HANDOFF (QZ, QH)	YES	DARC	22:53:11	QH 03 B1R026	PASS	
4.1.4.1 : INITIATE HANDOFF (QZ, QH)	YES	DARC	22:57:00	QH /OK 07 DARC010	FAIL	PTR#- 1/F-006 .
4.1.4.1 : INITIATE HANDOFF (QZ, QH)	YES	DARC	23:46:23	QH 03 B2CR14	PASS	

DARC/NAS BIDIRECTIONAL INTERFACE:
VERIFICATION OF SYSTEM REQUIREMENTS
September 30, 1988

SIS REFERENCE	TESTED?	NAS/DARC	TIME	ACTION	P/F	COMMENTS
4.1.4.1 : INITIATE HANDOFF (QZ, QN)	YES	DARC	23:46:25	QN 03 DARC016	PASS	
4.1.4.1 : INITIATE HANDOFF (QZ, QN)	YES	DARC	23:46:29	QN 15 CTS044	PASS	
4.1.4.1 : INITIATE HANDOFF (QZ, QN)	YES	DARC	23:54:17	QN 04 CTS042	PASS	
4.1.4.1 : ACCEPT HANDOFF (QZ, QN)	YES	DARC	23:45:05	QN CTS016	PASS	
4.1.4.2 : INITIATE HANDOFF (QZ, QN)	YES	NAS	22:59:14	QZ 04 B1L0B01	PASS	
4.1.4.4 : INITIATE HANDOFF (QZ, QN)	NO	DARC	: :			DARC POSITION INELIGIBLE
4.1.4.5 : INITIATE HANDOFF (QZ, QN)	YES	NAS	23:31:11	TI S02 B21F01	PASS	
4.1.4.5 : INITIATE HANDOFF (QZ, QN)	YES	NAS	23:32:21	QZ A05 B21F03	PASS	
4.1.4.5 : INITIATE HANDOFF (QZ, QN)	YES	NAS	23:42:46	TI A016 CINS20A	PASS	
4.1.5.1 : TRACK INITIATE (QT)	YES	DARC	22:50:36	QT 600 S010 00 DARC012	PASS	
4.1.5.1 : TRACK INITIATE (QT)	YES	DARC	22:56:10	QT S010 27 DARC018	PASS	
4.1.5.1 : TRACK INITIATE (QT)	YES	DARC	23:07:17	QT 195 DARC017	PASS	
4.1.5.1 : TRACK INITIATE (QT)	YES	DARC	23:08:53	QT S100 B2ST02	PASS	
4.1.5.1 : TRACK INITIATE (QT)	YES	DARC	23:54:30	QT S000 36 CINS60	PASS	
4.1.5.1 : TRACK INITIATE (QT)	YES	DARC	22:51:46	QT 600 S010 00 DARC010	FAIL	PTR#- 1/F-005
4.1.5.2 : TRACK INITIATE (QT)	YES	NAS	22:51:45	QT 050 S010 00 B1R022	PASS	
4.1.5.2 : TRACK INITIATE (QT)	YES	NAS	23:12:00	QT B2FL09	PASS	
4.1.5.2 : TRACK INITIATE (QT)	YES	NAS	22:51:00	QT /OK B2SC02	PASS	
4.1.5.2 : TRACK INITIATE (QT)	YES	NAS	22:55:10	QT B2MDC06	PASS	
4.1.6.1 : TRACK RE-INITIATE (QT)	YES	DARC	23:14:10	QT 150 B3A134	PASS	
4.1.6.1 : TRACK RE-INITIATE (QT)	YES	DARC	23:21:01	QT /OK B2T02	FAIL	PTR#- 1/F-022
4.1.6.1 : TRACK RE-INITIATE (QT)	YES	DARC	23:38:23	QT DBC06	PASS	
4.1.6.1 : TRACK RE-INITIATE (QT)	YES	DARC	22:51:10	QT 600 S100 00 DARC020	PASS	

DARC/NAS BIDIRECTIONAL INTERFACE:
VERIFICATION OF SYSTEM REQUIREMENTS
September 30, 1988

SIS REFERENCE	TESTED?	NAS/DARC	TIME	ACTION	P/F	COMMENTS
4.1.6.1 : TRACK RE-INITIATE (QT)	YES	DARC	23:37:47	QT CINS04	PASS	
4.1.7.1 : PRESENT POSITION HOLD (QH)	NO	DARC	: :			TESTED BY SIS PARAGRAPH 3.1.8
4.1.8.1 : PRESENT POSITION HOLD (HM)	NO	DARC	: :			DARC POS'N INELIGIBLE (3.1.9)
4.1.9.1 : CANCEL PRESENT POSITION HOLD (QH)	NO	DARC	: :			TESTED BY SIS PARAGRAPH 3.1.13
4.1.10.1 : CANCEL PRESENT POSITION HOLD (HM)	NO	DARC	: :			DARC POS'N INELIGIBLE (3.1.12)
4.1.11.1 : PROGRESS REPORT (PR)	NO	DARC	: :			DARC POS'N INELIGIBLE (3.1.6)
4.1.12.1 : REMOVE STRIP (QX)	NO	DARC	: :			TESTED BY SIS PARAGRAPH 3.1.15
4.1.13.1 : REMOVE STRIP (RS)	NO	DARC	: :			DARC POS'N INELIGIBLE (3.1.14)
4.1.14.1 : REPORTED ALTITUDE (QR)	NO	DARC	: :			TESTED BY SIS PARAGRAPH 3.1.22
4.1.15.1 : INTERIM ALTITUDE (QQ)	NO	DARC	: :			NOT TESTABLE BY SCENARIO INPUT
4.2.1 : AUTOMATIC TRACK INITIATES	NO	DARC	: :			NOT TESTABLE
4.2.2 : AUTOMATIC TRACK RE-INITIATES	YES	NAS	23:18:11	AUTOMATIC	PASS	
4.2.2 : AUTOMATIC TRACK RE-INITIATES	NO	DARC	: :			REACTS TO NAS DIRECTIVE
4.2.3 : AUTOMATIC TRACK TERMINATION	YES	NAS	23:17:05	AUTOMATIC	PASS	
4.2.3 : AUTOMATIC TRACK TERMINATION	NO	DARC	: :			REACTS TO NAS DIRECTIVE
4.2.4 : AUTOMATIC TRACK COAST	NO	DARC	: :			NOT TESTABLE
4.2.5 : AUTO TRACK POSITION SYNCHRONIZATION	NO	DARC	: :			REACTS TO NAS DIRECTIVE
4.2.5 : AUTO TRACK POSITION SYNCHRONIZATION	YES	NAS	: :		PASS	
4.2.6 : AUTOMATIC HANDOFF INITIATION	YES	NAS	23:52:52	AUTOMATIC	PASS	
4.2.6 : AUTOMATIC HANDOFF INITIATION	YES	NAS	23:42:46	AUTO(TI SI5 CINS20A)	PASS	
4.2.6 : AUTOMATIC HANDOFF INITIATION	YES	NAS	23:31:11	AUTO (TI SO2 B21F01)	PASS	
4.2.6 : AUTOMATIC HANDOFF INITIATION	NO	DARC	: :			REACTS TO NAS DIRECTIVE
5.1.1.1 : CODE DELETE (QB)	NO	DARC	: :			NO DARC/NAS INTERFACE

DARC/NAS BIDIRECTIONAL INTERFACE:
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SIS REFERENCE	TESTED?	NAS/DARC	TIME	ACTION	P/F	COMMENTS
5.1.2.1 : CODE INSERT (GB)	NO	DARC	: :			NO DARC/NAS INTERFACE
5.1.3.1 : REQUEST/SUPPRESS DATA BLOCK (GP)	YES	DARC	23:43:55	QP CTS037	PASS	
5.1.3.1 : REQUEST/SUPPRESS DATA BLOCK (GP)	YES	DARC	23:17:14	QP 07 B3AI25	FAIL	PTR#- 1/F-009
5.1.3.1 : REQUEST/SUPPRESS DATA BLOCK (GP)	YES	DARC	23:03:46	QP B2FL06	PASS	
5.1.3.1 : REQUEST/SUPPRESS DATA BLOCK (GP)	YES	DARC	23:04:10	QP B2FL06	PASS	
5.1.3.1 : REQUEST/SUPPRESS DATA BLOCK (GP)	YES	DARC	23:04:15	QP /OK B2FL06	FAIL	PTR#- 1/F-024
5.1.3.1 : REQUEST/SUPPRESS DATA BLOCK (GP)	YES	DARC	23:04:20	QP DARC016	PASS	
5.1.3.1 : REQUEST/SUPPRESS DATA BLOCK (QP)	YES	DARC	23:03:47	QP B2FL06	PASS	
5.1.3.1 : REQUEST/SUPPRESS DATA BLOCK (GP)	YES	DARC	23:32:25	QP CTS000	PASS	
5.1.3.2 : REQUEST/SUPPRESS DATA BLOCK (GP)	YES	NAS	22:59:18	QP B1LD801	PASS	
5.1.3.2 : REQUEST/SUPPRESS DATA BLOCK (GP)	YES	NAS	22:59:28	QP B1LDB01	FAIL	PTR#- 1/F-006
5.1.3.2 : REQUEST/SUPPRESS DATA BLOCK (GP)	YES	NAS	23:01:38	QP B1LDB01	PASS	
5.1.3.2 : REQUEST/SUPPRESS DATA BLOCK (GP)	YES	NAS	23:07:00	QP B1C01	PASS	
5.1.4.1 : FORCED DATA BLOCK ON/OFF (QZ, QN)	YES	DARC	23:47:05	QN CINS23A	PASS	
5.1.4.1 : FORCED DATA BLOCK ON/OFF (QZ, QN)	YES	DARC	22:51:48	QN B3CD01	PASS	
5.1.4.1 : FORCED DATA BLOCK ON/OFF (QZ, QN)	YES	DARC	22:52:50	QN B3CD01	PASS	
5.1.4.1 : FORCED DATA BLOCK ON/OFF (QZ, QN)	YES	DARC	22:51:50	QN DARC016	PASS	
5.1.4.2 : FORCED DATA BLOCK ON/OFF (QZ, QN)	YES	DARC	23:39:47	QN CINS05	PASS	
5.1.4.2 : FORCED DATA BLOCK ON/OFF (QZ, QN)	YES	NAS	00:00:12	QN CTS006	FAIL	PTR#- 1/F-016
5.1.5.1 : POINTOUT ON (QP)	YES	DARC	23:04:30	QP 19 B2FL06	PASS	
5.1.5.1 : POINTOUT ON (QP)	YES	DARC	23:04:40	QP /OK 19 B2FL06	PASS	
5.1.5.1 : POINTOUT ON (QP)	YES	DARC	23:04:32	QP 19 DARC016	PASS	
5.1.5.1 : POINTOUT ON (QP)	YES	DARC	23:04:36	QP 35 B2FL06	PASS	

DARC/NAS BIDIRECTIONAL INTERFACE:
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SIS REFERENCE	TESTED?	NAS/DARC	TIME	ACTION	P/F	COMMENTS
5.1.5.2 : POINTOUT ON (QP)	YES	NAS	23:41:22	QP 04 C1S037	PASS	
5.1.6.1 : REPOSITION PVD CENTER (Q2)	NO	DARC	: :			NO DARC/NAS INTERFACE
5.1.7.1 : RANGE CHANGE	NO	DARC	: :			NO DARC/NAS INTERFACE
5.1.8.1 : DATA BLOCK OFFSET (Q2, QN)	YES	DARC	23:50:30	QN 2/3 C1S028	PASS	
5.1.8.1 : DATA BLOCK OFFSET (Q2, QN)	YES	DARC	23:04:40	QN 2/1 B2FL07	PASS	
5.1.8.1 : DATA BLOCK OFFSET (Q2, QN)	YES	DARC	23:04:42	QN /0K 2/1 B2FL07	PASS	
5.1.8.1 : DATA BLOCK OFFSET (Q2, QN)	YES	DARC	23:04:45	QN 0/1 B2FL07	PASS	
5.1.8.1 : DATA BLOCK OFFSET (Q2, QN)	YES	DARC	23:04:50	QN 2/2 DARC016	PASS	
5.1.8.1 : DATA BLOCK OFFSET (Q2, QN)	YES	DARC	23:04:47	QN 2/1 B2FL07	PASS	
5.1.8.1 : DATA BLOCK OFFSET (Q2, QN)	YES	DARC	23:04:47	QN /6 B2RN03	PASS	
5.1.8.1 : DATA BLOCK OFFSET (Q2, QN)	YES	DARC	23:04:50	QN 2 B2RN03	PASS	
5.1.8.2 : DATA BLOCK OFFSET (Q2, QN)	YES	NAS	23:01:20	Q2 6 B2FL01	PASS	
5.1.9.1 : MODIFY ALTITUDE LIMITS (QD)	NO	DARC	: :			DARC POSITION INELIGIBLE
5.1.9.2 : MODIFY ALTITUDE LIMITS (QD)	YES	NAS	22:59:01	QD 000B200	PASS	
5.1 10.1 : INTERIM ALTITUDE (QQ)	NO	DARC	: :			NOT TESTABLE BY SCENARIO INPUT
5.1.10.2 : INTERIM ALTITUDE (QQ)	YES	NAS	23:32:15	QQ 500 B1SR01	PASS	
5.1.10.2 : INTERIM ALTITUDE (QQ)	YES	NAS	23:31:45	QQ 200 B1SR01	PASS	
5.1.11.1 : SELECT AUTOMATIC HANDOFF (QA)	NO	DARC	: :			DARC POSITION INELIGIBLE
6.1.1 : SURVEILLANCE TIE OFF (TO)	YES	NAS	: :	TO RD2 (B SUP CONS)	PASS	
6.1.1 : SURVEILLANCE TIE-OFF (TO)	NO	DARC	: :			REACTS TO NAS DIRECTIVE
6.1.1.1 : SURVEILLANCE TIE-OFF (TO)	YES	NAS	: :	TO DRP (B SUP CONS)	PASS	
6.1.1 : SURVEILLANCE TIE-OFF (TO)	NO	DARC	: :			REACTS TO NAS DIRECTIVE
6.1.1.2 : SURVEILLANCE TIE-OFF (TO)	YES	NAS	: :	TO OFF (B SUP CONS)	PASS	

DARC/NAS BIDIRECTIONAL INTERFACE:
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SIS REFERENCE	TESTED?	NAS/DARC	TIME	ACTION	P/F	COMMENTS
6.1.1.2 : SURVEILLANCE TIE-OFF (TO)	NO	DARC	: :			REACTS TO NAS DIRECTIVE
6.1.1.2 : SURVEILLANCE TIE-OFF (TO)	YES	NAS	: :	TO RD1 (@ SUP CONS)	PASS	
6.1.1.2 : SURVEILLANCE TIE-OFF (TO)	YES	NAS	: :	TO FDP (@ SUP CONS)	PASS	
6.1.2 : START PROCESSING (GO)	YES	NAS	: :	GO	PASS	
6.1.2 : START PROCESSING (GO)	NO	DARC	: :			REACTS TO NAS DIRECTIVE
6.1.3 : PLANNED SHUTDOWN (PS)	YES	NAS	: :	PS START TIME STOP TIME	PASS	
6.1.3 : PLANNED SHUTDOWN (PS)	NO	DARC	: :			REACTS TO NAS DIRECTIVE
6.1.4 : RESECTOR/R-POSITION ASSIGNMENT (CS)	YES	NAS	23:00:02	CS 0104/0102	PASS	
6.1.4 : RESECTOR/R-POSITION ASSIGNMENT (CS)	NO	DARC	: :			REACTS TO NAS DIRECTIVE
6.1.4 : RESECTOR/R-POSITION ASSIGNMENT (CS)	YES	NAS	00:01:35	CS 10/14	PASS	
6.1.5 : ALTIMETER SETTING (AS)	YES	NAS	22:58:45	AS 2258 DS 884 FSF 776	PASS	
6.1.5 : ALTIMETER SETTING (AS)	NO	DARC	: :			DARC POSITION INELIGIBLE
6.2.1 : DARC/NAS TIME SYNCHRONIZATION	YES	NAS	: :		PASS	
6.2.1 : DARC/NAS TIME SYNCHRONIZATION	NO	DARC	: :			REACTS TO NAS DIRECTIVE
6.2.2 : DARC/NAS INTERFACE MAINTENANCE	NO	DARC	: :			NOT TESTABLE
6.2.3 : DCP INTERFACE LOSS	NO	DARC	: :			NOT TESTABLE
6.2.4 : COMPOOL TABLE DQ SATURATION	NO	DARC	: :			NOT TESTABLE
6.2.5 : NAS RESUME MODE STARTOVER	NO	DARC	: :			NO DARC/NAS INTERFACE
6.2.6 : NAS REESTABLISH MODE STARTOVER	YES	NAS	: :		PASS	
6.2.6 : NAS REESTABLISHMENT STARTOVER	NO	DARC	: :			REACTS TO NAS DIRECTIVE