

WSC SCHEDULING EIF

OBJECTIVES:

Verify the following Message Types / Classes:

- 02/01 Routine SHO.
- 02/03 Routine EET SHO.
- 03/01 Special Instruction.
- 03/10 IIRV.
- 03/12 Cancel SHO.
- 03/13 TDRS Delta-T Approval.
- 03/15 IIRV In-flight Update.
- 03/18 Delta-T adjustment.
- 03/51 SHO Status
- 03/53 Preventative Maintenance Request.
- 03/54 Special Request.
- 03/59 TDRS Maneuver Request.

- Verify SHO processing by WSC.
- Verify Vector processing by WSC.
- Verify SHO and Vector daily transmissions to WSC.
- Verify Free-Text message exchange between NCC / WSC.

PREREQUISITS:

Successful completion of NCC98 OET OPS Scenario TBD.

TEST SETUP:

VTRS (Vector Transmission Rules Set) are set for auto transmission through the end of the next RAYDAY.
STRS (Schedule Transmission Rules Set) are set for auto transmission through the end of the current RAYDAY.
Vector data is available in the NCC database either from LISTNER or NTS.
Event Data for the next RAYDAY is available in the NCC Database either from LISTNER or NTS.

TEST SCRIPT:

<u>STEP</u>	<u>ELEMENT</u>	<u>ACTION</u>
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Vector Transmissions.

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| Step 2. | NCC | Transmits Type 8 IIRV (xx/xx) for the ground terminal being simulated by SMTF. |
| Step 3. | WSC | Verifies receipt of the Type 8 IIRV. |
| Step 4. | NCC | Transmits Type 1 Vectors for 1300 for the current RAYDAY. |
| Step 5. | WSC | Verify receipt of the Type 1 IIRV. |

Ephemeris Set transmissions.

- Step 6. NCC Transmits a Shuttle Ephemeris Set with an epoch 1 day in the future.
- Step 7. WSC Verifies receipt of the Ephemeris Set. WSC notes the epoch times of the Shuttle Ephemeris Set.

Delta-T OPM Transmission.

- Step 8. NCC Transmits a Delta-T OPM to WSC slipping the epoch time of the Shuttle Ephemeris set by 30 minutes.
- Step 9. WSC Verifies receipt of the Delta-T OPM and verifies the Shuttle Ephemeris Set epoch time has increased by 30 minutes.

Internal Delta-T adjustment.

- Step 10. NCC Applies an Internal Delta-T to the Shuttle Ephemeris Set indicating a slip of one hour. NCC then transmits the Shuttle Ephemeris Set to WSC.
- Step 11. WSC Verifies receipt of the Shuttle Ephemeris Set with the epoch times indicating t + 1 hour from the original transmission.

Vector Daily Transmission.

- Step 12. NCC NCC Initiates a Vector Daily Transmission to WSC. NCC notifies WSC of the number of vectors transmitted.
- Step 13. WSC Verifies receipt of the correct number of vectors.

NCC Vector Thruput.

- Step 14. NCC Configures VTRS to allow Vector thruput for Shuttle.
- Step 15. NCC Transmits a Type 8 Shuttle vector from NTS to the NCCDS. NCC Verifies the vector is received from the NTS and is correctly transmitted to WSC without intervention.
- Step 16. WSC Verifies receipt of the vector.

Event Scheduling.

- Step 17. NCC Transmits one SHO, with a start time of 12 hours in the future, and a duration of one hour, for each of the following service configurations:

NORMAL USERS

MAF/MAR/TRK
MAF/MAF EET/MAR/MAR EET/TRK
SSAF/SSAR/TRK
SSAF/SSAF EET/SSAR/SSAR EET/TRK
KuSAF/KuSAR/TRK
KuSAF/KuSAF EET/KuSAR/KuSAR EET/TRK
MAF/SSAR/TRK CROSS SUPPORT

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SSAF/MAR/TRK CROSS SUPPORT
SSA COMBINING

SHUTTLE

SSHF/KSHF/SSHR/KSHR/TRK (ON-ORBIT SUPPORT)
CHANNEL 3 DIGITAL
CHANNEL 3 TV
CHANNEL 3 ANALOG
CHANNEL 2 PAYLOAD INTERROGATOR (PI)

Note: Verify that the SHO also generates an IFL SHO to WSC.

SSHF EET (MRT)
KSHF EET (MRT)
SSHR EET (MRT)
KSHR EET (MRT)

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| Step 18. | WSC | Verifies receipt and correct processing of each SHO. |
| Step 20. | NCC | Verifies receipt of OPM-51s for each SHO transmitted to WSC. |

Daily Schedule Transmissions.

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| Step 21. | NCC | Begins a Schedule transmission for the next RAYDAY. NCC notifies WSC of the number of events transmitted. |
| Step 22. | WSC | Verifies receipt and correct processing of each SHO. |
| Step 23. | NCC | Verifies receipt of OPM-51s for each SHO transmitted to WSC. |

Schedule Delete Processing.

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| Step 24. | NCC | Begins to delete, one at a time, the events scheduled in Step 17 above. |
| Step 25. | WSC | Verifies receipt and successful processing of each delete. |

Bulk Schedule Deletes.

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| Step 26. | NCC | Transmits a Bulk Delete to WSC for all events transmitted in Step 21 above. |
| Step 27. | WSC | Verifies receipt and successful processing of each delete. |

Retransmission of Deletes.

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| Step 28. | NCC | Re-transmits the deletes issued in Step 26 above. |
| Step 29. | WSC | Verifies receipt of the re-transmitted deletes, and successful processing of the deletes indicating the events were already deleted. |
| Step 30. | NCC | Verifies receipt of 03/62 indicating that the events were not found. |

Replace Request Processing.

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| Step 31. | NCC | NCC transmits a Full Support Customer SAR from NTS with an event start time of 12 hours in the future, with a duration of 1 hour. |
| Step 32. | NCC | Verifies the event was scheduled and transmitted to WSC. |
| Step 33. | WSC | Verifies receipt and scheduling of the event. |
| Step 34. | NCC | Issues a REPLACE REQUEST for the event scheduled in Step 30 above. NCC issues a Delete to WSC. |
| Step 35. | WSC | Verifies receipt of the delete and successful processing. WSC issues an OPM-51 to NCC indicating delete is complete. |
| Step 36. | NCC | Receives OPM-51 and transmits the SHO specified in the REPLACE REQUEST. |
| Step 37. | WSC | Verifies receipt and correct processing of the SHO. |
| Step 38. | NCC | Verifies receipt of OPM-51s for the SHO transmitted to WSC. |
| Step 39. | NCC | Deletes the event scheduled by the REPLACE REQUEST in Step 33 above. |
| Step 40. | WSC | Verifies receipt and successful processing of each delete. |

Free-Text Message Exchange.

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| Step 41. | WSC | Transmits an OPM-53 (Preventative Maintenance Request) to NCC |
| Step 42. | NCC | Verifies receipt of the OPM-53. |
| Step 43. | WSC | Transmits an OPM-54 (Special Request or Instruction) to NCC |
| Step 44. | NCC | Verifies receipt of the OPM-54. |
| Step 45. | WSC | Transmits an OPM-59 (TDRS Maneuver Request) to NCC |
| Step 46. | NCC | Verifies receipt of the OPM-59. |
| Step 47. | NCC | Transmits an OPM-01 to WSC. |
| Step 48. | WSC | Verifies receipt of the OPM-01. |
| Step 49. | NCC | Transmits an OPM-13 to WSC. |
| Step 50. | WSC | Verifies receipt of the OPM-13. |

NCC Characterization

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| Step 51. | NCC | Inhibits WSC transmission in the STRS.. |
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Step 52.	NCC	Using NTS, NCC populates a 500 event database for the next RAYDAY.
Step 53.	NCC	Begins a BULK TRANSMISSION of the events scheduled in Step 52 above. During the transmission, NCC shall induce a MANUAL SCD FAILOVER on the WSC link. NCC notifies WSC of the SCD failover.
Step 54.	WSC	Verifies the number of SHOs received in the transmission.
Step 55.	NCC	Deletes the 500 events scheduled in Step 52 above.
Step 56.	NCC	Inhibits WSC transmission in the STRS..
Step 57.	NCC	Using NTS, NCC populates a 500 event database for the next RAYDAY.
Step 58.	NCC	Begins a BULK TRANSMISSION of the events scheduled in Step 52 above. During the transmission, NCC shall induce a NPG FAILOVER on the WSC link. NCC notifies WSC of the NPG failover.
Step 59.	WSC	Verifies the number of SHOs received in the transmission.
Step 60.	NCC	Deletes the 500 events scheduled in Step 52 above.

Items to Consider:

TDRS H/I/J
Virtual S/C
SHO Reject Testing.
Data Group and Mode coverage.
Tracking type coverage.
Vector reject testing.
Characterization Testing