GLAST Lat Project Subsystem Managers Meeting, March 17, 2005

LAT System Engineering

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Topics

• Status
  – Perf and ops signoff status
  – Particle test status summary
  – Plans to get to full LAT level test definitions
  – Trigger tests

• Data Bases
Performance and Operations Test Plan
(LAT-MD-02730)

• Status
  – Out for signature
    • Have received significant comments from Eric Grove and Martin Nordby, those comments are being incorporated
  – Particle Test Status
    • The muon collection test case review and update is complete
    • The VDG tests were approved for the single tower
    • The Am241 test was approved for the single tower

• Future plans
  – Contains test definitions through two towers, could be used up through 16 towers without flight GASU, EPU, SIU or PDU.
    • Current testing uses subsystem scripts in series, I&T is evolving to parallel testing
  – Utilize FSW capabilities as the definition matures to define more efficient testing that matches in orbit operations
  – Refine testing based on experience gained on single and two tower tests
  – Rich Baun leading this effort
LAT Level Test – Strategy

- An initial set of LAT Level test cases based on Subsystem tests has been identified (ACD, CAL, FSW, PWR, and TKR)
  - Support needed from ELX to identify test cases to verify T&DF functionality
    - Current approach has the ETE Test Cases, but additional tests are needed
  - Support needed from all Subsystems, FSW, and I&T to convert test cases to LAT Level and to identify possible efficiencies through use of FSW

- Will utilize FSW capabilities to test the LAT like it is flown
  - Plan to use modified FSW tests to conduct many LAT Level tests
  - Support from FSW is needed to
    - Provide detailed info on FSW capabilities and their use
    - Work with I&T and SE to modify FSW scripts so they sell the necessary requirements and run at the LAT Level
    - Work with SE and Subsystems on FSW capabilities (e.g. Diagnostic and Charge Injection) to support test

- Refine testing based on experience gained during integration
  - Support needed from Subsystems and I&T to identify and apply lessons learned

- Utilize Working Groups to define test details and present at weekly Test Planning Meeting for review
Performance &Ops Test Plan – Schedule

• LAT Level Test Version
  – Finalize requirements and functionality to be verified 1 April 05
  – Identify FSW capabilities that will efficiently perform subsystem and LAT level test cases 15 April 05
  – Detailed CPT, LPT, and test sequence definition 29 April 05
  – Detailed test case definition 27 May 05
  – First Draft available for review 13 June 05
  – Initial release 15 July 05

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Trigger Tests

- Trigger tests defined so far focused on single tower testing, with a single additional test defined for multiple towers.
- Trigger group started meetings with JJ and Mike to review the existing tests and determine modifications for single tower, multiple tower and full LAT testing.
- Meeting on March 16 to identify a draft list of additional tests, and prioritize those to be developed for single and two tower use.
- Plan forward
  - Single and two tower test implementation to start immediately, with the focus on the two tower tests.
    - Mini-tower differences from flight tower complicate the development, trigger team requests time on the flight tower to complete the test development.
  - By end of March provide a plan for implementation of the remainder of the tests.
Data Bases

• Issue:
  – Setting up for Tower A test highlighted the need for a coherent plan to capture and configuration manage:
    • Instrument setup data (hardware and software configuration)
    • Calibration data used to interpret the event data
    • Engineering telemetry coefficients
  – Parts of this information are in scattered data sets held by different organizations
• Plan Forward:
  – The approach must be a coordinated effort that includes:
    • SE
    • Subsystems
    • I&T
    • Off-line
    • ISOC
    • FSW
• Rob and I will set up a working group to address the issue and formulate a plan
  – Systems to drive the process initially to gather the list of data sets involved and high level flows
  – ISOC to provide the data base expertise to formulate the solution