

DATE: October 19, 2011

LOCATION: Regents Park III, Room 201

SUBJECT: HSF NSG HTV-3 Mission Status Splinter Minutes

Attendance:

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INTRODUCTION

Mr. Melvin Calhoun convened the October 19, 2011, Human Spaceflight (HSF) Network Support Group (NSG) H-II Transfer Vehicle (HTV)-3 splinter meeting to provide an HSTV-3 mission planning status (refer to the attachment, *H-II Transfer Vehicle-3 (HTV) Mission Readiness*).

MEETING

- A. Mission Overview. The currently scheduled launch date for HTV-3 is No Earlier Than (NLT) February 18, 2012. A Johnson Space Center (JSC) representative stated that there is talk of a launch slip and the date may be announced at the end of October/in November. The launch is Japan's Tanegashima Space Center (TNSC). Rendezvous and docking are To Be Determined (TBD). The HTV-3 will remain docked to the International Space Station (ISS) for a maximum of 30 days. The payload is supplies and the Goddard Space Flight Center (GSFC) Space Communications and Navigation (SCaN) testbed.
- B. Integrated Network (IN) Overview. This diagram illustrated the HTV-3 supporting elements. Mr. Calhoun noted that Eastern Range (ER) C-band support is contingency only.
- C. Mission Profile. This diagram provides a mission timeline and phases of the mission.
- D. Communications Paths. The diagram illustrated the communications links and types of data.
- E. Documentation. Mr. Calhoun stated that there will be two new Interim Support Instructions (ISI). One ISI is the C-band Contingency Plan and the other ISI is the Vector Management after Undock.
- F. Network Testing. Mr. Calhoun reviewed the scheduled testing and noted that the test dates could change if the launch date changes.
- G. Space Network (SN) Mission Support. The White Sands Complex (WSC) will provide S-band Single Access (SSA), S-band Multiple Access (SMA), and Multiple Access (MA). Commanding will be at 250bps. SN SSA support will be at 2- and 8-kbps. SN SMA/MA service support will be at 2- and 8-kbps. Tracking and Data Relay Satellite (TDRS) critical events will be submitted at L-21 days. HTV personnel the Mission Control Center-Houston (MCC-H) will provide all Ground Configuration Message Requests (GSMR) and TDRS link management. HTV S-band links will be recorded at WSC and held for period of 50 hours or longer (if requested via the Media Hold Request). It was noted that tracking support should be included and the presentation will be updated. SMA FWD support will be on a best-effort basis.
- H. HTV Integrated TDRS Communications Requirements. A list of critical events was provided. For non-critical periods, 30 minutes of coverage per orbit is required. Coherent mode will occur from Acquisition of Signal (AOS) to Loss of Signal (LOS). A TDRS handover timing of the TDRS link should not be scheduled at the same time as the ISS link handover timing. Mr. Calhoun reviewed the HTV Super Critical SSA events.
- I. ER Support. The ER will provide C-band contingency support. The procedure is being finalized and will be included in the updated TDRS System (TDRSS) Network Operations Support Plan (NOSP) (TNOSP). An ISI will be distributed prior to the mission.

- J. Flight Dynamics Facility (FDF) Support. FDF will provide premission analysis of TDRS coverage of HTV-3. FDF will provide orbit determination. FDF will provide acquisition data support based on HTV-3 vectors from the HTV Control Center (HTV-CC) via JSC or on FDF orbit determination solutions. FDF will provide TDRS vector support to JSC and the HTV-CC.
- K. GSFC NASA Integrated Services Network (NISN) Support. The Communication Service Office (CSO) NISN will provide voice communications and data transport and assist in fault isolation as needed. Mr. Calhoun reviewed the voice and data services scheduled for HTV-3 support.
- L. Second Generation Transponder. HTV-3 will be flying a new Melco transponder. The new transponder will be prime. The transponder went through compatibility testing March 9 – 12, 2010 with the Compatibility Test Laboratory (CTL) and WSC. This transponder addresses the false-lock anomaly that occurred during the earlier HTV-1 mission.
- M. Lessons Learned from the HTV-2 Mission
 - 1. TDE Late Acquisitions. There were two late acquisitions. There was a total data loss of 3 minutes and 53 seconds. A new vector was delivered by the FDF. The cause of the anomaly is unknown. An ISI is being worked to provide a workaround for this anomaly.
 - 2. Marshall Space Flight Center (MSFC) Huntsville Operations Support Center (HOSC) Backup Control Center (BCC) testing. HTV-2 comm and data via the MSFC BCC was not received at WSC. The MSFC Small Conversion Device (SCD) was not passing data. The Logical Port Address (LPA) for command at WSC was not configured properly. Mr. Calhoun stated that has been decided that it is prudent to conduct checkouts. BCC checkout should be included in premission testing. There will be an End-to-End (ETE) test prior to undocking to verify the TDRS link.
- N. Open Work. The JSC Ground Controllers (GC) are working on the configuration codes for the mission. Many of the codes are new and should cut down on the required number of GCMRs. The TNOSP is being updated.
- O. HTV-3 IN Team Members. Mr. Calhoun reviewed the HTV-3 IN team members.

ACTION ITEMS

No action items were assigned at the October 19, 2011, HSF NSG HTV-3 mission planning status meeting.

(Original Approved By)
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 GSFC/HSF