

# GLAST Large Area Telescope: I & T Input to Monthly Technical/Cost/Schedule Review 03/02/06

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# Last Month's Accomplishments (1 of 2)

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- **Management**
  - Supported Environmental Test Pathfinding at NRL
  - Supporting Environmental Test Planning
  - Maintaining Daily Planning/Hand-off Meetings
  
- **IFCT**
  - Removed redundant SIU for RAD750 Inspection
  - Mechanically and Electrically Integrated EPU's
  - Completed Phase 1a in LATTE.
  - Installed FSW B0-6-1
  - Ran LICOS LAT 00X Power-on, LAT 01X Power Off, LAT 04X Baseline Science Ops.
  - Complete baseline radiator EMI test.
  - Completed Pathfinding activities at NRL.

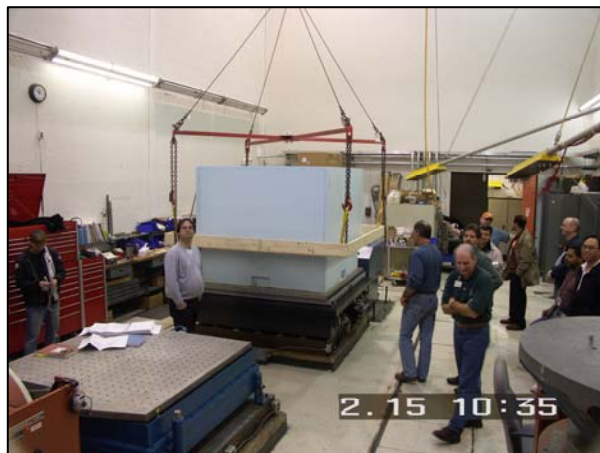
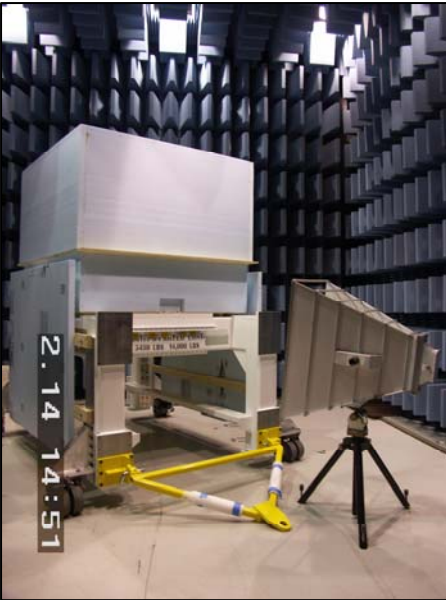


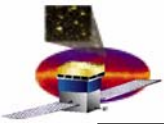
# Last Month's Accomplishments (2 of 2)

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- **SVAC**
  - Preparing for full LAT tests (Phase 1 and 2)
- **Online**
  - Troubleshooting FSW/LICOS scripts
  - Developing LICOS scripts for system level test (Phase 1 and 2).
  - Isolated the ACD High Voltage Bias turn-on issue.

# I&T Activities

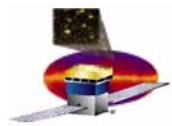




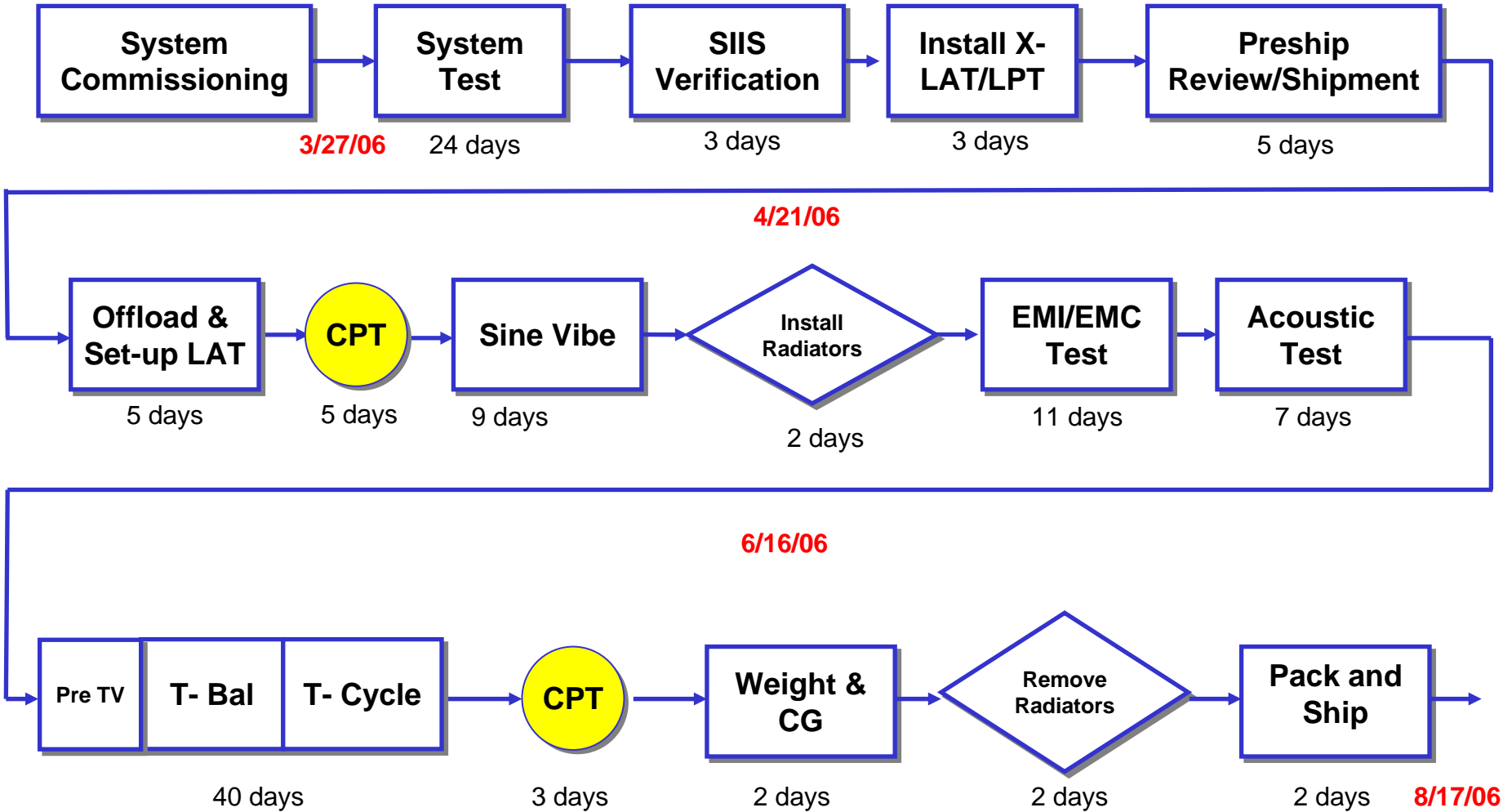
# Steps to Ship to NRL

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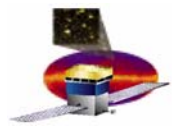
- Phase 0 – Hardware check out
  - Hardware
    - ACD
    - Flt PDU, Flt GASU (EM GASU), Flt Cables, EMI Skirt, no SIU/EPU
  - Software
    - LATTE 4
  - Exit
    - Successful LATTE 4 CPT
- Phase 1 – Software check out
  - Hardware
    - Flt PDU, Flt GASU, 2 Flt SIU, 3 Flt EPU, VSC, Control/Pwr Racks
  - Software
    - FSW, VSC, LICOS, Configuration Database
  - Exit
    - Successful LICOS CPT
- Phase 2 – Run for the record
  - Hardware
    - Full complement of flight hardware (See Above)
  - Software
    - Flight release of FSW, VSC, LICOS, Configuration Database
  - Exit
    - Successful LICOS CPT, SVAC, E2E, Verification w/SIIS



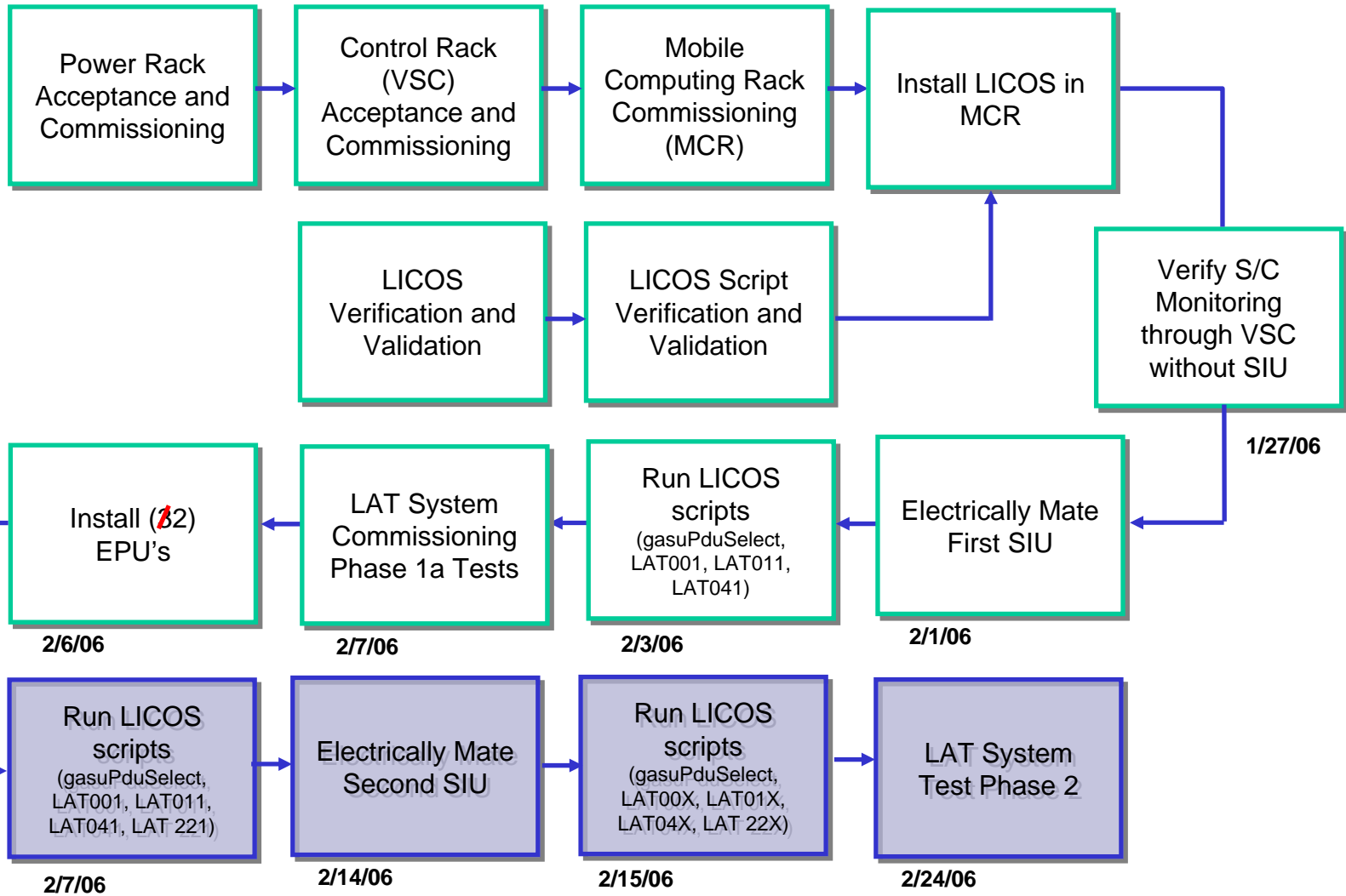
# LAT Test Flow



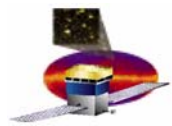
NOTE: Durations for moving and setup have been incorporated into the total duration for the test.



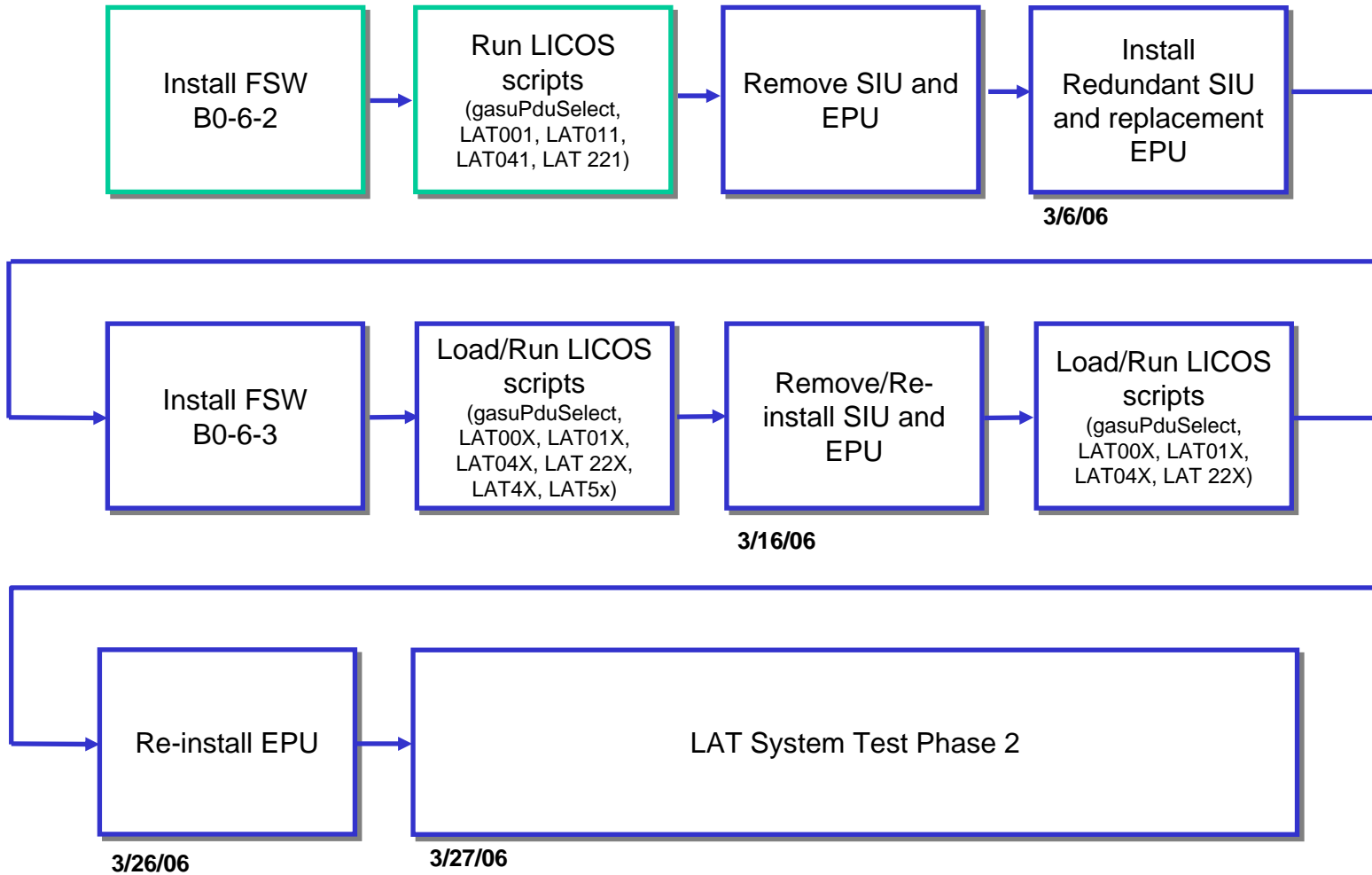
# Roadmap to LAT System Test



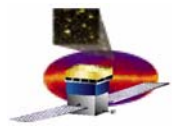
**Critical steps have been identified and are in the current I&T plan**



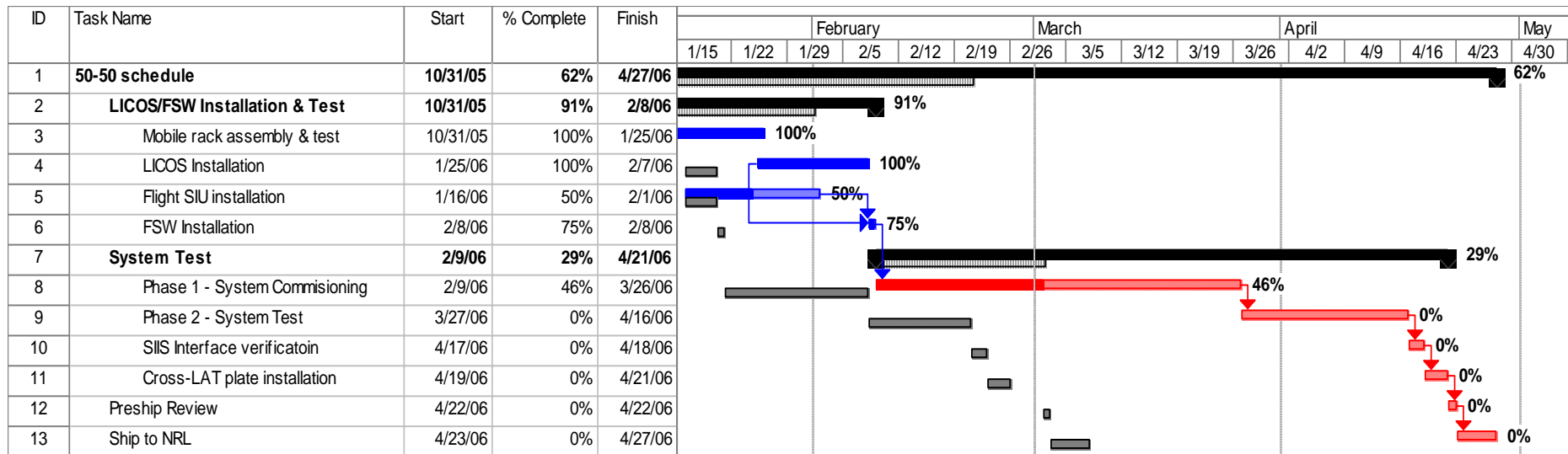
# NCR 833 Revised I&T Flow














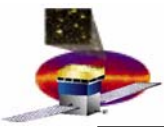


# I&T Summary Plan



# LICOS Status

Function	Status
TeleCommanding	
Telemetry handling	
Science Data handling	
Monitoring	
Trending	
Archiving	
Script running	
Configuration tracking (MOOT/FMX)	Awaiting FMX V2 from FSW
Activity tracking (e-logbook)	
V&V	



# Progress since January 26

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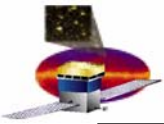
- **Script development**
  - pduGasuSelect (front/back door switch) – Ready for V&V 1/30 **Complete**
  - Power On (LAT00x)–V&Ved: some rework necessary; reV&V 1/30 **Complete**
  - Power Off (LAT01x) – V&Ved; ready for Bldg 33 **Complete**
  - Reinitialization (LAT02x) – In development **Ready for V&V**
  - Safe mode (LAT08x) – Ready for V&V 1/31 **Complete**
  - Baseline Science Ops (LAT04x) – Portions used in SIU/EPU burn; V&V 1/31 **Complete – Used to burn FSW B0-6-2 on SIU and EPU on the LAT**
  - LPA script – In development **Complete**
  - LCI scripts – In development with collaboration from FSW **Complete**
- **Activities DB work**
  - E-Logbook GUI update to accommodate new features in progress **Complete**
- **Mobile Computing Rack (MCR)**
  - CM procedures **Complete**
  - V&V today – Ready for use 1/30 **Complete**
  - Modules security certification at NRL complete. Modules returned. **Complete**
- **Telemetry table GUI with limit violation information **Complete****
- **Alarm handler **Complete****
- **UTC clock **Complete****

# LICOS Test Scripts

LAT #	LAT Perf. & Ops Test Plan (LAT-MD-02730) Script	Status	ECD
00	Power On	Complete	2/24
01	Power Off	Complete	2/3
02	Reinitialization	In testing phase	3/3
03	EPS Performance		3/15
04	Baseline Science Ops	Complete	2/9
05	Register Test		4/21
06	SIU/EPU H/W Functional		3/15
07	Energy Measurement Calibration		3/24
08	Safe Modes	Ready for V&V	4/7
12	Science Modes		4/14
13	LAT/SC I/F Functional		3/31
15	Thermal Control		3/31
16	Survival Heater Test		3/31
17	Conducted & Radiated Emissions		4/21

# LICOS Test Scripts (2)

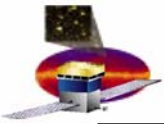
LAT #	LAT Perf. & Ops Test Plan (LAT-MD-02730) Script	Status	ECD
18	Conducted & Radiated Susceptibility		4/21
20	Science Performance Diagnostics		4/14
21	Timing Measure & Adjust		3/24
22	Science Ops Demo	Complete	2/25
23	GRB Handling		4/14
30	ACD CPT	In progress	3/17
31	ACD LPT	In progress	3/31
40	CAL CPT	In progress	3/15
41	CAL LPT	In progress	3/31
50	TKR CPT	In progress	3/15
51	TKR LPT	In progress	3/31
52	Light Tight Test		3/31
65	T&DF False Triggers		4/7
66	T&DF Data Transport Errors		4/7
70	SVAC – E2E Tests	In progress	3/31



# Mobile Computing Rack (MCR)

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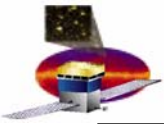
- Shifting test operations focus to Mobile Rack usage **Complete**
- Volatile elements (e-log and trending DB) moved from ODS to MCR **Complete**
- V&V in progress **Complete**
- Online to provide procedure and training to run LICOS & LATTE on MCR **Complete**
- Discussions with FSW led to the purchase of additional storage
  - 2 x 1.2 TBytes (2<sup>nd</sup> unit is a spare); Should arrive next week
  - Units include similar processing power as existing boxes
  - **Complete**
- Spare firewall, switch, bastion host and LICOS server were sent to NRL for evaluation and network test
  - Tests highlighted some issues that have been resolved
  - Units have been returned
  - **Complete**



# Planned work

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- **Cross strapping configuration selector (ST - 3/8)**
- **Requests from Thermal group**
  - **Method to transfer data from MCR to NRL computer**  
**Complete**
  - **Display showing tabulated environmental data** **Complete**
  - **LICOS port of TCS GUI used at Lockheed for the radiator TV test (JBT - 3/31)**
- **VSC update to handle exceptions (error conditions) (AP – 3/8)**
- **Mobile rack support of workstations (AP – 3/15)**



# Issues and Concerns

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- **Schedule**
  - Planning extended shifts and 24/7 coverage.
  - Rapid turnaround on NCR disposition and resolution.
  - Adding resources to help resolve DAQ and FSW issues in a timely manner.
- **Script Availability**
  - Adding resources to Online
- **Availability of FMX/MOOT**
- **Satisfying remaining LICOS requirements**
  - See [LAT-TD-07855](#)