

DATE: April 17, 2012

SUBJECT: Human Spaceflight Communications Working Group

LOCATION: JSC, Regents Park III

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INTRODUCTION

Mr. Michael Thomas convened the April 17, 2012, Network Support Group (NSG) Human Spaceflight (HSF) Communications Working Group (HSF Comm WG) splinter meetings to review upcoming NICS upgrades/outages, Mission Operations Voice Enhancement (MOVE) status, and NASA Integrates Services Network (NISN) Service Request (NSR) status (refer to the presentation, *Human Space Flight Working Group HSF*).

MEETING

- A. Mr. Thomas reviewed the upcoming NASA Integrated Communications Services (NICS)/upgrade/outage activities chart.
- B. Mr. Thomas provided a MOVE status. He stated that this status is from two weeks ago and the retrofit is going well.
 1. Goddard Space Flight Center (GSFC). There have been 377 retrofits completed.
 2. Johnson Space Center (JSC). The final Operational Readiness review (ORR) for Phases 5 - 8 is complete. All the International Space Station (ISS) keysets in the Mission Control Center (MCC) have been replaced. The Communications Service Office (CSO) is waiting on NASA input for the Space Shuttle keysets.
 3. Kennedy Space Center (KSC). Documentation is being updated for IOZ in preparation for the Critical Design Review (CDR) on the industrial area switch.
 4. White Sands Complex (WSC). There have been 79 refitted keysets received and installed with 37 being shipped back.
- C. NSR Status
 1. ISS Video Support
 - (a) NSR 37104. CNOC has provided the stream information to the customer and CSO is awaiting a response.
 - (b) NSR 37112. This is in work; the Design Cost Schedule (DCS) has been completed and the Engineering Implementation Package (EIP) is being developed.
 - (c) NSR 37135. An engineer has been assigned and is working with the Service Manger to develop the DCS. Fiber has been installed between Buildings 8 and 17.
 - (d) NSR 37171. An upgrade is wanted. Equipment ordering is the long-lead item. the Start of Service (SOS) date will be difficult to meet. What is the best fit for the cards? Enough information is not yet available for a price. Mr. Joe Aquino asked why we are not purchasing two of the cards that we already have. Mr. Thomas replied that the cards need to be looked at; there have been software upgrades, etc. since the purchase of the current cards. Mr. Aquino asked if a hybrid configuration is wanted and Mr. Thomas replied that it is not. Mr. Aquino commented that is has take a long time to get the boxes working and now is not the time to re-engineer a more advanced solution. Mr. Michael Thomas accepted an action item to talk with engineering in regards to the cards to be used in the ISS DL video (action item 0412-NSG HSFCWG-01). (Editor's Note: Mr. Thomas provided the following response. CSR has scheduled a meeting with engineering and CNOC to clarify the requirements. This action item is **Closed**.)

2. Mission Wide Area Network (WAN) Support
 - (a) NSR 36178. CSO is waiting on the Host Center support task at KSC to be completed.
 - (b) NSR 36329. This NSR is on hold. The circuit reconfiguration AT&T update is ready and waiting on JSC to schedule. The date will probably be pushed out to 05/31. Mr. Ken Jones stated that it is still on track.
 - (c) NSR 37132. CSO is waiting on AT&T.
3. Multi Purpose Crew Vehicle (MPCV)/Orion Support. NSR 36723: KSC will be installed on April 20 and then testing will begin.
4. Router Replacement Project. NSR 36029: Extension at Schriever Air Force Base (SAFB) is being worked. The estimated date of extension is April 30.
- D. Requirements Updates. Mr. Turonald Banks stated that he has requested SpaceX updates which are due April 17. Ms. Cathy Sham is reviewing the spectrum management requirements for EFT-1. Ms. Kitty Holman stated that she had nothing to report.
- E. Network And Communications Analysis and Integration Team (NACAIT) Status. Mr. Robbie Frazier stated that the SpaceX Flight Readiness review (FRR) has been conducted.
- F. Discussion
 1. Delivery of the new high-density Small Conversion Devices (HD SCD) and Graphical User Interface (GUI) to proceed with the JSS Nortel Router Replacement Project (NRRP) transition.
 - (a) Mr. Bob Marriott stated that it is his understanding that the Transition Readiness Review (TRR) was supported on April 4. The issue of the legacy Multiplexer/Demultiplexer (MDM) came up. This was a surprise to JSC. JSC thought an HD SCD was for transition. The transition plan still has MDMs. JSC is looking for HD SCDs and the GUI. JSC would like the HD SCDs before NRRP or in conjunction with the cable and rack installations. A design is in place and JSC is ready. With the MDM route, JSC loses redundancy. The HS SCDs provide dual paths. If there is an issue with the routes, the JSC Comm Control can switch networks rather than going back to the MDMs.
 - (b) The MDMs are obsolete.
 - (c) The question was raised as to when the HD SCDs will be ready. Mr. Scott Douglas stated that the schedules are being prepared and will be ready on April 18. SCD Release 7.0f will be delivered from development to operations this week or next. The release provides the capability to support the HD SCD and GUI. It will have seven ports displayed on the screen. There is no primary to secondary hot swap. When 7.0f is delivered to operations, operational acceptance testing will be conducted. Mr. Paul Hill is working the 7.0f deployment schedule. Mr. Douglas stated that he believes that the July timeframe is supportable. Comm Control will have to manually keep two HD SCDs in sync. In the December - January timeframe, the hot swap capability should be ready.
 - (d) Mr. Aquino stated that there is also hardware for the HD SCDs. Mr. Douglas stated that CSO has the hardware. Mr. Aquino asked if the hardware and software can be shipped separately. Mr. Douglas stated that it may be possible, but that he would have to check the limitations of the current release to support the new

hardware configuration. If the new hardware is compatible with the software, the HD SCDs can be shipped.

- (e) Mr. Scott Douglas accepted an action item to Check the limitation of the current SCD release to support new HW configuration; to determine if it is possible to ship the hardware prior to the release of HD SCD 7.0f (action item 0412- NSG HSFCWG-01). (Editor's Note: Mr. Douglas provided the following response and this action item is **CLOSED**. I have received schedules for SCD Release 7.0f and the High Availability version of either release 7 or 7.1 today. Yesterday I agreed to ship two HD SCDs to JSC for installation as soon as Release 7.0f is delivered for Operational Testing so that they can coordinate their installation work. I believe that should be the first week of May at the latest. The operational checkout of Release 7.0f is currently scheduled to complete by the end of June. JSC would be able to support NRRP testing and transition with the HD SCDs at this point with the caveat that Houston Comm Control will have to make configuration changes to two SCDs. The High Availability modifications to the software allowing Houston Comm Control to configure one SCD and have the other mirror that configuration automatically can be available by January 2013. This will have the High Availability Software available before the NRRP ORR and turn down of the legacy network and MDMs.)
- (f) Mr. Jay Lipford stated that it is not impossible to make the changes manually, but makes it more difficult. It would be prudent to deliver the hardware if possible; it would make the timeline shorter. He stated that when the software is available testing could be conducted with projects not flying. If there are multiple flights to support/test, the manual configuration will be difficult. If the Automated Transfer Vehicle (ATV) comes down in August, there could be a gap for testing. Mr. Douglas asked which configuration is more static (ATV, H-II Transfer Vehicle [HTV], etc). Mr. Lipford stated that the configurations are static except for the data rate changes especially during testing. All data rates are exercised very quickly.
- (g) Mr. Marriott stated that the schedule shows that there is a lot of Visiting Vehicle (VV) traffic to the ISS in the time frame being discussed. The assumption of a gap is not necessarily accurate.
- (h) Mr. Lipford stated that when transitioning services to the new SCDs, it is a matter of timing (testing, delays, flights, etc.). The HD SCDs are all new and will require a lot of testing. Mr. Aquino stated that ATV will have to be retested. Mr. Jim Bangerter stated that there is upcoming ATV testing scheduled. Mr. Aquino stated that if ATV is not ready, it should not be done until September. Mr. Douglas stated that he is confident that the HD SCDs can be shipped in May. The software may not be fully checked out at that time. The legacy SCDs can be used; although, that increases the workload.
- (i) Mr. Lipford stated that there is also the issue of not enough ports.
- (j) Mr. Aquino stated that if we can get the new hardware and software to support July, we will tell NRRP the schedule. We can choose when to transition each project.

- (k) Mr. Marriott stated that while ATV is attached to ISS, there are events scheduled all the time. We would have live links for testing which is better than waiting until ATV is down.
 - (l) It was asked if having MDMs at WSC and SCDs at JSC will present a problem. Mr. Douglas stated that it would not. There are no plans to transition the MDMs at WSC until Space Network (SN) Ground Segment Sustainment (SGSS). Mr. Lipford stated that there are plans to move one set of WSC MDMs in July.
 - (m) Mr. Douglas stated that with the gateways between the legacy and new equipment, we will have full redundancy in place at WSC. He stated that he would like to turn down the MDMs at JSC and ship the NLIC cards as spares to WSC.
2. NSR 36178 move forward plan and schedule for KSC local support. Mr. Vic Colaluca stated that funding has not been turned on for the task. Mr. Bill Manning stated that the 05/11 date is contingent on funding. Mr. Colaluca stated that he has not begun drawings for this effort. If the funding is made available by the week of April 23, it should be possible to make the date. Mr. Aquino stated that Ms. Jewel Hervey will work the funding issue. He stated that his only concern is redundancy at this point and that Meteorological Interactive Data Display System (MIDDS) can wait. Mr. Colaluca stated that the Cape is having funding issues with MIDDS. Mr. Manning stated that he understands Mr. Aquino's concern and it may be possible to work this NSR in two phases. Mr. Aquino stated that if Mr. Colaluca has to wait on the Air Force and they are not ready, the redundancy should not be held up. Mr. Manning suggested that the NSR be broken into two phases (redundancy and MIDDS). Mr. Manning asked that CSO be allowed to close the redundancy portion of the NSR while the MIDDS continues to be worked.
 3. NSR 36723 move forward plan and schedule of circuit extensions and MOVE keyset distribution and installation. The carrier is out on April 17 to do the work at Littleton. AT&T was scheduled for last Friday. The question was raised as to whether the work was done at KSC. Mr. Michael Thomas accepted an action item to, in regards to NSR 36723, determine if the carrier has completed the work at KSC (action item 0412- NSG HSFCWG-02). (Editor's note: Mr. Thomas provided the following input. AT&T confirmed circuits on NSR36723 have been delivered at KSC. LTTN advised circuits were delivered yesterday [04/17] by Century Link; LTTN will extend them to house cabling by 4/20. This action item is **Closed**.) Mr. Manning stated that he is not sure which building will have the keysets. The service can be put in place and the keysets would be the next phase. Mr. Aquino stated that the work should be done to get the service in. Mr. Colaluca stated that there is no connectivity in the main switch in the Communications Distribution/Switching Center (CD&SC) yet, but will be shortly. Mr. Manning stated that CSO will deliver to the demarc and then it will be Host Center work. It can be looked at as two separate tasks (CSO and keyset installation). Integration testing will be needed after the keysets are installed.
 4. NSR 37199 decommission of the IDEA network (DRAFT). The decommission NSR was input as a DRAFT on April 16. The real NSR is May 1 for a June 1 turndown. Mr. Douglas stated that the NSR should state that the service be turned down no earlier than June 1. Ms. Angela Culley stated that the carrier has been waiting.

Mr. Douglas stated that we do not want service order going out until when it is needed.

5. MSFC SCD. Mr. Melvin Calhoun stated that the hardware and software schedule is in place for the end of the month in anticipation of ATV testing in May. Mr. Douglas stated that he did not recall MSFC needing new hardware. Mr. Calhoun stated that Mr. Doug Solomon stated that he would be sending new devices with the new software. Mr. Solomon stated that there is the Beta for 7.0f and that the schedule is to make sure it works for projects at MSFC by the 31st. HTV flies in July. Testing only could be conducted. JSC is testing. Devices will be deployed to MSFC and then JSC.
6. Wallops Launch Video. Ms. Culley stated that she has heard that HQ may want launch video from Wallops. Mr. Aquino stated that he has not seen a requirement through JSC. Is this a PAO requirement? Ms. Culley stated that she was raising the question as there could be a cost associated with the requirement. Mr. Aquino noted that PAO has a Science Mission Directorate (SMD) HD link on the Premium Service (PIP) network now. There is no mission requirement.

ACTION ITEM REVIEW

The following action item was assigned at the April 17, 2012, NSG HSF Comm WG splinter meeting.

AI No.	Assignee	Action	Response
0412- NSG HSFCWG-01	Michael Thomas/JSC/CSO	Talk with engineering in regards to the cards to be used in the ISS DL video.	CSR has scheduled a meeting with engineering and CNOC to clarify the requirements. CLOSED
0412- NSG HSFCWG-02	Scott Douglas/GSFC/ NASA/CSO	Check the limitation of the current SCD release to support new HW configuration; to determine if it is possible to ship the hardware prior to the release of HD SCD 7.0f.	I have received schedules for SCD Release 7.0f and the High Availability version of either release 7 or 7.1 today. Yesterday I agreed to ship two HD SCDs to JSC for installation as soon as Release 7.0f is delivered for Operational Testing so that they can coordinate their installation work. I believe that should be the first week of May at the latest. The operational checkout of Release 7.0f is currently scheduled to complete by the end of June. JSC would be able to support NRRP testing and transition with the HD SCDs at this point with the caveat that Houston Comm Control will have to make configuration changes to two

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			<p>SCDs. The High Availability modifications to the software allowing Houston Comm Control to configure one SCD and have the other mirror that configuration automatically can be available by January 2013. This will have the High Availability Software available before the NRRP ORR and turn down of the legacy network and MDMs.</p> <p>CLOSED</p>
0412- NSG HSFCWG-03	Michael Thomas/JSC/CSO	In regards to NSR 36723, determine if the carrier has completed the work at KSC	<p>ATT confirmed circuits on NSR36723 have been delivered at KSC. LTTN advised circuits were delivered yesterday (04/17) by Century Link; LTTN will extend them to house cabling by 4/20.</p> <p>CLOSED</p>

NEXT MEETING

The next HSF Comm WG will be announced via email

(Original Approved By)
Michael Thomas
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