

MODIS Team Meeting Minutes

Minutes of the MODIS Team Meeting held on Tuesday December 21, 1993.

Action Items:

70. Evaluate the thermal design of the Schaeffer Magnetics' motor/encoder. Assigned to Daelemans 8/31/93. Due 10/15/93

73. Complete the MODIS brochure and released for printing. Assigned to Bauernschub 10/18/93. Due 11/15/93.

74. Prepare and submit a Configuration Change Request which revises the definition and impact of levels of software criticality for the MODIS Software Management Requirements Document. Assigned to Anderson 10/26/93. Due 12/ 1/93

75. Determine if the four electronic module boxes can be individually thermal tested in air, or must the thermal testing be done in a vacuum. Assigned to Silva 10/26/93. Due 11/ 9/93

76. Provide a schedule of the SBRC internal CDRs. Assigned to Bauernschub 10/27/93. Due 11/23/93
CLOSED 12/14/93

78. Recommend details of agreement with SBRC for GSFC access to near-real-time test data. Assigned to Montgomery 11/16/93. Due 12/ 7/93. CLOSED 12/21/93

79. Consider advisability of bringing bad Readout ICs to GSFC for electrical tests or destructive physical analysis. Assigned to Bob Martineau 11/23/93. Due 12/ 7/93

80. Determine what post-Software Acceptance Review (SWAR) tests need to be done to prepare MODIS for operations during the early on-orbit instrument checkout using macros. This involves determining the following:

- 1.) Who at SBRC is responsible for generating and testing these macros?
- 2.) When will this work on these macros be started?
- 3.) When will these macros be defined?
- 4.) When will these macros be tested?

Assigned to Guenther 11/16/93. Due 12/7/93. CLOSED 12/21/93

81. Determine use of on-board calibrators during testing and on-orbit. This is a lifetime issue involving motors, diffuser degradation due to exposure to sunlight, and use of calibration bulbs. Assigned to Guenther 11/23/93. Due 12/14/93. CLOSED 12/21/93

82. Work with the MODIS team to obtain a consensus on a revised MODIS crosstalk specification and provide inputs for a Configuration Change Request. Assigned to Ed Knight 12/14/93. Due 1/11/94

83. Answer the following questions about instrument commands.

- a) Are there any commands or command sequences which can damage MODIS?
- b) How does SBRC validate command macros before use on the instrument?

Assigned to Roberto 12/21/93. Due 1/14/94

The following items were distributed:

- 1) Weekly Status Report #118
- 2) SBRC Memos submission from week #110
- 3) Minutes of the last team meeting

Attendees:

✓ Dick Weber	✓ Bruce Guenther	June Tveekrem
✓ John Bauernschub	George Daelemans	✓ Bob Martineau
✓ Rosemary Vail	John Barker	Bob Silva
Lisa Shears	Joann Harnden	Ken Brown
✓ Mike Roberto	✓ Patricia Weir	Robert Kiwak
✓ Nelson Ferragut	Mitch Davis	Harvey Safren
✓ Gene Waluschka	Jack Ellis	✓ Ed Knight
Kate Forrest	✓ Ken Anderson	✓ Harry Montgomery
Bill Barnes	Rick Sabatino	Marvin Maxwell
Les Thompson	✓ Cherie Congedo	Bill Mocarsky

Team Meeting and Other Topics

December 21, 1993

General

The QMR was held Thursday, December 16, in building 16, room 125. The entire presentation was given by Lloyd Candell. Lloyd did an excellent job covering management and a top level technical overview of MODIS. Engineering team comments are included in a memo dated December 23, 1993.

SBRC will be shut down for the week of December 27th through December 31st.

Electronics Box Testing in Air

George Daelemans has a suggestion about T/V testing the boxes together before they are integrated with the EM. Early next year an aluminum MODIS mainframe will be available. This could serve as a test bed for the electronics boxes. This setup could minimize the number of penetrations of the T/V chamber. Testing could initially be performed in air so all the necessary measurements could be made as currently planned.

Pointing Knowledge Error

The science team on December 21st developed a proposed specification related to the allowable pointing knowledge error for MODIS. On the AM platform, MODIS is not the driver for this requirement, but this could be the case on PM. Meeting attendees included Al Fleig, Bill Barnes, Harry Montgomery, John Barker, Ed Knight and Mike Roberto. The proposed spec is as follows:

The total instrument plus spacecraft boresight pointing knowledge error shall not change by more than 50 meters over a time period of 1/2 orbit.

The rationale is as follows: The MODIS science team requirement for pixel location is 1/10 of a 1 km pixel. It is possible (though potentially expensive) to improve ground location with ground processing given certain conditions. To do this, it is necessary to identify ground control points that can be found. It is also necessary that the boresight error be sufficiently stable that knowledge of the identified ground control points is applicable to other pixels of the image. The proposed spec was obtained by assigning on half of

the 1/10 pixel error to the ground control point processing and 1/2 to uncertainty change in pointing knowledge.

Detectors

Bob Martineau mentioned that lot 1 PC detectors are bad. There was not a complete delineation of the serpentine due to faulty etching.

Mechanisms

Nelson Ferragut is requesting the stress analysis on the mainframe.

Optical Design

There was an error in Code V which was found by the GSFC STOP team. The GSFC version of Code V provided wrong results of ray locations if over 50 surfaces were traced. Optical Research Associates (ORA) of Pasadena, CA was contacted. ORA found their programming error and updated the GSFC version of Code V. As of this writing, Gene Waluschka is working with SBRC to assure their version of Code V does not have this error.

Systems and Calibration Telecon

This telecon was held on Monday, December 20th. Among the participants were Jim Young, Neil Therrien, Tom Pagano, Ed Knight, Harry Montgomery, John Barker, Bruce Guenther, and Mike Roberto.

1. PC Detector linearity and possible need for telemetry from the CLAM. The CLAM has the rough stage of offset (6 bits) and the FAM has the fine control offset (8 bits). If the PC detector linearity is within 1 percent or so, telemetry from the CLAM may not be necessary. The ability to change the offset in the CLAM during the mission allows for correction of detector characteristic changes during the mission. The following are under consideration:

- a) A reset circuit in the CLAM could be reset to a particular value and a MEM counter could keep track of increment and decrement signals sent to adjust the CLAM offset. However, a failure here could mean loss of a channel.
- b) Use all temperature sensors to determine background
- c) Modify CLAM to provide for telemetry readout. There is little real-estate for this.
- d) Move all offset into FAM for PC channels. This impacts ability to adjust for changes in detector characteristics.

2. After the CDR, Ed Knight and John Barker wish to stay on to get an overview of the MODIS Systems Analysis Program (MSAP), the algorithms, and the theory behind the algorithms.

3 SBRC has not seen the same radiant cooler rotations about the X axis that Cherie saw with the GSFC STOP analysis.

Mike Roberto

January 3, 1994