



TDRS Constellation Status



WSC Software & Hardware Activities



TDRS Fleet Status

- **Current TDRS configuration (*Mar 25, 2011*)**
 - **TDRS-3 49° W – stored S-Band (Launched 9/29/88)**
 - **TDRS-4 (TDS) 46° W (Launched 3/13/89)**
 - **TDRS-5 (171) 167.5° W (Launched 2/8/91)**
 - **TDRS-6 (TDW) 171° W (Launched 1/13/93)**
 - **TDRS-7 (TDZ) 275° W – Guam ZOE (Launched 7/13/95)**
 - **TDRS-8 (271) 271° W (Launched 6/6/00)**
 - **TDRS-9 62.4° W – stored S-Band (Launched 3/8/02)**
 - **TDRS-10 (TDE) 40.9° W (Launched 12/5/02)**
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TDRS Fleet Status

- **TDRS Eccentricity Management**
 - Received NASA concurrence to relax the TDRS eccentricity requirements to less than 0.0035 to minimize conjunction possibilities should a spacecraft anomaly occur
 - Based on potential issues with ISS, this action was suspended in late March 2010
 - Awaiting suspension release from JSC
 - **TDRS-3 is positioned at 49° west**
 - TDRS-3 is in storage mode
 - It is readily available to replace TDRS-4 if required, 24 hour turnaround
 - Highest eccentricity
 - **TDRS-3 Space-to-Ground Link (SGL) dedicated downlink TWTA #2 helix current is rising**
 - TWT has been shut off for storage, will be reactivated as the composite link if TDRS-3 is activated
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TDRS Fleet Status

- **TDRS-4 (TDS) KSA-2 Forward Power below specification**
 - The KSA-2 Forward service is 5.7 db below specification for Normal Power operations and 4.8 db below specification for High Power operations
 - Little or no adjustment of output power is available on the TWTA, a spare TWTA is available for this service
 - **TDRS-4 (TDS) Telemetry Errors**
 - SGLT-1/TDRS-4 downlink experiencing irregular, apparently random telemetry errors (hits)
 - Minor user data loss experienced with some of the telemetry hits
 - SGL Spare TWTA1 replaced TWTA2 on 3/17/11 because trending data indicated a fail in April
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TDRS Fleet Status

- **TDRS-4 (TDS) Power System Degradation**
 - Battery 1 has failed, and battery 2 has shown signs of soft short in at least one cell.
 - Spring 2011 eclipse season (1/20/11 – 3/23/11):
 - NAM 1251 issued to warn customers MA Forward, SA1, SA2, and MA Return services could be deactivated should the power system degrade further
 - NAM 1274 issued to advise no SA1 services available from 048/0200z to 080/0000z
 - SA1 and MAF were activated following Spring eclipse season
 - **TDRS-4 (TDS) Intermittent MA Elements**
 - MA elements 4, 10, 16, 22, and 28 have been intermittently disappearing
 - The system is designed to meet specification with 20 of 30 elements operational
 - No user data loss directly attributable to the anomaly
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WSC Hardware

- **Mission Operations Voice Enhancement**

- **Overview**

- **Replace current Multi-conference Digital Switch**

- **Schedule**

- **Install cabling and install keysets**
 - **STGT completed on 11/2010**
 - **WSGT Ongoing and complete by 4/2011**
 - **GRGT installs are scheduled for end of 2nd quarter 2011**
 - **Cutover to NTR T-1s at STGT completed 12/2010**
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WSC Hardware

- **Antenna SSC Replacement**

- **Overview**

- **Replace obsolete chassis and I/O boards and use current firmware**
- **No changes to TT&C ADPE software**

- **Schedule**

- **Currently testing new units in SMTF**
 - **Install SSC in SGLT-1 A-side**
 - **Send updated firmware for install into GRGT South B and Central A & B**
 - **Completed STGT SGLTs 1B, 2A, 2B, 3A, & 3B**
 - **25 Mb FWD EC-TO150-1**
 - **Cabling to all SGLTs complete**
 - **Testing is in progress**
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WSC Software Activities

➤ SW STN-102

- **IR Expanded Frequency for JWST**
- **Delivered to SGLT-2 ADPE on 03/18/2011**

• SW STN-103

- **IR Expanded Frequency for JWST**
- **Delivered to SGLT-2 'B' side IRs on 03/03/2011**

• SW SNAS 10.2

- **Delivery to the Servers and MOCC Clients 03/10/2011**

• SW 10007

- **TDRS-K level 3 testing in progress**

• SW 25MBFWD

- **Code merge in progress**
 - **Delivery to the NCCDS 05/30/2011**
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