Last Month work

Demo layout for the rest of the year

QLR action items

Next 3 months

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Feb activities

• Continued work on debugging AEM, GEM, GASU, LCB and drivers
• Checked in version 1 of the Cmd and Telem database tool to CMX and released it to production
• Almost finished with CMX port to windozes
• Finished draft version of FES hardware manual
• Started work on EEPROM file system (TFFS from Windriver)
• Built a watchdog timer facility for all platforms along with test code.
• More work on EM2 peer review
• Worked on detailing the second monthly demo and lay out of the rest of the year
• Have good candidate for 2-nd SE
• Hired another tech writer for Huffer
Demo schedule (I)

- **Jan demo:**
  - 1553 communication
  - pbs Pkg
  - MSG pkg
  - Filter
  - CMS pkg

- **Feb demo:**
  - config/readout CAL
  - config/readout TRK
  - watchdog
  - latte
  - lttx

- **March demo:**
  - config gasu... GEM, AEM, EBM
  - single event display
  - generate Alert tlm packet
  - generate diagnostic TLM packet

- **April demo:**
  - BOOT commands (all)
  - boot telem (packets)
  - cPCI LCB initialization
  - discreet monitor control/reporting
Demo schedule (II)

• May demo:
  – receive / process SI attitude
  – receive / process SI ancillary
  – receive / process SI time tone
  – gen ARR test cmd
  – gen science data pkt test cmd
  – set discretes on test cmd

• June demo:
  – ISIS formal testing

• July demo:
  – thermal control cmd/TLM
  – deadtime monitoring
  – deadtime reporting

• August demo:
  – config proto tower / TEM
  – cmd config multi towers / TLM
  – filter data from proto-flight HW
  – all filter algorithms to meet data rate

• Sept demo:
  – boot EPU (with TLM and control)
  – code load to EPU
  – produce simulated TLM frame
  – respond to cmds / Mode control
Demo schedule (III)

- Oct demo:
  - perform all instrument calib with FES
  - perform filter diagnostics and report in TLM
  - OPS / high lvl cmds

- Nov demo:
  - 1553 cmd/TLM full test
  - multi tower full config
  - diagnostics
  - filter performance
  - code load / run

- Dec demo:
  - Flight unit BUILD (pre - FQT)

- Jan demo:
  - Flight unit BUILD (post - FQT)
QLR responses (I)

- requirements are at a high level
  - FSW SRS (and later the FSW Test Plan) being updated.
  - Additional Documentation Updates planned.
    - Ie. FSW Maintenance Plan
**taken from Feb 26th EM2 review**

- Complete FSW SRS reviews and re-baseline requirements via FSW CCB by end of March
- Update DOORS Traceability in response to SRS updates by April
- Update FSW Test Plan in response to SRS updates by April
- Detailed mapping of FSW requirements to monthly demos
  - Thru June by end of March
  - Thru F/U by April
- ISIS requirements and testing addressed in detail by ISIS Lead Eric Hansen at review
- Monitor changes via FSW CCB
**taken from Feb 26th EM2 review**

- FSW SRS is LAT-SS-00399
  - Version 02 is latest baselined version
  - Draft of Version 03 to incorporate IV&V, QLR inputs
    - In FSW team review
    - Will mandate updates to FSW Test Plan, DOORS Tracing
- Applicable SRS requirements will be included in the ISIS requirements document
- Lots of clarifications added for testability
  - Pointing to other docs for reference
  - Specifying values/parameters
  - Splitting requirements
- Additional derived requirements from lower-tier docs: Boot, Thermal, CMD/TLM
- Mode Control (transition to/from Repointed mode)
- Ongoing work to derive requirements to satisfy ACD/CAL/TKR needs in the areas of Housekeeping, Event Monitoring, Diagnostics, Calibration, and SAA Transit
QLR responses (II)

- limited schedule margin
  - Science Data rate increased by 4X to reduce filtering requirements
  - Work on a prioritized schedule progressing
- identify and agree on code metrics
  - Have agreement and will report at ISIS delivery
- Implement a more formal test process
  - Will implement for ISIS delivery as build up to flight unit
- Have all FPGA (and ASIC) designs Peer Reviewed by GSFC reviewers
  - GPO and SLAC have already coordinated some of these reviews, more scheduled.
- Implement a FSW CCB
  - Done
  - Membership includes key FSW management, systems engineering, project office, and test personnel
  - See “LAT FSW CCB Procedure” (LAT-MD-03082) for details

- more FSW schedule details are needed
  - Demos set for rest of the year with details developing
  - Committed to a detailed schedule to be completed during March
QLR responses (III)

- report software resources regularly
  - At Release milestones
- Identify reviews to be held during FSW development
  - EM2 review happening Feb 26
  - Others tbd  TRRs; ISIS ; FES ; FU
- GPO support should be enhanced
  - Done  (Mike DeKlotz and Erik Andrews full time)
- Test stand support
  - LAT Management working to ensure that primary responsibility with the test stands rests with I&T team. FSW to provide software builds and updates through coordinated channels to I&T for Test Stands.
- Software scalability
  - FES will be platform to demonstrate full simulation of 16 tower system
- FES definition
  - 2 new collaborators will spend full time on definition and implementation
- ISIS may only be good for interface check out
  - ISIS -is- for interface testing only
  - (Have dedicated new engineer for ISIS deliverables)
- Have software report independently of the hardware
  - SLAC and Project Office continuing to ensure this occurs.
Additional Tasks in next 3 Months

- Finish design Internal LAT Software Communication Protocols
  - Communication task-to-task and CPU-to-CPU
- Finish Implementation of Table driven cmd server
- Event server
- Development of all EM2 packages (these use EM1 packages)
- Evaluate the design and implementation of Software watchdog
- Pick back up the housekeeping code
- Articulate a detailed schedule during March
- Formal definitions for ISIS deliverables
- Formal definitions for demos through EM2 delivery