

## BREAKOUT SESSION 8.

### INFORMATION TECHNOLOGY FOR SCIENCE MISSIONS

**Concern:** Embedded Scientific Computing - is that in scope? There may be come need to process data closer to the sensors.

**Response:** It may be useful for NASA applications now. But I'm not sure.

**Concern:** Display System Hardware that provides data visualization. Is that something that would be interesting for you?

**Response:** Not in the particular subtopics. However, check out the NEX - NASA Earth Exchange since they do have some visualization tools that they may be interested in.

**Concern:** Is there any interest in user interfaces, since you mentioned that there was some work to help the scientists communicate their data. Looking at what is available in the interfaces we could do better. So is there interest in user interface and human factors engineering. Not the hard science but rather presentation layout and communication of that science.

**Response:** Decisions support component. You may be able to make a case there. That's a natural place to check. Generally, there is interest in visualizing the data.

**Concern:** What about mission design, system design and supply chain, building spacecraft and accelerating those processes?

**Response:** I do get a sense that it's really about once the systems are in place how do we use them in the mission. NASA seems to now be more focused on the operations once the platform is in place.

**Concern:** NASA has limited restorations on sharing data. However, in the subtopics are there requirements for: 1. The results of computational simulations - are they confidential and is there a requirement on sharing that data? 2. Systems that do the work or store the data, is it essential for NASA to determine the right people work on the right data? 3. When sharing data – between government or government and industry, how do we ensure that the set of data is not compromised?

**Response:**

1. The data that NASA collects. The IT infrastructure would have restriction for gaining accounts.
2. Systems and data - No subtopics about making the data sets available but it is encouraged
3. Certainly that is an important thing. I don't believe that security has come up as a problem. if you are able to show that data integrity is an issue then propose solution. In general, we have not had cyber security as a focus for the IT but NASA has been reactive vs. proactive. Rather than wait, we encourage it.

**Concern:** Data sets for these subtopics - would that be made available?

**Response:** That data is generally available all the time.

**Concern:** ATC Numerical Simulation application -- The topic mentions focus on benefits of particular applications. But in that space there is a lot of common infrastructure software used in lots of applications. That is there a preference for proposals that focus on just one application and avoid infrastructure developments or in infrastructure development is the focus of the proposal?

**Response:** It is the benefit of that app that is driving a lot of things. You would highlight a specific application in Phase I especially but you mention that your developments will be kept generic enough.

**Concern:** Internet of things. How NASA's vision of IOT is changing. There are elements of security here. Could you elaborate?

**Response:** We don't see it now but it is of interest especially in complex systems. NASA is generally more focused on the problems. We are not really married to any particular technology. If you can help us make something easier or faster than If you could put together something practical than that will work.

**Concern:** Do you have any interest in real time modeling and simulation which will run at the same speed as the actual hardware?

**Response:** It showed up in different projects under a name "Digital twin".