

SUBJECT: Soyuz-33, Expedition 34 / Increment 34 MORR Minutes

DATE: October 3, 2012

PLACE: Goddard Space Flight Center, B12 / Room N112

TIME CONVENED: 1300

TIME ADJOURNED: 1330

ATTENDANCE

<i>Last Name</i>	<i>First Name</i>	<i>Organization</i>	<i>E-mail Address</i>	<i>Telephone #</i>
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Traversy	Steve	WSC	straverys@mail.wsc.nasa.gov	575-527-7196

INTRODUCTION

Ms. Melissa Blizzard convened the October 3, 2012, Soyuz 33, Expedition 34 / Increment 34 Mission Operations Readiness Review (MORR) to review the Integrated Network (IN) element mission operations readiness (refer to the presentation, *Soyuz-33/Expedition 34 Increment 34 Mission Operations Readiness Review [MORR]*). This MORR covers changes and updates to the network since the Soyuz-32 MORR.

MEETING

A. Welcome/Introduction

1. Ms. Blizzard reviewed the agenda for the MORR.
2. Ms. Blizzard reviewed the MORR board membership.
 - Mr. Jean-Marie Denis, GSFC/Code 301, Systems Review Office.
 - Mr. Scott Greatorex, GSFC/Code 450.1, Chief, Networks Integration Management Office (NIMO).
 - Ms. Susan Hoge, GSFC/Code 595, Navigation and Mission Design Branch.
 - Mr. Bradford Butts, GSFC/Code 761, Systems Management Branch.
 - M. Joe Aquino, JSC/DD43, Space Communications Integration Lead (SCIO) (Ms. Jewel Hervey signing for).
 - Mr. Stephen Currier, GSFC/Code 453, Ground Network (GN) Project (not in attendance).
 - Mr. Dan Hein, GSFC/Code 452, Space Network (SN) Project.
 - Mr. Mike Yettaw, DFRC, Range Technical Monitor, Western Aeronautical Test Range (WATR) (Mr. Russell James signing for).
 - Mr. James Bangerter, GSFC/450.1 Human Spaceflight (HSF) Network Director (ND).
3. Ms. Blizzard provided an overview of the review process (Goddard Space Flight Center [GSFC] MORR, Johnson Space Center [JSC] Mission Operations Directorate [MOD] Flight Readiness Review [FRR], and Stage Operations Readiness Review [SORR]). GSFC does not participate in the SORR, but is represented by the JSC Ground Controller's (GC) Office. The FRR is scheduled for October 15, 2012. The SORR is To Be Determined (TBD).

B. Mission Overview

1. Mr. Fred Pifer reviewed the Mission Profile. He stated that the launch is scheduled for December 5, 2012 at a TBD Greenwich mean Time (GMT). Docking with the International Space Station (ISS) will be December 7, 2012. The Soyuz will remain docked for approximately 6 months at which time it becomes the Russian Crew Return Vehicle. The payload is crew, logistics, and supplies.
2. Mr. Pifer reviewed the ISS Supply Sequence. The supply sequence illustrates the activities during the different increments.

C. Integrated Network Overview

1. Mr. Pifer reviewed the ISS/Soyuz IN Overview diagram. This is the basic network configuration in support of the ISS and Soyuz. The diagram is color coded for the different network elements. Green denotes the U.S. Segment and Blue denotes the Russian segment.

2. Mr. Pifer reviewed the documentation table. The table showed what documentation is or will be in place and when including the Interim Support Instructions (ISI). ISIs are considered open work. All other documentation is up to date.
 3. Mr. Pifer reviewed Program Requirements Document (PRD) changes.
 - (a) ISS VOL-I PRD updates.
 - (1) The requirement for Private Very High Frequency (VHF) communications was deleted as of July 24, 2012.
 - (2) The GSFC Orbit Determination Facility Coordination (ODF COORD) voice loop was added on August 14, 2012.
 - (b) ISS Utilization VOL-II PRD updates.
 - (1) Marshall Space Flight Center (MSFC) Operations Controller (OC) access was added to voice loop ISS Pointing (PTG 1) in section I. JSC-to-MSFC Real Time Support.
 - (2) MSFC OC access was added to voice loop ISS PTG 2 in section II. JSC-to-MSFC Simulation and Test Support.
 4. Mr. Pifer reviewed the Operational/Network Changes. White Sands Complex (WSC) upgrades are in progress.
 - (a) WSC has four 350 watts High Power Amplifiers (HPAs) and two 500 watts HPAs. The two 500 watts HPAs are being reconfigured to 350 watts HPAs by the vendor.
 - (b) Installation of the Remote Switching and Remote Keying is on-going.
 - (c) Minor reconfiguration and clean-up of VHF-2 equipment racks and camera installation is scheduled for completion by December 20, 2012.
 5. Mr. Pifer provided a Network Verification Test summary. VHF-1 two-way voice checks were performed with the ISS from Wallops Ground Station (WGS) on December 26, 2011, from Dryden Flight Research Center (DFRC) on February 23, 2012, and from WSC on June 25, 2012. Future passes are expected prior to the Soyuz 33 launch and will be coordinated by the ISS GC.
 6. Mr. Pifer discussed the Network VHF Proficiency Simulations. Simulations are scheduled to ensure proficiency and provide training. The ISS crew does not participate. Simulations were completed with DFRC and WGS on May 1, 2012 and with DFRD and WSC on August 27, 2012. The next simulation is being planned prior to the Soyuz 32 launch date of October 23, 2012.
- D. Integrated Network Elements Status
1. Network Integration Center (NIC). Mr. Eric Mount provided a status.
 - (a) There have been no hardware or software changes since the Soyuz-32 MORR.
 - (b) There are no open Discrepancy Reports (DRs).
 - (c) Three Freeze Exemption Requests (FERs) were recently issued and approved. One is for GSFC Steam Restoration and two are for Building 32 cabling and Power Distribution Unit (PDU) work.
 - (d) There is no open work.
 - (e) There are no projected changes.
 - (f) Facilities are Green.
 - (g) Staffing is sufficient to meet all requirements.
 - (h) Documentation is up to date.

- (i) Mr. Mount stated that the NIC is ready to support Soyuz-33/Expedition 34 and ISS Increment 34.
- 2. SN/WSC. Mr. Steve Traversy provided a SN/WSC and WSC VHF status.
 - (a) There have been no software changes since the Soyuz-32 MORR.
 - (b) Mr. Traversy reviewed the hardware changes. As of July 10, 2012, 202 out of 261 Mission Operations Voice Enhancement (MOVE) keysets have been retrofitted.
 - (c) There are no open DRs.
 - (d) There is no open work.
 - (e) Mr. Traversy reviewed the projected changes.
 - 1. SW-HST001 is scheduled for delivery to Space-to-Ground Link Terminal (SGLT)-4, -5, -6 User Service Subsystem (USS)/EXEC Automated Data Processing Equipment (ADPE) and Workstations in October 2012.
 - 2. USS-Component Replacement (USS-CR) SGLT-5 SA-1 equipment installation is scheduled for November 13, 2012.
 - 3. USS-CR SGLT-5 SA-2 equipment installation is scheduled for February 6, 2013.
 - 4. USS-CR SGLT-4 SA-1 equipment installation is scheduled for March 22, 2013.
 - 5. USS-CR SGLT-4 SA-2 equipment installation is scheduled for April 27, 2012.
 - 6. SW SUE001 is scheduled for delivery to SGLT-4, -5, -6 USS/EXEC ADPE and Workstations in May 2013.
 - (f) Staffing is sufficient to meet all requirements.
 - (g) Documentation is up to date.
 - (h) Mr. Traversy stated that the SN/WSC is ready to support the Soyuz-33/Expedition 34 and ISS Increment 34.
 - (i) Mr. Traversy provided a WSC VHF status.
 - (1) There have been no software or hardware changes since the Soyuz-31 MORR.
 - (2) There are no open DRs.
 - (3) There is no open software work. Open hardware work includes the VHF1/2 antenna camera installation, which is planned for Configuration Control Board (CCB) review in November 2012; VHF-1 remote switching and keying for Power Amplifiers (PAs); VHF-1/2 uplink and downlink audio recording separation; minor reconfiguration and clean-up of VHF-2 equipment racks; reconfiguring spare VHF HPAs from 500 watts to 350 watts; and VHF-1 RF pattern testing and masking surveys.
 - (4) Staffing is sufficient to meet all requirements.
 - (5) Documentation is up to date.
 - (6) Mr. Traversy stated that WSC VHF systems are ready to support Soyuz-33/Expedition 34 and ISS Increment 34.
- 3. WGS. Mr. Mark Harris provided a WGS status. There have been no software or hardware operational changes since the Soyuz-32 MORR. There are no open DRs. There is no open work. There are no projected changes. Staffing is sufficient to meet all requirements. Documentation is up to date. Mr. Harris stated that WGS is ready to support Soyuz-33/Expedition 34 and ISS Increment 34.

4. DFRC. Mr. Justin Thomas reported that there have been no software or hardware changes since the Soyuz-32 MORR. There are no open DRs. There is no open work. There are no projected changes. Staffing is sufficient to meet all requirements. Documentation is up to date. Mr. Thomas stated that DFRC is ready to support Soyuz-33/Expedition 34 and ISS Increment 34.
5. NASA/Department of Defense (DoD) C-bands Eastern Range (ER). Mr. Mike Gawel provided an ER resources status. ISS Visiting Vehicles (VVs) are not routinely supported by the DoD C-band radars. If a contingency is declared by the ISS GC during a VV mission, the ranges have agreed that C-band radars will provide VV contingency support within agreed upon call-up times for Nominal and Off-duty hours. Support will be provided on a best-obtainable basis. An ISI for C-band Radar Contingency Call-up Procedures will be published prior to the mission. Prior to L-10 days, the ER will provide an update to the Points-of-Contact (POC) for the ISI. The ER will also send the HSF ND and the Spaceflight Mission Manager (SMM) a status of available radars. Mr. Gawel reviewed the C-band Contingency procedure.
6. Flight Dynamics Facility (FDF). Mr. Warren Mitchell reported that there have been no software or hardware operational changes since the Soyuz-32 MORR. There are no open DRs. Soyuz-33 Two-Line-Elements (TLEs) will be transmitted to the VHF sites, and the sites will verify receipt and processing of the TLEs. There are no projected changes. Staffing is sufficient to meet all requirements. The Soyuz-33 Mission Support Plan will be delivered by November 21, 2012. Mr. Mitchell stated that FDF is ready to support Soyuz-33/Expedition 34 and ISS Increment 34.
7. Communications Service Office. Mr. Randy Honeycutt provided the CSO status.
 - (a) There have been no software or hardware changes since the Soyuz-32 MORR.
 - (b) Mr. Honeycutt reviewed the changes to the Marshall Space Flight Center (MSFC) Russian Services.
 - (1) A new Mission Voice System was installed at the Mission Control Center-Moscow (MCC-M).
 - (2) A new DICES VoIP system was installed at MCC-M.
 - (3) New Digital Touch Screen Keypads with Wireless Headsets were installed at all NASA consoles.
 - (4) A new Channel Bank and Gateways were installed with interfaces to the Russian side.
 - (5) All systems have been operating nominal for 1 month with the exception of a failed Gateway device. The backup unit is being used now. Two spare cards have been delivered to correct the problem. The cards will be tested, and upon successful completion of testing, one of the cards will be installed after Soyuz-32 docking.
 - (c) There are no open NASA Integrated Communications Services (NICS) Information Technology Service Management (NITSM) tickets.
 - (d) There is no software open work.
 - (e) The Nortel Router Replacement Project (NRRP) upgrade work continues. All equipment has been delivered to the sites. The Host Centers are in various stages of installation. The Test Readiness Review (TRR) was completed on March 4, 2012. The project is scheduled for completion in April or May 2013.
 - (f) There are no projected changes.

- (g) Staffing is sufficient to meet all requirements.
 - (h) Documentation is up to date.
 - (i) The CSO will process all FERs during the mission in accordance with NISN-SOP-002.
 - (j) Mr. Honeycutt stated that the CSO is ready to support Soyuz-33/Expedition 34 and ISS Increment 34.
- E. IN Summary. Mr. Pifer provided an IN summary.
1. Mr. Pifer reviewed the requirements/test matrix. The remaining work is considered standard work.
 2. Mr. Pifer reviewed the one risk (VHF-2). VHF-2 is not periodically End-to-End (ETE) tested. The Federal Aviation Administration (FAA) has refused to allow the use of the restricted frequency for periodic VHF-2 system validation. The last VHF-2 ETE Comm check was performed in September 2004. This is a very low risk. Mr. Pifer stated that this risk is considered to be decreasing due to the addition of proficiency simulations.

BOARD COMMENTS

Mr. Denis polled the Review Board for their comments. All the board members stated that the network is ready to support the Soyuz-33 pending closure of any TBDs.

ACTION ITEM REVIEW

No action items were assigned at the October 3, 2012, Soyuz-33 MORR.

REQUEST FOR ACTION (RFA) REVIEW

No RFAs were assigned at the October 3, 2012, Soyuz-33 MORR.

(Original Approved By)
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