SMOV44 REQUIREMENTS
KICK-OFF MEETING
8 MAY 2003
Carl Biagetti/STScI

AGENDA

SMOV4 PLANNING PROCESS
DEVELOPMENT SCHEDULE
SMOV4 CONCEPT
PLANNING GUIDELINES
SMOV4 PLANNING
PROCESS FLOW

SMOV CONCEPT STATEMENT
STSCI, SMOV Mgmt Team

REQUIREMENTS DEFINITION
STScI SMOV Team, 441 SMOV Planning Team

BASELINE PLAN
STScI SMOV Team, 441 SMOV Planning Team

PROPOSAL SUBMISSION
STScI SMOV Team, 441 SMOV Planning Team

PROPOSAL IMPLEMENTATION
STScI Proposal Implementation Team

OPERATIONS PLANNING
SMOV Ops Working Group, 441 SMOV Planning Team

SMOV OPERATIONS
(& SMOV CLOSURE)
SMOV Ops Team, SMOV TTRB
SMOV4 PLANNING
CURRENT APPROACH

• Proceed with planning driven by Nov04 launch
  – Requirements over the summer
    • Less subject to rework in case of launch delay
    • Project Requirements Review = 31July03
    • ACS/NICMOS/STIS complete activity summaries by Sep03

• Await confirmation or change of launch date
  – Proceed with or rephase SMOV planning accordingly
### SMOV4 Planning Development Schedule for Nov04 Launch (30Apr03)

<table>
<thead>
<tr>
<th>Task Name</th>
<th>Start</th>
<th>Finish</th>
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<tbody>
<tr>
<td>SMOV Planning  - ACS/NICMOS/STIS/FGS</td>
<td>Tue 12/10</td>
<td>Sat 1/3/04</td>
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<td>Requirements Identification</td>
<td>Tue 12/10</td>
<td>Thu 22/04</td>
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<tr>
<td>Activity Summaries</td>
<td>Fri 2/21</td>
<td>Sat 9/20</td>
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<td>Proposal Implementation</td>
<td>Sun 9/28</td>
<td>Sat 1/30</td>
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<tr>
<td>Requirements Development - WFC3/COS/VEH</td>
<td>Mon 4/7</td>
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<td>Comprehensive Plan Development</td>
<td>Fri 8/1</td>
<td>Thu 4/8</td>
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<td>Initial Activity Summaries</td>
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<td>Fri 11/3</td>
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<td>Initial SMOV Plan</td>
<td>Sat 8/9</td>
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<tr>
<td>Baseline SMOV Plan</td>
<td>Tue 1/10</td>
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<td>Special Cmding Development &amp; Test</td>
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<td>FGS SMGT</td>
<td>Thu 4/15</td>
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<td>COS Spec Cmding</td>
<td>Wed 1/11</td>
<td>Tue 3/26</td>
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<td>COS SMGT</td>
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<td>Tue 3/4</td>
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<tr>
<td>SMOV Ops Planning &amp; Scheduling</td>
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<td>Proposal Implementation</td>
<td>Tue 1/20</td>
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<tr>
<td>STSCI Operations Planning</td>
<td>Wed 5/26</td>
<td>Sun 10/3</td>
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<td>STSCI Readiness Review for SMOV4/SMOV4</td>
<td>Mon 10/4</td>
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<td>Thu 11/18</td>
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<td>SMOV4 Operations</td>
<td>Fri 11/26</td>
<td>Mon 5/30</td>
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<td>SMOV4 Closure Review</td>
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SMOV4 CONCEPT

SM4 PLANS

• Current launch date = 18 Nov. 2004
• Launch Readiness = 1 Nov. 2004
• WFPC2 is replaced by WFC3
• COSTAR is replaced by COS
• FGS3 is replaced by FGS3R
• ASCS installed, attached to ACS, STIS, COS
• All six gyros are replaced
• All six batteries are replaced
• DSC is installed
• NOBL installed on Bays 5, 7, 8
SMOV4 CONCEPT
ASSUMPTIONS AND INITIAL CONDITIONS AT RELEASE

- **SPACECRAFT SUBSYSTEMS**
  - **PCS**
    - 4-gyro complement at least through gyro calibration activity
    - CVZ pointing (North or South TBD) for Bright Earth Avoidance (BEA)
  - **EPS**
    - New batteries on line
  - **TCS**
    - ASCS in Safe
    - Noble installed in Bays 5, 6, 7
  - **OTA – Normal operating mode**
    - Heaters Off
    - One new (uncalibrated) FGS
      - FGEs Off
  - **DMS**
    - DMU Side A
    - HST486 in VSS mode
    - SSR configured for normal science ops
  - **I&C**
    - Normal TDRS configuration
    - Unrestricted SSAT use
SMOV4 CONCEPT
ASSUMPTIONS AND INITIAL CONDITIONS AT RELEASE

• Science Instruments
  – COS in Safe
  – WFC3 in Safe
  – ACS in Safe
  – NICMOS in Safe
    • NCC off
    • ESM in Operate
  – STIS in Safe
  – ASCS in Safe
    • CPLs in Safe
  – FGSs in Operate
SMOV4 ASSUMPTIONS – CONT’D

• All new, uncalibrated gyros
  – May require some slewing restrictions
  – Similar to SMOV3A

• All new batteries
  – Passive SMOV commissioning

• ACS/STIS “post-baseline” Noise Tests
SMOV4 CONCEPT

PLANNING DRIVERS/RESTRICTIONS

• Bright Earth Avoidance (BEA)
  – 12 days starting from Release
  – ACS/STIS MAMA for End-BEA Check?

• NCS/NICMOS Cooldown
  – No high-voltage restrictions per HSTP
  – No ACS/STIS/FGS pre-requisites
SMOV4 Planning Guidelines

The Generic SMOV Program

• A SMOV program is associated with each servicing mission
• Generic SMOV goals
  – Timely recommissioning of the Observatory for science operations
    • Commission newly installed science instruments
    • Recommission existing science instruments
  – Recommission Observatory systems for normal operations
  – Validation of other on-orbit replacements & installations
  – Early Release Observations
    • Demonstrate upgraded science capabilities to astronomical community and general public
SMOV4 Planning Guidelines

Existing SIs

• ACS draft requirements:
  http://www.stsci.edu/smov/smov4.html

• NICMOS draft requirements in work

• STIS draft requirements:
  http://www.stsci.edu/smov/smov4.html

• FGS draft requirements in work
SMOV4 Planning Guidelines

REQUIREMENTS PROCESS

• Determine SMOV tests.measurements
  needed to recommission Observatory & SIs
  (channel-by-channel)
  - Goal to validate or augment ground-based
    calibration data bases
  - Ready Observatory for EROs and normal
    GO/GTO science operations

• Circulate for SMOV team internal review

• Present to management review/blessing
SMOV4 Planning Guidelines

REQUIREMENTS

• Determine engineering parameters that need adjustment or measurement for commissioning

• Requirements statements should specify quantitative results only where necessary for commissioning
  - Define goals where appropriate

• Avoid explicit citing of CEI specs

• Determine special commanding needs ASAP

• Avoid implementation plans at requirements level
  - Unless unavoidable
SMOV4 Planning

Upcoming Stuff

• Next SMOV4 Planning Meetings
  – June tbd
  – July 17

• SMOV4 Requirements Review
  – 31 July 2003
  – HSTP/STScI Management Review of our requirements analysis and determination