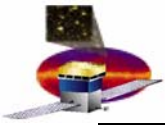


# **GLAST Large Area Telescope: I & T Input to Monthly Technical/Cost/Schedule Review 08/05/04**

**Elliott Bloom  
SU-SLAC  
Subsystem Manager**

**Ken Fouts  
SU-SLAC  
Subsystem Engineering Manager**

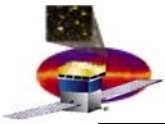
**elliott@slac.stanford.edu, fouts@slac.stanford.edu  
650-926-2469 650-926-2553**



# Agenda

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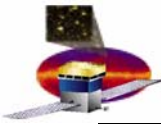
- **Each Subsystem Manager Should Present the following:**
  - **Technical Status:**
    - **Last Month's Accomplishments**
    - **Near-term Milestones & Status towards them for next 3 months (from F2F)**
    - **Drawing Release Plan & Status required to achieve production milestones**
    - **Summary of issues & concerns**
    - **Open Design/Engineering model/manufacturing issues and closure plan for them**
    - **Status of Subsystem's Documentation & qualification program**
  - **Cost & Schedule Status:**
    - **Identify threats to maintaining schedule and cost**
    - **Specific actions required to retain zero schedule variance (Work Arounds/CCBActions)**



# Last Month's Accomplishments

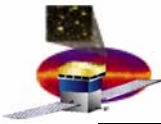
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- **Management**
  - Held 2 document reviews with NASA I&T. 12 I&T documents and procedures in approval cycle.
- **IFCT**
  - JPL crimping training completed for two I&T mechanical technicians.
  - JPL connector mate/demate instructor training completed by I&T technician.
  - CAL metrology bay shimming training completed.
- **MGSE**
  - 267 MGSE drawings complete or in final release cycle, 20 to go.
  - 4x4 proof test weights are cut to size and are in final machining.
- **Online**
  - First online CCB meeting was held and action items established.
  - Held IRR peer reviews for Online (go to I&T website for details)
  - LATTE V 3.4 was released containing ACD software counters.
- **SVAC**
  - Held IRR peer reviews for SVAC (go to I&T website for details)
- **Particle Test**
  - Rebuilt Van de Graaff accelerator column



# Near-term Milestones & Status for next 3 months

ID	Task Name	Start	Finish	August				September				October			
				Aug 1, '0	Aug 8, '0	Aug 15, '0	Aug 22, '0	Aug 29, '0	Sep 5, '0	Sep 12, '0	Sep 19, '0	Sep 26, '0	Oct 3, '0		
1	<b>IFCT</b>	<b>Mon 8/2/04</b>	<b>Wed 9/15/04</b>	[Gantt bar: Black, spans from 8/2 to 9/15]											
2	Procedure Definition and Release	Mon 8/2/04	Wed 9/15/04	[Gantt bar: Blue, spans from 8/2 to 9/15]											
3	Mechanical/Electrical Training	Wed 8/4/04	Wed 8/4/04	[Gantt bar: Blue, spans from 8/4 to 8/4]											
4	Two Tower IRR	Wed 9/15/04	Wed 9/15/04	[Milestone: Black square at 9/15]											
5	<b>EM2</b>	<b>Wed 8/4/04</b>	<b>Mon 9/6/04</b>	[Gantt bar: Black, spans from 8/4 to 9/6]											
6	EM Cal Deliver	Wed 8/4/04	Wed 8/4/04	[Milestone: Black square at 8/4]											
7	EM2 Testing	Mon 8/9/04	Mon 9/6/04	[Gantt bar: Blue, spans from 8/9 to 9/6]											
8	<b>MGSE</b>	<b>Mon 8/9/04</b>	<b>Fri 10/15/04</b>	[Gantt bar: Black, spans from 8/9 to 10/15]											
9	Grid Perimeter Ring Delivery and	Mon 8/9/04	Fri 8/27/04	[Gantt bar: Blue, spans from 8/9 to 8/27]											
10	PAP Delivery and Proof Test	Thu 9/30/04	Fri 10/15/04	[Gantt bar: Blue, spans from 9/30 to 10/15]											
11	<b>Mechanical Operation Grid Asse</b>	<b>Wed 9/1/04</b>	<b>Tue 10/5/04</b>	[Gantt bar: Black, spans from 9/1 to 10/5]											
12	Receive Grid	Wed 9/1/04	Wed 9/1/04	[Milestone: Black square at 9/1]											
13	Grid Assembly in I&T	Wed 9/1/04	Tue 10/5/04	[Gantt bar: Blue, spans from 9/1 to 10/5]											
14	<b>Online</b>	<b>Fri 8/6/04</b>	<b>Thu 9/30/04</b>	[Gantt bar: Black, spans from 8/6 to 9/30]											
15	LATTE Ver. 4.0	Fri 8/6/04	Fri 8/6/04	[Milestone: Black square at 8/6]											
16	Subsystem Script Verification	Mon 8/16/04	Thu 9/30/04	[Gantt bar: Blue, spans from 8/16 to 9/30]											
17	<b>Subsystem Deliveries</b>	<b>Thu 9/23/04</b>	<b>Fri 10/1/04</b>	[Gantt bar: Black, spans from 9/23 to 10/1]											
18	TKR A Delivery	Thu 9/23/04	Thu 9/23/04	[Milestone: Black square at 9/23]											
19	CAL A Delivery	Fri 10/1/04	Fri 10/1/04	[Milestone: Black square at 10/1]											
20	TEM/TPS A Delivery	Fri 10/1/04	Fri 10/1/04	[Milestone: Black square at 10/1]											
21	<b>Tower A Integration</b>	<b>Fri 10/1/04</b>	<b>Sun 10/31/04</b>	[Gantt bar: Blue, spans from 10/1 to 10/31]											

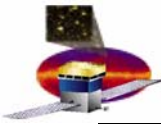


# I&T Mechanical Training

Rev. 7/23/04 L. Wai

I&T Mechanical Team Training List	= done							= to do		Expiration	Validator	Sign-Off
	Doug (QA)	Dave	Tom	Leo	Mark	Reggie	Eliazar					
Contamination Control		14-Apr-04	14-Apr-04	14-Apr-04	6-Aug-03	5-May-04	6-Aug-03	end project	Cullinan			
Electrostatic discharge (ESD)		14-Apr-04	14-Apr-04	14-Apr-04	1-May-03	1-Dec-03	1-Apr-03	2 yr	Tice			
Oxygen Deficiency		30-Apr-04	30-Apr-04	30-Apr-04	3-Jun-04	3-Jun-04	30-Apr-04	end project	Ortiz			
Critical Operations								end project	Ortiz			
Crane Operation	n/a	16-Apr-04	16-Apr-04	16-Apr-04	done	done	16-Apr-04	2 yr	Wai			
Crane Operation Practical Test	n/a	20-May-04	20-May-04	20-May-04	20-May-04	done	20-May-04	2 yr	Wai			
GERT		12-Apr-04						2 yr	Wai			
ITAR Training		21-Apr-04	21-Apr-04	21-Apr-04			21-Apr-04	2 yr	Wai			
RAD Worker Training	n/a	8-Jun-04	11-May-04	11-May-04	11-May-04	8-Jun-04	11-May-04	2 yr	Wai			
Van De-graaff operation	n/a	10-Jun-04	10-Jun-04	10-Jun-04			10-Jun-04	2 yr	Wai			
Mate/Demate			9-Jul-04	trainer	9-Jul-04			2 yr	Manger			
Crimping and soldering				n/a	n/a	n/a	n/a	2 yr	Bartholomew			
Electronic log book training								end project	Ortiz			
Electronic Mate/Demate log training								end project	Ortiz			
Electronic component installation log								end project	Ortiz			
Hardware Bagging								end project	Ortiz			
Room 104 Access		17-May-04	17-May-04	17-May-04	17-May-04		17-May-04	end project	Ortiz			
Air Bearings Operation		22-Apr-04	22-Apr-04	22-Apr-04	25-May-04	26-May-04	22-Apr-04	end project	Ortiz			
Cleanroom fork lift operation								end project	Ortiz			
Tracker Receiving Inspection								end project	Ortiz			
Calorimeter receiving Inspection					13-Feb-04		13-Feb-04	end project	Ortiz			
CAL Insertion/Inversion Handling		18-May-04	28-Apr-04	28-Apr-04	21-May-04	21-May-04	28-Apr-04	end project	Ortiz			
CAL Insertion/Inversion Crane		28-Apr-04	18-May-04	18-May-04	21-May-04	21-May-04	28-Apr-04	end project	Ortiz			
CAL Removal/Inversion Handling		18-May-04	28-Apr-04	28-Apr-04	21-May-04	21-May-04	28-Apr-04	end project	Ortiz			
CAL Removal/Inversion Crane		28-Apr-04	18-May-04	18-May-04	21-May-04	21-May-04	28-Apr-04	end project	Ortiz			
CAL Torquing		21-May-04	21-May-04	21-May-04	21-May-04	21-May-04	21-May-04	end project	Ortiz			
TEM/PSU Shimming/Torquing								end project	Ortiz			
ELX cable sequence		19-May-04	19-May-04	19-May-04	19-May-04		19-May-04	end project	Ortiz			
2-Tower CPT GASU / PDU /BOB Setup								end project	Ortiz			
Menning plate installation / removal								end project	Ortiz			
Tracker Heat Straps Installation								end project	Borden			
Tracker Cone installation								end project	Borden			
Tracker Flex Cable Installation								end project	Borden			
Tracker Flex Cable Removal								end project	Borden			
Tracker Insertion Handling								end project	Borden			
Tracker Insertion Crane								end project	Borden			
Tracker Removal Handling								end project	Borden			
Tracker Removal Crane								end project	Borden			
Optical Survey Setup								end project	Borden			
LAT Lift Fixture Crane Operation								end project	Borden			
GPR Installation								end project	Borden			
LAT Integration Stand Operation								end project	Borden			
LAT Floor Test Configuration								end project	Borden			

% done    0%    40%    40%    43%    38%    31%    43%



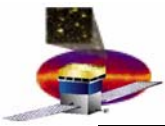
# IFCT Electrical Training

Rev. 7/23/04 L. Wai

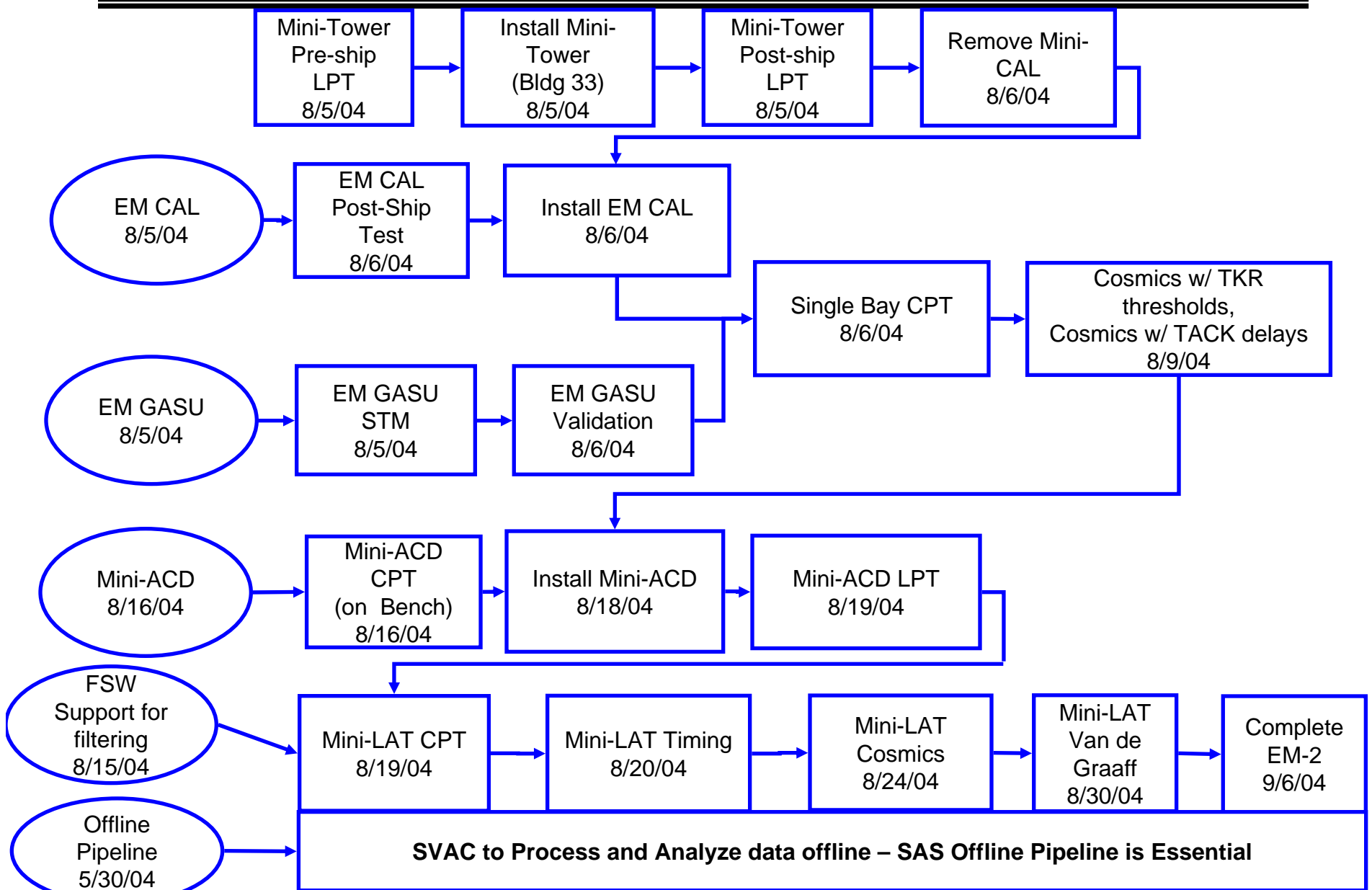
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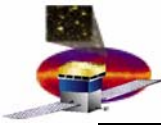
= to do

I&T Electrical Test Team Training	Doug (QA)	Brian H.	John C.	Toan Le	Joel B.	Expiration	Validator	Sign-Off	
Contamination Control		14-Apr-04	18-Jun-04			end project	Cullinan		
Electrostatic discharge (ESD)		14-Apr-04	15-Jun-04			2 yr	Tice		
Oxygen Deficiency		3-Jun-04	3-Jun-04			end project	Ortiz		
ITAR Training			7-Jun-04			end project	Wai		
GERT						2 yr	Wai		
RAD Worker Training	n/a	6-Jun-04	6-Jun-04			2 yr	Wai		
Van De-graaff operation	n/a	10-Jun-04	10-Jun-04			2 yr	Wai		
Mate/Demate			9-Jul-04	9-Jul-04	9-Jul-04	end project	Manger		
Hardware Bagging						end project	Ortiz		
Electronic Logbook Training				22-Jun-04			end project	Horwitz	
EGSE Validation							end project	Horwitz	
TPS interface and BOB usage							end project	Horwitz	
TEM interface and BOB usage							end project	Horwitz	
GASU interface and BOB usage							end project	Horwitz	
PDU interface and BOB usage							end project	Horwitz	
Tracker Performance Test							end project	Horwitz	
CAL Performance Test							end project	Horwitz	
Single Bay Test							end project	Horwitz	
Timing-In Test							end project	Horwitz	
Cosmics and VDG data collection							end project	Horwitz	
Two Bay Test							end project	Horwitz	
TEM CPT							end project	Horwitz	
TPS CPT							end project	Horwitz	
GASU CPT							end project	Horwitz	
PDU CPT							end project	Horwitz	
<b>% done</b>		<b>0%</b>	<b>25%</b>	<b>33%</b>	<b>0%</b>	<b>0%</b>			



# EM-2 (August 2004)



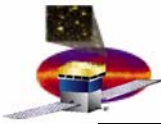


## Drawing Release Plan & Status required to achieve production milestones

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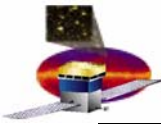
- **Total MGSE Drawing Sheet Count ~ 287**
  - **141 Drawing Sheets Released**
  - **94 Drawing Sheets released on July 16**
  - **32 drawing Sheets in Release Cycle by July 30**
  - **267 Drawing Sheets Virtually Released**
    - **( 141 + 94 + 32 = 267 )**
  - **20 sheets scheduled to be complete by Aug 30.**
  - **1x4 Grid Update on Stop Work**





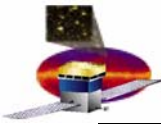
# Status of Subsystem's Documentation (1 of 4)

Document #	Document Title	Author	Document Number Assigned	Outline Complete	Draft Started	Draft Complete	Internal Review Complete	Draft in LATDocs	Submitted to CM (Natalie) for signoff (or expected date)	DCN written	DCN and Doc sent for signoff	Signed by Author	Signed by Elliott Bloom	Signed by QA	Document released	Released in LATDocs	# of Days in signoff	Expected Completion Date (Released in LATDocs)	Comment
<b>Integration and Test Subsystem Management Documents</b>																			
LAT-MD-01376	LAT Integration & Test Plan	Bloom / Grist	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				93	06-Aug-04	in signoff since May 3rd; waiting for Marsh
<b>Integration, Facilities, Configuration, and Test (IFCT) Documents</b>																			
LAT-TD-03828	TPS Safe to Mate Procedure	Horwitz	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					20	16-Aug-04	Submitted for signoff 7/15/04; waiting for Marsh, Clinton, Haller
LAT-TD-04099	TPS EICIT Procedure	Horwitz	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					20	16-Aug-04	Submitted for signoff 7/15/04; waiting for Marsh, Clinton, Haller
LAT-TD-03831	TEM Safe to Mate Procedure	Horwitz	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					16	16-Aug-04	Submitted for signoff 7/19/04; waiting for Marsh, Clinton, Haller
LAT-TD-03875	TEM EICIT Procedure	Horwitz	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					16	16-Aug-04	Submitted for signoff 7/19/04; waiting for Marsh, Clinton, Haller
LAT-TD-04097	TEM IVT Procedure	Horwitz	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					16	16-Aug-04	Submitted for signoff 7/19/04; waiting for Marsh, Clinton, Haller
LAT-TD-04098	TPS IVT Procedure	Horwitz	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					16	16-Aug-04	Submitted for signoff 7/19/04; waiting for Marsh, Clinton, Haller
LAT-MD-01386	LAT Facilities Plan	Wai	✓	✓	✓	✓	✓	✓	✓								13	16-Aug-04	Submitted for signoff 7/22/04
LAT-PS-03060	Room 104 Access Procedure	Ortiz	✓	✓	✓	✓	✓	✓	✓								8	16-Aug-04	Submitted for signoff 7/27/04
LAT-PS-03062	Tem/TemPS Shimming Procedure	Ortiz	✓	✓	✓	✓	✓	✓	✓								7	16-Aug-04	Submitted for signoff 7/28/04
LAT-PS-03263	Fastener Torquing Procedure	Borden	✓	✓	✓	✓	✓	✓	✓								7	16-Aug-04	Submitted for signoff 7/28/04
LAT-TD-04380	Acceptance Test Procedure, Break out Boxes and Cables	Horwitz	✓	✓	✓	✓	✓	✓	✓								2	16-Aug-04	Submitted for signoff 8/3/04
LAT-PS-03027	Calorimeter Integration Procedures	Ortiz / (Niel)	✓	✓	✓	✓		04-Aug-04	✓									18-Aug-04	



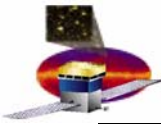
# Status of Subsystem's Documentation (2 of 4)

Document #	Document Title	Author	Document Number Assigned	Outline Complete	Draft Started	Draft Complete	Internal Review Complete	Draft in LATDocs	Submitted to CM (Natalie) for signoff (or expected date)	DCN written	DCN and Doc. sent for signoff	Signed by Author	Signed by Elliott Bloom	Signed by QA	Document released by Others	Document released	# of Days in signoff	Expected Completion Date (Released in LATDocs)	Comment
LAT-PS-03287	Cal Module Test Procedure	Canfield / (Grove)	✓	✓	✓				10-Aug-04									24-Aug-04	
LAT-PS-03290	Tracker Module Test Procedure	Canfield / (Tajima)	✓	✓	✓				10-Aug-04									24-Aug-04	
LAT-PS-04510	LATTE Users Manual	Canfield	✓						10-Aug-04									24-Aug-04	
LAT-TD-04382	GASU IVT Procedure	Horwitz	✓						12-Aug-04									26-Aug-04	
LAT-PS-03057	Critical Operations Procedure	Ortiz	✓	✓	✓				12-Aug-04									26-Aug-04	
LAT-PS-03291	Flight Hardware Bag and Purge Procedure	Borden	✓	✓	✓		✓		12-Aug-04									26-Aug-04	
LAT-TD-04260	GASU EICIT Procedure	Horwitz	✓	✓	✓				13-Aug-04									27-Aug-04	
LAT-TD-04332	PDU EICIT Procedure	Horwitz	✓						13-Aug-04									27-Aug-04	
LAT-TD-04381	GASU Safe to Mate Procedure	Horwitz	✓						13-Aug-04									27-Aug-04	
LAT-PS-04436	AeroGo Air Bearing Reference Guide	Ortiz	✓	✓	✓				13-Aug-04									27-Aug-04	
LAT-PS-04459	Connector Mate and Demate	Manger	✓	✓	✓				13-Aug-04									27-Aug-04	
LAT-PS-04511	Single Tower Test Procedure - Simple	Horwitz/ Canfield	✓						21-Aug-04									04-Sep-04	
LAT-PS-04512	Single Tower Test Procedure - w/ GASU	Horwitz/ Canfield	✓						21-Aug-04									04-Sep-04	
LAT-PS-03259	Menning Plate Procedures	Ortiz	✓	✓	✓				26-Aug-04									09-Sep-04	
LAT-PS-04244	Load Mass simulators into GRID MGSE	Ortiz	✓						26-Aug-04									09-Sep-04	



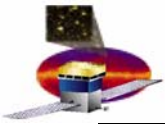
# Status of Subsystem's Documentation (3 of 4)

Document #	Document Title	Author	Document Number Assigned	Outline Complete	Draft Started	Draft Complete	Internal Review Complete	Draft in LATDocs	Submitted to CM (Natalie) for signoff (or expected date)	DCN written	DCN and Doc sent for signoff	Signed by Author	Signed by Elliott Bloom	Signed by QA	Document released	Released in LATDocs	# of Days in signoff	Expected Completion Date (Released in LATDocs)	Comment
LAT-PS-03058	Tracker Integration Procedures	Borden	✓	✓	✓	✓	✓	03-Sep-04										17-Sep-04	
LAT-TD-04383	PDU Safe to Mate Procedure	Horwitz	✓					03-Sep-04										17-Sep-04	
LAT-TD-04384	PDU IVT Procedure	Horwitz	✓					03-Sep-04										17-Sep-04	
LAT-PS-03277	LAT Test Floor Configuration Procedure	Borden	✓	✓	✓	✓	✓	10-Sep-04										24-Sep-04	
LAT-PS-03276	Two Tower w/GASU/PDU Test Procedure	Horwitz/ Canfield	✓					13-Sep-04										27-Sep-04	
LAT-PS-01586	Survey Procedures	Borden	✓	✓	✓	✓	✓	24-Sep-04										08-Oct-04	
<b>Mechanical Ground Support Equipment (MGSE) Documents, except drawings</b>																			
LAT-MD-01462-02	MGSE Development Plan	Gawehn / Borden	✓					16-Aug-04										30-Aug-04	
LAT-PS-04226	1x1 Lift Fixture Installation and Removal	Gawehn / Borden	✓					20-Aug-04										03-Sep-04	
LAT-PS-04229	4x4 Lift Fixture Installation and Removal	Gawehn / Borden	✓					20-Aug-04										03-Sep-04	
LAT-PS-04230	4x4 Stand Proof Test	Gawehn / Borden	✓					20-Aug-04										03-Sep-04	
LAT-PS-04227	GPR onto rotation Stand MGSE	Gawehn / Borden	✓					26-Aug-04										09-Sep-04	
LAT-PS-04231	Grid integration into GPR MGSE	Gawehn / Borden	✓					26-Aug-04										09-Sep-04	
LAT-PS-04228	4x4 Stand Operations Manual	Gawehn / Borden	✓					30-Sep-04										14-Oct-04	
<b>Online Documents</b>																			
LAT-MD-01533	EGSE Plan	Claus / Horwitz	✓					15-Sep-04										29-Sep-04	



# Status of Subsystem's Documentation (4 of 4)

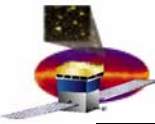
Document #	Document Title	Author	Document Number Assigned	Outline Complete	Draft Started	Draft Complete	Internal Review Complete	Draft in LATDocs	Submitted to CM (Natale) for signoff (or expected date)	DCN written	DCN and Doc sent for signoff	Signed by Author	Signed by Elliott Bloom	Signed by QA	Document released	Released in LATDocs	# of Days in signoff	Expected Completion Date (Released in LATDocs)	Comment	
<b>Science Verification Analysis and Calibration (SVAC) Documents</b>																				
LAT-MD-00446-06	SVAC Plan	do Couto E Silva	✓	✓	✓	✓			04-Aug-04										18-Aug-04	
LAT-MD-000575	SVAC Plan for LAT Integration at SLAC	do Couto E Silva	✓	✓	✓				13-Aug-04										27-Aug-04	
LAT-MD-000613	SVAC Contributed Manpower	do Couto E Silva	✓	✓	✓				15-Sep-04										29-Sep-04	
LAT-MD-00572	I&T/SAS ICD for LAT Integration	do Couto E Silva	✓	✓	✓				15-Sep-04										29-Sep-04	
<b>Particle Test Documents</b>																				
LAT-TD-00440-04	LAT Particle Test Plan	Godfrey	✓	✓	✓	✓		✓	5-Aug-04										19-Aug-04	
LAT-TD-01396	Calibration of the Van de Graaff Photon Flux	Godfrey	✓	✓	✓	✓	✓	✓	5-Aug-04										19-Aug-04	
LAT-TD-01805-02	Van de Graaff Accelerator Safety/Operations Handbook	Godfrey	✓	✓	✓	✓	✓	✓	5-Aug-04										19-Aug-04	
LAT-PS-04133	Procedure to Take Simultaneous BGO and LAT Data	Godfrey	✓	✓	✓	✓	✓	✓	5-Aug-04										19-Aug-04	
LAT-TD-04134	Procedure for Setting the LAT Timing Registers	Godfrey	✓	✓	✓	✓	✓	✓	5-Aug-04										19-Aug-04	
LAT-TD-04135	Procedure for Measuring the LAT Trigger Jitter using the Muon Telescope	Godfrey	✓	✓	✓	✓	✓	✓	5-Aug-04										19-Aug-04	
LAT-TD-04136	Van de Graaff and Cosmic Data Runs for LAT Integration	Godfrey	✓	✓	✓	✓	✓	✓	5-Aug-04										19-Aug-04	
LAT-TD-04419	Muon Telescope	Godfrey	✓	✓	✓	✓			5-Aug-04										19-Aug-04	



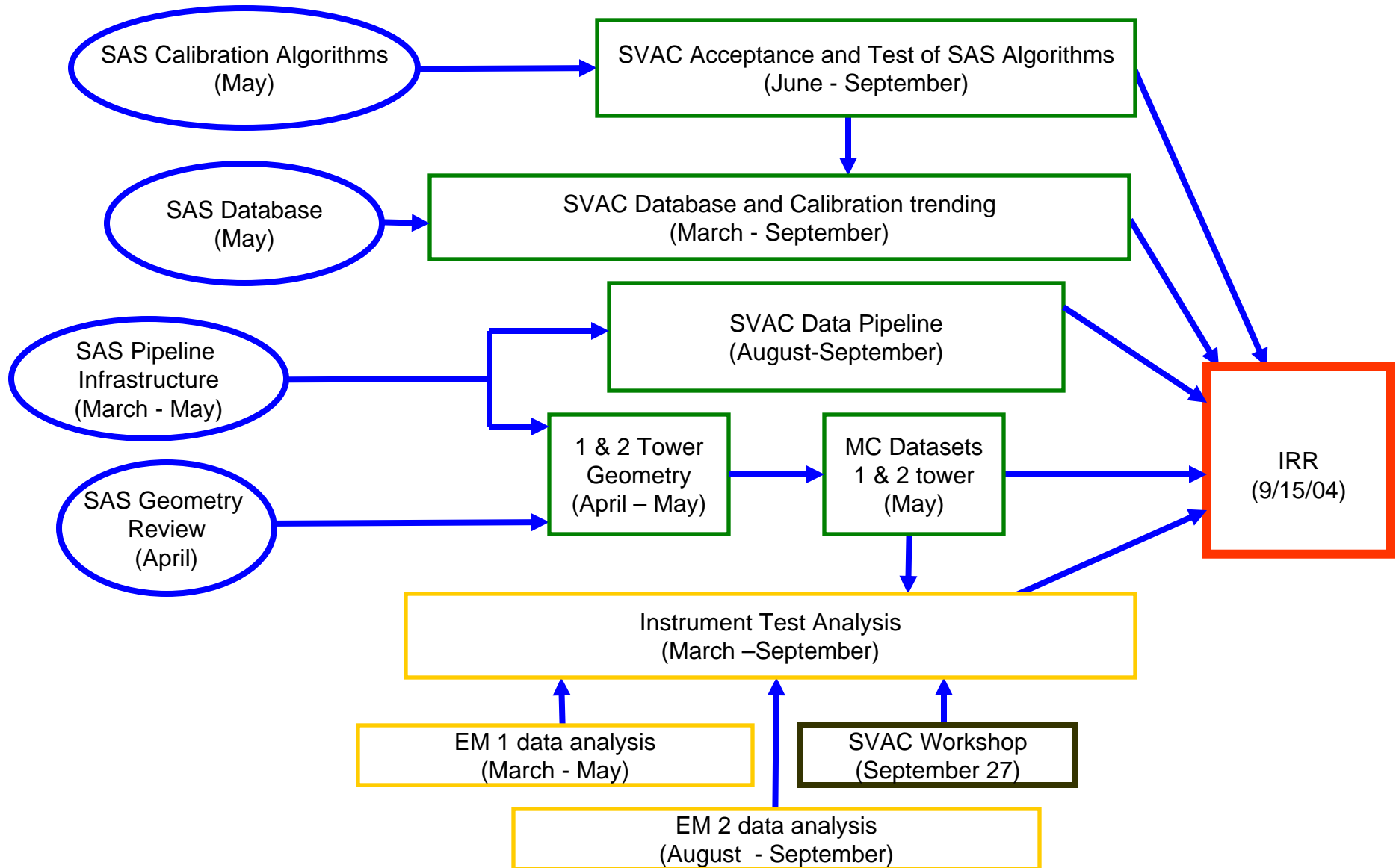
# Priority Ordering for Online Roadmap to 2 Towers

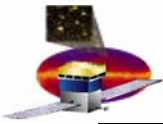
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1. **Hardware Monitoring, Trending, and Power up.**
  - Coded against FSW specifications doc and code ready for test as of 8/6/04.
  - Testing will proceed with EM2 work.
  - Final two tower implementation (I&T online + ISOC) depends on ISOC participation likely done 9/15/04.
2. **Subsystem – I&T scripts ready to use by I&T on Flight Hardware and under configuration control.**
  - **Receive Final subsystem scripts**
    - CAL – unit delivery promised by CAL (I&T need date is September 1)
    - ELX – September 15 (need date)
    - TKR – September 1 (need date)
    - ACD – one month before delivery (need date)
  - **Modify subsystem scripts to I&T specification. (Delivery + 2 weeks) – working with CAL and TKR pre-release scripts.**
  - **End to End and timing (system) scripts (first version usable for EM2, complete 9/15/04).**
  - **Place scripts under configuration control (1 hour)**
3. **LATTE security against unauthorized software changes (done).**
4. **LATTE parameter verification (8/15/04)**
5. **Method for full configuration tracking of all components (done) .**
6. **V&V online system and Scripts for LATTE 4.0 (Starts August 9 with release of LATTE 4. All subsystems will be using LATTE 4 to test flight hardware before delivery to I&T. I&T will use on EM 2 and test bed.)**
7. **Event “prescaling” in Event Server (done) .**
8. **Event filtering (Sept 1).**
9. **Transfer of LDF.fits, Run Configuration files, Run and Test Report files to persistent storage.**
  - **Transfer manually (done)**
  - **Transfer via Pipeline (Sept 1 ?)**
10. **Electronic Logbook – released July 19, updates are planned during EM-2 (9/15/04).**



# Science Verification, Analysis, and Calibration (SVAC) - Roadmap





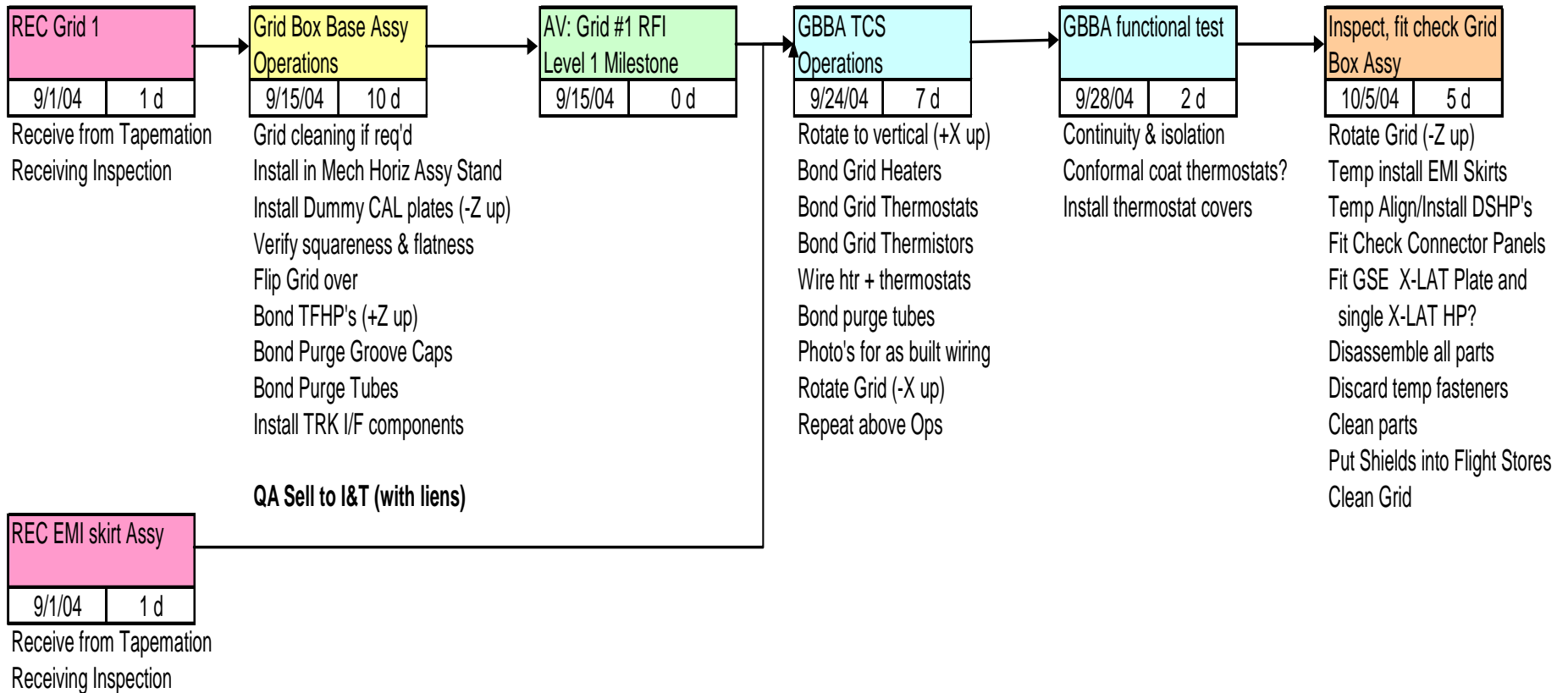
# Grid Mechanical Ops in I&T

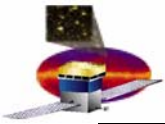
Grid Box Assy #1 Critical Path

Task	
Compl date	Duration

## PROPOSED PLAN

If I&T not ready the following Ops may be performed otherwise these are worked in parallel w/ I&T



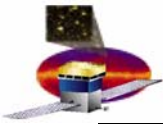


# Summary of issues & concerns

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- **Hardware delivery dates to I&T**
  - TKR
  - CAL
  - TEM/TPS
- **Subsystem script deliveries to I&T**
  - **No delivery commitments**
- **MGSE Delivery Schedule**
  - **Fabrication and proof test dates have slipped partially due procurement delays.**
    - **Requires continuous support to procurement from I&T and MGSE.**
  - **Personnel Access Platform (PAP)**
    - **Assembly cost and delivery estimates due 8/5.**
- **I&T document review and sign-off by the program (manufacturing and QA) is taking longer than planned.**
  - **Planned for 14d turn-around.**
  - **Average duration is nearly double.**

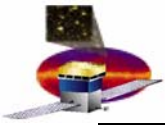




# Cost and Schedule Status

	WBS	BAC	BCWS	BCWP	ACWP	SV \$	CV \$	% BCWS	% BCWP	% ACWP	SPI Trend	CPI Trend	SPI	CPI	Cpi_Fcst	CpiSpi_Fcst
65	4.1.9	7,616	4,553	4,232	4,177	-321	54	59.78	55.56	54.85	↓	↑	0.929	1.013	7,519	7,772

- **Cumulative Schedule Variance (end of June)**
  - **Work Scheduled: 4553 k\$; Work Performed: 4232 k\$**
  - **Schedule Variance: -321k\$ (-7.1%)**
    - **-257k\$ in MGSE**
      - The following items are not complete per the baseline: Integration Stand hardware & PAP, Fabricate proof test weights, Radiator & X-Lat Lift fixtures, Tower Mass simulators, EM-2 Tkr Interface, Shipping container for LAT vibe test equipment, LAT support stand final hardware, LAT ground test heat exchanger, LAT GPR and attach brackets, Proof test of Integration stand, LAT lifting fixture, LAT misc equip, Misc Transport containers)
    - **-65k\$ in IFCT department**
      - The following items are not complete per the baselin: Receive/inspect Tower A electronics and Grid, Receive/inspect Tower A electronics, Install test stands, Test installed stands, Survey and alignments, Prep flight grid for integration, Comprehensive test procedure development.)
- **Cumulative Cost Variance (end of June)**
  - **Work Performed: 4232 k\$; Actual Cost: 4177 k\$**
  - **Cost Variance: 54k\$ (+1.3%)**



## Specific actions required to retain zero schedule variance (Work Arounds / CCBActions)

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- **Complete MGSE tasks that are in flow for two tower and LAT build. (done end of September)**
- **Zero baseline variance requires matching I&T schedule to hardware deliveries. Current baseline PMCS schedule calls for tower A and Grid work having begun in June.**
- **Training using mockups, and EM-2 activities, replacing actual integration. This allows I&T considerable risk reduction for flight integration.**
- **TIMs with TKR, CAL and ELX to take advantage of lessons learned by subsystems prior to delivery.**
- **Weekly meetings with NASA Mission I&T to work through documents and procedures.**