

DATE: April 17, 2012

SUBJECT: Soyuz-30/31 Mission Planning

LOCATION: JSC, Regents Park III

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INTRODUCTION

Mr. Fred Pifer convened the April 17, 2012, Network Support Group (NSG) Soyuz-30/27/31 and mission planning splinter meeting to discuss requirements and mission planning in support of the upcoming missions (refer to the presentation, *Soyuz-30/31 Mission Planning*).

MEETING

- A. Mr. Pifer reviewed the list of International Space Station (ISS) expeditions from November 2011 through October 2012.
- B. Mr. Pifer reviewed the missions since the last NSG and reviewed the increment end dates for the two missions. Mr. Pifer reviewed the two missions for which current planning is taking place.
- C. Mr. Pifer provided an Expedition/Increment definition. The Soyuz crew consists of three crew members; a Commander (CDR) and two Flight Engineers (FE). The ISS Expedition is a period of time that maintains the same ISS CDR and FE crew; six crew operations for nominal staffing; and three crew operations from undocking of a Soyuz to docking of the next Soyuz crew vehicle. The ISS crew Increment is a specific time period that combines different operations such as assembly, scientific research, maintenance, and other ISS systems utilization. The time period is from undocking of a Soyuz to undocking of the next Soyuz.
- D. Mr. Pifer reviewed Soyuz mission support. The support is standard and similar to previous missions. Pre-mission and Launch and Early Operations support includes: conducting Mission Operation Readiness Reviews (MORR); generating and reviewing mission support documentation; verifying readiness of the Very High Frequency (VHF)-2 network for Soyuz early orbit support through docking at the ISS; coordinating critical period tracking for emergency communications (Orbits 6-8); and coordinating schedules for tracking of Continental United States (CONUS) view periods (Orbit 6 through docking). Mr. Pifer stated that a test Two-Line Element (TLE) was transmitted from the Goddard Space Flight Center (GSFC) Flight Dynamics Facility (FDF) to the White Sands Complex (WSC) and WSC confirmed receipt of the TLE. The Dryden Flight Research Facility (DFRC) has also confirmed receipt of the TLE. Wallops need to confirm receipt. Undocking and landing support includes generating ISS Critical Period Interim Support Instruction (ISI) for undocking time frame. Spaceflight Mission Managers (SMM) staff the Network Integration Center (NIC) console at undocking minus 3 hours. SMM support of undocking is new. It is possible that VHF-2 communication could be required.
- E. Mr. Pifer reviewed the C-band support. Support is the same as the previous mission. C-band radars are no longer scheduled for early orbit support (Orbits 4 through 8). Johnson Space Center (JSC) provides pre-launch vector to FDF. FDF generates TLE data for VHF station antenna pointing. The C-band radars would be called up in a contingency, which is declared by ISS Flight Director (FD) and the ISS Ground Controller (GC) advises the network. The call up procedure for contingency support is included in the Tracking and Data Relay Satellite System (TDRSS) Network Operations Support Plan (TNOSP).
- F. Mr. Pifer summarized by stating that Soyuz-30 preparations are in progress and support will be similar to Soyuz-29. C-band support will be for contingency only. Line summary data will be provided on the modernized FDF system. Soyuz TLEs will be distributed via email and on the modernized FDF system. Advance planning email will be issued

following confirmation of launch time. Standard documentation will be issued starting at approximately Launch minus 30 days. Mr. Pifer stated that Soyuz-31 preparations will mirror that of Soyuz-30.

G. Mr. Pifer noted that the VHF Operational Readiness Review (ORR) will be held at WSC and the date is To Be Determined (TBD).

H. Mr. J. R. Hendrickson asked what will be done to re-validate the VHF-2. Mr. Jim Bangerter stated that Station Readiness Tests (SRT) will be conducted. He stated that work was performed on the VHF-1 Quad Yagi and not the VHF-2 system.

ACTION ITEM REVIEW

No action item was assigned at the April 17, 2012, NSG Soyuz-30/31 Mission Planning splinter meeting.

(Original Approved By)

Fred Pifer

GSFC/HSF