

UPS98 BASELINE CUSTOMER SCHEDULING EIF

OBJECTIVES:

Verify the following Message Type / Classes:

- 94/01 Fixed Schedule Message - Normal Support
- 94/02 Fixed Schedule Message - Premium Support
- 94/03 Fixed Schedule Message - Simulation Support
- 99/01 Schedule Deletion Notification
- 99/02 Schedule Result Message
- 99/10 Schedule Add Request
- 99/11 Schedule Delete Request

PREREQUISITES:

- Successful completion of SO OPS Scenario TBD.

TEST SETUP:

- Active Period
- Automatic Scheduling
- Deactivate STRS.
- Element testing is identified as a Baseline Customer in the NCC database.
- Event Database shall be void of events for the current and the next RAYDAY.
- TDRS-041 is assigned to SGLT1 in the NTS and the NCC Databases.

TEST SCRIPT:

STEP ELEMENT ACTION

SAR Scheduling with SSCs.

Step 1	UPS98	Transmits a SAR (99/10) containing one Service Specification Code for a MAF service. Event to be scheduled on TDRS-041 with a start time to begin one hour in the future, and a duration of 30 minutes. The SAR shall specify a Plus Event Tolerance of 1 hour.
Step 2.	NCC	Verify receipt and successful scheduling of the SAR. NCC verifies that the event did not utilize the plus tolerance for scheduling the event.
Step 3.	UPS98	Verify receipt of SRM (99/02) from NCC.
Step 4.	UPS98	UPS98 transmits a Schedule Delete Request (99/11) to the NCC deleting the event scheduled in Step 1 above.
Step 5.	NCC	NCC verifies receipt of the SDR and verifies deletion of the scheduled event.
Step 6.	UPS98	UPS98 verifies receipt of the Schedule Deletion Notification (99/01) and the SRM (99/02) from NCC.

Retransmission of UPS98 submitted Deletes.

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| Step 7. | NCC | NCC retransmits the Schedule Deletion Notification (99/01) and the SRM (99/02) from NCC for the event deleted by the UPS98 in Step 4 above. |
| Step 8. | UPS98 | UPS98 verifies receipt of the Schedule Deletion Notification (99/01) and the SRM (99/02) from NCC. |

SAR Scheduling with SSCs and respecifiabiles.

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| Step 9. | UPS98 | Transmits a SAR (99/10) containing one Service Specification Code for a MAF service. The SAR shall indicate a respecifiable value for the Data Rate. The Data Rate shall have a value of 2000 BPS. Event start time to begin one hour in the future. |
| Step 10. | NCC | Verify receipt and successful scheduling of the SAR. |
| Step 11. | UPS98 | Verify receipt of SRM (99/02) from NCC. |
| Step 12. | NCC | NCC deletes the event scheduled in Step 7 above from the operator console position. |
| Step 13. | NCC | NCC verifies receipt of the SDR and verifies deletion of the scheduled event. |
| Step 14. | UPS98 | UPS98 verifies receipt of the Schedule Deletion Notification (99/01). |

Retransmission of NCC submitted Deletes.

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| Step 15. | NCC | NCC retransmits the Schedule Deletion Notification (99/01) and the SRM (99/02) from NCC for the event deleted by the NCC in Step 10 above. |
| Step 16. | UPS98 | UPS98 verifies receipt of the Schedule Deletion Notification (99/01) and the SRM (99/02) from NCC. |

SAR Scheduling with PEs.

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| Step 17. | UPS98 | UPS98 transmits a SAR with Prototype Event (PE) codes for a MA service. Event start time to begin one hour in the future. |
| Step 18. | NCC | Verify receipt and successful scheduling of the SAR. |
| Step 19. | UPS98 | Verify receipt of SRM (99/02) from NCC. |
| Step 20. | UPS98 | UPS98 transmits a Schedule Delete Request (99/11) to the NCC deleting the event scheduled in Step 13 above. |
| Step 21. | NCC | NCC verifies receipt of the SDR and verifies deletion of the scheduled event. |
| Step 22. | UPS98 | UPS98 verifies receipt of the Schedule Deletion Notification (99/01) and the SRM (99/02) from NCC. |

SAR Scheduling with plus tolerances.

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NCC98

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| Step 23. | NCC | Schedules a Blocking Event on TDRS-041 MAF to begin T+ 4 hours with a duration of 1 hour. |
| Step 24. | UPS98 | Transmits a SAR (99/10) for TDRS-041 containing one Service Specification Code for a MAF service. Event start time to begin four hours in the future, a duration of one hour, and an event plus tolerance of 1.5 hours. |
| Step 25. | NCC | Verify receipt and successful scheduling of the SAR utilizing the plus tolerance. |
| Step 26. | UPS98 | Verify receipt of SRM (99/02) from NCC. |
| Step 27. | UPS98 | UPS98 transmits a Schedule Delete Request (99/11) to the NCC deleting the event scheduled in Step 20 above. |
| Step 28. | NCC | NCC verifies receipt of the SDR and verifies deletion of the scheduled event. |
| Step 29. | UPS98 | UPS98 verifies receipt of the Schedule Deletion Notification (99/01). |

SAR Scheduling with minus tolerances.

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| Step 30. | NCC | Schedules a Blocking Event on TDRS-041 MAF to begin 1 minute after the blocking event scheduled in Step 19 above ends with a duration of 1 hour. |
| Step 31. | UPS98 | Transmits a SAR (99/10) for TDRS-041 containing one Service Specification Code for a MAF service. Event start time to begin four hours in the future, a duration of one hour, and an event plus tolerance of 1.5 hours, and an event minus tolerance of 3 hours. |
| Step 32. | NCC | Verify receipt and successful scheduling of the SAR utilizing the minus tolerance. |
| Step 33. | UPS98 | Verify receipt of SRM (99/02) from NCC. |
| Step 34. | UPS98 | UPS98 transmits a Schedule Delete Request (99/11) to the NCC deleting the event scheduled in Step 27 above. |
| Step 35. | NCC | NCC verifies receipt of the SDR and verifies deletion of the scheduled event. |
| Step 36. | UPS98 | UPS98 verifies receipt of the Schedule Deletion Notification (99/01) and the SRM (99/02) from NCC. |
| Step 37. | NCC | NCC deletes all blocking events scheduled. |

Multiblock message transmission.

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| Step 38. | UPS98 | Transmits a SAR (99/10) containing as many Service Specification Codes to generate a multiblock message. Event does not need to schedule |
| Step 39. | NCC | Verify receipt of the multiblock SAR. |
| Step 40. | UPS98 | Verify receipt of SRM (99/02) from NCC. |

Service Scheduling (Normal and Shuttle).

- Step 41. NCC Enables STRS to allow auto thrupt of USMs (94/01, 94/02, 94/03) to the UPS98.
- Step 42. UPS98 UPS98 transmits, one at a time, conflict free SARs to schedule the following services:

Normal Users	Shuttle
MAF/MAR/TRK	SSHF/KSHF/SSHR/KSHR/TRK
SSAF/SSAR/TRK	KSHR EET
KSAF/KSAR/TRK	
SSAF/MAR Cross Support	
MAF/SSAR Cross Support	
SSA Combining (If UPS can support).	
SSAR EET	

The Start time of the first event shall be ASAP to generate a Premium Event. It is expected that the Shuttle events shall generate Multiblock USMs.

- Step 43. NCC As each of the above referenced events are transmitted NCC will verify receipt and successful scheduling of each SAR.
- Step 44. UPS98 Verify receipt of SRMs (99/02) and USMs (94/01, 94/02, 94/03) for each event from NCC.

NCC Scheduled Event

- Step 45. NCC NCC shall identify an available timeframe and schedule a MAF/MAR event for the UPS98 from the operator console.
- Step 46. UPS98 Verifies receipt of the USM (94/01 or 94/02) for the NCC scheduled event.

Bulk transmission to UPS98.

- Step 47. NCC NCC initiates a bulk transmission to the UPS98 of the USMs for the events scheduled in Step 38 and Step 41 above.

UPS98 Bulk Delete.

- Step 48. UPS98 UPS98 transmits a Schedule Delete Requests (99/11) to the NCC deleting all events scheduled by the EIF so far.
- Step 49. NCC NCC verifies receipt of the SDR and verifies deletion of all the scheduled events.
- Step 50. UPS98 UPS98 verifies receipt of the Schedule Deletion Notifications (99/01) and the SRMs (99/02) from NCC.

SA Antenna Open Selection.

- Step 51. NCC Schedules a blocking event for TDRS-041 SA-1 antenna to begin ASAP with a duration of 24 hours.
- Step 52. UPS98 Transmits a SSAF service SAR for TDRS-041, with an ASCII BLANK the antenna

field. The SAR shall have a start time 1 hour in the future. No event tolerances are to be specified.

- Step 53. NCC Verifies receipt of the SAR and verifies the event schedules on TDRS-041 SA-2 antenna.
- Step 54. UPS98 Verify receipt of SRMs (99/02) and USMs (94/01) for the event from NCC. Verify that the USM reflects the event being scheduled on SA-2.
- Step 55. UPS98 UPS98 transmits a Schedule Delete Requests (99/11) to the NCC deleting the event scheduled in Step 52 above.
- Step 56. NCC NCC verifies receipt of the SDR and verifies deletion of the scheduled event.
- Step 57. UPS98 UPS98 verifies receipt of the Schedule Deletion Notifications (99/01) and the SRM (99/02) from NCC.

Reject Testing: Code 49 (SSC not found).

- Step 58. UPS98 Transmits a SAR (99/10) containing one Service Specification Code not resident in the NCC database.
- Step 59. NCC Verify receipt and rejection of the SAR for a code 49 (Service specification code not found).
- Step 60. UPS98 Verify receipt of SRM (99/02) indicating a reject code of 49 from NCC.

Reject Testing:

- Step 61. UPS98 UPS98 transmits a SAR with Prototype Event (PE) codes not resident in the NCC database.
- Step 62. NCC Verify receipt and rejection of the SAR for a code 50 (Prototype Event ID not found).
- Step 63. UPS98 Verify receipt of SRM (99/02) indicating a reject code of 50 from NCC.

Other Rejects to test (to be negotiated with UPS98):

- Respecifiable out of range
- incorrect service ordering.
- Invalid start time
- invalid duration
- User channel ID conflict
- SA/MA Conflicts
- More than one SA ant
- Illegal Supiden
- Simulation equipment conflict.
- Forward or return link / tracking code mismatch.
- Earliest service start time not same as event start time

UPS98 FULL SUPPORT CUSTOMER SCHEDULING EIF

OBJECTIVES:

Verify the following Message Type / Classes:

- 94/01 Fixed Schedule Message - Normal Support
- 94/02 Fixed Schedule Message - Premium Support
- 94/03 Fixed Schedule Message - Simulation Support
- 94/04 Flexible Schedule Message - Normal Support
- 94/05 Flexible Schedule Message - Simulation Support
- 99/01 Schedule Deletion Notification
- 99/02 Schedule Result Message
- 99/10 Schedule Add Request
- 99/11 Schedule Delete Request
- 99/12 Replace Request
- 99/21 Alternate Schedule Add Request
- 99/24 Wait List Request
- 99/25 TDRS Scheduling Window
- 99/28 Schedule Result Request

PREREQUISITES:

Successful completion of NCC98 OET OPS Scenario SO TBD.

Successful completion of the UPS98 BASELINE CUSTOMER SCHEDULING EIF

TEST SETUP:

Active Period

Automatic Scheduling

STRS configured to inhibit USM transmissions to UPS98.

Element testing is identified as a Full Support Customer in the NCC database.

TDRS Sets are defined as follows:

ALL = 041, 046, 171, 174

TDRS-041 = 041, 046

TDW = 171, 174

TDZ = ???

TDRS / SGLT assignments shall be as follows:

TDRS-041 / STGT SGLT1

TDRS-174 / STGT SGLT2

TDRS-046 / WSGT SGLT1

TDRS-171 / WSGT SGLT2

TDRS-??? / WSGT SGLT3

Unless otherwise specified, all SARs will indicate a specific TDRS via its number (i.e. 041).

Element testing does not have a Default Freeze Interval set in the NCC Database.

TEST SCRIPT:

STEP ELEMENT ACTION

SAR scheduling with SSCs

- Step 1. UPS98 Transmits a SAR (99/10) containing one Service Specification Code for a MAF service. The Event is to be scheduled on TDRS-041 with an Event start time to begin one hour in the future.
- Step 2. NCC Verify receipt and successful scheduling of the SAR.
- Step 3. UPS98 Verify receipt of SRM (99/02) from NCC.
- Step 4. UPS98 UPS98 transmits a Schedule Delete Request (99/11) to the NCC deleting the event scheduled in Step 1 above.
- Step 5. NCC NCC verifies receipt of the SDR and verifies deletion of the scheduled event.
- Step 6. UPS98 Verifies receipt of a SRM indicating the event has been deleted.

SAR Scheduling with SSCs and respecifiabiles.

- Step 7. UPS98 Transmits a SAR (99/10) containing one Service Specification Code for a MAF service. The SAR shall indicate a respecifiable value for the Data Rate. The Data Rate shall have a value of 2000 BPS. The Event is to be scheduled on TDRS-041 with an Event start time to begin one hour in the future.
- Step 8. NCC Verify receipt and successful scheduling of the SAR.
- Step 9. UPS98 Verify receipt of SRM (99/02) from NCC.
- Step 10. NCC NCC transmits a Schedule Delete Request (99/11) from the operator console deleting the event scheduled in Step 6 above.
- Step 11. NCC NCC verifies receipt of the SDR and verifies deletion of the scheduled event.
- Step 12. UPS98 Verifies receipt of a SRM indicating the event has been deleted.

SAR Scheduling with PEs.

- Step 13. UPS98 UPS98 transmits a SAR with Prototype Event (PE) codes for a MA service. The Event is to be scheduled on TDRS-041 with an Event start time to begin one hour in the future.
- Step 14. NCC Verify receipt and successful scheduling of the SAR.
- Step 15. UPS98 Verify receipt of SRM (99/02) from NCC.
- Step 16. UPS98 UPS98 transmits a Schedule Delete Request (99/11) to the NCC deleting the event scheduled in Step 12 above.
- Step 17. NCC NCC verifies receipt of the SDR and verifies deletion of the scheduled event.
- Step 18. UPS98 Verifies receipt of a SRM indicating the event has been deleted.

SAR Scheduling with Event plus tolerances.

- Step 19. NCC Schedules a Blocking Event on TDRS-041 MAF & MAR 1 - 5 to begin T+ 4 hours with
a duration of 1 hour.
- Step 20. UPS98 Transmits a SAR (99/10) for TDRS-041 containing one Service Specification Code for
a MAF service. Event start time to begin four hours in the future, a duration of one hour, and an event plus tolerance of 1.5 hours.
- Step 21. NCC Verify receipt and successful scheduling of the SAR utilizing the plus tolerance.
- Step 22. UPS98 Verify receipt of SRM (99/02) from NCC.
- Step 23. UPS98 UPS98 transmits a Schedule Delete Request (99/11) to the NCC deleting the event scheduled in Step 18 above.
- Step 24. NCC NCC verifies receipt of the SDR and verifies deletion of the scheduled event.
- Step 25. UPS98 Verifies receipt of a SRM indicating the event has been deleted.

SAR Scheduling with Event minus tolerances.

- Step 26. NCC Schedules a Blocking Event on TDRS-041 MAF to begin 1 minute after the blocking event scheduled in Step 19 above ends with a duration of 1 hour.
- Step 27. UPS98 Transmits a SAR (99/10) for TDRS-041 containing one Service Specification Code for a MAF service. Event start time to begin four hours in the future, a duration of one hour, and an event plus tolerance of 1.5 hours, and an event minus tolerance of 3 hours.
- Step 28. NCC Verify receipt and successful scheduling of the SAR utilizing the minus tolerance.
- Step 29. UPS98 Verify receipt of SRM (99/02) from NCC.
- Step 30. UPS98 UPS98 transmits a Schedule Delete Request (99/11) to the NCC deleting the event scheduled in Step 24 above.
- Step 31. NCC NCC verifies receipt of the SDR and verifies deletion of the scheduled event.
- Step 32. UPS98 Verifies receipt of a SRM indicating the event has been deleted.

SAR Scheduling with Service plus tolerances.

- Step 33. UPS98 Transmits a SAR (99/10) for TDRS-041 containing Two Service Specification Codes for a MAF and a MAR service. Event start time to begin four hours in the future, a duration of one hour, and an event plus tolerance of 4.5 hours, and an event minus tolerance of 3 hours. The MAR shall have a service plus tolerance of 3 hours.
- Step 34. NCC Verify receipt and successful scheduling of the SAR utilizing the service plus tolerance.
- Step 35. UPS98 Verify receipt of SRM (99/02) from NCC.

- Step 36. UPS98 UPS98 transmits a Schedule Delete Request (99/11) to the NCC deleting the event scheduled in Step 29 above.
- Step 37. NCC NCC verifies receipt of the SDR and verifies deletion of the scheduled event.
- Step 38. UPS98 Verifies receipt of a SRM indicating the event has been deleted.

SAR Scheduling with Service Minus tolerances.

- Step 39. UPS98 Transmits a SAR (99/10) for TDRS-041 containing two Service Specification Codes for MAF and MAR services. Event start time to begin four hours in the future, a duration of one hour, and an event plus tolerance of 1.5 hours, and an event minus tolerance of 5 hours. The MAR services shall have a service tolerance of plus 1 hour and a service tolerance of minus 3 hours.
- Step 40. NCC Verify receipt and successful scheduling of the SAR utilizing the minus tolerances.
- Step 41. UPS98 Verify receipt of SRM (99/02) from NCC.
- Step 42. UPS98 UPS98 transmits a Schedule Delete Request (99/11) to the NCC deleting the event scheduled in Step 33 above.
- Step 43. NCC NCC verifies receipt of the SDR and verifies deletion of the scheduled event.
- Step 44. UPS98 Verifies receipt of a SRM indicating the event has been deleted.
- Step 45. NCC NCC deletes all blocking events scheduled.

SAR Scheduling with Minimum Service Duration.

- Step 46. NCC Schedules a Blocking Event on TDRS-041 MAF to begin 2 hours in the future with a duration of 1 hour. The NCC Schedules a Blocking Event on TDRS-041 MAF to begin 4 hours into the future with the duration of one hour.
- Step 47. UPS98 Transmits a SAR (99/10) for TDRS-041 containing one Service Specification Code for a MAF service. Event start time to begin three hours and 10 minutes hours in the future, a duration of one hour, with a minimum service duration of 30 minutes. .
- Step 48. NCC Verify receipt and successful scheduling of the SAR utilizing the minimum service duration. NCC Verifies that the system shortened the event by the minimum amount required to schedule the event.
- Step 49. UPS98 Verify receipt of SRM (99/02) from NCC.
- Step 50. UPS98 UPS98 transmits a Schedule Delete Request (99/11) to the NCC deleting the event scheduled in Step 40 above.
- Step 51. NCC NCC verifies receipt of the SDR and verifies deletion of the scheduled event.
- Step 52. UPS98 Verifies receipt of a SRM indicating the event has been deleted.
- Step 53. NCC NCC deletes all blocking events scheduled.

SAR Scheduling with other Service Level Flexibility

TBD

Alternate SAR Scheduling with SSCs.

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| Step 54 | NCC | Transitions NCC to BATCH SCHEDULING mode. |
| Step 55. | UPS98 | Transmits a SAR (99/10) containing one Service Specification Code for a MAF service. Event start time to begin one hour in the future. There shall be no Flexible Scheduling parameters in the SAR. |
| | NCC | Schedules a BLOCKING EVENT to force a rejection of the event scheduled above. |
| Step 56. | UPS98 | Transmits a ALTERNATE SAR (99/21) containing one Service Specification Code for a MAF service. Event start time to begin one hour in the future. The ALTERNATE SAR shall reference the ID of the SAR scheduled in Step 47 above. |
| | NCC | Schedules a BLOCKING EVENT to force a rejection of the event scheduled above. |
| Step 57. | NCC | Verify receipt and successful processing of the ALTERNATE SAR. |
| Step 58. | UPS98 | Verify receipt of SRM (99/02) from NCC. |

Alternate SAR Scheduling with SSCs and respecifiabls.

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| Step 59. | UPS98 | Transmits a ALTERNATE SAR (99/21) containing one Service Specification Code for a MAF service. The ALTERNATE SAR shall indicate a respecifiable value for the Data Rate. The Data Rate shall have a value of 2000 BPS. Event start time to begin one hour in the future. The ALTERNATE SAR shall reference the ID of the SAR scheduled in Step 48 above. |
| | NCC | Schedules a BLOCKING EVENT to force a rejection of the event scheduled above. |
| Step 60. | NCC | Verify receipt and successful processing of the ALTERNATE SAR. |
| Step 61. | UPS98 | Verify receipt of SRM (99/02) from NCC. |

Alternate SAR Scheduling with PEs

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| Step 62. | UPS98 | UPS98 transmits a ALTERNATE SAR with Prototype Event (PE) codes for a MA service. Event start time to begin one hour in the future. The ALTERNATE SAR shall reference the ID of the SAR scheduled in Step 51 above. |
| | NCC | Schedules a BLOCKING EVENT to force a rejection of the event scheduled above. |
| Step 63. | NCC | Verify receipt and successful processing of the ALTERNATE SAR. |
| Step 64. | UPS98 | Verify receipt of SRM (99/02) from NCC. |

Alternate SAR Scheduling with an Event plus tolerance.

- Step 65. UPS98 Transmits a ALTERNATE SAR (99/21) for TDRS-041 containing one Service Specification Code for a MAF service. Event start time to begin four hours in the future, a duration of one hour, and an event plus tolerance of 1.5 hours. The ALTERNATE SAR shall reference the ID of the SAR scheduled in Step 54 above.
- NCC Schedules a BLOCKING EVENT to force a rejection of the event scheduled above.
- Step 66. NCC Verify receipt and successful processing of the ALTERNATE SAR utilizing the plus tolerance.
- Step 67. UPS98 Verify receipt of SRM (99/02) from NCC.

Alternate SAR Scheduling with an Event minus tolerance.

- Step 68. UPS98 Transmits a ALTERNATE SAR (99/21) for TDRS-041 containing one Service Specification Code for a MAF service. Event start time to begin four hours in the future, a duration of one hour, and an event plus tolerance of 1.5 hours, and an event minus tolerance of 3 hours. The ALTERNATE SAR shall reference the ID of the SAR scheduled in Step 57 above.
- NCC Schedules a BLOCKING EVENT to force a rejection of the event scheduled above.
- Step 69. NCC Verify receipt and successful processing of the ALTERNATE SAR utilizing the minus tolerance.
- Step 70. UPS98 Verify receipt of SRM (99/02) from NCC.

Alternate SAR Scheduling with a service plus tolerance.

- Step 71. UPS98 Transmits a ALTERNATE SAR (99/21) for TDRS-041 containing Two Service Specification Codes for a MAF and a MAR service. Event start time to begin four hours in the future, a duration of one hour, and an event plus tolerance of 4.5 hours, and an event minus tolerance of 3 hours. The MAR shall have a service plus tolerance of 3 hours. The ALTERNATE SAR shall reference the ID of the SAR scheduled in Step 60 above.
- NCC Schedules a BLOCKING EVENT to force a rejection of the event scheduled above.
- Step 72. NCC Verify receipt and successful processing of the ALTERNATE SAR utilizing the service plus tolerance.
- Step 73. UPS98 Verify receipt of SRM (99/02) from NCC.

Alternate SAR Scheduling with a service minus tolerance.

- Step 74. UPS98 Transmits a ALTERNATE SAR (99/21) for TDRS-041 containing two Service Specification Codes for MAF and MAR services. Event start time to begin four hours in the future, a duration of one hour, and an event plus tolerance of 1.5 hours, and an event minus tolerance of 5 hours. The MAR services shall have a service tolerance of plus 1 hour and a service tolerance of minus 3 hours. The ALTERNATE SAR shall reference the ID of the SAR scheduled in Step 63 above.

- NCC Schedules a BLOCKING EVENT to force a rejection of the event scheduled above.
- Step 75. NCC Verify receipt and successful processing of the ALTERNATE SAR utilizing the minus tolerances.
- Step 76. UPS98 Verify receipt of SRM (99/02) from NCC.

Alternate SAR Scheduling with a Minimum Duration tolerance.

- Step 77. UPS98 Transmits a ALTERNATE SAR (99/21) for TDRS-041 containing one Service Specification Code for a MAF service. Event start time to begin three hours and 10 minutes hours in the future, a duration of one hour, with a minimum service duration of 30 minutes. The ALTERNATE SAR shall reference the ID of the SAR scheduled in Step 66 above.
- Step 78. NCC Verify receipt and successful processing of the ALTERNATE SAR utilizing the minimum service duration.
- Step 79. UPS98 Verify receipt of SRM (99/02) from NCC.
- Step 80. UPS98 Transmits a ALTERNATE SAR (99/21) containing one Service Specification Code for a MAF service. Event start time to begin 36 hours in the future. The ALTERNATE SAR shall reference the ID of the SAR scheduled in Step 69 above.
- Step 81. UPS98 Verify receipt of SRM (99/02) from NCC.
- NCC Performs a BATCH SCHEDULING run and activates the schedule. NCC will observe rejects of the SAR scheduled in Step 47 and observe rejects of the ALTERNATE SARs scheduled in Steps 48, 51, 54, 57, 60, 63, & 66. The Alternate SAR submitted in STEP 69 should be the only SAR to schedule. The ALTERNATE SAR submitted in Step 72 should be discarded.
- UPS98 Receives and verifies SRMs and USMs for events scheduled in Steps 48, 51, 54, 57, 60, 63, 66, 69, & 72.
- Step 82. NCC Transitions to AUTOMATIC SCHEDULING Mode.
- Step 83. UPS98 Transmits a SAR (99/10) containing one Service Specification Code for a MAF service. Event start time to begin one hour in the future.

Alternate SAR Scheduling with other Service Level Flexibility

TBD

Replace Request Scheduling with SSCs.

- Step 84. UPS98 Transmits a REPLACE REQUEST (99/12) containing one Service Specification Code for a MAF service. Event start time to begin one hour in the future. The REPLACE REQUEST shall reference the ID of the SAR scheduled in Step 75 above.
- Step 85. NCC Verify receipt and successful scheduling of the REPLACE REQUEST.

Step 86. UPS98 Verify receipt of SRM (99/02) from NCC.

Replace Request Scheduling with SSC and respecifiableness.

Step 87. UPS98 Transmits a REPLACE REQUEST (99/12) containing one Service Specification Code for a MAF service. The REPLACE REQUEST shall indicate a respecifiable value for the Data Rate. The Data Rate shall have a value of 2000 BPS. Event start time to begin one hour in the future. The REPLACE REQUEST shall reference the ID of the Replace Request scheduled in Step 76 above.

Step 88. NCC Verify receipt and successful scheduling of the REPLACE REQUEST.

Step 89. UPS98 Verify receipt of SRM (99/02) from NCC.

Replace Request Scheduling with PEs.

Step 90. UPS98 UPS98 transmits a REPLACE REQUEST with Prototype Event (PE) codes for a MA service. Event start time to begin one hour in the future. The REPLACE REQUEST shall reference the ID of the REPLACE REQUEST scheduled in Step 79 above.

Step 91. NCC Verify receipt and successful scheduling of the REPLACE REQUEST.

Step 92. UPS98 Verify receipt of SRM (99/02) from NCC.

Replace Request Scheduling with an Event plus tolerance.

Step 93. NCC Schedules a Blocking Event on TDRS-041 MAF & MAR 1 - 5 to begin T+ 4 hours with a duration of 1 hour.

Step 94. UPS98 Transmits a REPLACE REQUEST (99/12) for TDRS-041 containing one Service Specification Code for a MAF service. Event start time to begin four hours in the future, a duration of one hour, and an event plus tolerance of 1.5 hours. The REPLACE REQUEST shall reference the ID of the REPLACE REQUEST scheduled in Step 82 above.

Step 95. NCC Verify receipt and successful processing of the REPLACE REQUEST utilizing the plus tolerance.

Step 96. UPS98 Verify receipt of SRM (99/02) from NCC.

Replace Request Scheduling with an Event minus tolerance.

Step 97. NCC Schedules a Blocking Event on TDRS-041 MAF to begin 1 minute after the blocking event scheduled in Step 19 above ends with a duration of 1 hour.

Step 98. UPS98 Transmits a REPLACE REQUEST(99/12) for TDRS-041 containing one Service Specification Code for a MAF service. Event start time to begin four hours in the future, a duration of one hour, and an event plus tolerance of 1.5 hours, and an event minus tolerance of 3 hours. The REPLACE REQUEST shall reference the ID of the REPLACE REQUEST scheduled in Step 86 above.

Step 99. NCC Verify receipt and successful processing of the REPLACE REQUEST utilizing the minus tolerance.

Step 100. UPS98 Verify receipt of SRM (99/02) from NCC.

Replace Request Scheduling with a Service plus tolerance.

Step 101. UPS98 Transmits a REPLACE REQUEST(99/12) for TDRS-041 containing Two Service Specification Codes for a MAF and a MAR service. Event start time to begin four hours in the future, a duration of one hour, and an event plus tolerance of 4.5 hours, and an event minus tolerance of 3 hours. The MAR shall have a service plus tolerance of 3 hours. The REPLACE REQUEST shall reference the ID of the REPLACE REQUEST scheduled in Step 90 above.

Step 102. NCC Verify receipt and successful processing of the REPLACE REQUEST utilizing the service plus tolerance.

Step 103. UPS98 Verify receipt of SRM (99/02) from NCC.

Replace Request Scheduling with a Service minus tolerance.

Step 104. UPS98 Transmits a REPLACE REQUEST(99/12) for TDRS-041 containing two Service Specification Codes for MAF and MAR services. Event start time to begin four hours in the future, a duration of one hour, and an event plus tolerance of 1.5 hours, and an event minus tolerance of 5 hours. The MAR services shall have a service tolerance of plus 1 hour and a service tolerance of minus 3 hours. The REPLACE REQUEST shall reference the ID of the REPLACE REQUEST scheduled in Step 93 above.

Step 105. NCC Verify receipt and successful processing of the REPLACE REQUEST utilizing the minus tolerances.

Step 106. UPS98 Verify receipt of SRM (99/02) from NCC.

Step 107. NCC NCC deletes all blocking events scheduled.

Replace Request Scheduling with a Minimum Service Duration.

Step 108. NCC Schedules a Blocking Event on TDRS-041 MAF to begin 2 hours in the future with a duration of 1 hour. The NCC Schedules a Blocking Event on TDRS-041 MAF to begin 4 hours into the future with the duration of one hour.

Step 109. UPS98 Transmits a REPLACE REQUEST(99/12) for TDRS-041 containing one Service Specification Code for a MAF service. Event start time to begin three hours and 10 minutes hours in the future, a duration of one hour, with a minimum service duration of 30 minutes. The REPLACE REQUEST shall reference the ID of the SAR scheduled in Step 96 above.

Step 110. NCC Verify receipt and successful processing of the REPLACE REQUEST utilizing the minimum service duration.

Step 111. UPS98 Verify receipt of SRM (99/02) from NCC.

Step 112. NCC NCC deletes all blocking events scheduled.

REPLACE REQUEST Scheduling with other Service Level Flexibility

TBD

Wait List processing of SARs.

Step 113. NCC NCC transitions to BATCH SCHEDULING MODE.

Step 114. NCC NCC set Wait List Processing to MANUAL MODE.

Wait List processing with SSCs.

Step 115. UPS98 Transmits a SAR (99/10) containing one Service Specification Code for a MAF service. Event start time to begin one hour in the future. The Wait List flag in the SAR must be set.

NCC Schedules a BLOCKING EVENT to force a rejection of the event scheduled above.

Step 116. NCC Verify receipt and successful processing of the SAR.

Step 117. UPS98 Verify receipt of SRM (99/02) from NCC.

Wait List processing with SSCs and respecifiabls.

Step 118. UPS98 Transmits a SAR (99/10) containing one Service Specification Code for a MAF service. The SAR shall indicate a respecifiable value for the Data Rate. The Data Rate shall have a value of 2000 BPS. Event start time to begin one hour in the future. The Wait List flag in the SAR must be set.

NCC Schedules a BLOCKING EVENT to force a rejection of the event scheduled above.

Step 119. NCC Verify receipt and successful processing of the SAR.

Step 120. UPS98 Verify receipt of SRM (99/02) from NCC.

Wait List processing with PEs

Step 121. UPS98 Transmits a SAR (99/10) with Prototype Event (PE) codes for a MA service. Event start time to begin one hour in the future. The Wait List flag in the SAR must be set.

NCC Schedules a BLOCKING EVENT to force a rejection of the event scheduled above.

Step 122. NCC Verify receipt and successful processing of the SAR.

Step 123. UPS98 Verify receipt of SRM (99/02) from NCC.

Wait List processing with an Event plus tolerance.

Step 124. UPS98 Transmits a SAR (99/10) for TDRS-041 containing one Service Specification

Code for a MAF service. Event start time to begin four hours in the future, a duration of one hour, and an event plus tolerance of 1.5 hours. The Wait List flag in the SAR must be set.

- NCC Schedules a BLOCKING EVENT to force a rejection of the event scheduled above.
- Step 125. NCC Verify receipt and successful processing of the SAR utilizing the plus tolerance.
- Step 126. UPS98 Verify receipt of SRM (99/02) from NCC.

Wait List processing with an Event minus tolerance.

- Step 127. UPS98 Transmits a SAR (99/10) for TDRS-041 containing one Service Specification Code for a MAF service. Event start time to begin four hours in the future, a duration of one hour, and an event plus tolerance of 1.5 hours, and an event minus tolerance of 3 hours. The Wait List flag in the SAR must be set.
- NCC Schedules a BLOCKING EVENT to force a rejection of the event scheduled above.
- Step 128. NCC Verify receipt and successful processing of the SAR utilizing the minus tolerance.
- Step 129. UPS98 Verify receipt of SRM (99/02) from NCC.

Wait List processing with a service plus tolerance.

- Step 130. UPS98 Transmits a SAR (99/10) for TDRS-041 containing Two Service Specification Codes for a MAF and a MAR service. Event start time to begin four hours in the future, a duration of one hour, and an event plus tolerance of 4.5 hours, and an event minus tolerance of 3 hours. The MAR shall have a service plus tolerance of 3 hours. The Wait List flag in the SAR must be set.
- NCC Schedules a BLOCKING EVENT to force a rejection of the event scheduled above.
- Step 131. NCC Verify receipt and successful processing of the SAR utilizing the service plus tolerance.
- Step 132. UPS98 Verify receipt of SRM (99/02) from NCC.

Wait List processing with a service minus tolerance.

- Step 133. UPS98 Transmits a SAR (99/10) for TDRS-041 containing two Service Specification Codes for MAF and MAR services. Event start time to begin four hours in the future, a duration of one hour, and an event plus tolerance of 1.5 hours, and an event minus tolerance of 5 hours. The MA services shall have a service tolerance of plus 1 hour and a service tolerance of minus 3 hours. The Wait List flag in the SAR must be set.
- Step 134. NCC Schedules a BLOCKING EVENT to force a rejection of the event scheduled above.
- Step 135. NCC Verify receipt and successful processing of the SAR utilizing the minus tolerances.

Step 136. UPS98 Verify receipt of SRM (99/02) from NCC.

Wait List processing with a Minimum Duration tolerance.

Step 137. NCC Schedules a Blocking Event on TDRS-041 MAF to begin 2 hours in the future with a duration of 1 hour. The NCC Schedules a Blocking Event on TDRS-041 MAF to begin 4 hours into the future with the duration of one hour.

Step 138. UPS98 Transmits a SAR (99/10) for TDRS-041 containing one Service Specification Code for a MAF service. Event start time to begin three hours and 10 minutes hours in the future, a duration of one hour, with a minimum service duration of 30 minutes. The Wait List flag in the SAR must be set.

Step 139. NCC Schedules a BLOCKING EVENT to force a rejection of the event scheduled above.

Step 140. NCC Verify receipt and successful processing of the SAR utilizing the minimum service duration.

Step 141. UPS98 Verify receipt of SRM (99/02) from NCC.

Step 142. NCC Performs a BATCH SCHEDULING run and activates the schedule. NCC will observe rejects of the SARs scheduled in Steps 107, 110, 113, 116, 119, 122, 125, and 128. NCC verifies requests have been entered on the Wait List.

Step 143. UPS98 Receives and verifies SRMs for events scheduled in Steps 107, 110, 113, 116, 119, 122, 125, and 128

Step 144. NCC Transition Wait List Processing to AUTOMATIC MODE.

Step 145. NCC NCC deletes all BLOCKING EVENTS and observes WAIT LIST Processing of SARs on the WAIT LIST.

Step 146. UPS98 Receives and verifies SRMs for events scheduled in Steps 107, 110, 113, 116, 119, 122, 125, and 128.

Step 147. UPS98 Deletes all events scheduled as a result of WAIT LIST PROCESSING.

Step 148. UPS98 Verifies receipt of a SRM indicating the event has been deleted.

WAIT LIST Scheduling with other Service Level Flexibility

TBD

WAIT LIST Processing of WAIT LIST REQUESTS.

Step 149. NCC Schedules a BLOCKING EVENT on TDRS-041 MAF starting ASAP with a duration of 24 hours.

Step 150. UPS98 Transmits a SAR (99/10) for TDRS-041 containing one Service Specification Code for a MAF service. Event start time to begin one hour in the future. The Wait List flag in the SAR must NOT be set.

- Step 151. NCC Verify receipt and rejection of the SAR.
- Step 152. UPS98 Verify receipt of SRM (99/02) from NCC.
- Step 153. UPS98 Transmits a WAIT LIST Request specifying the SAR that was transmitted in Step 150 above.
- Step 154. NCC Verifies receipt of the Wait List Request, and verifies the rejected event has been placed on the Wait List.
- Step 155. NCC Deletes the BLOCKING EVENT scheduled in Step 149 above.
- Step 156. NCC Observes the WAIT LIST REQUEST schedule.
- Step 157. UPS98 Verifies receipt of the SRM and USM.

Service Scheduling

- Step 158. NCC Enables STRS to allow auto thrupt of USMs (94/01, 94/02, 94/03) to the UPS98.
- Step 159. UPS98 UPS98 transmits, one at a time, conflict free SARs to schedule the following services:

Normal Users	Shuttle
MAF/MAR/TRK	SSHF/KSHF/SSHR/KSHR/TRK
SSAF/SSAR/TRK	KSHR EET
KSAF/KSAR/TRK	
SSAF/MAR Cross Support	
MAF/SSAR Cross Support	
SSA Combining.	
SSA EET	

The Start time of the first event shall be ASAP to generate a Premium Event. It is expected that the Shuttle events shall generate Multiblock USMs. All Events are to have some Flexible Scheduling Parameter.

- Step 160. NCC As each of the above referenced events are transmitted NCC will verify receipt and successful scheduling of each SAR.
- Step 161. UPS98 Verify receipt of SRMs (99/02) and USMs (94/01, 94/02, 94/03) for each event from NCC.

Bulk transmission to UPS98.

- Step 162. NCC NCC initiates a bulk transmission to the UPS98 of the USMs for the events scheduled in Step 38 above.

Freezing flexible events via transmission to WSC

- Step 163. NCC NCC initiates a bulk transmission to the WSC for the events scheduled in Step 172 above.

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Step 164. UPS98 Observes 94/04 messages for events scheduled in Step 172 above.

TUT

Step 165. NCC Generate a TUT update.

Step 166. UPS98 View TUT report.

Step 167. UPS98 Deletes Events scheduled in Step 172 above.

TDRS Sets

Step 168. NCC Schedules BLOCKING EVENTS for all services on TDRS-041, 046, and 174 to encompass the next 12 hours.

Step 169. UPS98 Transmits a SAR with a value of "ALL" for TDRS (services at the discretion of the UPS98). Start time of the event is 1 hour in the future with a duration of one hour.

Step 170. NCC Verifies receipt of the SAR and scheduling on TDRS 171.

Step 171. UPS98 Verify receipt of SRM (99/02), and Flexible USM from NCC.

Step 172. UPS98 Deletes Events scheduled in Step 181 above.

Step 173. UPS98 Verifies receipt of a SRM indicating the event has been deleted.

Step 174. UPS98 Transmits a SAR with a value of "TDW" for TDRS (services at the discretion of the UPS98). Start time of the event is 1 hour in the future with a duration of one hour.

Step 175. NCC Verifies receipt of the SAR and scheduling on TDRS 171.

Step 176. UPS98 Verify receipt of SRM (99/02), and Flexible USM from NCC.

Step 177. UPS98 Deletes Events scheduled in Step 185 above.

Step 178. UPS98 Transmits a SAR with a value of "TDE" for TDRS (services at the discretion of the UPS98). Start time of the event is 1 hour in the future with a duration of one hour.

Step 179. NCC Verifies receipt of the SAR and rejecting for a service conflict on TDRS 174.

Step 180. UPS98 Verify receipt of SRM (99/02), and Flexible USM from NCC.

Step 181. UPS98 Deletes Events scheduled in Step 189 above.

Step 182. UPS98 Verifies receipt of a SRM indicating the event has been deleted.

Step 183. NCC Deletes all BLOCKING EVENTS.

TSWs

Step 184. UPS98 UPS98 transmits a SAR for TDRS 041 with the TSW flag set.

- Step 185. NCC Verify receipt of SAR and rejection on a Code 67 (Use of TSWs requested, applicable TSWs not available).
- Step 186. UPS98 Verify receipt of the SRM indicating a reject code of 67.
- Step 187. UPS98 Transmits TSWs to indicate coverage unavailable available until 12 hours in the future, with the view duration being 12 hours.
- Step 188. UPS98 UPS98 transmits a SAR for TDRS 041 with the TSW flag set. Event start time is to be 1 hour in the future with a duration of 1 hour, and an event tolerance of plus 3 hours.
- Step 189. NCC Verify receipt of SAR and rejection on a Code 68 (Use of TSWs requested but request cannot be scheduled within available TSWs).
- Step 200. UPS98 Verify receipt of the SRM indicating a reject code of 68.
- Step 201. UPS98 UPS98 transmits a SAR for TDRS 041 with the TSW flag set. Event start time is to be 1 hour in the future with a duration of 1 hour, and an event tolerance of plus 18 hours.
- Step 202. NCC Verify receipt of SAR and scheduling of the event when the TSW indicates view 12 hours in the future.
- Step 203. UPS98 Verify receipt of the SRM indicating an accept code of 69 (Use of TSWs requested, and request can be scheduled within available TSWs).
- Step 204. UPS98 Transmits a new TSW indicating coverage closes prior to event start.
- Step 205. NCC Verifies that a USM is transmitted to the UPS98 indicating that the event is no longer valid.
- Step 206. UPS98 Transmits an empty TSW to the NCC.
- Step 207. NCC Verifies receipt of the empty TSW and verifies all TSW data is purged from the system.
- Step 208. UPS98 Deletes Event scheduled in Step 201 above.
- Step 209. UPS98 Verifies receipt of a SRM indicating the event has been deleted.

Event Freezing

- Step 210. UPS98 Transmit a TDRS-ALL MAF event with a start time of 4 hours in the future, an event duration of 30 minutes, and a Freeze Interval set for 3 hours 55 minutes.
- Step 211. NCC Verify receipt of SAR and scheduling of the event.
- Step 212. UPS98 Verify receipt of Flexible USM.
- Step 213. NCC After Freeze Interval has elapsed, verify Flexible event has become frozen.
- Step 214. UPS98 Verify Receipt of Fixed USM.
- Step 215. UPS98 Deletes Event scheduled in Step 205 above.

Step 216. UPS98 Verifies receipt of a SRM indicating the event has been deleted.

Alternate Schedule Add Request Chains

Step 217. NCC Transitions NCC to BATCH SCHEDULING MODE.

Step 218. UPS98 Transmits a TDRS-041 MAF event with a start time of 4 hours in the future, with a duration of 1 hour.

Step 219. UPS98 Transmits and ALTERNATE SAR with a start time of 2 hours in the future, an event duration of 1 hour, and referencing the SAR scheduled in Step 212. UPS98 continues to schedule ALTERNATE SARs, each start time for each subsequent event incrementing by 2 hours, and having a duration of 1 hour until a chain of 12 ALTERNATE SARs has been built.

Step 220. UPS98 Transmits a REPLACE REQUEST replacing the ninth ALTERNATE SAR.

Step 221. NCC Verifies receipt of the REPLACE REQUEST and verifies that all ALTERNATE SARs linked to the ALTERNATE SAR that was replaced have been discarded.

Step 222. UPS98 Verifies receipt of the SRM for the REPLACE REQUEST, and verifies receipt of SRMs for the discarded ALTERNATE SARs.

Step 223. UPS98 Transmits a SCHEDULE DELETE REQUEST deleting the sixth ALTERNATE SAR in the chain scheduled in step 213 above.

Step 224. NCC Verifies receipt of the SCHEDULE DELETE REQUEST and verifies that all ALTERNATE SARs linked to the ALTERNATE SAR that was deleted have been discarded.

Step 225. UPS98 Verifies receipt of SRMs for the discarded ALTERNATE SARs.

Step 226. UPS98 Deletes remaining events scheduled in Step 213 above.

Step 227. UPS98 Verifies receipt of a SRM indicating the event has been deleted.

Request Edited by Operator

Step 228. NCC Transitions the NCC to BATCH SCHEDULING MODE.

Step 228. UPS98 Transmits a SAR to the NCC with the requested TDRS of ZZZ.

Step 229. NCC Edits the SAR replacing the ZZZ with 041.

Step 230. NCC Transitions the NCC to AUTOMATIC SCHEDULING MODE. NCC verifies that the event schedules and a USM is transmitted to the UPS98.

Step 231. UPS98 Verifies receipt of the USM indicating that the request was edited by the operator.

Event Flexibility

Step 232. UPS98 Transmits a SAR for TDRS-041 with a start time 12 hours in the future, an event plus

tolerance of 2 hours, an event minus tolerance of 2 hours, and an event duration of 30 minutes.

- Step 233. NCC Verifies receipt and scheduling of the event. NCC verifies transmission of a Flexible USM.
- Step 234. UPS98 Verifies receipt of the flexible USM.
- Step 235. UPS98 Transmits another SAR for TDRS-041 with a start time of 12 hours in the future, a duration of 1 hour, and no flexible scheduling parameters.
- Step 236. NCC Verifies receipt of the SAR, verifies scheduling at the requested start time, the moving of the event scheduled in step 232 above to begin AFTER the SAR scheduled in Step 235 has ended. NCC verifies transmission of a Fixed USM for the event scheduled in step 235, and a Flexible USM for the event scheduled in Step 232 that was moved to a new start time.

Bulk SAR transmission

- Step 237. UPS98 Transmits a sequence of 500 SARs to the NCC for the next RAYDAY.
- Step 238. NCC Verifies receipt and scheduling of the 500 events.
- Step 239. UPS98 Verifies receipt of the 500 SRMs and USMs.
- Step 240. UPS98 Upon completion of the scheduling of the 500 events transmitted in Step 237 above, the UPS98 shall transmit deletes for the 500 events scheduled.
- Step 241. NCC Verifies receipt of the 500 SDRs and verifies that all schedules from Step 237 above are deleted from the NCC Database.
- Step 242. UPS98 Verifies receipt of the 500 SRMs.

Still to add:

- Virtual Spacecraft
- Invalid TSW
- Invalid Replace
- Invalid Alt Request
- Customer Priorities