Short term activities for the standard analysis environment

July 15-September 15, 2002

Databases and related utilities (DB)

Event summary access

D1 Event summary (gamma rays and all events)

U1 Event data extractor

U9 [to be defined] Subselections on already-extracted event data

Pointing information

D2 Pointing/livetime/mode history

U2 Pointing/livetime/mode extractor

Other databases and access

D4 Other high-level (GRB, transient summaries)

U5 Catalog access tool

Short term activities

1. Refine requirements definitions for the components listed above.

2. Evaluate candidate implementations for the Level 1 (Event summary) database D1. Criteria for selection include performance (broadly defined to mean ingest speed, indexing speed, if relevant, and search speeds for relevant of kinds of searches), data management, maintainability, mirrorability, risks

3. Compose a document about what and when data are shared among the LAT team, SSC, and mirror sites. The content will eventually be parcelled out to the various IRDs, but in the meantime, it will assemble the big picture in one place.

4. Evaluate needs for the full Level 1 database (summary triggers for all events, primarily useful for inflight calibration monitoring), and a Level 0.5 database (for archiving/distribution).

Analysis tools (AT)

Likelihood analysis

A1 Likelihood analysis

D6 CALDB for IRFs

U3 Exposure calculator

U7 Source model definition

Pulsar analysis

D5 Pulsar ephemerides (need a corresponding Utility?)

A3 Phase assignment

A4 Pulsar profiles, periodicity tests

A5 Period search

GRBs

A6 Spectral-temporal analysis

A7 Physical modelling

Catalog analysis

A2 Source identification

D3 Point source catalog

U5 Catalog access (at least for D3)

A8 Interstellar emission model

Short term activities

1. Refine requirements definitions for the components listed above. Identify editors for any areas presently lacking one. For GRB (and potentially other analysis tools) the requirements definition process may result in the redefinition of tools in terms of multiple components.

2. Evaluate Gaudi and HEAdas for potential application to the analysis tools.

3. Begin to evaluate open issues for implementation for the core analysis tools and those related to observation simulation. Basic open issues include the definition of exposure, the reference frame for likelihood analysis, and source model definition. Results of studies of open issues, like trade studies, must be documented.

4. Consider the proposed definition of a tool for interactively applying cuts to already-selected data (U9)

5. Implement a prototype CALDB representation of LAT response functions

Observation simulation (OS)

O1 Livetime/pointing simulator

O2 High-level observation simulator (which will contain modules for the various source classes)

Short term activities

1. Refine requirements definitions for the components listed above. In particular, define and document an interface for external (i.e., contributed) models.

2. Develop prototypes of both O1 and O2. They do not need to be fully featured, but will be useful for prototyping the analysis tools.

User interface (UI)

UI1 Event Display

UI2 Image/Plot Display

UI3 Map Generator

UI4 User Support

UI5 Framework and Interfaces

UI6 Command Line Interface and Scripting

UI7 GUI Interface and Web Access

Short term activities

1. Refine requirements definitions for the components listed above.

2. For the programming infrastructure items, like constructing a class diagram in UI5, begin work on defining the lowest-level classes (those common to many tools).

3. For the components to be selected (rather than developed specifically for the LAT), research the available options and identify candidates.

Management

Short term activities

1. Develop the long-term schedule, at least a good first-order guess. Demonstrate that required resources (FTEs) can be met within the collaboration/SSC.

2. Define the testing and acceptance requirements for the software (test programs, code reviews, etc.).

3. Define the coding conventions and the requirements for documentation of the code.

[Who oversees the generation of use cases? Presumably we want a complete set in time for the review, or some other way to justify that we've scoped out the standard analysis environment.]