August 21, 2002

MODIS sensor Working Group (MsWG) Summary

Attendance: Bill Barnes, Bob Barnes, Stuart Biggar, Vincent Chiang, Wayne Esaias, Eddie Kearns, Gerhard Meister, Chris Moeller, Junqiang Sun, Gary Toller, Jack Xiong, Eric Vermote, Zhengming Wan, Joe Esposito

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Scheduled Items

Note: WB – Bill Barnes, BB – Bob Barnes

Item 1 Terra MODIS Status

Update on the Formatter Issue

WB) The formatter error rate is currently at 51M evts/day. We previously believed that the 1B error flag would be an indicator of possible science impact. Joe Auchter has reviewed the software and suggests that a better indicator of possible science impact would be the 1F error flag. We will delay the transition of formatter from A-side to B-side until there is evidence of science impact. This is being done to conserve resources.

WE) What is being checked to determine science impact? We should be checking at the pixel level in L1A or L1B.

JX) MCST is currently looking at the OBC data with less frequent checking of L1A, L1B data. If any impact is noted it will be brought to MsWG's attention.

WB) It is our decision to wait on switching formatter from A to B side. IOT is monitoring error flags(1F and 1B) but there is a possibility that science impact can occur without the flags being observed.

JX) MCST investigated data near the time of early 1B flags but found no evidence of correlation between the flags and data missing.

WB) The expected impact would be a pixel shift. This implies that we must watch for missing pixel flags and look for shifted data. The rate of the 1B flag occurrence has remained steady throughout the mission thus far.

CM) Is there a scenario in which the formatter is never switched?

WB) We do not wish to use up resources. We only do a detailed granule analysis when there is an indication of a problem. We expect (using envelope calculations) that at a rate of a few hundred million per day we will begin to see a science impact.

JX) The early rate increase was fairly fast but we increased from 30M to 50M over a much longer (~2 months) period.

New trend in m_1 (VIS band)

JX) Band 8 (VIS Bands) suggests that the instrument degradation is occurring again since around the time of the MST meeting (m_1 is increasing). This has been confirmed with the SRCA and Lunar calibrators that do not depend upon the SD. MCST is monitoring this trend. The current impact is roughly a 1% difference for B8 from the m1 LUT being currently used in Miami.

WE) Can go to collect 4 forward process in mid September.

EK) Small jumps in m_1 cause a large effect on our results (coefficients). Better to wait until later (collect 5 reprocess) for a LUT update.

JX) MCST can use the 2-3 months to get a better fit with lower uncertainty.

Item 2 Aqua MODIS Status

Command missing events

WB) We have had occurrences of commands being issued and not implemented on-board Aqua. A night-to-day terminator command was missed. MCST noted that after an SD calibration the SDD/SDS close command was missed causing 5 days of Open mode exposures each orbit. Although the impact on the SD has been shown to be negligible, missing commands may cause a serious problem. A TIGER team has been formed to investigate the impact of missing commands.

Around the Table

Participant: Wayne Esaias – An item we track is the Water Leaving Radiance (WLR).

WE) Miami can see effects near the beginning of the mission (February 2000).

JX) Early in the mission the rate of SD calibrations was high causing a larger SD degradation. m_1 would need to be reprocessed specially for this period to improve the LUT for Miami (*MCST Action: look into the early m1 data and reprocess as needed to improve the Miami product*)

WE) Can SeaWifs perform an additional lunar calibration on December 18, during the MODIS Deep Space Maneuver (DSM)? The phase angle will be about 22°. This data would be used in a DSM comparison of Terra/Aqua/SeaWifs.

Participant: Jack Xiong –MCST has sent Kurt reprocessed RR granule data (L1B) using the new LUTs.

Participant: Chris Moeller – What is the status of the SWIR correction in Aqua L1B?

JX) L1B is currently not applying a SWIR OOB correction to the data. MCST can be ready in two weeks with updated m_1's that include this correction for use in L1B.

CM) Will hold off B26 correction analysis until SWIR OOB correction is applied.

JX) MCST will add the correction over the next few weeks.

CM) Will next be looking at comparison of Terra and Aqua B36. We are in the final stages of planning under-flights of Terra and Aqua.

JX) MCST has compared B36 and found some difference between the instruments. Bands 31 and 32 agree well. We are going to use a different site to compare (possibly polar measurements) in order to improve/confirm our findings.

Participant: Zhengming Wan – Two clear days for calibration/comparison of Terra and Aqua. Cannot get data from the DAAC (granules 2002224.0955 and 2002224.1000). ZW will send Email of needed granules to MCST. *MCST Action: MCST will order the granule data for ZW.*

JX) When will the results be ready?

ZW) Should have a thermal comparison in two weeks.

Participant: Bill Barnes – Data has started to be sent to Hugh Keifer for inter-comparison of Terra, Aqua, SeaWifs, etc.