

SUBJECT: Soyuz-29, Expedition 30 / Increment 30 MORR Minutes

DATE: November 2, 2011

PLACE: Goddard Space Flight Center, B3 Auditorium

TIME CONVENED: 1300

TIME ADJOURNED: 1345

ATTENDANCE

<i>Last Name</i>	<i>First Name</i>	<i>Organization</i>	<i>E-mail Address</i>	<i>Telephone #</i>
Banks	Turonald	GSFC/HSF	Turonald.Banks.contractor@exelisinc.com	301-823-2563
Beckner	Phil	GSFC/595	phillip.d.beckner@nasa.gov	301-286-1919
Blizzard	Melissa	GSFC/HSF	Melissa.Blizzard@exelisinc.com	301-823-2622
Booker	Harrison	GSFC/HSF	Harrison.Booker@exelisinc.com	301-823-2627
Calhoun	Melvin	GSFC/HSF	Melvin.Calhoun@exelisinc.com	301-823-2644
Clark	Elizabeth	GSFC/HSF	Elizabeth.Clark@exelisinc.com	301-823-2625
Damiano	Sharon	GSFC/CSO	Sharon.C.Damiano@nasa.gov	301-286-6468
Daniel	Earl	GSFC/HSF	Earl.Daniel.contractor@exelisinc.com	301-823-2560
Greatorex	Scott	GSFC/NASA/NIMO	Scott.A.Greatorex@nasa.gov	301-286-6354
Hoge	Susan	GSFC/NASA/595	Susan.L.Hoge@nasa.gov	301-286-3661
Honeycutt	Randy	GSFC/CSO	Randy.B.Honeycutt@nasa.gov	301-286-0771
Jones	Robert	GSFC/NASA/599	Robert.L.Jones@nasa.gov	301-286-0663
Kraesig	Richard	GSFC/HSF	Richard.Kraesig@exelisinc.com	301-823-2569
May	Jennifer	GSFC/HSF	Jennifer.May.contractor@exelisinc.com	301-823-2629
Pifer	Fred	GSFC/HSF	Fred.Pifer.Contractors@exelisinc.com	301-823-2646
Ramirez	Crystal	GSFC/595	Crystal.E.Ramirez@nasa.gov	301-286-2181
Riley	Kevin	GSFC/HSF	Kevin.Riley@exelisinc.com	301-823-2647
Russell	Thomas	GSFC/HSF	Thomas.Russell@exelisinc.com	301-823-2626
Testoff	Steven	GSFC/ASRC/HSF	Steven.B.Testoff@nasa.gov	301-286-6538

<i>Via Teleconference</i>				
Aquino	Joseph	JSC/NASA/SCIO	Joseph.M.Aquino@nasa.gov	281-483-4033
Bangerter	James	GSFC/NASA/HSF ND	James.A.Bangerter@nasa.gov	301-286-7306

Baum	Earl	JSC/NOIT	Earl.J.Baum@nasa.gov	281-483-2321
Brautigam	Ronnie	CCAFS	Ronnie.Brautigam.CTR@patrick.af.mil	321-853-8150
Currier	Stephen	GSFC/WFF/NASA	Stephen.F.Currier@nasa.gov	757-824-1646
Gawel	Mike	ER	Michael.Gawel@patrick.af.mil	321-853-8118
Glasscock	David	WSC	dglassco@mail.wsc.nasa.gov	575-527-7035
Harris	Mark	WFF	Mark.A.Harris@nasa.gov	757-824-2192
Hein	Daniel	GSFC/WSC/452	Daniel.J.Hein@nasa.gov	575-527-7257
Hervey	Jewel	JSC/NASA/SCIO	Jewel.R.Hervey@nasa.gov	281-483-0359
Marriott	Bob	JSC/NOIT	Robert.R.Marriott@nasa.gov	281-483-6879
Marsh	Mike	JSC/NOIT	Michael.K.Marsh@nasa.gov	281-483-4761
Midon	Marco	GSFC/NASA	marco.m.midon@nasa.gov	301-286-5570
Neal	Jim	ER	James.Neal.ctr@patrick.af.mil	321-853-8275
Richards	Erik	WSC	Erik.Richards@nasa.gov	575-527-7120
Thomas	Justin	DFRC/Arcata	justin.l.thomas@nasa.gov	661-276-5023
Thomas, Sr.	Michael	JSC/CSCO	Michael.L.Thomas@nasa.gov	281-483-7544
Thompson	Craig	JSC/NOIT	Craig.Thompson-1@nasa.gov	281-483-0241
Traversy	Steve	WSC	straversy@mail.wsc.nasa.gov	671-727-9392
Wolfe	Jerry	ER	Nelson.Wolfe.ctr@patrick.af.mil	321-853-8227
Yettaw	Mike	DFRC/NASA	Michael.E.Yettaw@nasa.gov	661-276-3253

INTRODUCTION

Ms. Melissa Blizzard convened the Soyuz-29, Expedition 30 / Increment 30 Mission Operations Readiness Review (MORR) to review Integrated Network (IN) element mission operations readiness (refer to the presentation, *Soyuz-29, Expedition 30 Increment 30 Mission Operations Readiness Review [MORR]*). This MORR covers changes and updates to the network since the Soyuz-28 MORR.

MEETING ITEMS

A. Welcome/Introduction

1. Ms. Blizzard reviewed the agenda for the MORR.
2. Ms. Blizzard reviewed the MORR board membership.
 - Mr. Robert L. Jones, GSFC/Code 599, 450 Senior Technical Authority.
 - Mr. Scott A. Greator, GSFC/Code 450.1, Chief, Networks Integration Management Office (NIMO).
 - Ms. Susan L. Hoge, GSFC/Code 595, Navigation and Mission Design Branch.
 - Mr. Bradford Butts, GSFC/Code 761, Systems Management Branch (not present).
 - Mr. Joseph Aquino, JSC/DD13, Manager, Space Communications Integration Office (SCIO).
 - Mr. Stephen F. Currier, GSFC/Code 453, Ground Network Project.
 - Mr. Daniel Hein, GSFC/Code 452, Space Network Project.
 - Mr. Michael Yettaw, DFRC, Range Technical Monitor, Western Aeronautical Test Range (WATR).
 - Mr. James A. Bangerter, GSFC/Code 450.1, Human Spaceflight Network Director.
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 directly in the SORR, but is represented by the JSC Ground Controller's (GC) Office. Dates have not been set for the FRR or SORR.

B. Mission Overview

1. Mr. Riley reviewed the Mission Profile. He stated that the launch is scheduled for December 21, 2011, 1310 GMT. Docking to the International Space Station (ISS) will be December 23, 2011. 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. Riley reviewed ISS Supply Sequence. The supply sequence illustrates the activities during the different increments.

C. Integrated Network (IN) Overview

1. Mr. Riley 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. Riley reviewed the documentation. The table shows what documentation is or will be in place and when including Interim Support Instructions (ISI). All documentation is up to date.

3. Mr. Riley stated that there have been no Program Requirement Document (PRD) changes. However, there are plans to update the requirements to reflect the change to conduct proficiency passes once per quarter vice monthly.
4. Mr. Riley reviewed the Operational/Network Changes. The White Sands Complex (WSC) has made some Very High Frequency (VHF) system upgrades. The equipment shelter was recabled in June. There have been two passes since the recable and the passes were much better. The recabling definitely has had an impact on the quality of the passes. A VHF-1 Quad Yagi antenna and tower have been ordered. The VHF-2 will remain in place and the VHF-1 will be on a new tower. Advance Tower Services, Inc. has been selected as the contractor to erect the VHF-1 antenna and tower on an existing pad. An Engineering Change (EC) is being written. WSC VHF-1/-2 transmit and receive/record capabilities will be included in the antenna/tower upgrade EC. Mr. Jones asked if there will be a support issue while the upgrades are being made. Mr. Riley stated that the system will down for a matter of hours and the network will be informed. Mr. Bangerter stated that the work will be scheduled well in advance.
5. Mr. Riley provided a Network Verification Test summary. VHF-1 good two-way checks were performed with the ISS and Wallops Ground Station (WGS) on August 29 and September 20, 2011; Dryden Flight Research Center (DFRC) on August 31 and September 30, 2011; and WSC on August 31 and September 30, 2011. Mr. Riley commented that all passes were good quality. Mr. Scott Greatorex asked when the VHF-2 system was last tested. Mr. Riley responded that the one and only test was conducted in September 2004, at which time the astronauts went into the Soyuz and powered the system up.

D. Integrated Network Element Status

1. Network Integration Center (NIC). Mr. Riley provided a NIC status.
 - (a) There have been no software operational changes since the Soyuz 28 MORR. The Mission Operations Voice Enhancement (MOVE) keysets have been installed since the Soyuz 28 MORR. The keysets are powered down when not in use due to the keyset burn incidents experienced in the network.
 - (b) There are no open Discrepancy Reports (DR).
 - (c) There is one Freeze Exemption Request (FER) in the system.
 - (d) There is no software open work. The hardware open work is the MOVE keyset retrofits.
 - (e) There is a projected change to reconfigure the NIC consoles/workstations over the next months.
 - (f) Facilities are Green.
 - (g) Staffing is sufficient to meet all requirements.
 - (h) Documentation is up to date.
 - (i) Mr. Riley stated that the NIC is ready to support Soyuz-29.
2. Space Network (SN)/WSC. Mr. Erik Richards provided a SN/WSC and WSC VHF status.
 - (a) The Second Tracking and Data Relay Satellite System (TDRSS) Ground Terminal (STGT) SIMOSKIF software delivery was made on September 28, 2011. The White Sands Ground Terminal (WSGT)/STGT SIMOSKIF software delivery was

made on October 11, 2011. There have been no hardware operational changes since the Soyuz 28 MORR.

- (b) There are no open DRs.
 - (c) There is no open work.
 - (d) There are no projected changes.
 - (e) Mr. Richards reviewed the TDRS fleet configuration through December 2011 and January through March 2012. Changes in the fleet configuration were annotated in Red on the charts.
 - (f) Staffing is sufficient to meet all requirements.
 - (g) Documentation is up to date.
 - (h) Mr. Richards stated that the SN/WSC is ready to support Soyuz-29.
 - (i) Mr. Richards provided a WSC VHF status.
 - (1) There have been no hardware or software operational changes since the Soyuz-28 MORR.
 - (2) WSC has closed its one DR; DR 258962 on the VHF-1 noisy downlink. The DR was closed on October 17, 2011.
 - (3) Open work is the audio record capability on the VHF system and the VHF-1 and VHF-2 system separation. Two ECs have been created for the work. The VHF-1 system move to Extended TDRS Ground terminal (ETGT) was to begin in November and be complete in December 2011. The first load of equipment is now expected in November and the tower delivery in December. The schedule is being reassessed. The audio recording capability via MOVE will be done in parallel with the VHF-1 system move.
 - (4) Staffing is sufficient to meet all requirements.
 - (5) Documentation is up to date.
 - (6) Mr. Richards stated that WSC VHF systems are ready to support Soyuz-29.
3. WGS. Mr. Mark Harris provided a WGS status. There have been no software or hardware operational changes since the Soyuz 28 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-29.
4. DFRC. Mr. Justin Thomas reported that there have been no software operational changes since the Soyuz 28 MORR. DFRC has installed a new spare V2 computer. This computer will be updated in real time and monitor Soyuz missions. Should a prime or backup computer fail, DFRC will switch tracking to the spare. There are no open DRs. The open work is the completion of the installation of the new V2 computer. 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-29.
5. NASA/DoD C-bands Eastern Range (ER). Mr. Mike Gawel provided an ER resources status. ISS Visiting Vehicles (VV) are not routinely supported by the ER and Western Range (WR). If a contingency is declared by the ISS Ground Controller (GC) during a VV mission, the ranges have agreed that the ER and WR C-band radars will provide VV contingency support within agreed upon call-up times for Nominal and Off-duty hours. An ISI for C-band Radar Contingency Call-up Procedures will be published prior to mission. Mr. Riley stated that the procedure will eventually be

- included in the TNOSP. Mr. Gawel reviewed the C-band Radar Contingency Call-up procedure. Mr. Gawel stated that at L-11 days, he will send an update to the Points-of-Contact (POC) for the ISI. The ER will also send the Spaceflight Mission Managers (SMM) a status of the available radars. This notice will not preclude any radar maintenance, etc.
6. Communication Services Office (CSO). Mr. Randy Honeycutt provided the CSO status.
 - (a) There have been no software or hardware operational changes since the Soyuz 28 MORR.
 - (b) There have been no changes to the Marshall Space Flight Center (MSFC) Russian Services activities.
 - (c) There are no Problem Management and Dispatch System (PMDS) tickets.
 - (d) There is no open work.
 - (e) There are no projected changes.
 - (f) Staffing is sufficient to meet all requirements.
 - (g) Documentation is up to date.
 - (h) NISN will process all FERs during the mission in accordance with NISN SOP-002.
 - (i) Mr. Honeycutt stated that CSO is ready to support Soyuz-29.
 - (j) Mr. Bangerter asked the status of the MOVE keyset retrofit. Mr. Honeycutt reported that there are issues with the retrofit packages. The retrofit will not begin in November. It is possible that the keyset retrofit will not be done at the sites, but that the keysets will be shipped to FUSA. Mr. Honeycutt agreed to provide an update to the Soyuz-29 MORR package.
 7. Flight Dynamics Facility (FDF). Mr. Phil Beckner reported that the FDF has implanted a new modernized software and hardware system since the Soyuz 28 MORR. This will provide a new communications front end with new external interfaces. Transition to operations is scheduled for November 9, 2011. The transition will be complete December 19, 2011. The FDF legacy system will be dismantled beginning January 1, 2012. Soyuz-28 will be supported on the legacy system. Soyuz-29 will be supported on the new system. The Operational Readiness Review (ORR) is scheduled for November 4, 2011. There are no open DRs. The Soyuz-29 Two Line Elements (TLE) will be transmitted and reception verified by VHF sites. There are no projected changes. Staffing is sufficient to meet all requirements. The Soyuz-29 Mission Support Plan will be delivered by December 7, 2011. Mr. Beckner stated that FDF is ready to support Soyuz-29.
- E. Integrated Network Summary. Mr. Riley provided an IN summary.
1. Mr. Riley reviewed the requirements/test matrix. Mr Riley noted that VHF-2 testing is done in parallel with VHF-1 testing and that the testing is done with the ground segment and sties performing VHF-2 passive tracking.
 2. Mr. Riley 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. Mr. Bangerter reported that Ms. Cathy Sham, the JSC Spectrum Manager, is still working this issue with NASA HQ and the FAA.

BOARD COMMENTS

Mr. Jones polled the Review Board for their comments. All the board members stated that the network is ready to support Soyuz-29.

ACTION ITEM REVIEW

No action items were assigned at the November 2, 2011, Soyuz-29 MORR.

RFA REVIEW

No Requests for Action (RFA) were assigned at the November 2, 2011, Soyuz-29 MORR.

(Original Approved By)

James A. Bangerter

GSFC/NASA/450.1

HSF ND

Kevin Riley

GSFC/HSF