Critical Support
versus
Highly Desirable

NSG May 2001

Background

- **In August 2000 a meeting was held with representatives from the Flight Director and MOD offices to discuss Flight Rule definitions for Critical versus Highly Desirable support to the ISS and SSP Programs**
- **It was pointed out by the Networks representatives present that a category of "highly desirable" was not recognized nor administrated by the Network in scheduling or resolving conflicts during realtime operations**
- **It was suggested that the SSP and ISS Programs revise the definitions of their support categories documented in the Flight Rules for both programs**
- **It was agreed by the parties present that a study would be undertaken over the course of the next few Shuttle missions to evaluate the impacts of attempting to use the term "highly desirable" when trying to elevate the priority of certain events versus scheduling "critical" support during the forecast period**

Results of Study

- **Data was analyzed and compiled from the following missions:**
  - **STS-106, STS-92, STS-97, STS-98, STS-102, STS-100**
- **STS-106**
  - **Both SSP and ISS Programs continued to use the term "Highly Desirable" during realtime operations to attempt to heighten the priority of certain on-orbit events, (e.g. PAO activities and during efforts to fill gaps in the schedule)**
  - **Although "Highly Desirable" incidents occurred infrequently they caused additional scheduling impacts to other customers when attempting to honor the requests**
  - **During the STS-106 mission the "Critical Period"s (CP) for both the SSP and ISS Programs were poorly defined pre-mission**
    - **ISS reboost activities were not communicated to GSFC for inclusion in the ISI pre-mission and numerous gaps in the STS and ECOMM schedules were worked in realtime**
- **STS-92**
  - **JSC ceased to used the term "Highly Desirable" following the STS-106 mission**
  - **Critical mission periods were not defined to the Network for either program until 12 days prior to launch**
  - **The Critical Period ISI had to be re-issued twice within the first 3 days of the mission**
  - **There were numerous conflicts worked in realtime between ECOMM and Shuttle**
    - **However, conflicts could have been avoided if ECOMM events had been deleted during the times that the ECOMM transponder was to be turned OFF**

Results of Study

- **STS-97**
  - **Pretty clean mission, however the critical periods for both programs was not received by the Network until approx. 10 days prior to launch**
  - **Flight team requested some "nice to have" ZOE closures during the mission but later cancelled the request and JSC used TUT to gain additional support were needed**
- **STS-98**
  - **Beginning with this mission the Network sent out the "CP" ISI at L-32 days with generic times for launch/landing and known major events**
    - **Actual "CP" times were received at L-6 days for both programs**
  - **During the mission 127 events had to be rescheduled for ISS due to undated predicts received. Additional CP times were requested and worked in realtime for reboost activities not identified pre-mission**
- **STS-102**
  - **Critical period data received from JSC for both programs at L-6 days**
  - **Realtime changes during the mission required the CP ISI to be re-issued 5 times during the mission**
  - **There were numerous gaps worked for both programs in realtime during the mission**

Results of Study

- **STS-100**
  - **Preliminary CP data received from JSC for Shuttle 2-3 weeks in advance, however CP times for ISS (taken from baseline mission timeline received at L-30 days) did not coincide with SSP CP defined in NOI**
  - **CP ISI re-issued 5 times during the mission due to changes in EVAs and mission extensions**
  - **Numerous times during the mission schedulers were involved in reworking ISS schedules due to holes in the schedule the realtime identifications of ISS CPs. ISS CPs were poorly defined pre-mission**

Summary

- **Because both the SSP and ISS Programs have stopped using the term "Highly Desirable" it is recommended that the category be deleted from the Flight Rules**
- **Identifying events as "Critical" during pre-mission planning activities minimizes realtime scheduling activities when events must be moved**
- **Network requests as much time as possible, pre-mission, for identification of CPs for both ISS and SSP, minimum should be one week prior to launch**
- **Need a process to identify ISS CPs outside of a Shuttle mission periods**
  - **ISS CPs are sometimes identified just 24-48 hours in advance of the activities**
- **It is recommended if an unplanned event occurs that needs heightened attention both programs should consider calling it "Critical" to ensure coverage requirements (without abusing the usage)**