

## **FDS Design Peer Review Request For Action (RFA) from Peer Review conducted on February 10, 2004**

1. Originator: J. Lynch/595  
RFA Title: Risk Of Propulsion System Failure Prior To Deorbit Burn  
Issue: Propulsion system may not be used for up to 10 years prior to deorbit burn execution.  
Action Requested: Assess failure modes of propulsion system, prior to use for deorbit maneuvers, if not used for up to 10 years; compare to other failure modes if propulsion system is used, assess relative risk of each and make recommendations.  
Actionee: M. Woodard/595  
Due Date: TBD
  
2. Originator: M. Concha/595  
RFA Title: Re-entry Flight Dynamics  
Issue: Propellant budget shows apogee burn sequence to lower perigee. A chart of resulting perigee heights was not included in the presentation.  
Action Requested: Provide accompanying perigee height values for maneuvers in order to ensure final re-entry trajectory avoid “skip-out”, i.e., the resulting flight path angle provides for a “steep” enough descent.  
Actionee: M. Woodard/595  
Due Date: April 30, 2004
  
3. Originator: T. Stengle/595  
RFA Title: TDRS Ephemeris For Spacecraft Use  
Issue: If the spacecraft requires TDRS orbit information which is not met by the current “standard” TDRS products out the FDF, there will be a cost impact to the ground system.  
Action Requested: Confer with FDF personnel to understand existing TDRS orbit data and require the spacecraft and GLAST ground system to make use of standard TDRS products.  
Actionee: M. Woodard/595  
Due Date: March 31, 2004
  
4. Originator: R. Harman/595  
RFA Title: Attitude Knowledge Uncertainty  
Issue: 10 arcsecond RSS 1-sigma absolute attitude knowledge is a very tight requirement.  
Action Requested: A detailed attitude knowledge budget is needed for both survey and inertial modes. Can the science instrument be added to the ground solution?  
Actionee: M. Woodard/595  
Due Date: April 30, 2004

5. Originator: R. Harman/595  
RFA Title: ITOS Sequential Prints  
Issue: Experience with WIRE and TRACE have shown their version of ITOS cannot reliably output sequential prints.  
Action Requested: Ensure capability well before launch with a requirement on ITOS to produce uncorrupted sequential prints.  
Actionee: M. Woodard/595  
Due Date: March 31, 2004
  
6. Originator: R. Harman/595  
RFA Title: Add RTADS (Real-time Attitude Determination System)  
Issue: A real-time attitude system is mandatory for at least the deboost phase. If there are any problems during deboost (e.g. stuck thruster), a real-time system is the only source of attitude and rate information.  
Action Requested: Add RTADS to the GLAST ground system now.  
Actionee: M. Woodard/595  
Due Date: March 31, 2004
  
7. Originator: R. Carpenter/595  
RFA Title: GLAST GPS Navigation  
Issue: Navigation capabilities have not been compared to predictive requirements.  
Action Requested:
  - a) Convert predictive requirements to position errors in meters or kilometers
  - b) Acquire realistic (see note below) simulated GPS solutions from Viceroy
  - c) Predict GPS definitive solutions to verify that they meet predictive requirements under expected density and drag dispersion environment
  - d) Check onboard propagator capabilities
  - e) Check differenced one-way Doppler (DOWD) predictions versus requirements

Note: Realistic-should include GPS visibility in mission orbit using a variety of typical attitude profiles; may want to use Formation Flying Testbed GPS simulator to do this.

Actionee: M. Woodard/595  
Due Date: April 30, 2004
  
8. Originator: R. Carpenter/595  
RFA Title: Clarify Orbit Determination/Prediction Requirements  
Issue: Requirements often do not specify probability/reliability level, e.g. "1-sigma", "3-sigma", "RMS", etc., or coordinate frame, or operating regime (e.g. while thrusting or within X minutes after a burn, etc.).  
Action Requested: Clarify requirements  
Actionee: M. Woodard/595  
Due Date: April 30, 2004

9. Originator: T. Stengle/595  
RFA Title: Responsibility For Deorbit Operations  
Issue: Responsibility for deorbit maneuver planning and execution is not clear (is it Goddard Flight Dynamics organization, Omitron, or spacecraft builder SpectrumAstro?).  
Action Requested: Define responsibilities for deorbit maneuver planning and operations  
Actionee: M. Woodard/595  
Due Date: March 31, 2004
10. Originator: D. Quinn/595  
RFA Title: GPS Clock Failure  
Issue: All concerned regarding GPS were couched in terms of state vector issues. What happens if the GPS clock is not available for an extended period of time?  
Action Requested: Assess mission impacts in the event of a GPS clock failure.  
Actionee: M. Woodard/595  
Due Date: March 31, 2004
11. Originator: G. Marr/595  
RFA Title: GLAST ELV Dispersion Analysis  
Issue: Impact of launch vehicle dispersions on operational altitude  
Action Requested: Analysis should be performed to determine whether or not 3-sigma launch vehicle dispersions will drive the spacecraft out of the desired range of beginning-of-life altitudes.  
Actionee: M. Woodard/595  
Due Date: March 31, 2004
12. Originator: G. Marr/595  
RFA Title: Contingency Ascent Analysis  
Issue: Recovery from non-nominal launch vehicle performance  
Action Requested: A plan to analyze contingency ascent in the event of non-nominal launch vehicle performance should be outlined.  
Actionee: M. Woodard/595  
Due Date: April 30, 2004
13. Originator: G. Marr/595  
RFA Title: Predicted Ephemeris Requirements  
Issue: Definition and justification of predicted ephemeris requirements  
Action Requested: The predicted ephemeris requirement should be well defined and justified.  
Actionee: M. Woodard/595  
Due Date: April 30, 2004

14. Originator: J. Teter/582

RFA Title: Definition of FDS Products

Issue: Not clear from the Peer Review that a list of required FDS products has been defined.

Action Requested: Provide a list of required FDS products that includes the name or description of the product, the frequency of the data provided in the product, the delivery frequency of the product, and the duration of the product. This will need to be defined in order to develop the interfaces to the systems that require these products (e.g. MOC Planning and Scheduling). In addition, it should be noted which controlled document will capture these product definitions.

Actionee: M. Woodard/595

Due Date: March 31, 2004