DATE: April 16, 2012

SUBJECT: Network Protocol Splinter Session Minutes

LOCATION: JSC, Building 30

ATTENDANCE:

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INTRODUCTION

Mr. Rick Kraesig convened the April 16, 2012, Network Support Group (NSG) Network Protocol splinter meeting to discuss network protocol during testing and the White Sands Complex (WSC) delog process (refer to the presentation, *Network Protocol Working Group*).

MEETING

A. Network Mission Support

1. During some testing it has been noticed that there have been issues with the network protocols. This meeting was convened to review the protocols and discuss how to make network activities progress more smoothly.
2. All testing requires a Schedule Request and Briefing Message (BM). The question was raised as to how far in advance the two items are distributed. Ms. Elizabeth Clark stated that the Scheduling Request is sent prior to the forecast period (approximately 3 weeks). The Scheduling Request secures WSC equipment and resources. The request also puts the support on the WSC schedule so any conflicts can be worked. Mr. Erik Richards stated that the Forecast becomes the Daily Ops Schedule. Mr. Bill Foster asked what should be done if the request is late in the flow. Mr. Richards stated that the request should still be made through the WSC Scheduling Office. WSC works off the Schedule Request and not the BM. Ms. Melissa Blizzard stated that the paperwork is needed even with late requests. Both the Schedule Request and BM are generated by the Spaceflight Mission Manager (SMM).
3. SUPIDENs will be scheduled with a suffix of SM vice MS. There has been confusion in the past. SM equals Simulation. The Vector Ver is a simulation. If the test is internal to the Integrated Network (IN), then use SM. When the mission Interim Support Instruction (ISI) is distributed for mission status, go to MS. There is little testing after this ISI. Data flows are in support of the mission.
4. Mr. David Glasscock stated that SM is not accounted for in the system. MS is accounted for in the system. The two helps WSC to discriminate. The different suffixes help WSC account for daily losses. If the activity is a test, then it is not counted as a loss. Mr. Tom Russell asked about engineering support. Mr. Richards stated that it does not matter as long as it is not in support of the mission. Even engineering support should use SM. On obit engineering tests should be EE. WSC needs to know if it will be MS or EE. Mr. Jim Bangerter stated that there will be a lot of engineering testing coming in the future for the new programs.
5. Follow the BM test timeline. There have been requests to start tests early. The network may be unprepared if a test starts early. Mr. Richards stated that staying with the timeline is very important to WSC. He asked that there be no deviations from the plan.
6. The question was raised to who should be giving the test briefing. It was stated that it should the person/organization who is driving the test; the owner of the test objectives. The owner's name should be in the BM; identify the test conductor. The briefing should cover the timeline, objectives, loops, participants, etc.
7. For structure, it was stated that the network should follow the Ground Control Message Request (GCMR) recommendations. If the Johnson Space Center (JSC) Ground Controller (GC) is unable to send the GCMR, the GC will advise the SMM to send the GCMR. If the SMM is unable to send the GCMR, the SMM will advise

WSC Engineering to send the GCMR. During testing, the SMM will send the GCMR. Mr. Mike Marsh asked if all entities will be on the loops. If there is an issue and the report has to be echoed from one entity to another that takes finesse and valuable time. Mr. Roy Harris asked the value of going through the SMM. Mr. Richards stated that the SMM is more familiar with WSC ops. Ms. Blizzard stated that if all entities are on the loop, then the GC could go directly to WSC. Mr. Kraesig stated that the GC would have to know who to talk to. Mr. Foster stated that BM should have the positions included. Mr. Richards started that JSC should go to WSC TO&A and not all the different WSC positions (e.g., Site Specialist [SS], Operation Supervisor [OS], Voice) as was done on the H-II Transfer Vehicle (HTV) mission. The SS is responsible for the Space-to-Ground Links (SGLT) and not necessarily paying attention to your particular event. TO&A will know who to talk to. Ms. Blizzard stated that this should be included in the BM. Mr. Marsh stated that it is critical who is on the loops. Mr. Joe Whitney asked if the others at WSC (SS, OS, etc.) know when to not answer. Mr. Richards stated that WSC is working on that. WSC is working on training the team.

8. Mr. Bangerter stated that the BM needs to be clear and concise. It should identify the protocols, call signs, and the Test Conductor and their role. The Test Conductor's role is to get the test on track. The OS has a list of tests and should be aware. Participants need to be on the correct loops. If there is an issue, the Test Conductor needs to step in and get it corrected. Make sure everyone knows who to call. If everyone is on the same loop, the GC can go direct to WSC. The SMM is still a part of the overall interface; especially, in the role of troubleshooting.
9. The SMMs and WSC Engineering are on console during pre-launch. Console support is documented in an ISI. During the launch count, go through the SMM. Mr. Whitney stated that JSC has no issues with the pre-launch protocol.
10. The SMMs and WSC Engineering are on console during launch and early orbit operations. If the SMM is on console the protocol is the same and if the SMM leaves the console, the GC is made aware. Mr. Harris asked the difference in the phases and Ms. Blizzard stated that there is no real difference. In the past, the SMMs were not on console the entire period. Mr. Whitney stated that during ascent it is not safe to go through the SMM first. Mr. Marsh agreed. If there is a loss of data, JSC will be troubleshooting and there will not be time to relay information or educate the SMM on the problem. Mr. Kraesig stated that the GC would go to WSC for troubleshooting. Mr. Harris stated that there would be no conversation on the loop during ascent unless there is a problem. Mr. Richards stated that the BM should lay out the WSC hours. Mr. Glasscock stated that as long as TO&A is on console, come to TO&A. WSC wants JSC to have access to the engineers. TO&A will work with the SMMs. Mr. Bangerter stated that the launch count should stated which POC the GC goes to and when. Mr. Glasscock stated that there is a pre-launch briefing for Expendable Launch Vehicles (ELV); this could be done for other supports. Mr. Bangerter agreed. Mr. Glasscock stated that there is an internal briefing and then one with the ELV Network Operations Managers (NOM). Ms. Clark stated that there is a briefing with the Flight Dynamics Facility (FDF) and WSC. Mr. Bangerter stated that JSC should be included in that briefing. JSC should also be informed of the status of WSC Engineering when the SMMs are released.

11. During launch and early orbit, who is responsible for sending the GCMR? Mr. Glasscock stated that this is very important should the X-Terminal be down. Ms. Blizzard stated that if the GC cannot send the GCMR, the task defaults to the SMM. If the SMM can't send the GCMR, then WSC would. Mr. Glasscock stated that the team needs to communicate the fact that the X-Terminal is down. Mr. Whitney stated that who to call should be added to the launch count.
12. During mission operations, the GC interfaces with the WSC CSC and or WSC Ops. IF the GC is unable to send GCMRs, the GC will advise the WSC CSC to send the GCMR. This will be called out in the BM and launch count.
13. Mission L-1 day voice checks are conducted at L-1 day or as close to launch as possible. The test will be documented in a Schedule Request and BM. When the test is concluded, the voice loops will be frozen. The SMM will send a Network Test Report. Ms. Clark stated that during the Automated Transfer Vehicle (ATV) mission, WSC came in for ATV and the loops were not configured per the BM. Mr. Richards stated that WSC wants the checks and then the configuration frozen. Mr. Ken Jones stated that if he needs to use the loops, he will, but he has no issue with the process. Ms. Clark stated that this is an issue when there are two Visiting Vehicles (VV) testing at the same time. Mr. Jones suggested adding the loop permanently and configured to the switch. JSC is getting ready to turn down servicers. JSC needs to know what is needed. There are still no Exploration Flight Test (EFT)-1 requirements. A NASA Integrated Services Network (NISN) service Request (NSR) can get the services back. The loops are in the switch. Mr. Rick Kraesig accepted an action item to provide the EFT-1 voice loop requirements (action item 0412-NSG-NW Protocol-01).
14. Non-real-time problem reporting is coordinated by the SMM. The GCs are provided a call-up list for off hours. There have been occasions when a problem arose and no one on the call-up list was called.
15. The SMMs and WSC Engineering would like access to the electronic Flight Notes. Mr. Kraesig's access has been approved. Mr. Whitney stated that this is an NDC process now. Mr. Kraesig stated that he will verify his access and that the process works.
16. Mr. Kraesig reviewed the WSC support position call signs and their roles and responsibilities.

B. WSC Delogs.
1. The delogs were originally intended for internal troubleshooting and never intended as a Space Network (SN) process. The delog process is very labor intensive.
2. Delogs will be provided on a best-effort basis. Mr. Richards reviewed the required delog request information including urgency.
3. The system purges after 90 days.
4. Is the delog for troubleshooting or historical purposes only?
5. Mr. Richards reviewed the delog process. You need to delog a specific site. Sites do not 'talk' back and forth. There is no automation in the system. Mr. Marsh asked if the process will be easier after the SN upgrades and Mr. Glasscock stated that it will not.
6. Mr. Bangerter stated that he has seen a lot of delog requests without a lot of information provided. Why does the customer need the delog. The GCs need to get

more data from the customer. There needs to be a high-level reason (communication drop outs, power fluctuations on the S/C, etc.). This information helps WSC get the correct data.

7. Mr. Whitney agreed. The GCs need to push back more on requests.
8. Mr. Richards stated that the EB/No does not provide the entire picture. Sometimes the customer may actually require much more data. Mr. Whitey stated that there is an OIP. ATV is not following the OIP. ATV is the only project with an OIP. Mr. Bangerter stated that an OIP is needed with SpaceX. Mr. Whitney stated that if a SpaceX request comes up, the customer will have to be told that a delog request has to be related to a problem.
9. Mr. Bangerter stated that the customer should be provided what they have requested. If they ask for data again, I will get with the customer. This needs to be enforced. Mr. Glasscock stated that WSC will only send EB/No data if that is what is requested. Mr. Bangerter agreed. The GCs will need to work with the customers to determine what they really need to request.
10. Mr. Glasscock stated that WSC does not record the frequency, but can provide parameters that will help. Mr. Marsh stated that only the JSC Mission Evaluation Room (MER) ever did analysis. No one at JSC will be doing that analysis now.
11. Mr. Bangerter stated that if WSC gets multiple requests for the same times, he needs to be informed. He will work with the customer.
12. Mr. Richards reviewed the EB/No data. Mr. Richards stated that the HTV Scheduling Orders (SHO) are not currently correct. Mr. Whitney stated that the Interface Control Documents (ICD) are not up to date. Mr. Richards stated that if there is a major change, compatibility testing will need to be re-run. Mr. Glasscock stated that the new modems will have different EB/No values.

C. Discussion
   1. There is no form used for requests.
   2. If you have problems, WSC is willing to have a telecon to help resolve the problem.
   3. The GC's will work with ATV to have them follow the OIP.

ACTION ITEM REVIEW

The following action item was assigned at the April 16, 2012, NSG Network Protocol splinter meeting.

AI No.	Assignee	Action	Status
0412-NSG-NW Protocol-01	Rick Kraesig/ GSFC/HSF	Provide EFT-1 voice loop requirements.	**Open**

(Original Approved By)
Rick Kraesig
GSFC/HSF