CASSINI SOST SEGMENT

Rev 088 Handoff Package

Segment Boundary: 2008-282T20:50:00 – 2008-284T20:50:00

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Links to files

Science Highlights

Notes & Liens

Integration Checklist

Links to files

Timeline plot:
https://cassini.jpl.nasa.gov/sp/icy/088EN/SOST_088EN_timeline_080324.pdf

TOL (xls, txt):
https://cassini.jpl.nasa.gov/sp/icy/088EN/SOST_088EN_TOL_080324.xls
https://cassini.jpl.nasa.gov/sp/icy/088EN/SOST_088EN_TOL_080324.txt

SPASS (txt, pdf, xls):
https://cassini.jpl.nasa.gov/sp/icy/088EN/SPASS_SOST_088EN_080324.txt
https://cassini.jpl.nasa.gov/sp/icy/088EN/SPASS_SOST_088EN_080324.pdf
https://cassini.jpl.nasa.gov/sp/icy/088EN/SPASS_SOST_088EN_080324.xls

SMT report:
https://cassini.jpl.nasa.gov/sp/icy/088EN/SOST_088EN_080321.rpt

DSN (text, nav, seg):
https://cassini.jpl.nasa.gov/sp/icy/088EN/SOST_088EN_080321_text.txt
https://cassini.jpl.nasa.gov/sp/icy/088EN/SOST_088EN_080321_nav.txt
https://cassini.jpl.nasa.gov/sp/icy/088EN/SOST_088EN_080321_seg.txt

Science Highlights

Oct. 8-10, 2008 (DOY 282-284)

At an altitude of only about 25 km, this flyby of Enceladus (E5) is humankind's closest encounter with the satellite to date (and most likely the closest of the entire Cassini mission!). All teams will be very busy making observations and recording data. The Ion an Neutral Mass Spectrometer (INMS) will have prime control over the spacecraft at closest approach with an attitude also optimized for the Cosmic Dust Analyzer (CDA). The Cassini Plasma Spectrometer (CAPS) will be riding along taking data as well. Like recent previous Enceladus encounters, this flyby will focus on observing the active plumes emanating from the south pole of Enceladus.

Notes and Liens

Notes:

- Pointing:
  - OK.
- Data Volume:
  - OK
- DSN:
  - SP_088EA_M70METNON283_SP overlaps DSS-63 weekly maintenance. Pass is only 02:15 in duration and we're requesting that maintenance is removed or shifted because it is necessary to clear some DV before closest approach for important Enceladus flyby (E5 = lowest altitude of whole Cassini mission!)
- Opmodes:
  - OK (Note: RSS ORT on DOY 284 is using RSSKRWAF (full, not slow). Although this opmode technically expires in Rev 86 with the power cutoff of 690.1 W, the predict for that DOY 284 is 689.6 W and L.Burke says we're still good to use full RWA power here.)
- Special Activities:
  - E5 flyby at ~25 km altitude.

Sequence Liens:

- No liens.
- Standard disclaimer: A waiver may be needed for turns or observation designs near closest approach that require the faster turn rates (for turns >60°). SP manager is aware and approves.

Segment Checklist p1

Item	Disposition notes, or X if complete
1. Disposition all requests in CIMS - approve all pending requests	X
2. Version the SPASS in CIMS, use label INTEG_FIN, in description put date and your name	X
3. Examine SPASS, ensure opnav & SP turns correctly designated PRIME or NEW WAYPOINT	X
4. Waypoints and downlinks have been checked and are violation free (per CTV)	X
5. SP turns have been checked, have adequate time, and are violation free. All large turns >60 degrees use the slower slew rates as specified by AACS in FR07D145 and include turn margin as specified in the Extended Mission slew margin policy. Exceptions to this rule are specified in FR07D145	X
6. There are no more than 3 waypoint changes in a 24 hour period	X
7. The minimum prime instrument request duration outside ±5 hours from a targeted satellite flyby is 30 minutes	X
8. Custom handoffs are limited to the following periods: 1) ±3 hours around a targeted Titan flybys, 2) ±3 hours around a targeted Icy Satellite flyby, and 3) for OPNAVs that precede or follow a Downlink (special case)	Custom period > ±3 hours around EN, but can't track near C/A to have NAC to EN as waypoint. Teams always return to same pseudo-WP (NAC to EN, -X to Sun) with true RA/Dec WP defined for safing/emergencies. (Ok'd by SP manager)
9. Custom periods designated properly with SPASS notes (n/a for opnavs)	X
10. Custom period requests have "pick up at" and "hand off at" information filled in correctly (n/a for opnavs)	X
11. Multi-revolution turns about the X-axis have an offset greater than or equal to 30 degrees about X	N/A
12. An inertially fixed secondary attitude is used for all downlinks that contain prime and backup OTMs	N/A
13. The secondary axis for downlinks that contain prime and backup OTMs is the same	N/A
14. Downlinks that contain OTPs only roll for the first 4 hours of the downlink pass. OTB- no rolling/SRU	N/A
15. There is one downlink pass block per OTM prime or backup window (one wedding cake for a split pass). Exception - if first split downlink pass is less than or equal to 4 hours, can use 2 cakes, put playback_gap in 2nd pass	N/A

Segment Checklist p2

Item	Disposition notes, or X if complete
16. Downlinks (attitude/rolling) match XMDL working group plan. Negotiated changes should be reported back to the WG	Original DL matches XMDLWG. Added 02:15 duration DL to clear data before C/A, and 03:50 DL to help with dual PB at end of seg.
17. (guideline) The downlink attitude secondary vectors (and offsets) are mostly the same between RWA biases	N/A
18. Live moveable blocks (LMBs) include the appropriate time margin specified as a DEADTIME request in CIMS at the beginning and end of the moveable block. TLM modes in separate OBSMOV request	N/A
19. Live moveable blocks use an LMB epoch and use the appropriate epoch naming conventions. Live Update Blocks use a LUB epoch	N/A
20. All stellar occultation observations include an additional +/-20 minutes of time (40 minutes total) when they occur within -1 day to +2 days of Saturn periapse	N/A
21. All Ground and Live Moveable blocks associated with non-targeted geometric events (e.g., solar and earth occultations) include an additional +/-20 minutes of time margin (40 minutes total) to account for reference trajectory changes.	N/A
22. Check your GMB, LMB, Occ times against current reference trajectory	X
23. Dual playback of high value science data is performed via multiple playbacks within this segment. CIMS entries are correct. Dual playback does not affect downstream segments	X
24. Run the resource checker in CIMS and fix errors found. Paste remaining notes here with disposition. --- No outstanding issues.	X
25. Run SMT, if SSR not empty at end of segment include in notes, and instances of <0 SSR margin	X (Neg. P4 margin <6 Mb. OK.)
26. Examine SMT warnings report, include dispositions here of any items (negative SSR margin already covered)	X (2 instances of a few RADAR Mb not recorded at telem mode transition boundaries. Should be ok.)

Segment Checklist p3

Item	Disposition notes, or X if complete
27. Examine “ap_downlink report check” output, include dispositions here of any items (see next two items). --- M34 (DSS-55) and C34 (DSS-34) maintenance conflicts. RSS aware and pushing back. (see #27)	X
28. List any DSN stations requested during maintenance periods, AND JUSTIFICATION --- SP_088EA_M70METNON283_SP overlaps DSS-63 weekly maintenance. Pass is only 02:15 in duration and we’re requesting that maintenance is removed or shifted because it is necessary to clear some DV before closest approach for important Enceladus flyby (E5 = lowest altitude of whole Cassini mission)	X
29. List your percent 70M stations requested - avoid >35%	3 out of 5 (60%) but only one long (9⁺ hr) 70M pass
30. Examine “ap_downlink report nav” output, MP should ensure NAV OK with gaps in 2way	X
31. In CIMS check for “start before”, “end before”, “start after”, “end after” requests - fix if any problems found	X
32. Verify OPNAVs are in SNER5, sanity check rest of tlm modes	X
33. If sequence boundary at START of your segment, ensure IVPGAP info correct. If sequence boundary at END of your segment (ie in the next segment), ensure 5 “SEQ” upload DSN passes	N/A
34. If sequence boundary at END of your segment (ie in the next segment), ensure 5 “SEQ” upload DSN passes - will probably ripple into preceding segment(s), make sure to notify them. NO “end after” MAPS requests	N/A
35. Verify opmodes correct (RSS and RADAR especially), teams going to sleep have agreed?	X
36. Compare RSS requests to DSN requests, make sure they jive (ORT, occ, etc), ORTs are integrated.	X
37. If conjunction is in your segment, see Conjunction page on SP Wiki	N/A
38. Only 3 AZSCANSs per sequence. Each AZSCAN must be preceded and followed by a RWA bias.	N/A
39. RAMAVOID: new waypoint, NOT in custom period	N/A
40. If on thrusters, confirm deadbands	N/A
41. Segment products & this package linked to XM deliveries page	X