DATE: March 28, 2011

SUBJECT: NSG ODAR WG Minutes

LOCATION: JSC, Regents Park III

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INTRODUCTION

Ms. Aldora Louw convened the March 28, 2011, Obsolescence-Driven Avionics Redesign (ODAR) Working Group (WG) meeting to discuss ODAR requirements, project status, and schedules.

MEETING

A. Mr. Steven Testoff stated that there is one open WG action item. Action Item 0910-NSG-ODAR-02 on Mr. Ray Sparks to provide performance assessment of the International Space Station (ISS) IP Ground Routed Network (IIGoR) configurations.
   1. Mr. Sparks stated that he has the numbers, but is not satisfied with the results and is working on final numbers that he should have by the end of the week (April 1). Ms. Louw stated that the numbers are very important and are needed for meetings with the Communication Data Processor (CDP) vendor and the design review.
   2. Mr. Scott Douglas stated that from a NASA Integrated Services Network (NISN) perspective, the baseline is 120 ms; that is the contract with the Service Level Agreement (SLA) vendor.
   3. Ms. Louw stated that the numbers that are being seen are higher and that she is looking at the alt route rates. Mr. Sparks stated that in some cases the latency has been 240 ms. The 120-ms round trip with Space Link Extension (SLE) is a concern. SLE and a high latency rate may be a design concern. This is of concern to the vendor.
   4. Mr. Joe Aquino asked if this is a NISN or IIGoR equipment issue.
   5. Mr. Douglas stated that the point-to-point latency is 120 ms as long as the NISN carrier provisions for that.
   6. Mr. Jay Lipford stated that it is not NISN on the alt routes for ODAR. Outside NISN are alt routes with NISN circuits. One route has two different legs of the NISN infrastructure. The forward link through the 150-Mbps interface is 120 ms, and then the 300-Mbps interface is another 120 ms. A test was conducted last week with the Goddard Space Flight Center (GSFC) to White Sands Complex (WSC) link on a protected path and the latency was 213 ms (Johnson Space Center [JSC] to WSC). When the circuit was 'normalled' up, the rate dropped. The carrier met the specifications with the Marshall Space Flight Center (MSFC) design and alt routes. But when the interface goes through two NISN circuits with 240-ms routers at each end, you would have to take down the 150-Mbps link and leave the 300-Mbps link up.
   7. Ms. Louw stated that the box will have to deal with that should it happen.
   8. Mr. Douglas stated that 25 Mbps at 240 ms is sustainable, but difficult. Ms. Louw stated that adding SLE on top of the Transmission Control Protocol/Internet Protocol (TCP/IP) will have to be handled as well by the eFDPs. Mr. Douglas stated that 240 ms is a reasonable upper limit.
   9. Ms. Louw stated that she will have to discuss this with the vendor. The vendor will have to test from 3 – 25 Mbps.
   10. Mr. Aquino asked if JSC should argue that the service 120 ms. Mr. Douglas stated that NISN did not design the alt routes.
   11. Mr. Lipford stated that the OC12s have a higher percentage of failures. We do not know the min/max of the 300-Mbps Premium Internet Protocol (PIP) service between

JSC and MSFC. Mr. Douglas stated that he believes the PIP route is stable. Mr. Lipford stated that the other route is less likely and provided the 213 ms rate.

12. Mr. Aquino asked if JSC should design the box to meet the rates or should NISN do something. Mr. Lipford stated that a new circuit infrastructure would be needed and there would be cost to do that. Mr. Douglas stated that the 150-Mbps link could be moved off the OC12 paths, but would require funding.
13. Mr. Lipford stated that the odds of two router ports going down at the same time are very low. We tested the failure on purpose.
14. Ms. Louw stated that Mr. Sparks is working the numbers and we will have the vendor work with the numbers.

B. Ms. Erin Adams reviewed the Critical Design Review (CDR) action items.
   1. ICD-ESTL-SDIL. This will be complete by May. Ms. Adams will confirm the date.
   2. APID configurations. This is in work. Ms. Adams will set up a meeting with Mr. Tony Scaffacidi.
   3. Ground Architecture Control Document (ACD). Mr. Sparks stated that he is correcting errors in the document. He will send out the strawman document. Mr. Ray Sparks accepted an action item to provide the strawman ground ACD to Ms. Erin Adams by COB March 28, 2011 (action item 032811-ODAR WG-01).
   4. Latencies. This is being worked.
   5. Building Interface Control Documents (ICD). The Building 2 ICD is being published. The Building 8 ICD under discussion.
   6. eFDP Training. The training schedule has been reworked. The training will be conducted the second week of May (Tu, Wed, and Thu). There will be 3 days of training with two sessions each day. The network personnel are reviewing the training package. Mr. Sparks will provide the training package to Ms. Louw and Mr. Mallik Putcha when the review is complete. Mr. Sparks has a document that will provide the requirements for what is needed to conduct the training. Ms. Sharon Marston stated that the Electronic Systems Test Laboratory (ESTL) has a room adjacent to the laboratory that can be used to conduct the training.
   7. eFDP and SLE. This action is on Mr. Tom Whitline.
   8. Canned Data. Mr. Sparks stated that the data was supposed to be ready the week of March 21. He stated that he will check the status.

C. Ms. Louw discussed the schedule.
   1. Ms. Louw asked that updates be provided to Mr. Putcha. Please let him know if any items are missing.
   2. In regards to Line 105 - Testing of Forward Service Upgrade (3 to 25 Mbps variable rates), Mr. David Glasscock stated that WSC is on schedule for June. The hardware is in place; the cabling is complete, and the software is being tested.
   3. Ms. Louw stated that the Ku-band WSC 25-Mbps service Operational Readiness Review (ORR) is July 12.
   4. It has to be determined when the Integrated Communications Unit (ICU) will be at ESTL. Will it be June or July? Will the forward service be ready for testing? The dates provided were provided by Mr. Ralph Ralston. Mr. Ralph Ralston was assigned an action item to review the ODAR integrated schedule and provide input for lines 112 – 118 (action item 032811-ODAR WG-02).

5. Mr. Sparks stated that the forward link with the low-rate switch will be ready, but not the forward link with the high-rate switch. Mr. Jim Bangerter asked if this is the software that is supposed to be delivered prior to STS-134 and Mr. Glasscock replied that it is. The software has not been delivered to the floor yet.
6. The matrix switch will be installed the last week of April at Sunny Carter. It will then be possible to receive the forward link from the ICU. Mr. Sparks does not know if they have converters. A design was provided that mirrors WSC.
7. Mr. Chris Hopkins stated that the ICU may have a 4-week slip for delivery to JSC. He is trying to minimize the impact to ESTL testing. The ESTL dates should be moved to July vice June.
8. Mr. Joe Krypel asked if testing will involve MSF Ops. Mr. Sparks stated that MSFC Operational Readiness Tests (ORT) are scheduled for July to August, 2011. Joint testing with MSFC and the Mission Control Center (MCC) are scheduled for September to January.
9. Ms. Louw stated that the dates being discussed do not meet the dates on the schedule. A meeting with the Communication and Tracking Officers (CATO) and DMCs was conducted to discuss operations participation in testing. Mr. Krypel stated that MSFC Ops would like to be involved in early testing on a non-interference basis to perform some data collection.
10. Ms. Louw asked if testing will be isolated to the ESTL or will data flow out to other entities. She stated that it will be evaluated as to what can be done in addition to the ESTL test objectives.
11. Ms. Louw asked Mr .Hopkins to keep the WG up to date on the ICU delivery schedule. Mr. Hopkins stated that the software is looking better and there are some outstanding items.
12. Lines 142 and 147 (End-to-end [ETE] testing). ODAR ETE testing will be with Software Development and Integration Laboratory (SDIL) – MSFC – JSC. Distribution will be made to the IPs and Building 8. P3 is the same test. EDM2 will be at ESTL. This will be a radiated test. We need to identify the different building blocks for that test, test objectives, and who is responsible for testing, reporting, etc.

D. Other Discussion
1. Mr. Bob Marriott asked about the ISS Downlink Enhancement Architecture (IDEA) decommissioning date. Ms. Louw stated that the date is December 11, 2011. With schedule slips, if the turndown occurs in December, testing will have to be conducted on operational circuits. This has been done before, but has not worked well. The discussion is to move the decommission date to February. Ms. Jewel Hervey stated that this has to be discussed with NISN. She stated that she would like some input by the week of April 4.
2. It was stated that compatibility testing at ESTL will depend on the Mr. Hopkins input. This will be tracked with the EDM2 schedule.
3. Mr .Joe Aquino asked about the Campus Local Area Network (LAN) decommissioning. The 300-Mbps LAN is scheduled to be ready for operations use on April 5, 2011. The Campus LAN is scheduled to be decommissioned on April 25, 2011. Ms. Louw stated the MEL operational date is July 1st. Mr. Sparks stated that operations say they will be ready on April 5. Ms. Louw stated that she needs to discuss this with Mr. Jeff Watson before agreeing to change the July 1st date.

Mr. Aquino stated that the LAN should be decommissioned after the Space Shuttle mission.

ACTION ITEM REVIEW

AI No.	Assignee	Action	Status
032811-ODAR WG-01	Ray Sparks/ MSFC	Provide the strawman ground ACD to Erin by COB March 28, 2011.	**Open**
032811-ODAR WG-02	Ralph Ralston/ WSC	Review the ODAR integrated schedule and provide input for lines 112 – 118.	**Open**

NEXT MEETING
The next meeting will be conducted on April 20, 2011. A notice will be distributed.

(Original Approved By)
Aldora Louw/JSC