

DATE: October 18, 2011

LOCATION: Regents Park III, Room 2011

SUBJECT: HSF NSG ISS VV TDRSS Scheduling Splinter Minutes

Attendance:

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INTRODUCTION

Mr. Bob Hudgins convened the October 18, 2011, Human Spaceflight (HSF) Network Support Group (NSG) International Space Station (ISS) Visiting Vehicle (VV) Tracking and Data Relay Satellite System (TDRSS) scheduling splinter meeting to discuss a recommended scheduling approach.

MEETING

- A. Mr. Hudgins stated that the recommended Space Network (SN) scheduling approach is very similar to that used for the Space Shuttle. The approach allows for 24-hour launch slips for VV. The ISS will use TDRS-East, TDRS-West, and TDRS-275. VV will use TDRS-Spare Single Access (SA)-1, TDRS-171 SA-1, and TDRS-275 SA-1 and -2. There is no limitation on S-band Single Access (SSA), Multiple Access (MA), or S-band Multiple Access (SMA).
- B. Mr. Rich Romanski stated that the customer should start by scheduling TDRS-Spare SA-1 services. Mr. Jim Bangerter stated that this should not be a problem, but is not a hard and fast rule. Mr. Bangerter stated that that if the program wants the ISS and VV to share an antenna, the determination will be made before hand and the antenna scheduled.
- C. Mr. Romaski stated that the SN would prefer SA-2 be scheduled and the presentation will be updated. Mr. Bob Marriott stated that the Johnson Space Center (JSC) does not select the antenna when scheduling.
- D. Mr. Hudgins reviewed the White Sands Complex (WC) Scheduling Timeline. The timeline is a 4-week timeline (Planning, Forecast Scheduling Period, Confirmed Schedule Released, and Real-time Scheduling Period). The schedule starts 4 weeks ahead of the active week. WSC would like all SARs in by 1200Z Monday morning of week 2. During week 3, the SN Priority List is no longer considered. The schedule in place is the priority except for critical or emergency activities.
- E. Mr. Hudgins discussed the VV launch slips. During the Automated Transfer Vehicle (ATV)-2 mission, ATV-2 critical launch events were scheduled late. When the launch was rescheduled, there were gaps in the coverage and the ATV program threatened to scrub the launch. ATV and H-II Transfer Vehicle (HTV) critical events will get priority. The program needs to understand that it takes time to coordinate schedule conflicts. The first indication WSC receives is the Operations Message (OPN) and then the Interim Support Instruction (ISI). The ISI is critical to WSC. Critical times associated with launch have never been denied, but take time to work. It takes approximately 8 – 12 hours to reserve the first 48 hours of critical time. VV events can be conditionally guaranteed. The updated Critical Period ISI is required to begin the process of scheduling new launch/early orbit events.
- F. Mr. Hudgins discussed VV mission coordination. Goddard Space Flight Center (GSFC) Spaceflight Mission Managers (SMM) and WSC Forecast Scheduling review customer testing and launch requirements on a weekly basis. A scheduling teleconference will occur at L-30 days. The GSFC SMMs, WSC Scheduling, and JSC Ground Controllers (GC) will review launch requirements and the launch scrub plan.
- G. The JSC GC will submit Critical Support Request. The Critical Period ISI is produced by the GSFC SMM. The ISI is transmitted within one day of receiving the Critical Support Request. The WSC Long Range Forecast is then updated. In real time, less than 2 days of the support, the GC will verbally advise the SMM of the requested support and the

SMM will verbally advise SN Real-time Scheduling and transmit the ISI as soon as possible. Unresolved TDRS conflicts need to be elevated to the NASA Network Director (ND) for resolution. Current policy requires that the JSC GC make this request to elevate to the ND as the SMM will not assume a conflict needs to be worked.

- H. The attendees discussed the Freeze period. The Critical ISI implements the Human Spaceflight (HSF) Freeze policy. TDRS-Spare, TDRS-171, and TDRS-275 and associated equipment are frozen at L-8 hours. Exemptions require NASA ND permission via the Freeze Exemption request (FER) form. Mr. Bangerter stated that the whole site is not frozen. Mr. Joe Whitney stated that it was his group's impression that the whole site is frozen. Ms. Elizabeth Clark stated that it was agreed by the scheduling group that the TDRS and associated Space-to-Ground Link (SGLT) will be frozen. Mr. Bangerter stated that the whole site is never frozen. It is acceptable to freeze the SGLT for ISS critical events. It was stated that WSC likes the idea of not freezing the whole SGLT. This would allow work to be done on equipment not used by the customer. It was decided that the whole SGLT would be frozen and if there was work that was needed, the FER would be used. A generic ISI can be issued when the critical periods are received and the ISI can be updated in real time with the antennas. Mr. Bangerter stated that the whole SGLT will be frozen and that it would be helpful to list what is not frozen in the ISI. The JSC GC's need to call when the activity will occur in 2 days or less. Mr. Whitney stated that JSC will update its Local Operating Procedures (LOP).
- I. Mr. Hudgins reviewed the October through December 2011 and January through March 2012 TDRS constellation. During the October through December 2011 period, F10 is drifting to 174 West. This is driven by TDRS-K testing. During the January through March 2012 period, TDRS-K testing is a big variable. When F10 is in the West, its SMA and will be 174 degrees vice 171 degrees. There is no SMA on East. TDRS-K testing will march through several SGLTs. The SN is counting on the VVs to use SMA and WSC will be watching this. Legacy 171 will remain at 167.5.
- J. Mr. Hudgins reviewed WSC major activities November 2011 through February 2012.
- K. The question was raised as to whether TDRS-K will be asking ISS to participate in testing. Mr. Bangerter stated that this question arises out of a discussion at the last NSG when the SN stated that it may be asking the customers to support testing. The ISS Program is willing to participate and wonders when it will be approached. Mr. Bangerter stated that he will talk with the TDRS-K program.

ACTION ITEMS

No action items were assigned at the October 18, 2011 HSF NSG ISS VV TDRSS scheduling meeting.

(Original Approved By)
Bob Hudgins
WSC/GN and SN Scheduling