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# Strategy for Migrating the LHCb Software to the GAUDI Framework

Summary of discussions during LHCb meeting in Amsterdam

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# OO Migration Project

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## ◆ Final objective:

- Produce a complete set of fully functional data processing applications using exclusively OO technology.
- Sub-objectives:
  - » Provide a fully functional framework (GAUDI)
  - » Assemble new and old algorithms into a single complete suit of data processing applications. Be able to run productions.
  - » Convert all the existing FORTRAN code to C++

## ◆ Phases:

- Framework development phase
- Transition phase
- Consolidation phase

# Framework development phase

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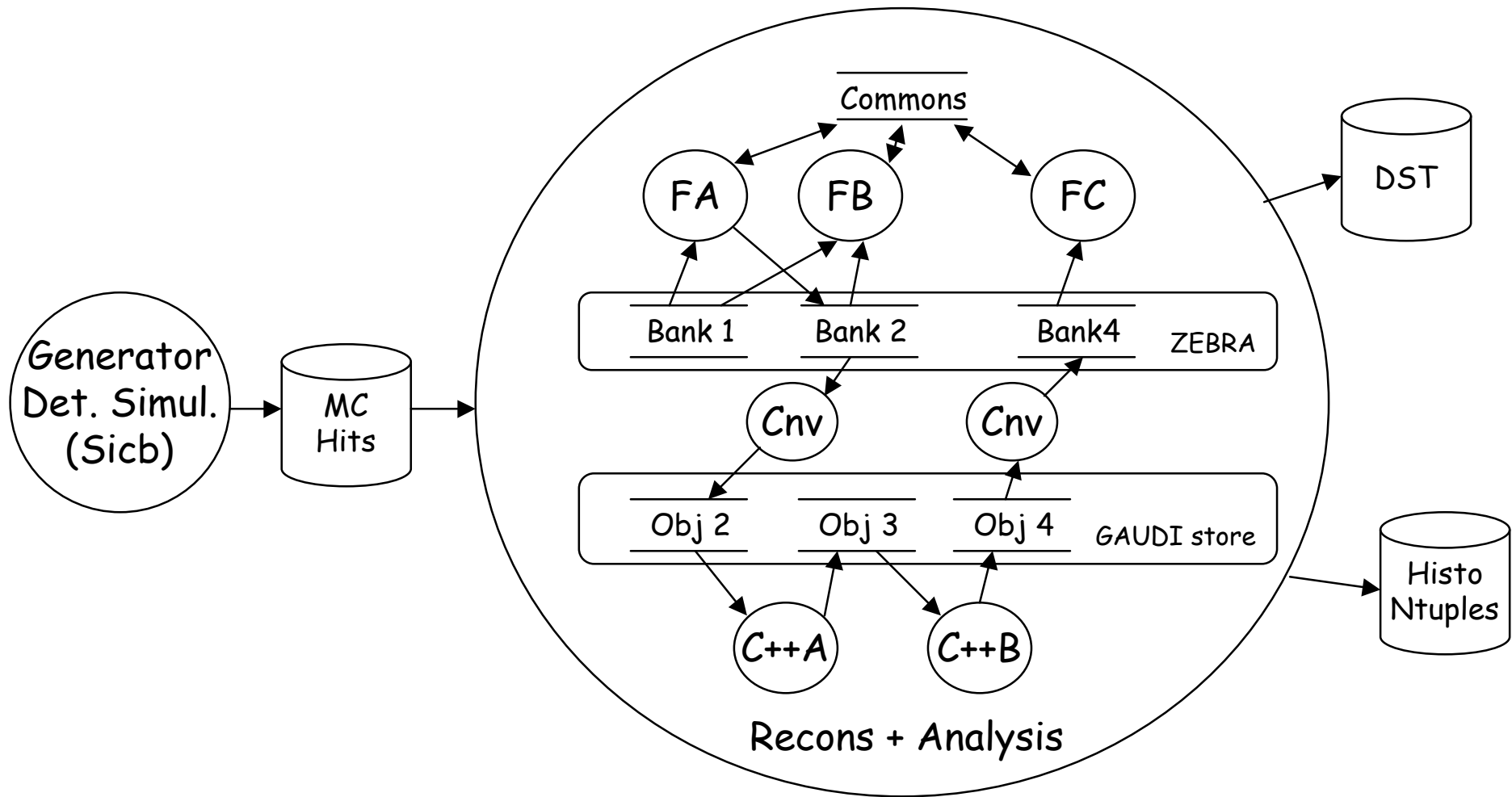
- ◆ At the end of this phase the GAUDI framework should be functionally complete
  - Data access services
  - Generic event model
  - Generic detector description model
  - Data visualization
  - Basic set of services
- ◆ Develop some physics algorithms to prove architecture concept
- ◆ We started this phase one year ago
- ◆ We expect to be completed by middle of November

# Transition phase

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- ◆ At the end of this phase we should be able to reconstruct and analyze simulated data within the GAUDI framework. The Monte Carlo data production will still be done using Sicb.
- ◆ Incorporate reconstruction and analysis parts of SICb in the GAUDI framework - wrap FORTRAN code
  - Analyse SICb to identify all modules, their inputs and outputs
  - Develop a complete OO event data model
  - Write converters to allow access to data in both formats
- ◆ Development of new algorithms can proceed within GAUDI
- ◆ Caveats
  - temporarily will live with two representations of geometry
  - lot of work to make converters in both directions

# Transition Phase (2)



# Consolidation phase

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- ◆ At the end of this phase we should be able to retire the FORTRAN compiler and libraries
- ◆ Re-engineer algorithms to use standard GAUDI services
- ◆ Replace wrapped FORTRAN code incrementally
- ◆ Specialize generic detector descriptions to concrete sub-detectors
- ◆ Incorporate Geant4

# Planning

	1998		1999				2000			
	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4
Architecture Design	■									
Gaudi Development v1		■								
Gaudi Development v2			■							
Gaudi Development v3				■						
Framework Functional						◆				
Analysis Sicb					■					
Transition phase						■				
Production program								◆		
Consolidation phase								■		
Migration completed										◆