GLAST Large Area Telescope: I&T Integration Readiness Review

Online Peer Review
July 21, 2004

Overview

Ric Claus
Online Manager
SLAC

Outline of talks

Introduction – 5 min (Elliott)

Overview – 10 min (Ric), 5 min discussion

1. Outline of talks
2. Department work chart
3. Scope
4. Documents

Core I – 15 min (Selim), 5 min discussion

1. Test Executive Architecture
2. Software Distribution

Core II – 15 min (Jim), 5 min discussion

1. Data handling, products and parsing
2. Issue tracking
3. Trigger

GUIs – 15 min (Alicia), 5 min discussion

1. Run Control
2. Single Event Display
3. E-logbook

Scripts – 15 min (Lester), 5 min discussion

1. Subsystem scripts
2. System scripts
3. EM-2 lessons learned
4. Visualization tool

Road map – 15 min (Ric), 5 min discussion

1. Health monitoring
2. Powering sequence
3. Validation & verification

Summary – 5 min (Ric), 5 min discussion

1. Conclusions and Concerns

Department Work Chart

Online (SLAC)
Ric Claus, Manager

- **Selim Tuvi** — Programmer
- **Alicia Kavelaars** — Graduate student (Aero/Astro)
- **Jim Panetta** — Engineering Physicist
- **Lester Miller** — Experimental Physicist

Key Subsystem Contacts

ACD (GSFC)
- Sharon Orsborne
- Karen Calvert
- Greg Greer
- Cameron Jerry
- Adrienne Beamer
- George Moore

TKR (UCSC, Pisa, SLAC)
- Luca Latronico
- Luca Baldini
- Carmello Sgro
- Marcus Ziegler
- Hiro Tajima
- Johann Cohen-Tenugi

CAL (NRL)
- Byron Leas

ELX (SLAC)
- Mike Huffer
- Jana Thayer, ELX Testing Manager
- Gregg Thayer
- Amedeo Perazzo
- Philip Hart

FSW (SLAC)
- JJ Russell
- Tony Waite
- James Swain

I&T (SLAC)
- Eduardo do Couto e Silva
- Larry Wai
- Brian Horwitz
- John Canfield
- Gary Godfrey

SAS (SLAC)
- Richard Dubois
- Heather Kelly

ISOC (SLAC)
- Steve Culp
- Lori Bator

Scope of presentations

- **LATTE – LAT Test Executive**
- **LDF – LAT Data Format**
- **Preparations for testing flight parts**
- **Readiness for two flight tower integration into grid**

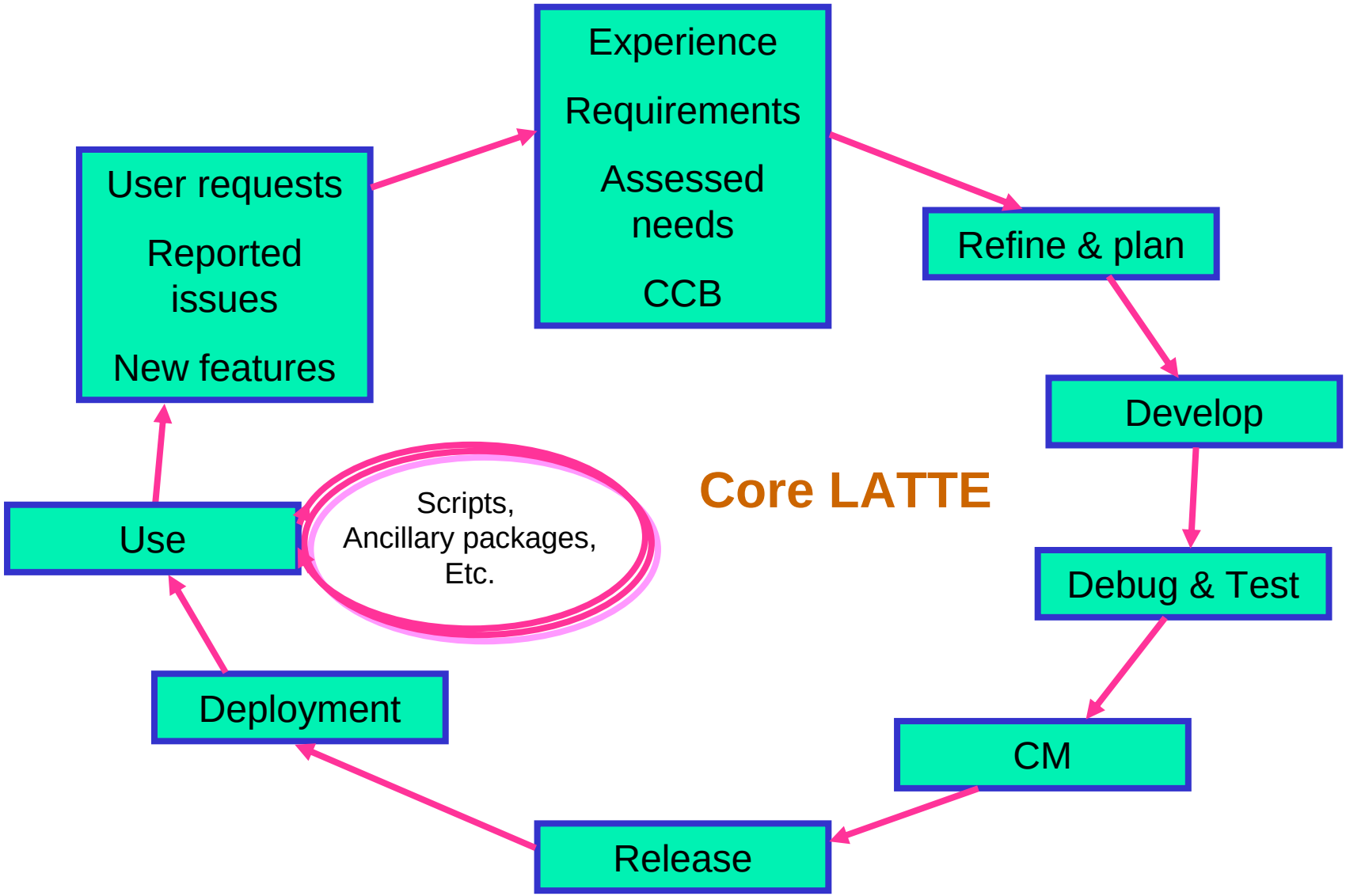
Documentation list (1)

- LAT-TD-00861 Test-stand architecture redux
- LAT-SS-00461 LAT TEM-GASU to CPU Data Formats
- LAT-TD-00606 LAT Inter-module Communications
- LAT-TD-00860 The LAT Communications Board (LCB)
- LAT-TD-00639 ACD Electronics Module (AEM)
- LAT-TD-00605 The Tower Electronics Module (TEM)
- LAT-TD-01545 The GLT Electronics Module (GEM)
- LAT-TD-01547 The Command/Response Unit (CRU)
- LAT-TD-01546 The Event Builder Module (EBM)
- LAT-TD-01543 The Power Distribution Unit (PDU)
- LAT-TD-xxx GASU Based Teststands and the ACD
- LAT-TD-03664 GASU Based Teststands
- LAT-MD-03489 E2E Committee Final Report
- LAT-MD-03492 LAT I&T Configuration Management/Change Control Requirements
- ACD Test-stand architecture
- ACD Software Scalers
- HippoDraw
- HippoDraw Python Interface API
- FSW Releases and User's Guide
- LAT FSW API doxygen documentation
- VxWorks manuals

Documentation list (2)

- LAT-SS-00586 Subsystem Interface Control Document
- Online System User's Guide
- Test-stand initial setup instructions
- LATTE API doxygen documentation
- LDF (LAT Data Format) API doxygen documentation
- Quick Run-Control Guide
- E-logbook tutorial
- LAT-TD-02834 I&T Testing Requirements
- LAT-TD-03075 Online Roadmap to July 2004
- LATTE FAQ - Frequently Asked Questions

Development cycle



Moving towards IRR

- **Some 40 LATTE installations operating at 4 sites**
  - **Single contributor (TEM, AEM) test stand**
  - **Multi-tower test bed**
  - **With and without detectors, e.g. mini-tower, full tower**
  - **Stand-alone (no hardware)**

- **LATTE is Platform independent**
  - **More or less inherent – no particular effort applied**
  - **Regular running on both Windows and Linux**
  - **LAT & subsystem I&T are Windows-centric**
    - ➢ **Most tested platform**

Hardware & Software Commissioning vs. I&T Testing

- **Commissioning phase**
  - **Verifies that hardware and/or software work as expected**
  - **Requires flexibility to demonstrate that modules work. Testing a particular hardware instance is not the goal.**

- **I&T Testing phase**
  - **Concerned with particular component instances**
  - **Components are tracked by serial number**
  - **Must cope with per-instance configurations**
  - **Configuration management and control is required**

- **LATTE needs to support both environments**