LHCb Offline Application Framework

Status
13 October 1998
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Project Goals (reminder)

- Development of an O-O framework for the LHCb data processing applications (simulation, reconstruction, analysis). Completed by 2000.
- Periodic releases with added functionality.
- Release 1.0 at the end of this year. The functionality:
  - Definition of input/output data. Job parameters.
  - Loop over events. For each event, access MC data truth from ZEBRA files produced by SICB.
  - Provide placeholders for analysis user code.
  - Output results in form of histograms and/or ntuples.
Progress from last week

- Main activity: Architecture design.
- No change on the overall architecture since last week.
- Studied in more detail the *Transient Event Store*.
- Compiling list of scenarios.
Current Architecture
Transient Event Store

- **Persistency Service**:
  - `Fetch()`
  - `Store()`

- **Event Data Service**:
  - `Find("EcalDigits", 4)`
  - `Register("key", #)`

- **Algorithm**:
  - Direct reference

- **Transient Event Store**
  - Creates

### Example Code

```plaintext
Persistency Service

Event Data Service

Algorithm
```

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Transient Event Model

- Strong aggregation tree structure. Many levels.
- EvtObject can only belong to one container.
- EvtObject may have relationships (links) with other EvtObjects.
## Work distribution

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Architecture Review

- **Benefits**
  - Forced preparation for the review. Documentation.
  - Early detection of problems with the existing architecture
  - Validation of the requirements
  - Improvement in Architectures in the Organization

- **Cost**
  - 15-20 staff days.

- **When**
  - The week before the LHCb week in December.
Architecture Review

◆ Activities
  – Description of the candidate architecture
  – Scenario-based techniques to analyze the architecture
  – Overall evaluation

◆ Review team
  – Experience with software architectures
  – Domain experts
  – From other LHC experiments
Project tracking

- Progress can be followed in Web page

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