



# MISSION OPERATIONS AND DATA SYSTEMS DIRECTORATE



## STS-87 USMP-04/SPARTAN FLIGHT READINESS REVIEW

### NETWORKS



## AGENDA

- TDRSS CONSTELLATION
- SIGNIFICANT CHANGES
- ASCENT PROFILE
- CONFIGURATION MANAGEMENT
- CRITICAL PERIODS
- READINESS CERTIFICATION

GARY A. MORSE  
GSFC/NETWORKS  
NOVEMBER 1997

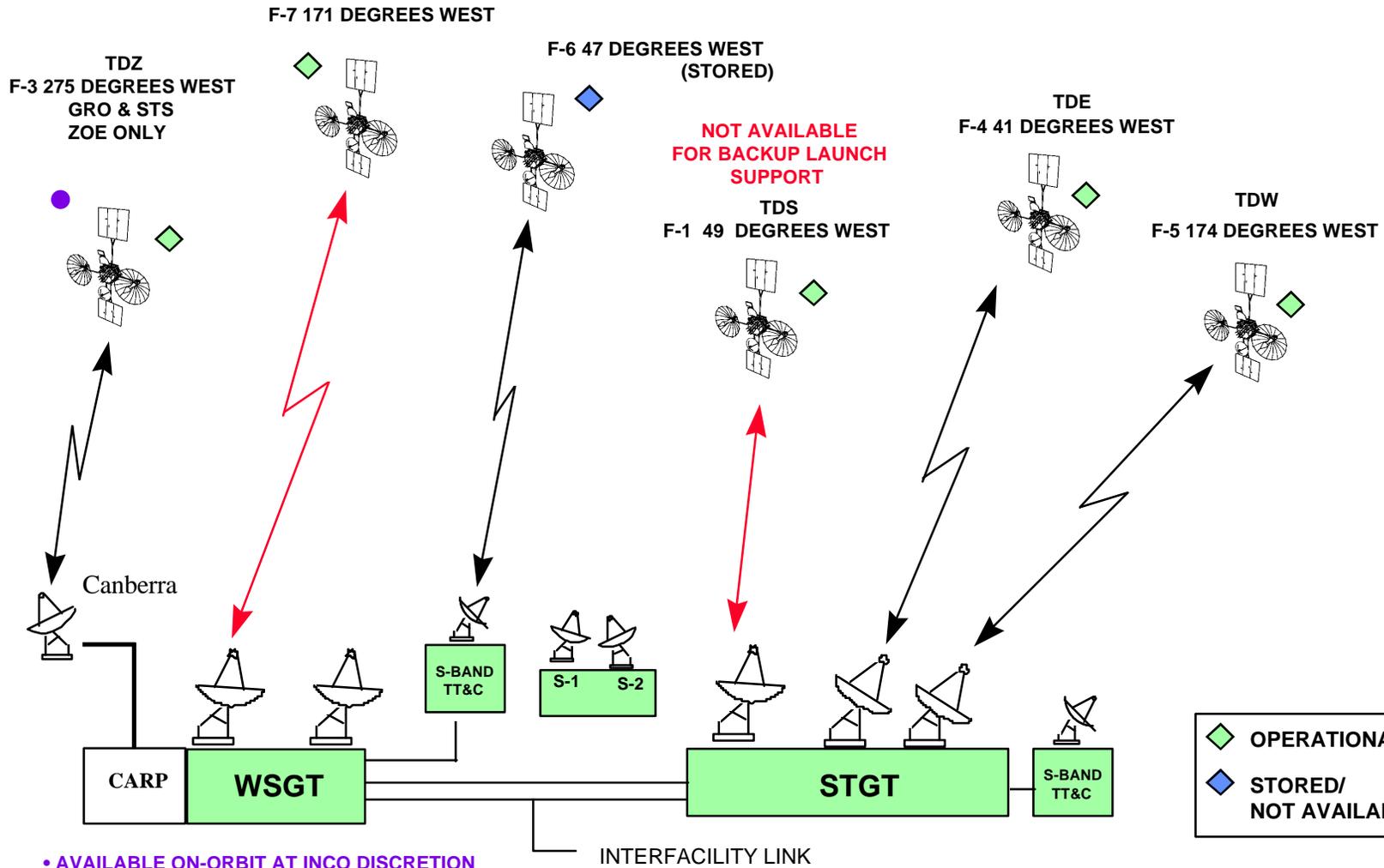
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DIRECTORATE

CODE 500

# STS-87 USMP-04/SPARTAN NETWORKS



## TDRSS CONSTELLATION



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### **SIGNIFICANT CHANGES**

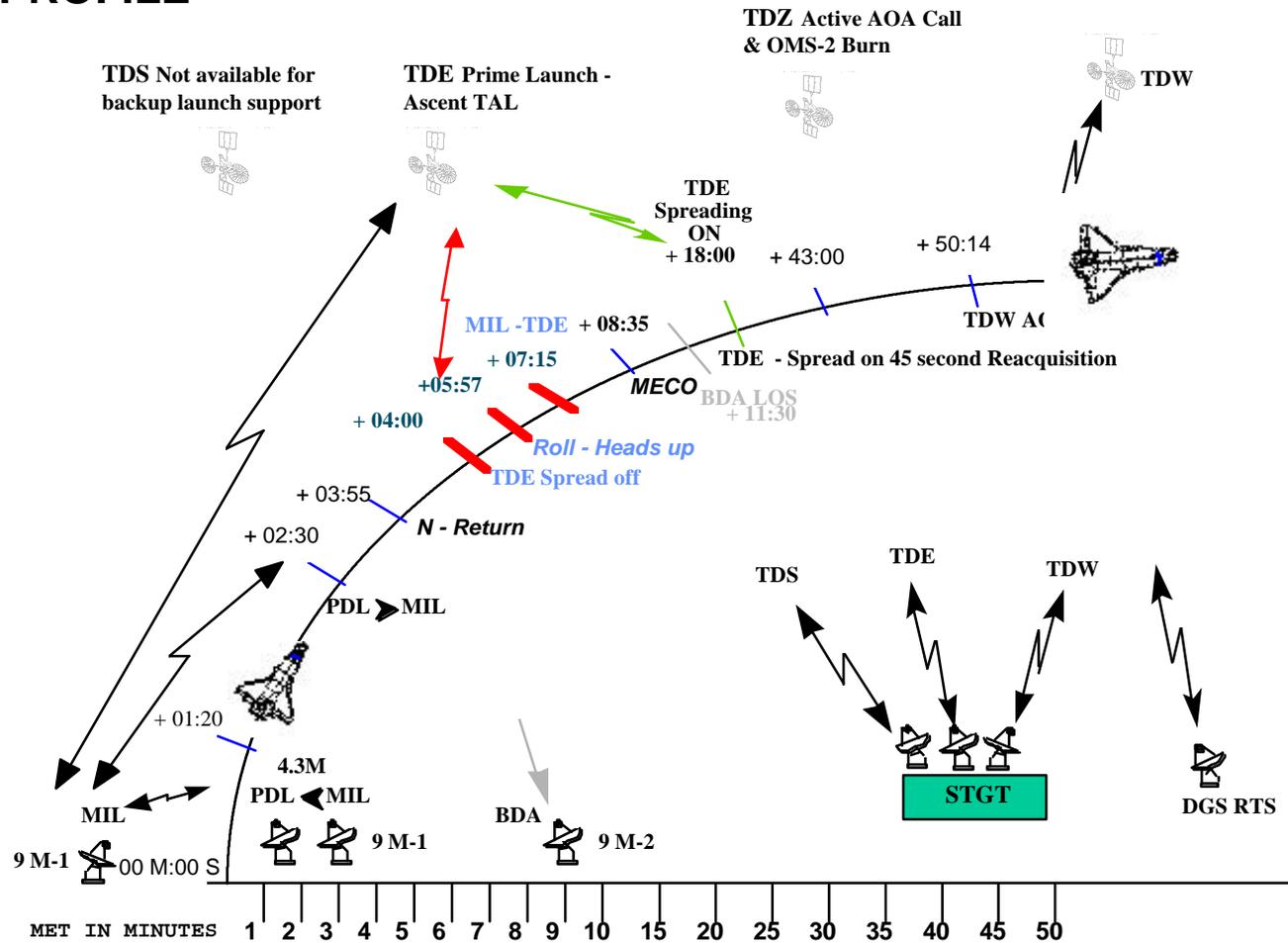
- **SPACE NETWORK**
  - **ACTIVATED TDRS-7 ON OCTOBER 22, 1997**
    - **AVAILABLE FOR USER SUPPORT FROM OCTOBER 27-NOVEMBER 12, 1997 AND NOVEMBER 18-24, 1997**
    - **TRANSITIONED TDRS-1 (SPARE) FROM WSGT TO STGT - OCTOBER 20, 1997**
      - **NOT AVAILABLE FOR SHUTTLE SUPPORT UNTIL TRMM LAUNCH +48 HOURS**

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## ASCENT PROFILE



Note: TDE Spread off prevents 45 second loss of communications during MIL - TDE hand up. Spread off is restricted to TDRS Pointing over water

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NETWORKS****SIGNIFICANT CHANGES (CONT)**

- **WSC**
  - **SOFTWARE - BASELINE 97005**
    - **DELIVERED TO WSGT ON OCTOBER 8, 1997, DELIVERED TO STGT OCTOBER 15, 1997**
    - **CORRECTS SIX DRS AFFECTING SHUTTLE SUPPORT**
  - **FIRMWARE - 9701**
    - **DELIVERY COMPLETED OCTOBER 24, 1997**
    - **CORRECTS ANOMALY NOTED WITH HIGH DATA RATE CONTROLLER**
      - **IMPROVES RECEIVER REACQUISITION TIME AND DETECTION OF FALSE LOCKS**

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NETWORKS****SIGNIFICANT CHANGES (CONT)**

- **NASA INTEGRATED SUPPORT NETWORK (NISN)**
  - **LAUNCH (HYBRID)**
    - **CONFIGURE NCC/FDF AND JSC (CONTROL AND STATUS ONLY) IN IP**
    - **ALL OTHER ELEMENTS ON LEGACY/MSS**
  - **POST SPARTAN RETRIEVAL**
    - **JSC AND WSC CONFIGURE IP AS PRIME FOR COMMAND AND TELEMETRY**
      - **WSC AND JSC CONFIGURE DEMUXES FOR IP**
    - **MIL/BDA/RTS AND DRYDEN BEGIN IP ENGINEERING PASSES ON-ORBIT (TWO-WAY AND/OR FM DUMPS, WHEN AVAILABLE)**
    - **BEGIN SPIF/TAC ON-ORBIT IP CHECKOUT IN SHADOW MODE**
    - **SSME PLAYBACK FROM WSC TO MSFC TO TEST IP CONFIGURATION**
  - **LANDING (ASSUMES NO IP ANOMALIES DURING MISSION TESTING)**
    - **ALL ELEMENTS CONFIGURE IP AS PRIME FOR LANDING SUPPORT**

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**SIGNIFICANT CHANGES (CONT)**

- **C-BAND RADAR**
  - **ASTC SCHEDULED DOWN FOR RELOCATION JUNE 1997 TO JUNE 1998**
  - **KMLC/KMRC SCHEDULED DOWN FOR ANNUAL VISITATION NOVEMBER 23, 1997 THROUGH JANUARY 3, 1998**

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## **STS-87 USMP-04/SPARTAN NETWORKS**



### **CONFIGURATION MANAGEMENT**

- **HARDWARE/SOFTWARE FREEZE**
  - **INTEGRATED NETWORKS FREEZE WILL BE IMPOSED AT LAUNCH MINUS 7 DAYS**
  - **EXEMPTIONS ARE APPROVED BY THE NETWORK DIRECTOR AND APPROPRIATE DIVISION CHIEFS**
- **CRITICAL PERIOD**
  - **CRITICAL PERIODS HAVE BEEN IDENTIFIED**
  - **MAINTENANCE AND TESTING RESTRICTIONS APPLY**
- **STAFFING**
  - **NETWORK DIRECTOR CONSOLE STAFFED DURING CRITICAL PERIODS**

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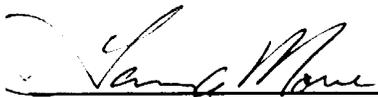
**SPACE SHUTTLE CRITICAL PERIODS**

<i>EVENT</i>	<i>START</i>	<i>STOP</i>
LAUNCH RENDEZVOUS MISSION	LAUNCH -4 HOURS	LAST RENDEZVOUS BURN ON FD1
LAUNCH NON-RENDEZVOUS MISSION	LAUNCH -4 HOURS	“GO FOR ORBIT OPS”
PAYLOAD DEPLOY	DEPLOY -3 HOURS	FINAL SEP BURN (+1 ORBIT DELAY)
RENDEZVOUS/DOCKING	2 HOURS PRIOR TO FIRST DAY OF RENDEZVOUS BURN (~CREW WAKEUP)	HATCH OPENING (+1 ORBIT DELAY FOR CONTINGENCY)
RENDEZVOUS GRAPPLE/RETRIEVE	2 HOURS PRIOR TO FIRST DAY OF RENDEZVOUS BURN (~CREW WAKEUP)	PAYLOAD BERTHING (+1 ORBIT DELAY FOR CONTINGENCY)
UNDOCKING	UNDOCKING - 3 HOURS	FINAL SEP BURN (+1 ORBIT DELAY)
EVA	EVA EGRESS - 1 HOUR	EVA INGRESS + 1 HOUR
LANDING	TD - 5 HOURS	WOW

# GODDARD SPACE FLIGHT CENTER

## CERTIFICATE OF MISSION OPERATIONS AND DATA SYSTEMS DIRECTORATE (MO&DSD) NETWORKS READINESS

THIS IS TO CERTIFY THAT WITH SUCCESSFUL COMPLETION OF FLIGHT  
READINESS PREPARATIONS AND CLOSURE OF ASSOCIATED ACTION ITEMS, ALL  
MO&DSD ELEMENTS AND INTEGRATED NETWORKS ARE READY  
TO SUPPORT THE STS-87 USMP-04/SPARTAN-201 MISSION.

  
G. A. MORSE/NASA DATE 10/17/97

SPACE SHUTTLE  
NETWORK DIRECTOR

  
W. WATSON/NASA for DATE 10/17/97

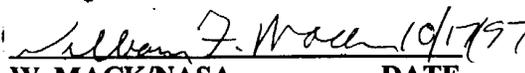
ASSISTANT CHIEF  
NETWORKS DIVISION

  
W. FRIEDMAN/ATSC DATE 10/17/97

VICE PRESIDENT  
GSFC PROGRAMS

  
JON Z. WALKER/NASA DATE 10/17/97

HEAD, INTEGRATION AND  
OPERATIONS MANAGEMENT

  
W. MACK/NASA DATE 10/17/97

OFFICE OF FLIGHT  
ASSURANCE

  
R. STELMASZEK/NASA DATE 10/17/97

HUMAN SPACE FLIGHT  
NETWORK SUPPORT MANAGER

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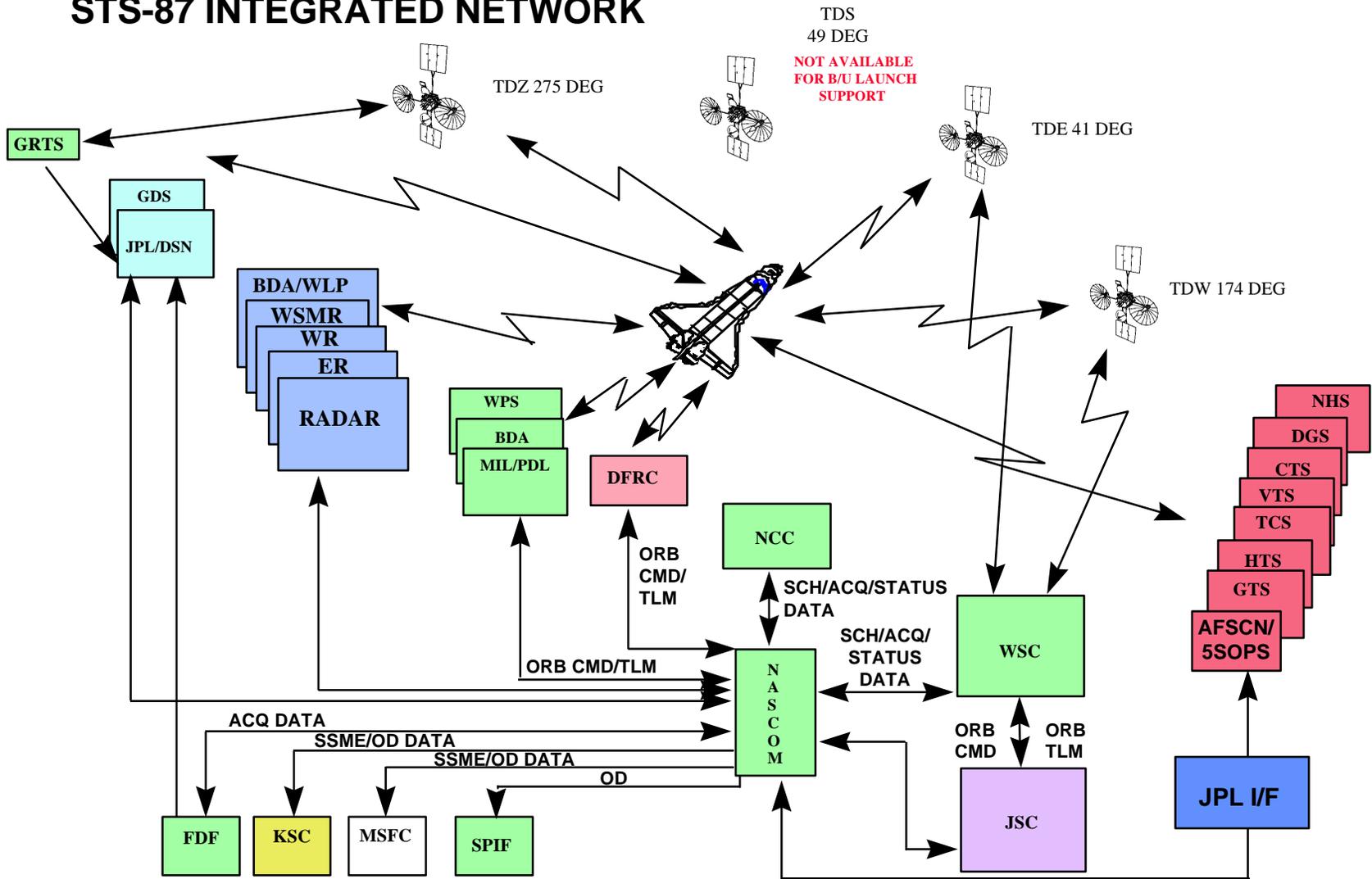
**BACKUP**

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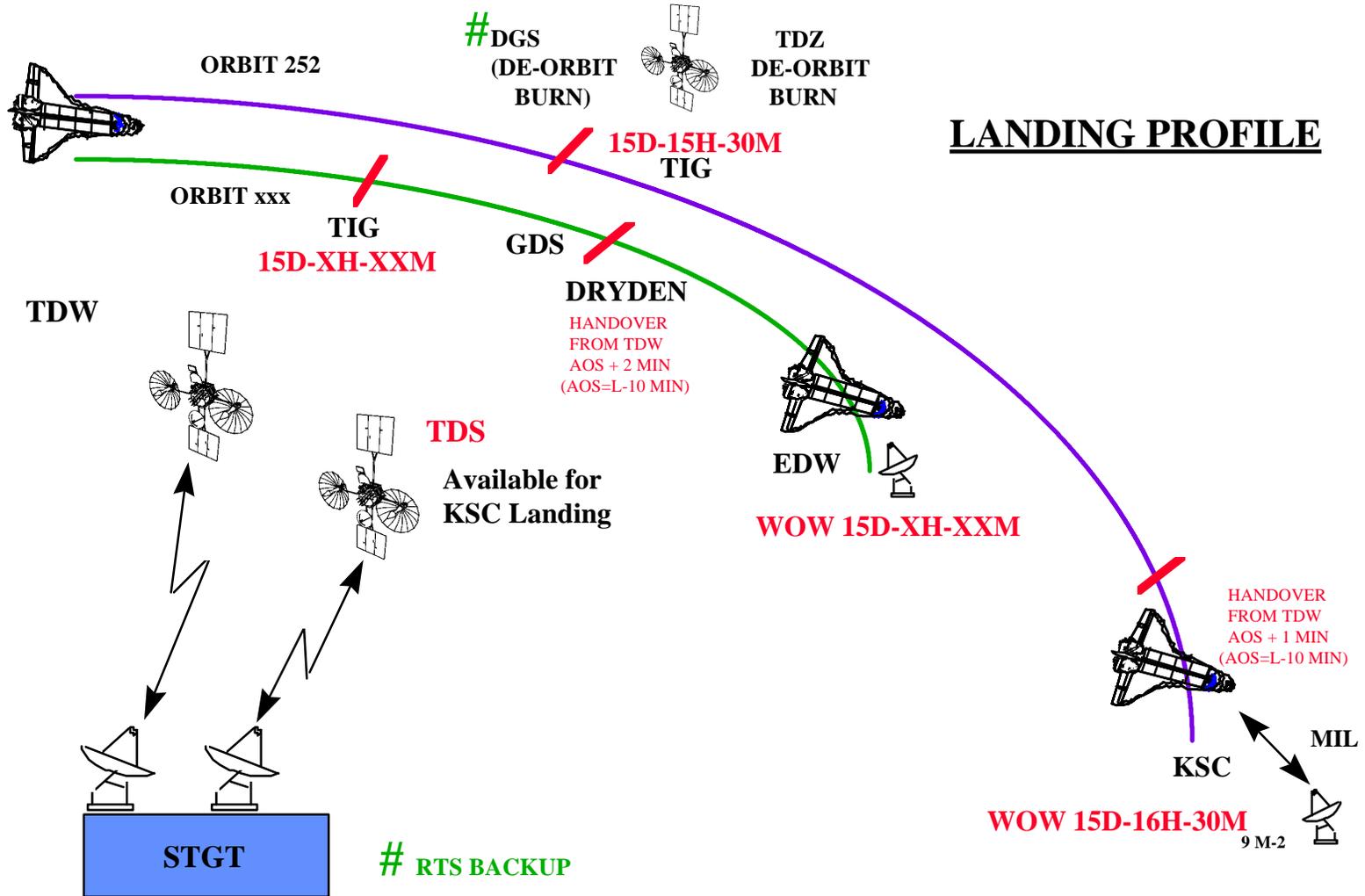


## STS-87 INTEGRATED NETWORK



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## CONNECTIVITY REDUNDANCY FOR BERMUDA, MILA, JSC AND WFF

