



Date: March 10th, 2008

To: Lunar Ice Discovery Team

From: [REDACTED] Systems Engineer

Subject: Design Process Kick-off

As Systems Engineer for the Lunar Ice Discovery (LID) Team, I would like to congratulate the team on all the work we have done so far. As you know, Monday March 17th will be our first meeting in which we bring together each of our Subsystem Engineers. In addition, we will be kicking off the design process and begin working on our proposal for the NASA Discovery Program. I realize that for many of you, this will be the first proposal you have worked on. I also realize that it will be the first time many of our Subsystem Engineers will be working on the front end of the design process. As the Systems Engineer, I can assure each of you that with team cooperation, hard work, and dedication, we will all come together as a team and succeed in creating a proposal that the NASA Discovery Program will accept.

good intro

Progress So Far

Up to this point, we are well into Pre-Phase A of the Design Process. Our Principal Investigator has completed our mission needs, goals, and objectives. We have also completed our mission scope and developed an operations concept. I expect each of you to be very familiar with these documents before our meeting on Monday. The effort that has been put forth will lead the way for our next steps in the design process. That being said, we have a lot of ground to cover before our proposal will be ready.

May also want to give them more homework

- like be familiar with the AO and start researching similar / heritage missions

Design Process Kick-off

The next two weeks are crucial to the success and completion of our design proposal. Our objective with LID is to confirm evidence of water at the polar caps of the Moon.

In our first meeting, we will develop requirements for our mission based on our needs, goals, and objectives. We will also brainstorm alternative operations concepts. Although we have one concept of operations developed, we need a broad spectrum of ideas and alternatives for the mission.

By the end of the first week, we will decide on an operations concept frontrunner. This will be determined by the group as the operations concepts most likely to be selected by the NASA Discovery Program.

we would not brainstorm the ops but the actual spacecraft & payload concepts

→ the design that meets the scope and preliminary conops provided by the P.I.

good idea to split in teams to perform parallel concept analysis. Q: how would you use the PI in these activities

We will then divide into two teams. The first team, Team Galileo, will continue progress on our frontrunner operations concept. This will ensure that we have one mission concept and design approach that can work. The second team, Team Copernicus, will work on the alternative operations concept, ensuring that each design is a feasible alternative. Team Copernicus will also work toward brainstorming ideas for developing potential technology needs.

careful - don't want to push tech. too much since Discovery is a constrained program

In order to make the best use of our time and of our team members, I have decided to use the following day-to-day timeline. In the mornings, both teams will work together in order to determine our progress thus far. In the late morning, Team Galileo will convene and work toward their goals. Team Copernicus will not meet until the afternoons. This is necessary because many of our Subsystem Engineers will be working on both teams. This time in between will be necessary for each of you to do your research and follow-up on action items taken from the meetings. We will all meet again the next morning where each Team Lead will update the entire LID team on their progress and to ensure that we are on schedule.

good coordination of work ethic

By the middle of the second week (Wednesday, March 26th), we should have made much progress toward the development of our frontrunner operations concept toward our alternative concepts, and toward researching what needs to be done in order to make these things happen.

By Friday, March 28th, we will deliver a Status Update to the NASA Discovery Program. This will include our requirements, our primary operations concept and the work we have done with it, and a list of our alternative concepts.

your company's management team.

NASA is on the receiving end when proposal is complete

Keep in Mind

For those of you who have not been exposed to the front end of the design process before, there are a few important things to keep in mind. First of all, "better is the enemy of good enough". What this means is that if you have solution that meets all of our needs, go with it. It is also necessary to "keep it simple". As I mentioned before, the solution may already be out there. We can accomplish our mission without creating a discovery. And most importantly, we are a team, so go to each other for advice, opinions, questions, or concerns. Don't be afraid to disagree with someone's solution and don't be offended if someone disagrees with yours. This is the designing phase, and as we brainstorm ideas, some will pull through, while others won't. It is important to remember that almost 80% of all concepts and designs are modifications of previous designs, so each Subsystem Engineer needs to research past missions that are similar to ours. It is also essential for each of us to be aware of the environment in which our mission will take place. While developing our operations concepts, we must keep the launch environment, space environment, lunar environment, and the lunar surface environments in mind. Make sure that each decision made is taking the other subsystems and environments into account. As the Systems Engineer, it is my job to make sure that each of you understands that there other systems involved in this design process.

I like this paragraph

What's Next?

These next two weeks are necessary to set the foundation for what lays ahead. After we have our operations concept and alternatives hashed out, we can begin developing the technology we will need and we can begin preparing for Phase A. This will include starting trade studies on

Note point above. This would probably not happen

You might want to discuss how the concept downselect will take place & who will be involved since only 1 design concept can be proposed.

our ideas and developing a baseline mission concept, which are necessary in order to prepare a proposal that the NASA Discovery Program will select. The work done at the beginning is essential to our future success, so work hard now and it will pay off soon.

Please remember to look over our mission needs, goals, objectives, scope, and operations concept prior to next week's meeting. I look forward to seeing you all there. Remember, if we work hard in the beginning, it will set the stage for the future of our proposal with the NASA Discovery Program.

Sincerely,

Kristen John

*your paper shows good
management & organizational
skills.*