LHCb Offline Application Framework

Status

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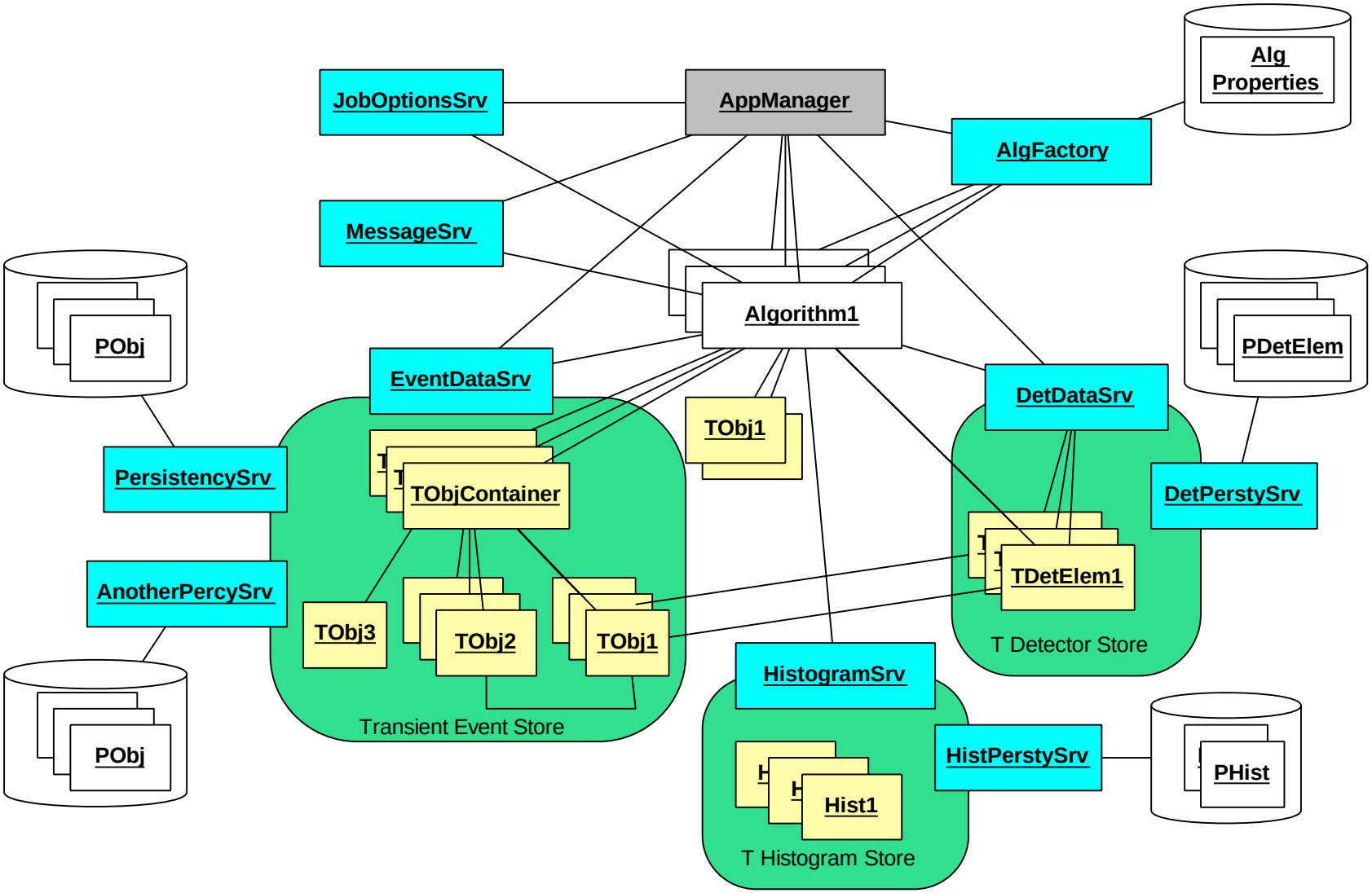
Project Goals (reminder)

- 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 for 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.

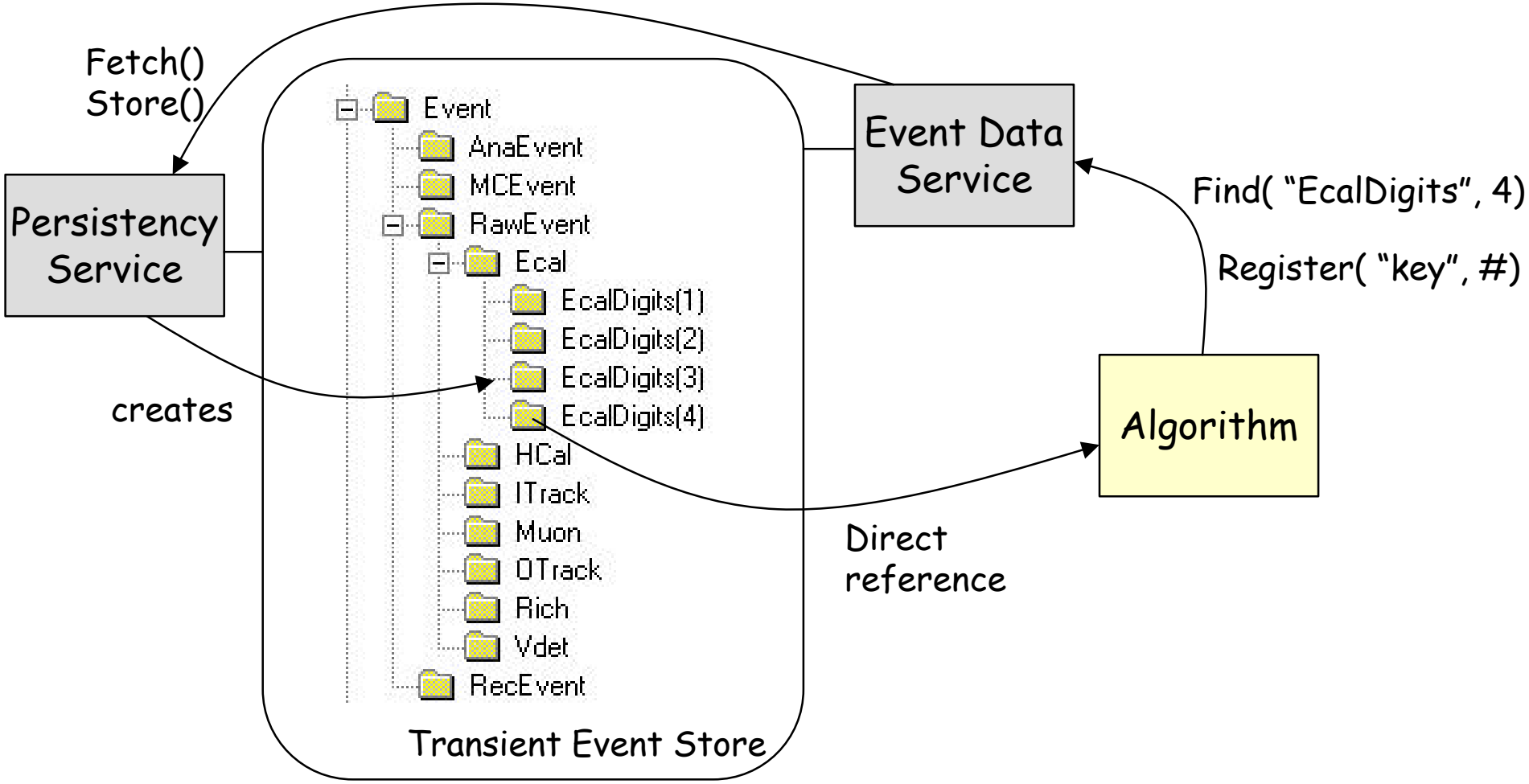
Progress from last week

- 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.
- Work distribution in view of producing the Architecture Design Document (ADD).

Current Architecture

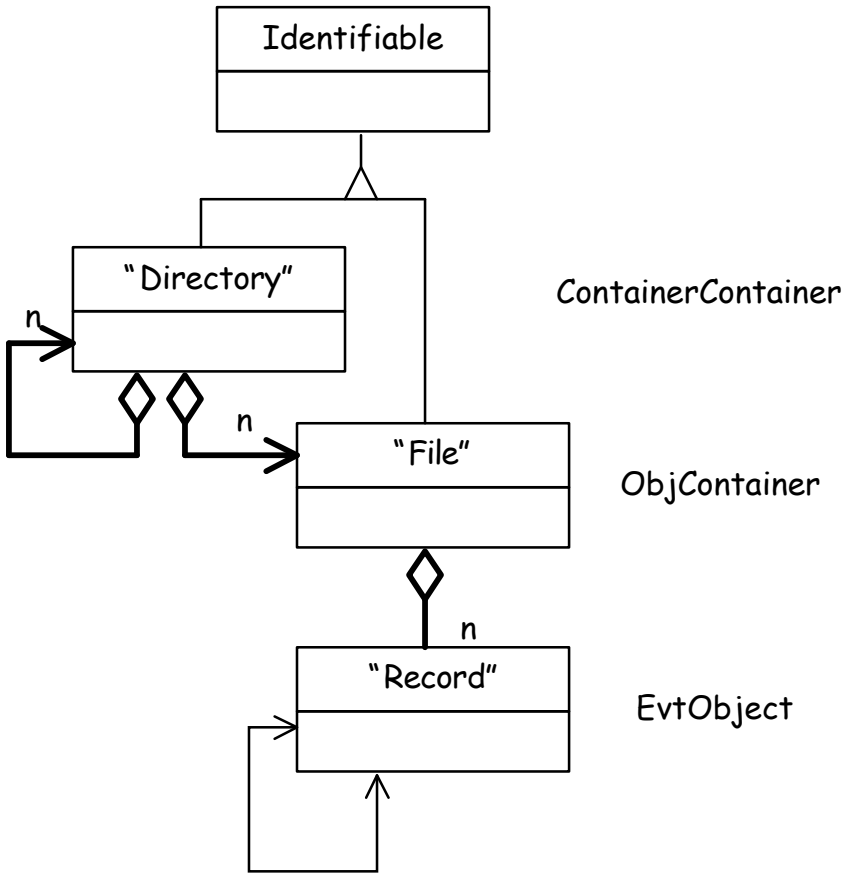


Transient Event Store



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

Domain	Components	Who	Deliverables
Data processing	Application Manager	PM	description, diagrams
	Algorithm Interface	PMy	description, diagrams
	Job Options Service	MC	
Event data model	Event Data Service	PMy	
	Transient Event Store	MF	
	Event Persistency Service	MF	
	Transient Event Model	PB	
Detector data model	Detector Data Service		
	Transient Detector Store		
	Detector Persistency Service	MF	
	Detector Data Model		
Histogram model	Histogram Service	IL	
	Transient Histogram Model	IL	
	Histogram Persistency Service	MF	
Visualization	Visualization components	JH, IL	
	Graphical Representation Service		
User Interface	Interactive User Interface		
	Message Service		
Networking	Distributed Object Management		
	System kernel	IL	

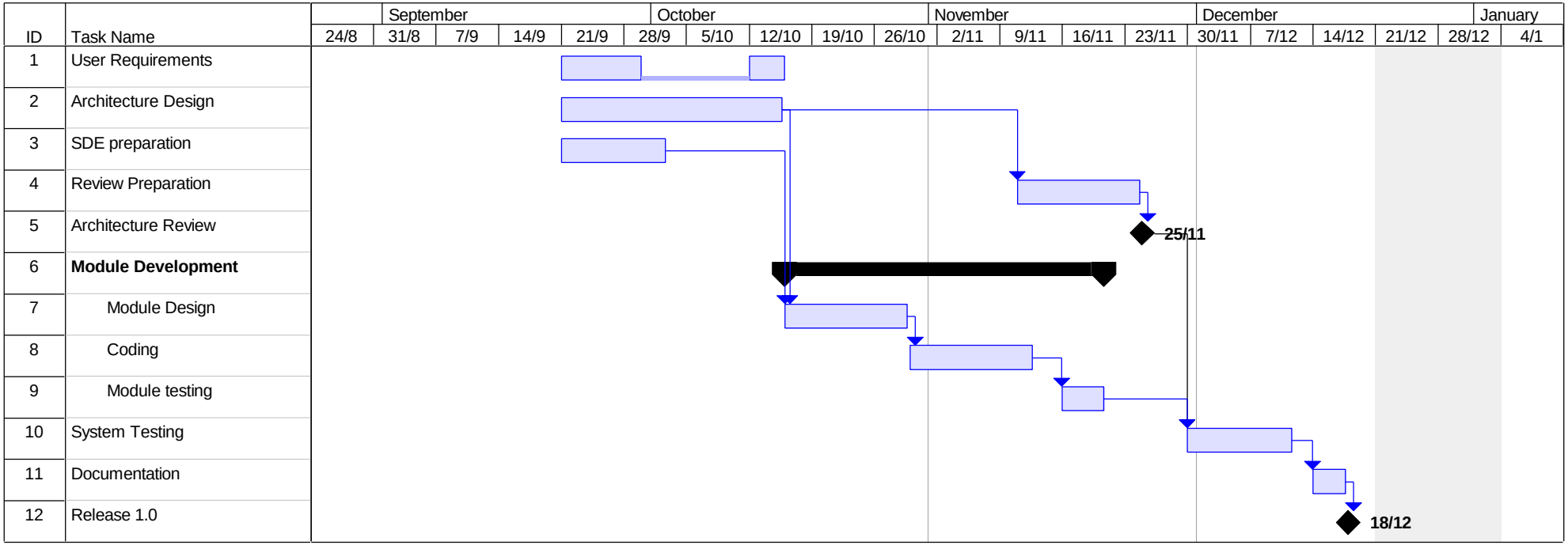
Architecture Review

- 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
  - http://lhcb.cern.ch/computing/offline/html/TNS_Scrapboard.htm