

MODIS SCIENCE DATA SUPPORT TEAM PRESENTATION

November 13, 1992

AGENDA

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ACTION ITEMS:

ACT92_11.13

06/12/92 [Tom Goff, Carroll Hood] Develop separate detailed schedules using Microsoft Project for Level-1A and -1B software design and development. (Refine the use of Microsoft Project so that it becomes a useful tool rather than an action item.) STATUS: Open. Due Date: 07/10/92

07/31/92 [Tom Goff, Ed Masuoka, Al Fleig] Develop the purpose and requirements for a packet simulator. Get more information on the packet simulator being developed by SBRC. (An updated requirements specification was included in the handout on 09/04/92. A copy was provided to Al to take to the Science Team Meeting. Tom arrange a meeting with Ed and Al.) STATUS: Open. Due Date: 09/04/92

11/06/92 [Lloyd Carpenter] Develop a plan for MODIS software requirements definition, documentation and review. STATUS: Open. Due Date: 11/20/92

11/06/92 [Lloyd Carpenter] Develop a plan for generating updated computer resource requirements for MODIS production processing. STATUS: Open. Due Date: 11/27/92

MODIS Airborne Simulator (MAS) Status

Liam E. Gumley

Progress up to 12 November 1992

(1) MAS data processing

MAS FIRE Data Processing Status, 12 November 1992				
Flight Date	Region covered	Number of flight lines	Number of scanlines	Processing status
10/31/91	Ames test flight CA,NV	3	25447	Complete
11/12/91	Ferry flight CA to TX	1	7920	Complete
11/14/91	Coffeyville KS	16	38661	Complete
11/18/91	Coffeyville KS	14	47985	Complete
11/21/91	Coffeyville KS	12	58011	Complete
11/22/91	Coffeyville KS			
11/24/91	Gulf coast TX, LA			
11/25/91	Coffeyville KS			
11/26/91	Coffeyville KS			
12/03/91	Gulf coast TX, LA			
12/04/91	Gulf coast TX, LA			
12/05/91	Coffeyville KS			
12/07/91	Coffeyville KS			
11/16/91	Ground calibration	—		
11/20/91	Ground calibration	—		
11/23/91	Ground calibration	—		

These flights have all been processed with the final version of the visible/near-infrared calibration, and with INS/MAS clock offsets corrected. GIF quicklook images and flight summaries have been generated and made available for anonymous FTP at [ltpiris2.gsfc.nasa.gov](ftp://ltpiris2.gsfc.nasa.gov).

MODIS Level-2 Processing Shell Design and Development

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Date: November 9 - November 13, 1992

1. PGS Toolkit Study

I am preparing a draft of the requirements for a computer language interface tool. This language interface tool is not addressed in the current PGS Toolkit Study Report, but it will be needed in the integration of the shell and Team Members' algorithms.

Currently this tool is required for handling interface problems between C and FORTRAN, unless the Team Member is using a different computer language. In order to minimize the modifications of Team Member's source code, we need a user friendly powerful tool that can provide a completely transparent, machine independent interface between C and FORTRAN subprograms, and global data handling. The following list includes some concerns about the C and FORTRAN interface:

1. The specification of subprogram name
For example: How does the compiler determine whether the called subroutine is written in C or FORTRAN?
2. The type of subprogram
For example: How does the compiler determine whether the called subprogram is a subroutine, an integer function, or a real function?
3. The type and structure of passed data
For example: How does the tool handle the passing of a COMPLEX value from a FORTRAN subroutine to the C main routine, or the passing of a character string?
4. Array handling
For example: FORTRAN stores arrays in column-major order while C stores arrays in row-major order. Usually, the first index of an array in FORTRAN is 1, where the default in C is 0.
5. Accessing data in a common block
For example: How does the tool process the data in a labeled or unlabeled common block?

Here is a short summary of the syntax required for handling the interface:

- Prototyping a FORTRAN subroutine for C
- Prototyping a FORTRAN function for C
- Calling FUNCTION_NAME from C
- Passing COMMON BLOCKs

The CFORTRAN tool that I have used in an earlier test is a good example, but its reliability is to be determined. I am planning to discuss this matter with Ted Meyer next week.

2. NCSA HDF

Due to the limit of disk space on the HP , I am using ftp to download HDF Ver. 3.2 from NCSA to the Iris, so that I can exercise the HDF's calling interfaces and utilities.

MODIS SOFTWARE AND DATA MANAGEMENT PLAN

Status Report

The MODIS Software and Data Management Plan was distributed to the MODIS science team members on August 28, 1992 for review and comments.

Responses

John Barker
Kendall Carder
Dorothy Hall
Alfredo R. Huete
Chris Justice
Paul Menzel
Steve Running
Alan Strahler
D.D. Tanre
Zhengming Wan

No response

Mark Abbott
Ian Barton
Otis Brown
Dennis Clark
Wayne Esaias
Robert Evans
Howard Gordon
Frank Hoge
Yoram Kaufman
Michael King
Jan-Peter Muller
John Parslow
Vince Salomonson
Philip Slater
Vern Vanderbilt

Of those who responded, several concurred. The individual comments were as follows:

With regard to the responsibilities of the team members, "Commensurate with available resources" should be added to all appropriate sections. Uncertainty of funding was mentioned by several.

Team members cannot assume responsibility for correct operation on the PGS or deliver code that can operate in the ECS environment without additional programmers, not covered in current budgets. PGS and ECS are unspecified; assuming this responsibility is scary.

There were comments about responsibility for individual products in the tables.

A section (2.5) is needed explaining the role of the EDC DAAC for Level-2 and higher products, and the team interaction anticipated with the DAAC.

A comment is needed on how the team members will access post launch data for algorithm validation - how and where they will get the data - how this will be billed (?) etc. Team member requirements, MODIS and non MODIS.

Clarification was requested on the Beta Version - TM Code Development. What is expected in the Initial Delivery at the end of '93?

Include an appendix of all the acronyms.

How is the team member to establish the initial agreement for providing non EOS data? (Section 2.4.2)

Who is developing the algorithms and coding Earth location? (Section 3.2.7)

What is a "make" file? (Section 3.3.5)

Beta review of team member Level-2 algorithms in October, 1992 (Schedule) will/did not happen.

Delivery of beta, V1 and V2 Level-1 code? (Delivery to the ECS is shown on the schedule. Could this be a question of when the SDST will deliver code to the team/team leader?)

RECOMMENDATIONS:

1. Make changes responsive to all team member comments.
2. Contact "Miami" for the Oceans algorithms section from (Page 7.)
3. Complete the TBD sections where possible in Section 4 and expand Sections 5 through 8.
4. Expand and complete the glossary/data dictionary (Appendix A).
5. Update the schedule and table of products.
6. Check against the Software and Data Management Plan guidelines issued by Stanley Scott (Code 423) on August 28, 1992 for completeness.

MODIS SOFTWARE REQUIREMENTS REVIEW

Strawman Review Plan

- **Develop a requirements phase plan**
- **Develop system and operations concepts**
- **Define detailed requirements and derive specifications**
- **Analyze and classify requirements**
- **Develop reuse plan**
- **Prepare software plan**
- **Identify technical risks**
- **Prepare requirements analysis report**
- **Refine report and presentation materials for review**
- **Schedule review and notify appropriate reviewers**
- **Provide advance copies of report to reviewers**
- **Conduct the software requirements review**

Reference: Recommended Approach to Software Development, SEL-81-304, June 1992