# ISOC software summary

## Contents

## Some useful Confluence pages

- FASTCopy processing chain
- Mission Planning
- How to create a new platform for AFS
- ISOC RPM Reference documentation
- ISOC Software Documentation
- FlightOps cron and trscron jobs
- ISOC primary server host setup at SLAC
- How to check up on the u23 backups

## Division of function

The ISOC software handles the following tasks:

- FASTCopy automation
  - Incoming and outgoing packages
  - Submission of halfpipe jobs
  - Command reconciliation
  - Gap finding and DTR transmission
- Raw data storage
  - Raw data and FASTCopy package archive
  - Backup of the above to tape via
    - Level0Xrootd pipeline job'
    - astore (Fermi disk archiver)
- Real-time monitoring and event logging
  - Redaction at MOC and FSSC
  - Reception of real-time stream from MOC
  - Distribution of RT stream to various places
    - Event log
    - RT web apps
- Mission planning and viewing
- Telemetry trending
- Oracle database front end
- LAT simulation and testing famework

## Repositories

### Subversion

/nfs/slac/g/glast/online/svnroot

- ISOC
  - Raw data handling
  - Real-time tools
  - Redactor
  - Paging and logging
  - FASTCopy automation
  - Mission planning
  - Report generation
- ISOC_ETC
  - Configuration files

- - Desktop files
  - LICOS
    - LAT simulation and testing library
  - LICOS_ETC
    - Configuration files
  - LICOS_Scripts
    - Top-level I&T testing framework
  - distro
    - ISOC release prep tools
    - Crontab entries and cron scripts
    - ISOC RT daemons
    - T&C DB maintenance
    - FASTCopy itself
  - maint
    - Copies of
      - ISOC AFS admin area
      - ISOC Oracle admin (wallet, tnsnames.ora, etc.)
  - quarks
    - Small building blocks (utility library)
    - Python time and leap second handling
    - Master leap-second table
  - ConfigSystem
  - LDF
    - LAT Data Format
  - LSF
    - LAT Science format, extension of LDF

## Offline software

/nfs/slac/g/glast/ground/cvs

CHS package

- Halfpipe scripts, config and xml
- Event handling (EPU merge, event extraction)
- Duplicate of raw archive ISOC lib

GPLtools in offline CVS

- PipelineNetlogger and PipelineNetloggerConfig
  - Let the halfpipe and L1 post to the ISOC event log.

## Web applications

/nfs/slac/g/glast/ground/javacvs

Applications:

- FASTCopy viewer (FCWebView)
- Trending
- LogWatcher (ISOC event log)
- Mission Planning Viewer
- Web telemetry table GUI (also has command-line version in ISOC SVN)
- Web raw telemetry display (also has command-line version in ISOC SVN)

# Data/admin files and databases

## AFS administration area

Rooted at /afs/slac/g/glast/isoc/flightOps

- ISOC software releases
- ISOC environment setup scripts
- Overrides of LAT operations limit tests
  - For example, limits on SSR utilization fraction
- Event logging filter configuration (filter out debug messages)

- Oracle database admin files
    - Wallet (password store)
    - tnsnames.ora (service nicknames)
    - sqlnet.ora (gives wallet location)

## Raw data archive

Rooted at /nfs/farm/g/glast/u23/ISOC-flight/Archive/level0. The location is stored in the so-called sitedep files in the ISOC_ETC package.

Data is stored in UTC time hierarchy according to CCSDS packet timestamp: year, month, day, hour.

Each actual file contains data for a single APID.

Only the last 60 days of data are stored. After that it goes to a live backup on xroot.

## FASTCopy package archive

Rooted at /nfs/farm/g/glast/u23/ISOC-flight/Archive/fcopy. The location is stored in the so-called sitedep files in the ISOC_ETC package.

Data is stored in UTC time hierarchy according to time to reception or transmission.

Full data is kept for 24 hours, then the larger files such as L1 data or L0 science are erased after backup to tape. Generally the smaller files such as outgoing mission planning and DTR are kept.

## Oracle database (isocflight)

This is where we keep the:

- Raw data package table of contents by package, ICD file, datagram and CCSDS packet.
- Mission planning tables.
- ISOC event log.
- Trending tables.
- Data processing status.