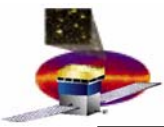


GLAST Large Area Telescope: I & T Input to GSFC Monthly Review 07/30/03

**Elliott Bloom
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Last Month's Accomplishments

- **July**
 - EM – CAL rotation stand for 1x4 grid configuration proof tested.
 - Single bay grid refurbished and reassembled.
 - Support TKR EGSE/Scripts at Pisa.
 - I&T approve traveler for assembly and testing of EM.
 - Single bay integration procedures complete.
 - Facility readiness review before EM arrives.
 - Measured photon angular distribution from VDG target using BGO array.
 - Integration Test plan draft.
 - Apply lessons learned from TKR minitower to EM deliveries.
 - Supported ground software workshop.



Summary of Issues and Concerns

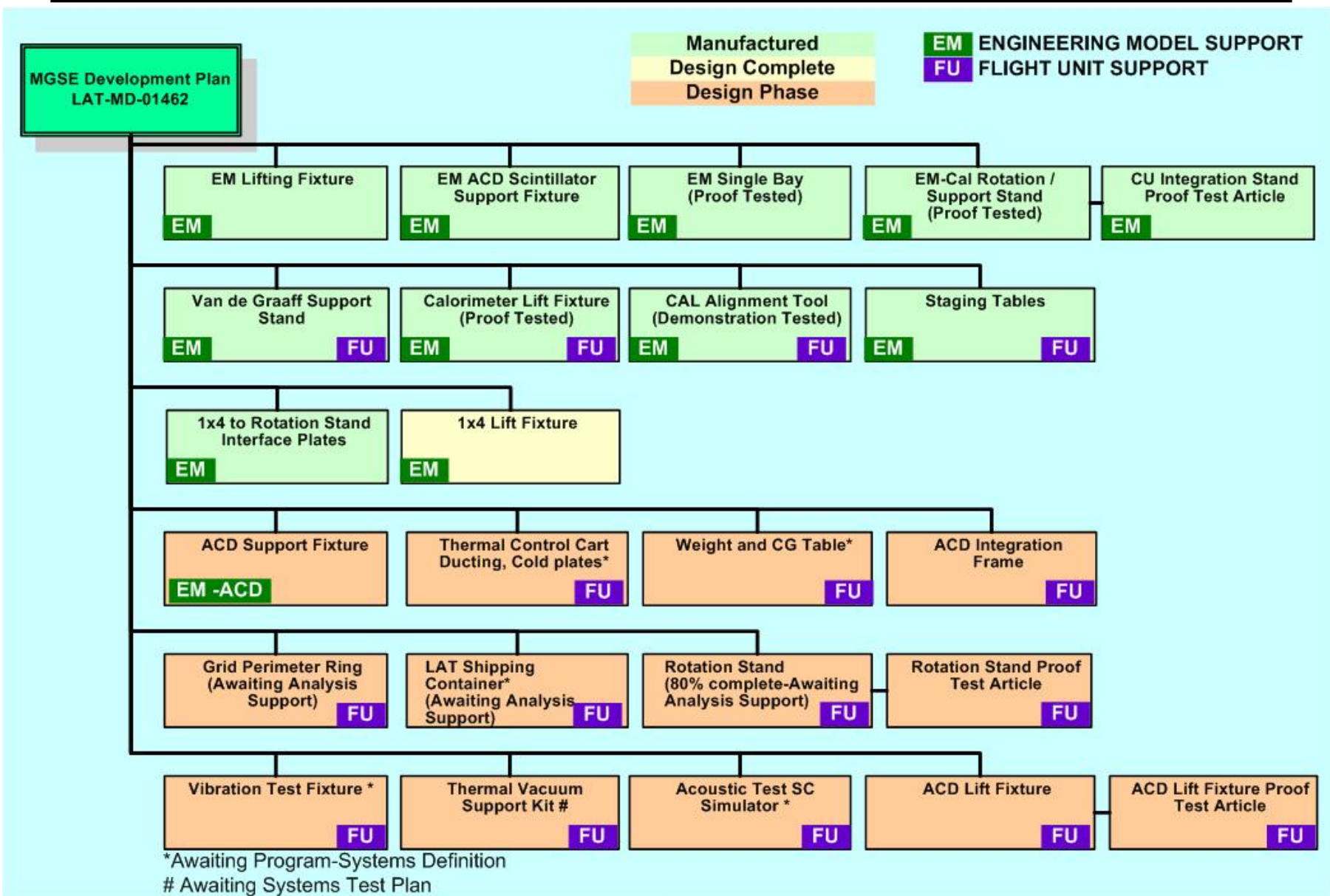
- Delay in implementation of 3 month schedule extension will leave our MGSE schedule exposed to a very large schedule variance over the next 1-3 months, getting bigger as PMCS reprogramming is delayed longer. This will be on the books for many months! Should we do a separate I&T MGSE plan now to avoid this overhead?
- Late delivery to I&T of EM parts and EGSE software test scripts.
 - Late delivery will delay preparations for LAT, particularly in areas of IFCT and SVAC. Possible impact on EGSE.
 - Part of EGSE/MGSE verification strategy depends on I&T EM program.
- Delivery of flight hardware to I&T may be late.
- I&T EGSE is proceeding with in-house developed test executive software. Change to another system for Observatory and/or IOC will require major cost change request.
- Spacecraft interface detail uncertainty.
 - Environmental test fixtures.
 - EGSE interface.
 - MGSE handling fixtures.
- SIIS fidelity uncertainty.
- Delivery of flight hardware to I&T may be late.
- When will a decision be made about where to go for Environmental Testing? This will impact preparations and design of Vibration and T/V fixtures, airplane test, and LAT transportation strategy. (Need decision from Goddard in August – September time frame; by August 31 would be OK.)
- By December 15, 2003 we need to hire 4 full time I&T electronics techs for LAT flight assembly that are currently not funded in I&T, and likely not funded (at the level that I&T would like) in electronics.

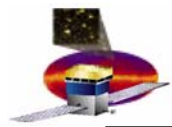


Open Design/EM/Manufacturing Issues

- **I&T Test Plan is not complete.**
 - **Work requires E. Bloom and B. Grist.**
 - **Many system level requirements that the I&T plan is dependent upon are still in flux.**
 - **Work is going as fast as practical given other requirements on Bloom/Grist time.**
- **Finalization of all LAT test plan requirements is not complete post CDR. This is resulting in compressed schedule and potential increased cost for I&T.**
 - **Current estimates are September for completing all System Engineering test plans from the Design Team.**
 - **About 3 months beyond that time needed to finalize I&T test plans and procedures given heavy load on I&T personnel starting with EM deliveries.**
- **ATDPs for I&T flight hardware acceptance are not complete. System Engineering is working to complete by end of August.**
 - **System Engineering is updating ATDP requirements.**
 - **I&T EM activities are being used to flush out issues.**
 - **ATDP needs to be specified before major production of flight hardware for subsystems to be responsive to I&T needs (end of August?)**

Status of MGSE

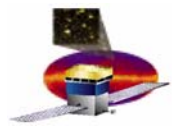




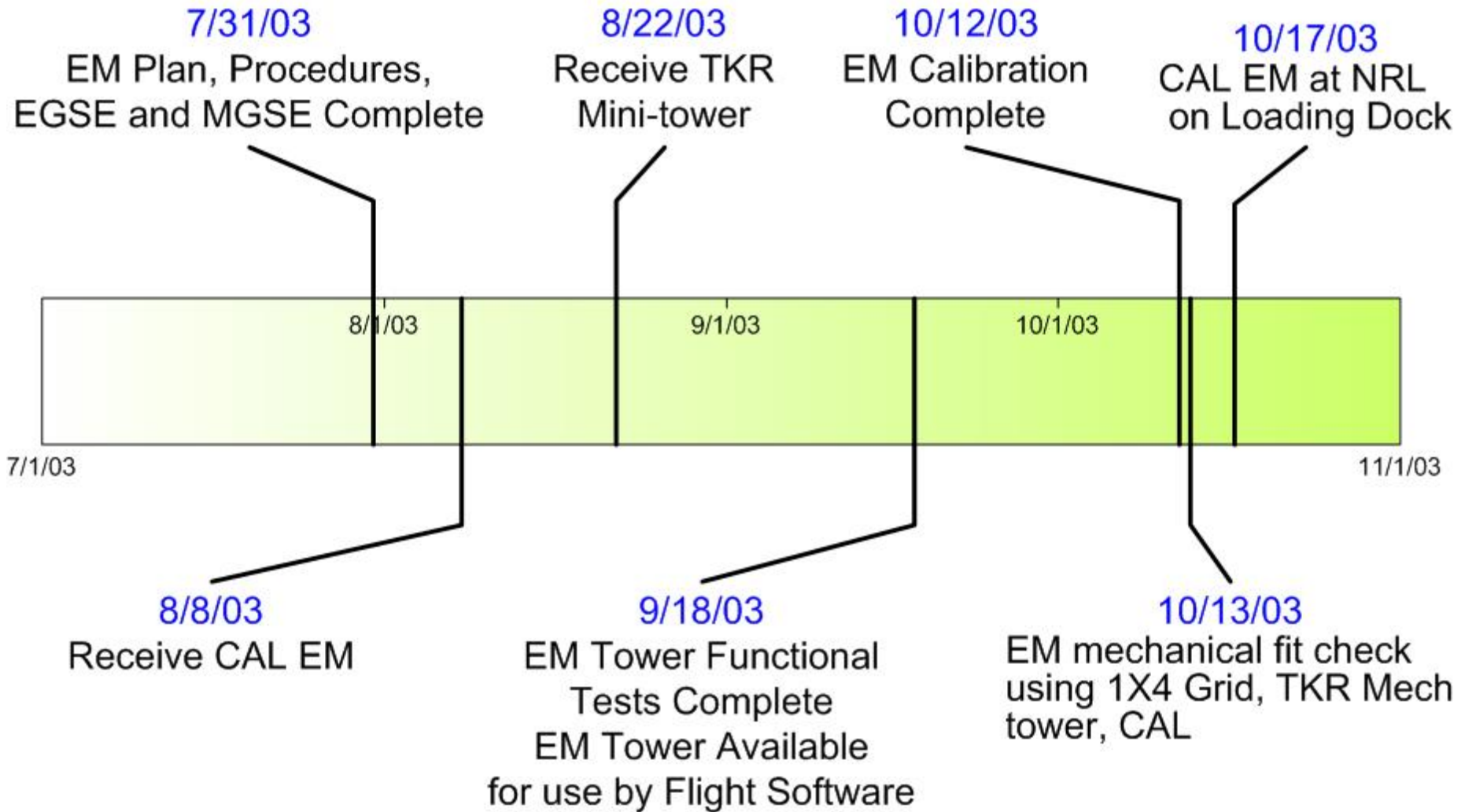
Near-term Milestones (next three months)

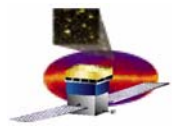
EM Plan, Procedures, EGSE and MGSE Complete	07/31/03
Receive CAL EM	08/08/04
Receive TKR mini-tower	08/22/04
EM Tower functional tests Complete	09/18/03
EM Tower Available for use by Flight Software	09/18/03
EM Calibration Complete	10/13/03
CAL EM at NRL Loading Doc; TKR mini-tower in Italian Customs	10/17/04
Receive perimeter ring and attach brackets* 9.5k\$ (need Feb 04)	08/19/03
Receive low humidity tent* 11k\$ (need Apr 04)	08/27/03
Receive LAT rotation stand* 78k\$ (need Feb 04)	09/03/03
Receive ground test heat exchanger* 28k\$ (need Feb 04)	10/29/03

*needs to be reprogrammed

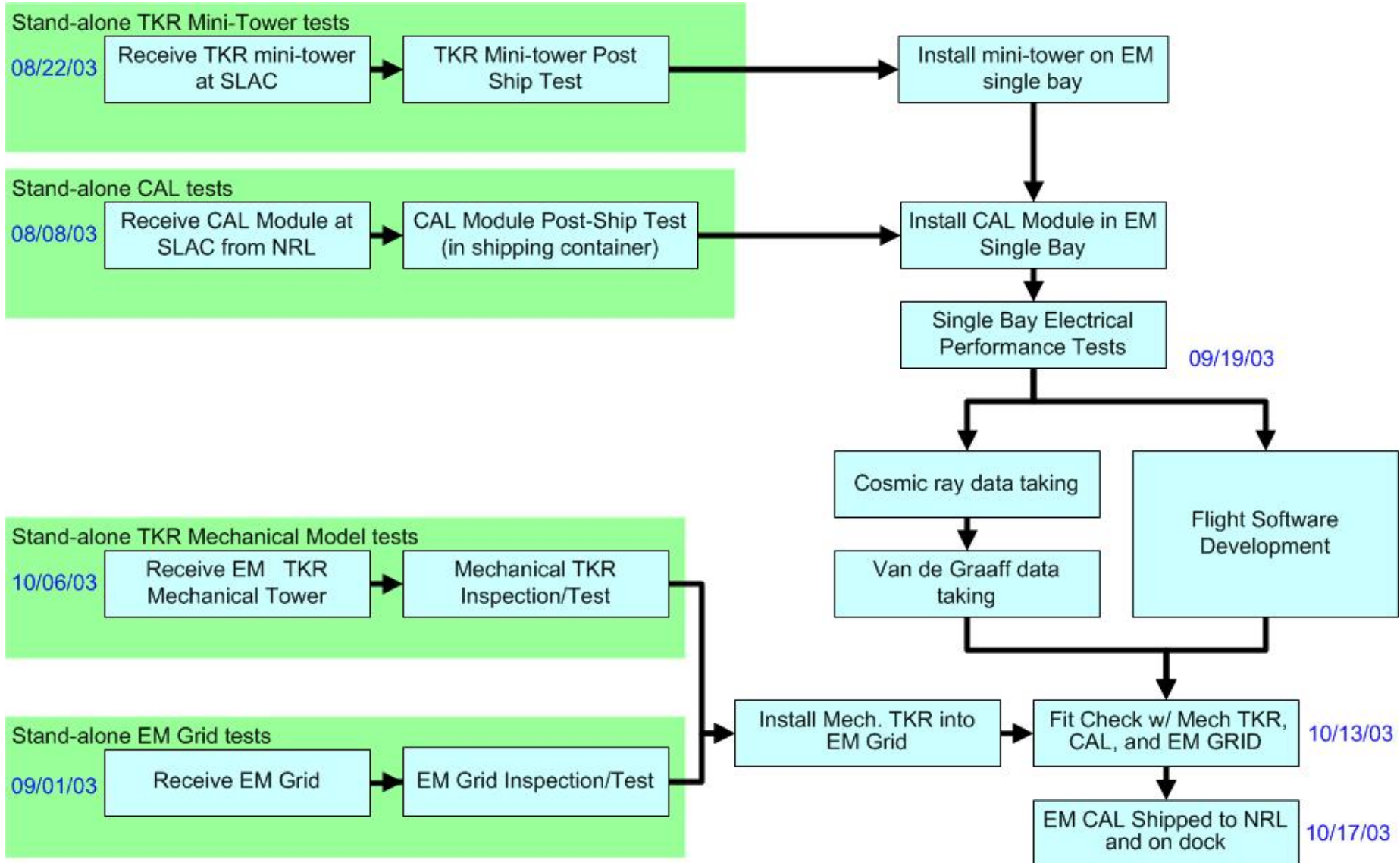


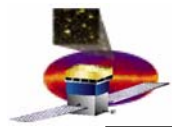
EM Testing Timeline





EM Test Flow

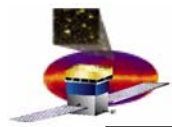




Available Staff For EM, August 7 – October 17

Bloom, Elliott	I&T – Physicist	Bui, Henry	ELX – Elec. Tech.
Claus, Ric	I&T – Software Prog.	Huffer, Mike	ELX – S/S Engineer
Chen, Xin	I&T – Software Prog.	Nelson, Dave	ELX – S/S Engineer
do Couto e Silva, Eduardo	I&T – Physicist	Sapozhnikov, Leonid	ELX – S/S Engineer
Gawehn, Eric	I&T – Mech. Eng.		
Godfrey, Gary	I&T – Physicist	Bogaert, Gilles	CAL – Physicist
Grist, Brian	I&T – Elec. Eng.	Giebels, Berrie	CAL – Physicist
Kamae, Tune	I&T – Physicist	Graduate Student	CAL – Berrie’s Student
Mizuno, Tsunefumi	I&T – Physicist	Grove, Eric	CAL – S/S Eng./Phys.
Molini, Mark	I&T – Mech. Tech.	Leas, Byron	CAL – Software
Panetta, Jim	I&T – Software Prog.		
Rogers, Reggie	I&T – Mech. Tech.	Baldini, Luca	TKR – Software
Tajima, Hiro	I&T – Physicist	Bhatnagar, B.J.	TKR – S/S Eng.
Tice, Jeff	I&T – Mech. Tech.	Borden, Tom	TKR – S/S Eng.
Tuvi, Selim	I&T – Software Prog.	Latronico, Luca	TKR – Software Prog.
Wai, Larry	I&T – Physicist	Williams, Roger	TKR – S/S Eng.
		TKR Post-Doc	TKR – Software Prog.

31 Assigned Staff (13 off-project)



Daily Meetings During EM @ SLAC

- Start on Thursday August 7 in Bld 33. This is the day before the CAL EM is due to arrive at SLAC.
- There will be an 8 AM meeting every weekday. It will last 15-20 minutes.
 - Required attendance
 - I&T Department managers.
 - Personnel who are on day shift that day.
 - A representative from ELX
 - Meeting Agenda
 - Review of progress of previous day.
 - Plan of work for the day shift.
 - Reports of Non Conformance or other anomalies from the previous day.
 - Brief technical reports having to do with work done the past day or two.
- There will be a 4PM meeting if we have scheduled a swing shift. It will last 10-15 minutes.
 - Required attendance
 - I&T Department managers.
 - Personnel who were on day shift and who will be on swing shift that day.
 - A representative from ELX.
 - Meeting agenda
 - Review of progress of day shift.
 - Plan of work for swing shift.
 - Reports of Non Conformance or other anomalies from day shift.