GLAST Large Area Telescope

Gamma-ray Large Area Space Telescope

Instrument Flight Software

LAT F2F
Nov 16, 2005
FSW & Dataflow Responsibilities

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Virtual Spacecraft</th>
<th>Ground (I&amp;T or ISOC)</th>
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<tbody>
<tr>
<td>EPU</td>
<td>SIU</td>
<td>Ground Computers</td>
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<td>Commanding</td>
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<td>Diagnostics</td>
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<td>GASU</td>
<td>VSC Crate</td>
<td>e-net</td>
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<td></td>
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<td>VPI Interface</td>
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<td>Instrument</td>
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<td>CCSDS Dump</td>
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From FSW: Everything (including science data encoders)  
LCI/Science data decoder plug-ins  
Command & Telemetry Database

From VSC:  
Everything  Everything FSW

From I&T:  
Everything FSW
FSW Support to System Test Flow

FSW Dev.
- R 5.1
- 10/21
- Decode Fmt/Critical Jira
- Fmt
- 11/4
- Critical Jira's
- 11/14
- Testbed Version
- 11/17
- Final Dev/Critical Jira's
- R 5.2
- 11/23
- FQT
- R 5.x's
- R 6.0
- 12/9
- Script Update
- TRR
- 12/14
- FQT
- R 6.0
- 12/20

VSC/Power
- VPI Dev/Spec
- 11/2
- Script Dry Runs
- 11/9
- 11/16
- Bld 33 Rack
- 11/21
- 11/23?
- R 5.2
- 11/30

FSW Test
- 11/14
- FQT
- 11/23
- R 5.x's

LAT I&T
- Script Dev.
- Initial Scripts
- Script Dev/Update
- LICOS /Script Dev.
- 11/16
FSW Status

• Release 5.1 Complete
  – Multiple Hours of System Runs – debugging data flow
  – FSW Contribution to VPI Complete
  – Test Script Development/Closure pending VPI closure – see Mike H.

• Release 5.2 Target for Phase 1 FQT
  – Paced by a science fmt/LPA bug -> Sergio/JJ
  – Need Complete VPI/Science Interface commissioned in test bed – See Mike H.
  – FQT ECD 23 Nov   -----------→ New ECD 30 Nov

• Release 6.0 Target For Formal FQT
  – Incorporate Lessons Learned
  – Deferred Major Jira Items
  – Initial Filters and data compression
  – FQT ECD 20 Dec
Critical Development Issues Summary

- Troubleshooting event processing overwrite bug (FSW-353 & 344)
- Backtrack CDM database to unique key (FSW-316)
- Decode functions for LCI data (FSW-277)
# Open Critical & Blocker Issues

<table>
<thead>
<tr>
<th>Key</th>
<th>Components</th>
<th>Summary</th>
<th>Assignee</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>FSW-353</td>
<td>LSE</td>
<td>LPA Needs Context</td>
<td>Sergio</td>
<td>LPA needs to record LATC file IDs in the datagrams. Additionally, time of last LATC verification should be included.</td>
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<td></td>
<td>LSF</td>
<td>Information Included in Datagrams</td>
<td>Maldonado</td>
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<td>QSEC</td>
<td>LPA needs to record LATC file IDs in the datagrams.</td>
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<td></td>
<td>LSEC</td>
<td>Science Datagram</td>
<td>James J</td>
<td>The proposed VSC interface requires an enhancement to the LSF datagram schema. In order to hide unnecessary details, the standard datagram header needs an option to accommodate a root contribution. In terms of programming, this only adds 1 option bit and a 32-bit length word to the LSF datagram header and a small amount of code in LSE to use this feature. The current toy decoders, which to this point have been advertised as prototypes, should only have to be rebuilt (i.e. no new</td>
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<td>QSEP</td>
<td>Schema needs to be enhanced to support the proposed VSC interface</td>
<td>Russell</td>
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<td>LSEP</td>
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<td>FSW-344</td>
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<td>FSW-316</td>
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<td>SIB</td>
<td>Package CDM should provide a method to backtrack a CDM database to the unique key of the database file</td>
<td>A.P.Waite</td>
<td>To ensure uniquely identified databases, CDM needs to provide a method to backtrack from the database handle to the file key of the file containing the database. This turns out to be tricky, because CDM is a very low level package and cannot call FILE facilities without making the package use tree go circular. As a stop gap measure, the development version of CDM provides this kind of functionality (an entry point called CDM_getKey()), but there is currently nothing behind the implementation. This could be released into production so that JJ et al.</td>
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<td>FSW-277</td>
<td>QSEC</td>
<td>Write decode functions for the encoded LCI data</td>
<td>James</td>
<td>The QSEC package will contain the public interface between FSW and our clients for calibration event and context data. It will also provide functions to unpack the calibration datagrams. The development process for these functions will involve JJ and me agreeing on the &quot;natural&quot; event format.</td>
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Test Summary

• Script status
  – 22 of 46 scripts run to successful completion
  – Completion of 17 of 46 scripts awaiting finalization of science data format
  – Remaining 7 scripts in process or awaiting other development liens
• Formal dry runs with SQA have begun (4 completed)
• Dataflow lab priority now shifted from core development to testing & fixes
• Test schedule
  – 11/9 Science data format related VSC capability complete
  – 11/17 Receive R5.2 as test object
  – 11/28->30 FSW System Checkout FQT
JIRA Metrics

JIRA Metrics as of 15 November 2005

JIRA Metrics as of 31 October 2005

Closed
Open

May-05 Jun-05 Jul-05 Aug-05 Sep-05 Oct-05