

FSW Monthly May 33 '04

Last Month work

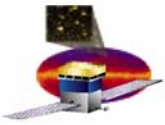
Demos

Action items

Schedule

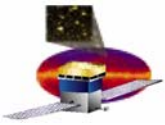
Next 3 months

**T. Schalk for the fsw team
Ucsc**



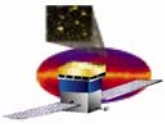
May activities

- Released PBC V1-1-1 and loaded it into the SLAC RAD750 SUROM.
- Restructured the MEM unit test to make it easier to add subtests such as verification of PCI configuration space.
- Started integrating the LCB polled mode driver into the PBC code. (NRL needs LCB hardware to continue)
- Brought LTX unit tests up to date and ensured that they all run successfully on RAD750 targets. Significant updates to the 1553 RT application mode drivers. And updates to test applications which use the 1553.
- Finished updating the PBC to use the address definitions in Memmap
- Prepared 1553 software and procedures for delivery and acceptance of the SIIS at SLAC
 - Resumed PBC test script development. These perl scripts use the SIIS to send telecommands to and receive telemetry from the PBC.
 - Prepared the SIIS archive file library and utility files for release. (there is a concern that the source code may contain information that is proprietary to Spectrum Astro.)
 - Finished the siis2moc utility that extracts CCSDS packets from a SIIS archive file and stores them in MOC level 0 data files



May activities

- **housekeeping**
 - Acquired and sent housekeeping telemetry on the RAD750 using 1553 communications.
 - Entered all existing LHK telemetry packet definitions using LCAT which produced corresponding source code and ITOS output. Validated ITOS output using AstroRT
 - Coded a telecommand payload dump routine for the above telecommands to support upcoming demo.
- **Thermal control**
 - Work on smoothing filters to remove noise from temperature inputs and on conversion speed
 - First cut coding for asynchronous communication with the PDU is complete
 - Starting on TCS telemetry and clarifying relationship between housekeeping telemetry and TCS telemetry.
 - Testing the TCS code on the RAD750 in simulation mode



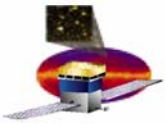
May activities

- **LATC (configuration via a file) working on windows**
- **Developed procedure such that In future all the CMX pre-build binaries will also install on a windows machine**
- **Released LATC to I&T**
- **Produced additional functions requested by I&T to power on and configure the LAT.**

- **New release of PBS/MSG. These are two of our lowest level packages. New features where added after the two code reviews revealed common problems**

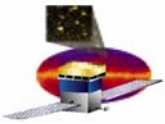
- **First iteration of the ITC being exercised**

- **Ed & Ed coming up to speed on Calib and LCB/driver**



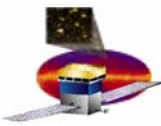
May activities

- **FES**
 - Routines were added to the FES code to generate internally-supplied buffers containing arbitrary sets of trigger bits for the tracker and calorimeter, and arbitrary veto bits for the ACD
 - The FES test event generator was upgraded to create files of ACD data as well as tracker and calorimeter data
 - The test bed has been upgraded to have a full complement (41) of FES boards.
 - After a good round of intense trouble-shooting the FES now run reliably with all boards staying in synch after some 50 millions of events at 10KHz. The next stage is a detailed check of all the trigger lines, followed by trying to push through GLEAM Monte Carlo events that have been suitably formatted for FES consumption.



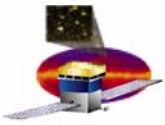
Demo schedule (I)

- **March demo:**
 - [generate Alert tlm packet (hardware issue)]
- **April demo:**
 - **BOOT** commands (“**all**”) did not show these...
 - Start Reset Error Dump
 - PCI Device Header Write & Dump
 - Processor Register Write & Dump
 - Memory Write Memory Dump Data Memory Dump Cancel
- **May (33-rd) demo:**
 - Overview scheduled for Kavli conference room @ 5:00 today
 - interface between the Spacecraft (SDIS), and the Spacecraft Interface Unit (SIU). The Spacecraft is represented in these demonstrations by an mv2304 CPU crate. The SIU is a RAD750 flight crate incorporating the boot code demonstrated last month. The demonstrations will show an infrastructure exists that allows an SIU to generate an Automatic Repoint Request and issue it to the SDIS and allows an SIU to receive and perform simple processing on ancillary, attitude, and time tone data messages sent by the Spacecraft crate
- **June demo:**
 - ISIS formal testing => aug



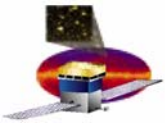
Demo ↔ req mapping

Microsoft Excel - Demo Requirements Tracking Sheet											
Type a question for help											
Arial 10 B I U											
E28											
	A	B	E	F	G	H	I	J	K	L	
1											
2											
3	Legend										
4	* P - the demonstration shows <i>partial</i> progress on a requirement										
5	* F - the demonstration shows <i>full/final</i> progress on a requirement										
6	* NA - full progress on the requirement cannot be demonstrated on the FU test bed										
7	* <u>Underlined Requirement</u> - the heading from the FSW SRS is empty; it contains subheadings but no requirements of its own										
8	* Red formatting - the demonstration was not completed (in full or in part) and must be rescheduled										
9											
10											
11											
12											
13	Requirement Number (Ver. 3)	Requirement	SIB demos: power up PDU/GASU, EEPROM listing, 1553 messages sent COTS BC to RAD750 RT (Jan)	LCB Package Test (Feb)	TKR and CAL: register read/write and event tests (Feb)	Watchdog function (Feb)	Alert and Diagnostic Telemetry demo (March)	GASU Configuration Demo/Single Event Display (March)	Boot Commands Demonstration (April)	Discrete control/reporting in HSK telem (April)	General ARR comr (May)
21	5.2.1.3.4	Science Data Packet Synchronization Word									
22	5.2.1.4	Command, Configuration and Data Collection Interface to the Subsystems			P			P	P		
23	5.2.2	<u>Hardware Interfaces with the Spacecraft</u>									
24	5.2.2.1	<u>Command, Telemetry and Data Bus (CTDB)</u>									
25	5.2.2.1.1	Command, Telemetry and Data Bus Protocol - SC	P								
26	5.2.2.1.2	Command Rates									
27	5.2.2.1.3	Data Format	P								
28	5.2.2.2	Discrete Signals from the SC to the LAT								P	



Items being ACTED on:

- **ISIS req doc being presented to CCB on Thursday**
- **New PMCS FSW schedule “ready” for CR**
 - **Will go over in some detail**
 - **Includes TRR for ISIS and FU**
 - **Includes FU peer review**
 - **Includes demos as milestones**
- **Needed resource spread sheet for FSW personnel**
- **Proposed daily(?) weekly(?) resource scheduling meeting**
- **Over view doc for demos showing mapping of functionality under development**
- **Suggestion that some of the demo activity be done by test team**



Additional Tasks in next 3 Months

Finish development of Internal LAT Software Communication Protocols

– task-to-task and CPU-to-CPU

- Finish development of all EM2 packages (& design of FU packages)
- Finish defining the housekeeping code payload
- Put more detail into monthly demos
- **ISIS** deliverables, schedule and formal testing