
Shuttle SSR and RTS Update Network Support Group



Gary Horlacher / JSC INCO

September 18, 2002

(281) 483-6203

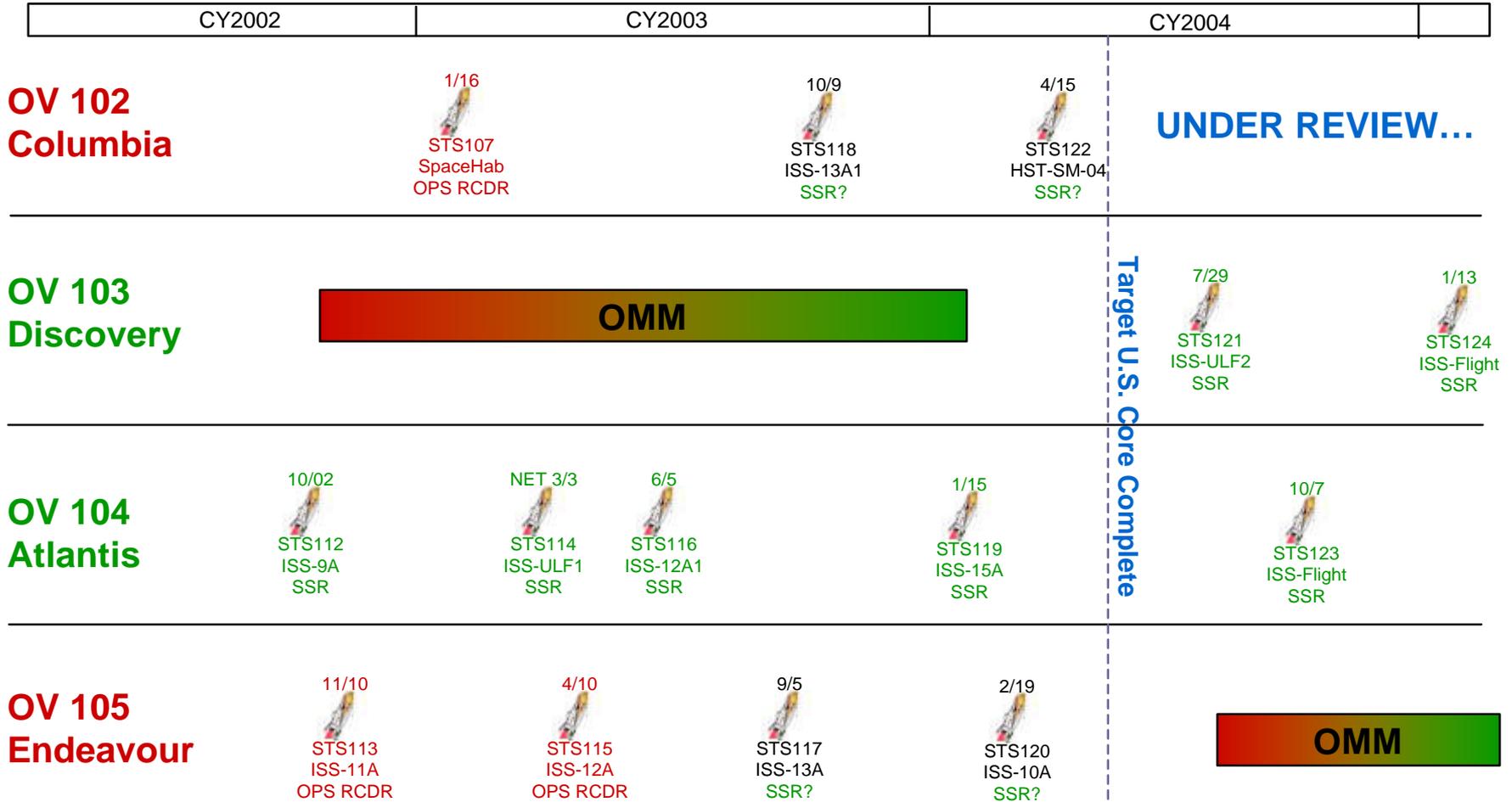
AGENDA

- **Current status of Solid State Recorders (SSRs) throughout fleet**
- **Map vehicles against best-guess manifest**
- **SSR 2048 Kbs status**
- **Shuttle/RTS support status**
- **Shuttle playback forward plan without RTS**

Shuttle Fleet SSR Status

| VEHICLE | SERVICE STATUS | RECORDER | COMMENTS |
|---------------------|--------------------------------|-----------|----------------------------------------------------------------------------------------------|
| OV 102 Columbia | In service | OPS | Non-ISS vehicle so minimal usage to date, but being outfitted for at least one flight to ISS |
| OV 103 Discovery | Out of service (OMM period) | OPS → SSR | Will have SSRs next flight |
| OV 104 Atlantis | In service | SSR | Only SSR flight experience to date (STS-110) |
| OV 105 Endeavour | In service | OPS | Probably last vehicle to get SSRs |

Manifest (as of 16 September 2002)



2048 Kbs Status

- **Going-in question of Shuttle FM capability @ 2048 Kbs (out of SPEC)**
- **One flight of SSRs to date (STS-110)**
- **Successfully tested 2048 Kbs playbacks to MILA**
 - **Post pass play backs from MILA to JSC @ 1024 Kbs**
- **Confidence is very high that all vehicles will be 2048 Kbs capable**
 - **Plan to verify each remaining vehicle on its maiden SSR flight**

Shuttle/RTS Support Status

- **Mr. Sobchak has successfully secured Shuttle support through the IUS Fly-out period**
- **Shuttle plans no change to RTS operations this year**

Shuttle Playback Future Plan

- Continue to plan for RTS to stop supporting Shuttle in Mid to Late 2003
- No longer planning any “pretend-no-RTS-flights” prior to loss of RTS
 - Late 2003 syncs up with *planned* SSRs across fleet
 - Worst case, only a few OPS RCDRs flights probable after RTS support ends
 - Can re-evaluate as 2003 progresses

Shuttle Playback Forward Plan (cont.)

- After RTS support ends:
 - MOD will utilize Ku CH2 for all recorder playbacks from post insertion thru Ku stow (day before 1st landing opportunity)
 - From Ku stow thru deorbit burn, MOD will utilize DFR and MILA/WLP during the ~half day on-range period (8-12 hours, inclination dependent).
 - Planning on increasing DFR lines to support 1024 Kbs thru-put capability coincident with or prior to RTS turn down
 - Mitigation factors that can be considered to respond to or preclude onboard data protection issues:
 - Scheduling TDRS Z to reduce LOSs
 - 2048 Kbs playbacks to MILA to “catch up” onboard
 - “Begging and borrowing” to reduce TDRS conflicts (hence, reduce LOSs)

Shuttle Playback Forward Plan (cont.)

- For Ku failure missions (i.e. STS-91), invoke “contingency support” clause and utilize DFR and MIL/WLP for all view periods throughout entire mission (~8-12 hours per day on range)
- More likely to use mitigation factors described before
- Take advantage as opportunities arise for incorporating 2048 Kbs capability where possible:
 - Next planned JSC FEP upgrade
 - MILA to JSC lines
 - DFR to JSC lines
 - WLPS to JSC lines
- Wonder where the Shuttle replacement is and when it will get here!