TOST: Hand-off Package
000TI (T0)
Titan C/A=2004-184T09:30:21.06, 341,500km
Epoch = GMB_E000_Titan0

July 12, 2003
Trina Ray
## 000TI(T0) Timeline

**C/A= 2004-184T09:30:21.06 @341,500km; Illuminated Approach**

<table>
<thead>
<tr>
<th>Start Time</th>
<th>End Time</th>
<th>Prime Activity</th>
<th>Observ. Detail</th>
<th>Op Mode</th>
<th>TLM Mode</th>
<th>Comments</th>
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<td>+05:00</td>
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<td>184T20:21</td>
<td>Downlink over Goldstone</td>
<td>Downlink over Goldstone</td>
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<td>185T11:00</td>
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<td>OPNAV</td>
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Note: The table above shows the schedule and events related to the 000TI (Titan-0 Flyby) mission. The specific details include the UTC times, indicating the timing of the events, and the description of the mission event.
### TOL (all CIMS) sorted by Team

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<th>Request</th>
<th>Start Time</th>
<th>Epoch Relative Start Time</th>
<th>Duration</th>
<th>Effort Rate (baud)</th>
<th>Data Volume (b/s)</th>
<th>PA/BSS Type</th>
<th>Primary Printing</th>
<th>Secondary Printing</th>
<th>Agreement</th>
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**T. Ray**

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| MAG_000T_SANMPL10031_RIDER | 2004-18710 31:00 | 00714:30.00 | 2004-18710 21:00 | 600 | 31.32 | SPASS Rider |
| MAG_000T_SANMPL10032_HOT | 2004-18710 21:00 | 00714:00.21 | 2004-18710 31:00 | 600 | 8.96 | SPASS Rider |
| MAG_000T_SANMPL10033_HOT | 2004-18710 31:00 | 00714:31.00 | 2004-18710 21:00 | 17.28 | Non-SPASS | |
| MAG_000T_SANMPL10034_HOT | 2004-18710 21:00 | 00714:00.21 | 2004-18710 31:00 | 600 | 14.78 | Non-SPASS |
| MAG_000T_SANMPL10035_HOT | 2004-18710 31:00 | 00714:31.00 | 2004-18710 21:00 | 600 | 57.78 | Non-SPASS |
| MM_000C_SEQV02_RM02 | 2004-18710 25:00 | 00713:00.25 | 2004-18710 21:00 | 900 | 0.16 | Non-SPASS |
| MM_000C_SEQV02_RM01 | 2004-18710 25:00 | 00713:00.25 | 2004-18710 21:00 | 900 | 0.16 | Non-SPASS |
| MM_000C_SEQV02_RM00 | 2004-18710 25:00 | 00713:00.25 | 2004-18710 21:00 | 900 | 0.16 | Non-SPASS |
| MM_000C_SEQV02_RM01 | 2004-18710 25:00 | 00713:00.25 | 2004-18710 21:00 | 900 | 0.16 | Non-SPASS |
| MM_000C_SEQV02_RM02 | 2004-18710 25:00 | 00713:00.25 | 2004-18710 21:00 | 900 | 0.16 | Non-SPASS |
| MM_000C_SEQV02_RM03 | 2004-18710 25:00 | 00713:00.25 | 2004-18710 21:00 | 900 | 0.16 | Non-SPASS |
| MM_000C_SEQV02_RM04 | 2004-18710 25:00 | 00713:00.25 | 2004-18710 21:00 | 900 | 0.16 | Non-SPASS |
| MM_000C_SEQV02_RM05 | 2004-18710 25:00 | 00713:00.25 | 2004-18710 21:00 | 900 | 0.16 | Non-SPASS |

T. Ray 8 7/12/03
### Data Volume Summary (all CIMS)

**Allocation for first Observation Block from October PSG**

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## Telemetry Mode Report

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SSR Strategy Description

• see separate presentation slide 000TI_T0_030712_SSRstrategy.ppt found in /www/sp/ubertwt/twtdoc/

• Partition 5 zeroed out, so OpNav data should be routed to Partition 4 by CDS
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# DSN Requests

CASSINI DSN COVERAGE SUMMARY for CIMS_000TI_TO.apf generated on 2003-Jul-12 01:16:25

(+ = pass overlaps with previous pass; * = in conflict with DSN weekly maintenance)

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<td>184T17:50-21:45 03:55</td>
<td>184T18:00 20:48-21:45 00:57</td>
<td>184T19:15-21:45 184T17:51-20:21 02:30</td>
<td>--- 15/15 XX - -- --0 124</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G 70MET 14</td>
<td>185T15:30-00:30 09:00</td>
<td>185T15:40 18:28-00:30 06:02</td>
<td>185T15:30-00:30 185T14:06-23:06 09:00</td>
<td>OTP 15/15 XX - -- --0 99,110,124,110</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Below are Target Working Team (TWT) and Orbiter Science Team (OST) constraints that must be followed during segment implementation. Any exceptions to constraint numbers 3, 4, 6, or 7 must be approved by the Science Planning Manager.

<table>
<thead>
<tr>
<th>Constraint</th>
<th>Comments</th>
<th>Disposition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. A. SP has checked all waypoints turns to and from waypoints. B. All initial downlink attitudes have been checked as waypoints.</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>2. All turns to and from waypoints checked for violations and margins.</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>CAPS CDA CIRS INMS ISS MIMI MAG NAV RADAR RPWS RSS UVIS VIMS</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>Each Prime Instrument agrees to accept a reduction in observation time during implementation if problems arise.</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>3. Custom handoffs limited to: A. ±3 hours from targeted Icy Satellite flyby B. ±3 hours from targeted Titan Flyby C. OpNavs preceding/following a downlink</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>4. Minimum 30 min SPASS Prime request duration outside ±5 hours from targeted satellite flyby (5 min. integer duration if &gt;30 min.)</td>
<td>V</td>
<td>2, both waypoint turns that are shorter than 30 min, checked in PDT</td>
</tr>
<tr>
<td>5. Live and Ground Movable Blocks include appropriate time margins.</td>
<td>V</td>
<td>K. Klaasen’s margin for flyby T0 is 20 min. according to memo dated NONE. We used a verbal input from Jerry Jones</td>
</tr>
<tr>
<td>6. Waypoints changes are ≤3 per day A. All turns that accomplish the waypoint strategy are requested by SP or OpNav.</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>7. Live Movable Blocks limited to the following orbits: 7, 8, 9, 10, 12, 28, 51, 56, 57, 60, 63, 64</td>
<td>C</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Guideline</th>
<th>Yes / No</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Were repeatable/reusable templates used where possible?</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>2. During Pre-Integration: Was 30 min. used for 90° RWA turns and/or 10 min. for RCS turns?</td>
<td>No</td>
<td></td>
</tr>
</tbody>
</table>
Science Planning Handoff Comments

- High Level Science Summary
  - Validating the Titan Atmospheric model Huygens will be using, in particular the observations of temperature and composition. First look at the surface with ISS (2 km/pix). First measurements of Titan at different wavelengths. Unique look at the South Pole region.

- Pointing Issues
  - None

- Data Volume Issues
  - Lien: CDS must manage the playback pointers by hand, partition 5 zeroed out, so OpNav data should be routed to Partition 4. 860 Total Mbits allocated to TOST for data collection. – see SPLAT next page

- CIMS Issues
  - None

- Power Issues
  - None

- Flight Rule/Mission Plan Guidelines and Constraint Issues
  - Are we on thruster control at 1300km? What are the deadband requirements if so?
    - 350,000km flyby – not on thrusters
  - Are all PRIME and ORS observations are epoch relative?
    - Yes
  - OD Uncertainty called out explicitly?
    - 20 minutes dead time at the start and end of timeline.
## SPLAT

<table>
<thead>
<tr>
<th>SOP#</th>
<th>Priority</th>
<th>Location of Lien from...</th>
<th>Team</th>
<th>Time</th>
<th>Request</th>
<th>Lien or Action</th>
<th>Proposed Solution</th>
<th>Disposition</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOST-T0-1</td>
<td>P1</td>
<td>TWT Handoff Package</td>
<td>CDS</td>
<td></td>
<td></td>
<td>CDS must manage the playback pointers by hand. Note that partition 5 was zeroed out so OpNav data should be routed to Partition 4. 860 Total Mb/s allocated to TOST for data collection. Separate SSR handoff slide on SP website. MP (John Smith) and CDS (Mike Sierchio) have been working the specifics of this since June 2002 and further refinements of the specifics may occur after TWT handoff.</td>
<td>Manage pointers by hand</td>
<td></td>
</tr>
</tbody>
</table>