

November 19 - December 2, 2004

Terra successfully completed a -8.7 degree MODIS Roll Maneuver on December 1, 2004.

The fifth Terra re-engineering meeting was held on Nov. 30. A major challenge will be the design of automation to mimic the human troubleshooting of data transfer from the solid state recorder (SSR). The solution may rely on a combination of information from Terra engineering telemetry, the space network, the EDOS system, and the spacecraft control system.

A splinter meeting was held with EDOS to discuss enhancements to the status message that can be reported.

Two Mission Impact Reports (MIRs) occurred this week having to do with the High Gain Antenna Motor Drive Assembly (MDA2) BITE failures while in the South Atlantic Anomaly (SAA). In all cases there was no impact to science objectives and no data loss.

Two Mission Impact Reports (MIRs) occurred this week having to do with K-band dropouts with TDS during science data playback. This is a common problem that occurs more frequently (1-2 times per week) this time of year. In any event, no science data was lost due to replaying data during the same TDRS contact.

One Mission Impact Report (MIR) occurred this week having to do with an improperly configured GSIF. The Flight Operations Team (FOT) noticed no CODAs were coming from EDOS during a playback. EDOS confirmed no lock on K-band data. Playback was stopped. The White Sands GSIF reconfigured and a replay of data occurred without incident. Subsequently, there was no impact to science objectives and no data loss.

On November 24, 4 hours of Direct Broadcast data were lost. It turns out the DAS antenna was in standby mode when it should have been transmitting. The onboard ATC that commands the DAS to transmit did not contain the appropriate commands. A subsequent ATC (which ran 4 hours later) did contain the appropriate commands and the DAS was enabled. Since DB activity is pre-defined and should be automatically injected into all ATC loads via MMS, MMS is suspect. As a workaround, on-line engineers will manually check all ATC validations for the required DB commands.

On November 27, 53 seconds of MODIS data were lost due to an assumption that was incorrect. During any TDRSS contact, it takes time for Terra and WSC (via TDRSS) to lock-up on each other. This lock-up occurs while dumping data. Therefore, a small fraction of data is lost at the beginning of any dump due to lock-up time (seconds). Hence, a replay of the first part of the data is always instituted after a dump to recover this lost data. When the EPGN is used (infrequently) to dump science data, this replay is never instituted because it was assumed this lock-up

delay was minuscule. This assumption was incorrect, hence the 53 second data loss. The FOT has updated its SOP so now every science dump via the EPGN is treated just like any science dump via TDRSS. Therefore, all science dumps via the EPGN will now require a replay of data to recover the small amount lost during transmission lock-up.

The scheduled transition of the ECS contract to the MOMS contract is planned for January 15, 2005 (Aura launch plus 180-Days). The FOT will transition on December 20, 2004.