LHCb Offline Application Framework

Status

20 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 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.

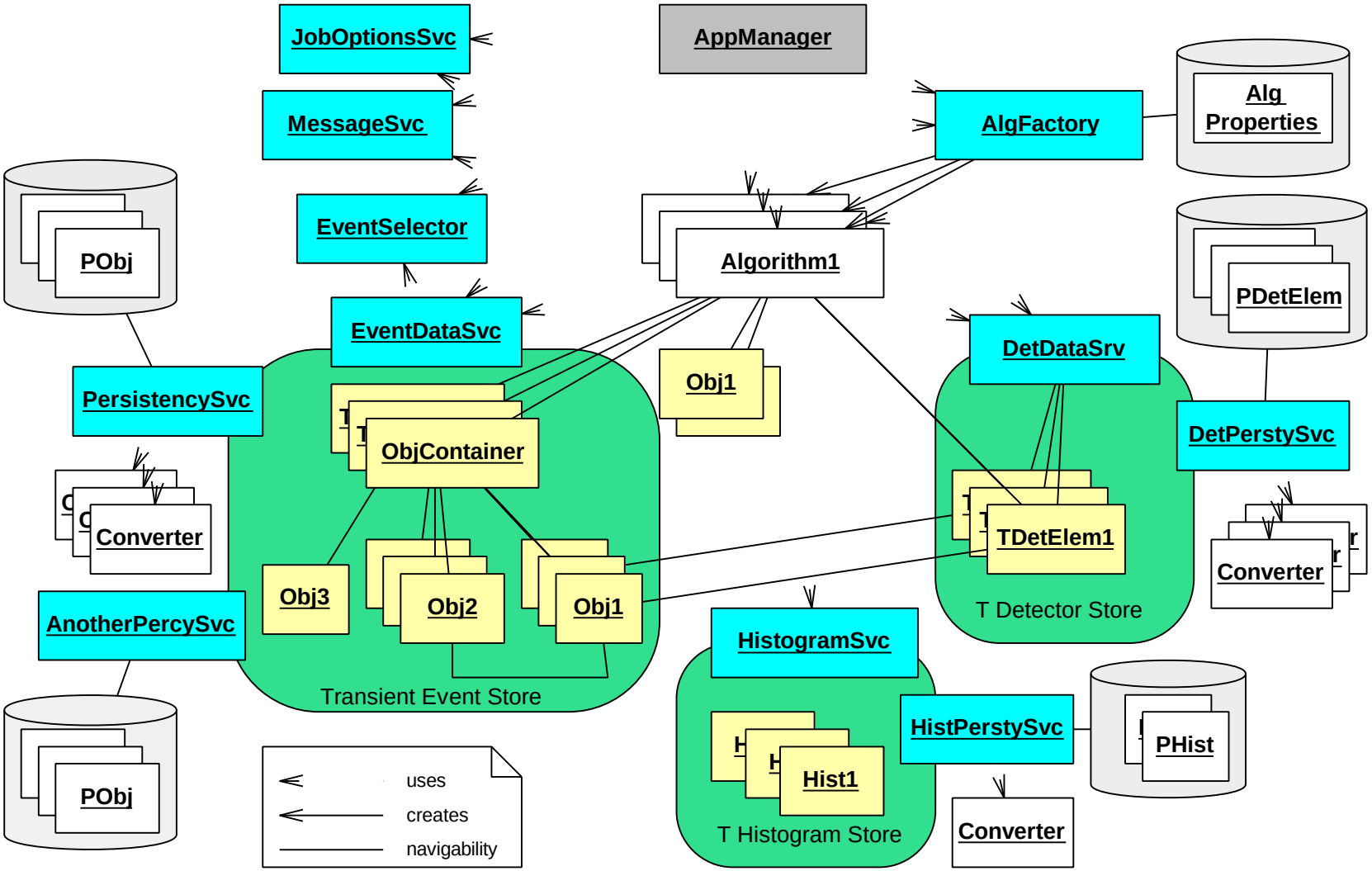
Progress from last week

- Main activity: Architecture design.
- Visit to LAL (Orsay)
- Some changes on the overall architecture since last week.
- Studied in more detail:
  - Detector description
  - Visualization aspects
- Compiling the list of scenarios.
- Some progress in the description of the components. Input to the Architecture Design Document (ADD).

Visit to LAL (Orsay)

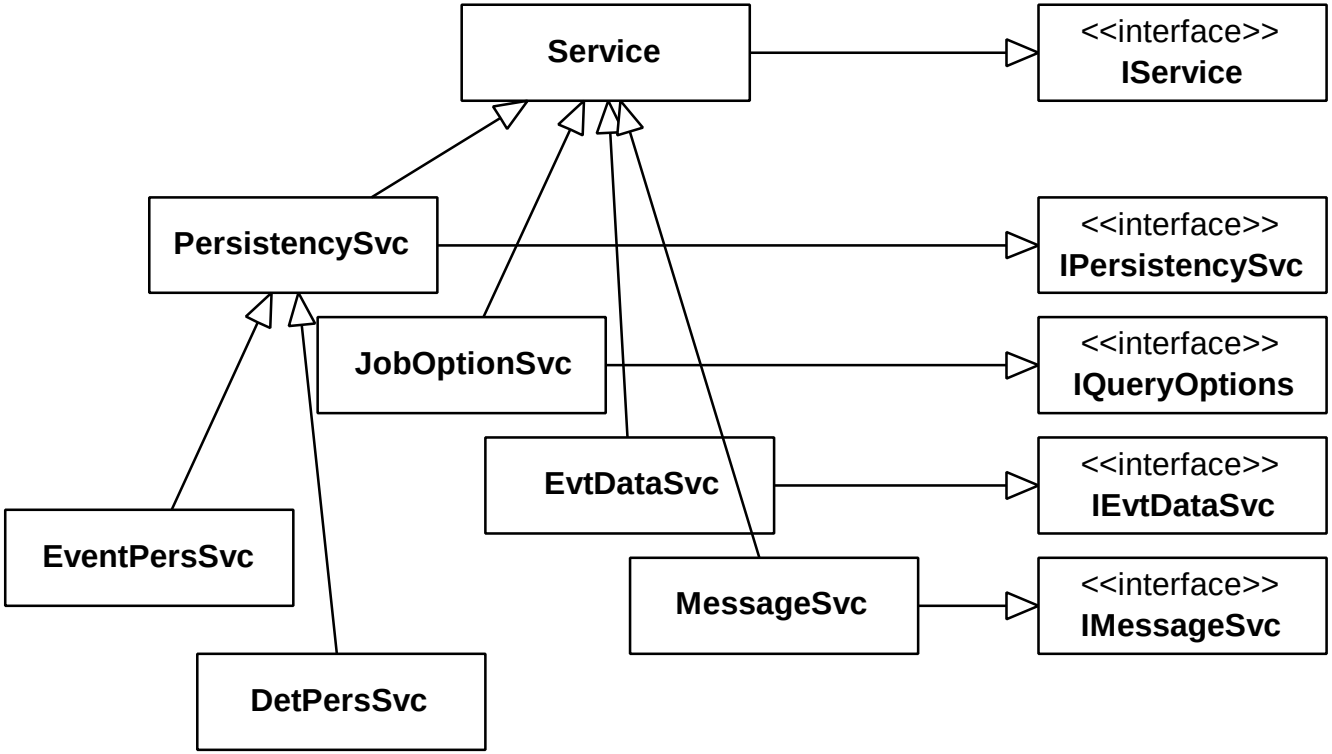
- Confront our current architecture ideas to experts.
  - Positive reassurance.
  - Suggestions of presentation (scenario diagrams, semantic of lines in graph, ...)
  - Other suggestions: time-evolution relationship (from new to old).
- Detector description
  - Transient model to many specific models (see later)
  - Importance of “Identifiers”. There is the need to have references to detector elements from event store or detector description.
- Visualization
  - Graphical converters and “selectors” (see later)

This week Architecture

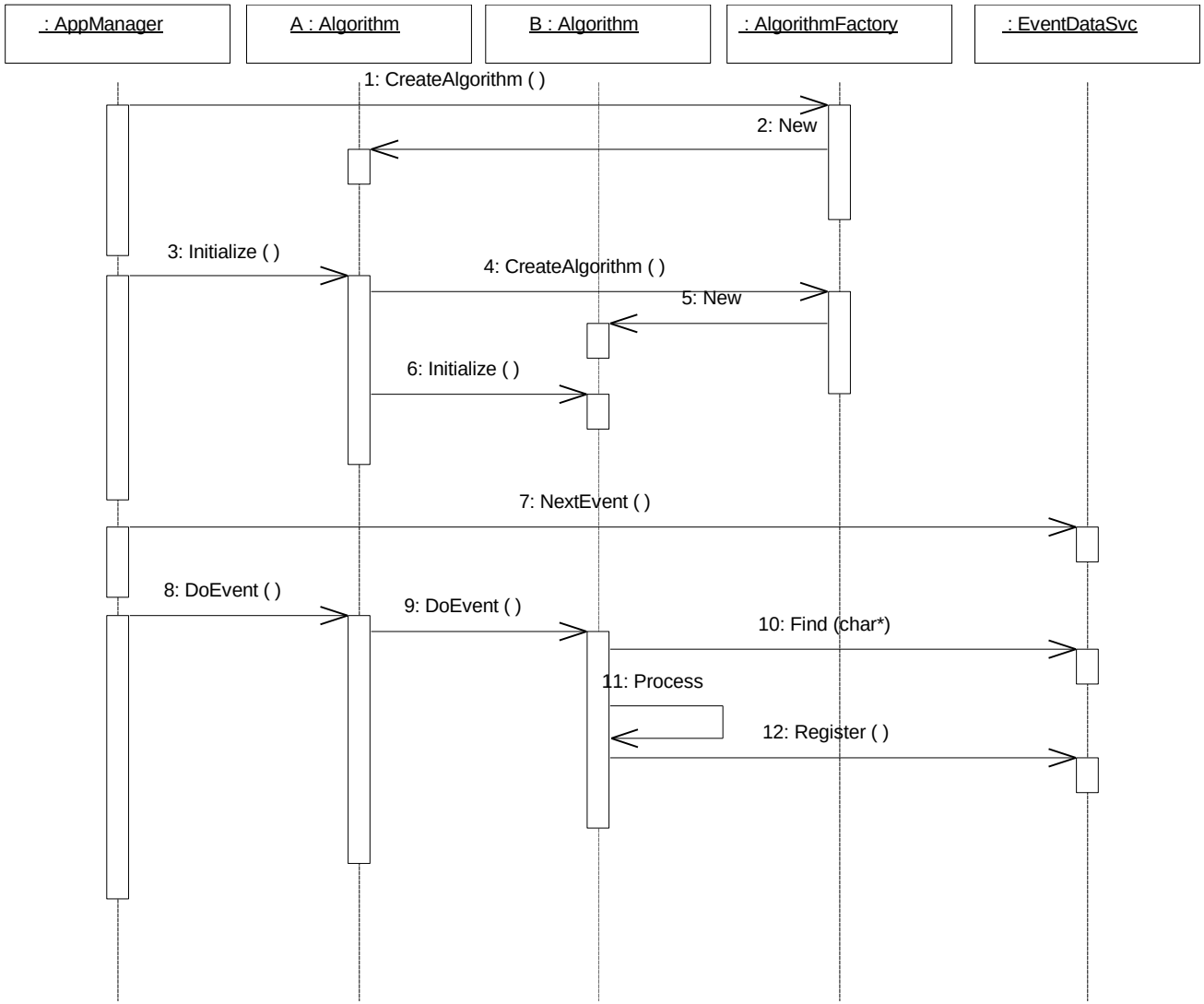


Architecture (class diagrams)

Services

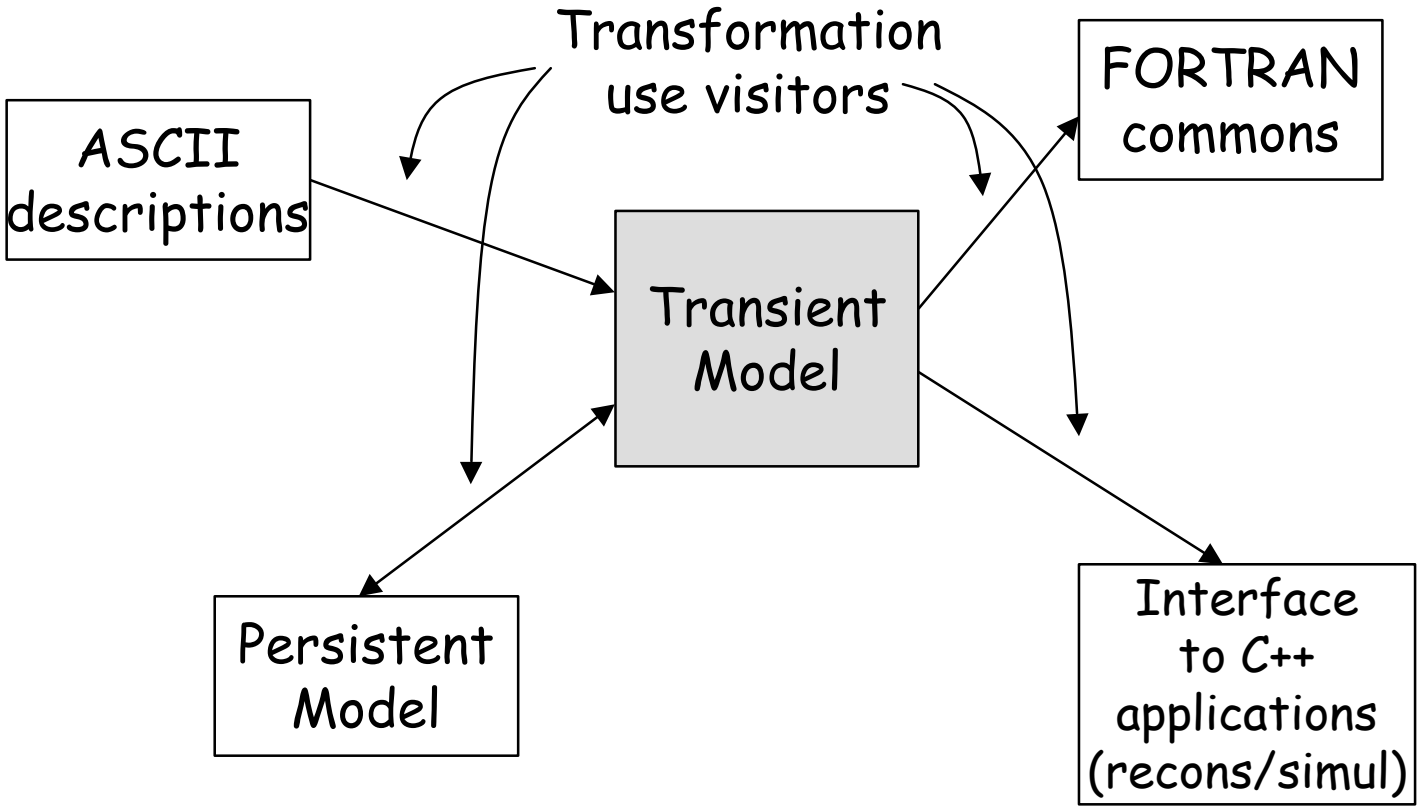


Architecture (use cases)

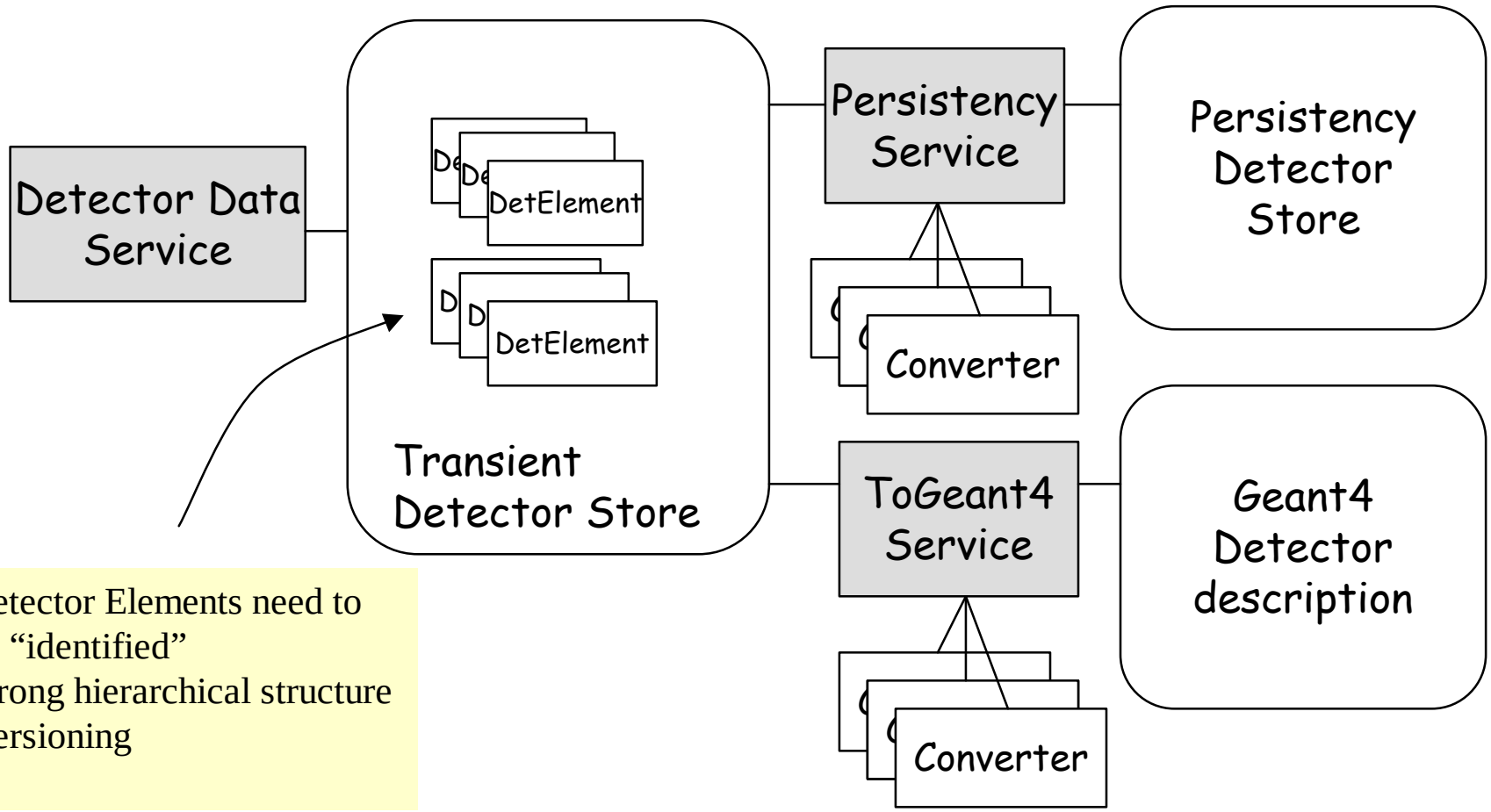


Detector Description

- ATLAS approach:

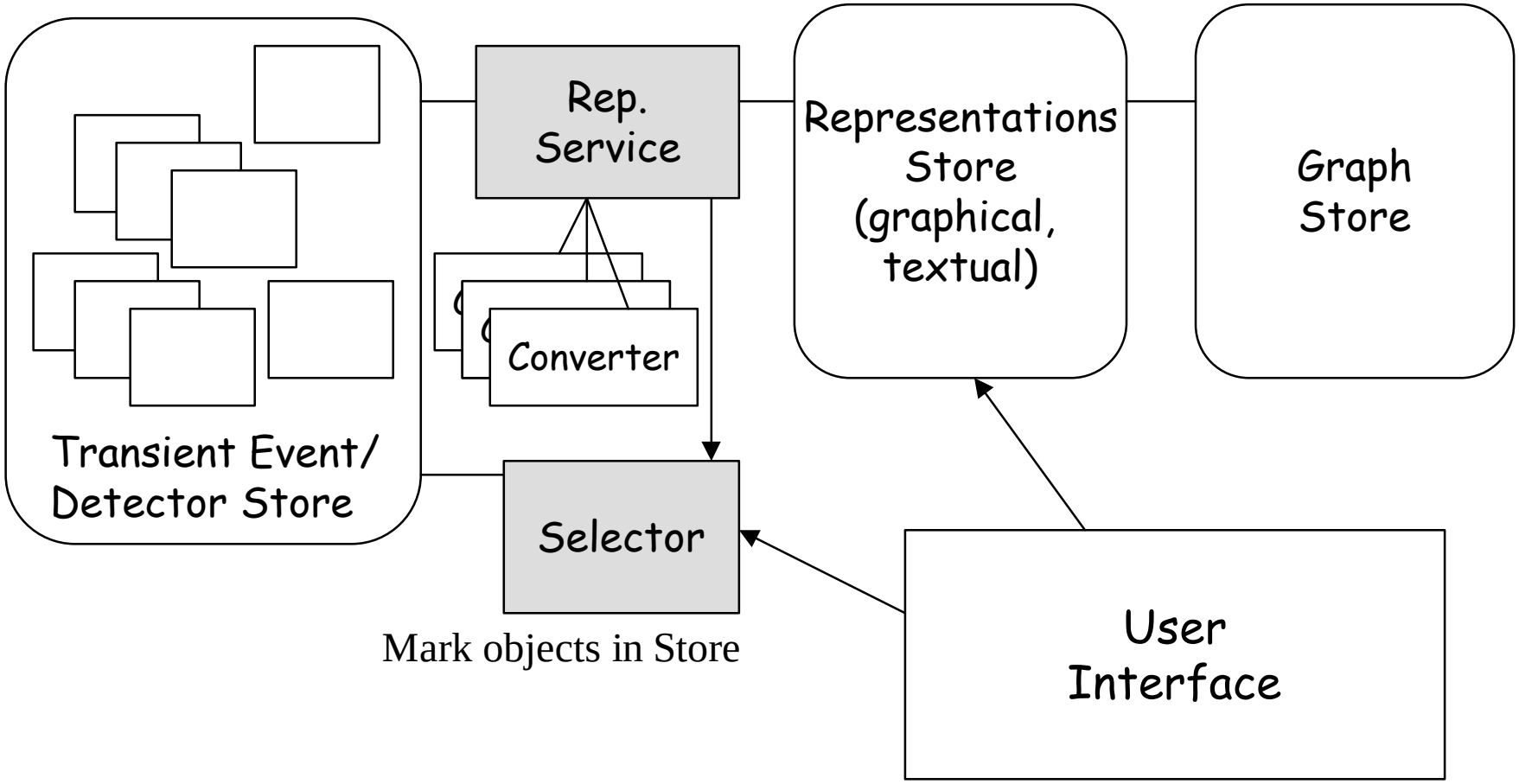


Detector Description (2)



- Detector Elements need to be “identified”
- Strong hierarchical structure
- Versioning

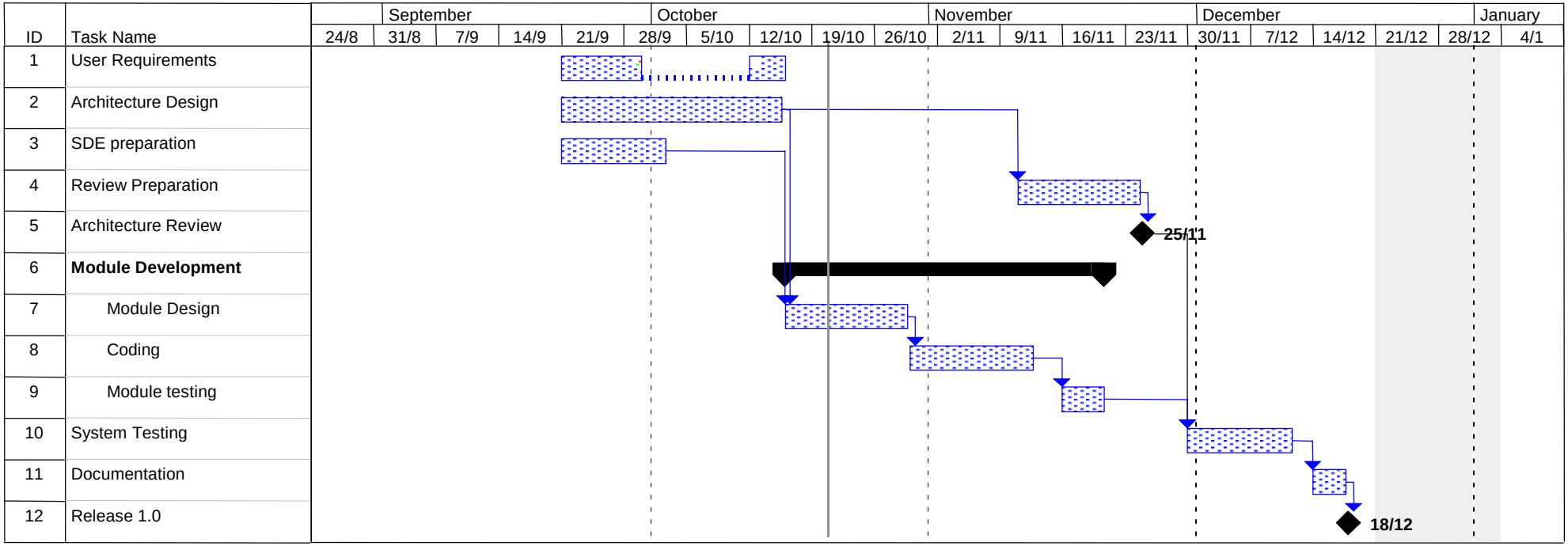
Visualization



Work Breakdown

Domain	Components	Who	Deliverables
Data processing	Application Manager	PM	description, diagrams
	Algorithm Interface	PMy	description, diagrams
	Job Options Service	MC	description, diagrams
	Event Selector		
Event data model	Event Data Service	MF	description, diagrams
	Transient Event Store	MF, PMy	description, diagrams
	Event Persistency Service	MF	description, diagrams
	Transient Event Model	PB	Raw Event - diagram, model Monte Carlo Event - diagram, model
Detector data model	Detector Data Service	MF	description, diagrams
	Transient Detector Store	MF	description, diagrams
	Detector Persistency Service	MF	description, diagrams
	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	

Project tracking



- 1 week delay for the moment.
- Hopefully this translates into better design.