GLAST
Large Area Telescope

Script Status

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Scripts

• What’s been done so far
• Getting to basic functionality: LCI and Cosmics
• Work needed to get to full functionality
Script perspective

GLAST LAT Project

Analysis Script

Run ID, data products

Configuration

EGU conversion

Cmd Data

Tlm Data

Analysis Engine

Decompress

LDF

Cmd

LAT Diag

S/C Diag

LAT Tlm

S/C Tlm

Science Tlm

Archives

XML: LATc, LCI, etc Acquisition context info

VSC

TLM DB

Clients

Script Engine

CVT

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So there are two parts:

• **Analysis script:**
  – Migrated version of current scripts
  – Run in modes: acquisition or analysis

• **Commanding scripts:**
  – Responsible for preparing sequence of commands which represent a run
  – Probably only one instance of this script, will get its information from the output of acquisition mode analysis script
Analysis Script: intelligent design

Delivered Script

Parallelized

LICOS

Acquire

Analyse

Acquire

Analyse

Of course, there are many in between steps (punctuated equilibrium…)

Online – Managers Face to Face – 11 October, 2005
Schematic of scripts in action

- LICOS
- Acquire
- Analyse

LATc XML
LCI XML
Context

LDF Context

Results

Ancillary files
Schemas

CVS

Commanding

LICOS

??
Current status: Commanding scripts

- Commanding scripts:
  - Vaporware: still waiting for details from FSW
  - Probably a simple object (no brains):
    - Ask user what to run (from set of prepared acquisition runs in configuration control)
    - Read acquisition inputs (xml, context, …), convert them to appropriate form (LATc binary, …)
    - Deal with MOOD
    - Prepare appropriate command sequence: file uploads, LATc, LCI, physics set up, etc.
    - Create entry in run database
  - Will probably iteratively bring in complexity:
    - First iteration just convert, upload, run, create (emend, actually) context file and entry in run database
    - Later bring in MOOD capabilities, command optimization
Current Status: Analysis scripts

- **LCI scripts:**
  - Can run analysis on LDF without use of LATTE
    - Still waiting for science data interface
    - Same code can be run in LATTE4: one goal for maintenance is to keep one version of each algorithm
  - Can create LCI and LATc xml
    - Script is run in different mode
    - Used to create configuration controlled run definitions
    - (actually it is run in a simulator in LATTE 4)
  - Algorithms are still being optimized for LCI

- **Physics scripts:**
  - Plan to use end2end script:
    - Use “csv” spreadsheet framework for configuration
    - Plan to use simple transport error analysis standard in LATTE 4 scripts at analysis stage
  - Still waiting for FSW before proceeding
So still to do: basic

- **Write commanding script**
- **Finish analysis context:**
  - Baseline is up and working modulo LICOS science data interface (and ACD scripts)
    - “Analysis Engine” is just a standalone script runner
  - Interface to HSK database (currently scripts use acquisition command/response for temp/volt and stash in context file)
- **Finish acquisition context:**
  - This is essentially ready for LCI
  - Physics acquisition configuration easy to implement but not done
Still to do: further on

• Commanding:
  – Not much to say beyond previous slide
  – Command optimization

• Analysis:
  – Still use current framework for LATc xml creation:
    • Ancillary files for thresholds, calibrated quantities
    • Schemas for serial numbers
  – Commanding inputs are identified by algorithm and sequence number (actually loop parameters)
    • No way to identify overlap between LCI configurations
    • Still unclear how explicit xml under configuration control migrates to more dynamic way of creating configurations
    • Eventually want MOOD to be given parameters?
Still to do (2)

• **Analysis:**
  – ACD scripts need catching up
    • Have been rewritten to use LATTE facilities (rather than custom facilities)
    • Need to be split into acquire and analysis
    • Need to be mapped into LCI capability
      – ASC contribution capability
      – Trigger configurations more complex

• **Need to define inputs to pipeline**
  – Do we give the pipeline analysis outputs?
  – E.g. What do we do with online calibration results?
And in conclusion…

• **Schedule:**
  – Driven by availability of information ("Is the hole round or square?")
  – Thanks to compatibility with LATTE 4, the analysis work is essentially ready
  – Probably a week of work to:
    • Create initial commanding script
    • Move to FSW science interface
    • Use HSK instead of acquisition context as needed
    • Prepare initial physics run acquisition and analysis

• **Questions:**
  – What to do about configuration
    • The current scheme still uses LATTE 4’s configuration scheme for creating MOOT inputs.
    • When will physics configurations get defined?
      – What is the successor to the end2end csv file for their definition?