

# Gaudi Workshop 2016

## Introduction

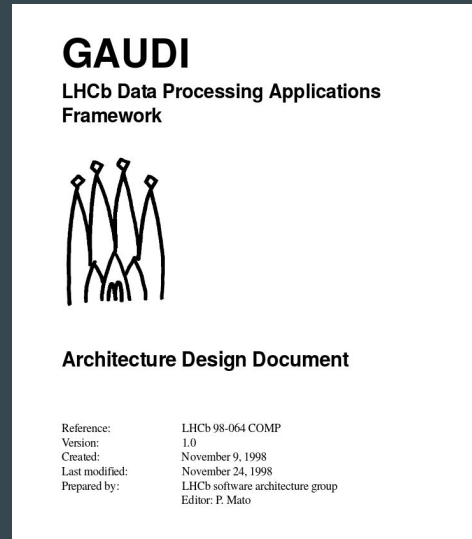


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# Gaudi turns 18 this year!

- The Gaudi Design document v1 was created Nov 1998:



- Developed in the context of a single experiment (LHCb)
- These days used by a wide set of users!
- Quite a successful project, but boundary conditions changed dramatically

⇒ **Gaudi needs to adapt to changes in hardware architectures**

⇒ **There is no place for software w/o parallelization**

# Dare to change things!

Yes, **Gaudi served us well** since 1998 !

This means **18 years of evolution in computing architectures**, as well as:

- additional experience in object-oriented programming
- substantial evolution in C++ and external libraries
- experience what worked well in the Gaudi design and what didn't

While the change of CPU architectures is the trigger for the Gaudi redesign, we should take the time to incorporate all lessons learnt

**Whatever we design now is likely to stay for another 18 years!**

# Time to clean up and converge

During the lifetime of Gaudi many equivalent features were implemented independently by different users

What can we move upstream? Which version “wins” ? Who gains?

## Diverged even in core components:

- DataSvc vs. StoreGate
- Message logging
- Data handles

## History repeated for GaudiHive prototype

- ATLAS and LHCb extended the initial demonstrator by experiment-specific features

*We should move to a mode of **discuss, then implement** instead of **implement, then discuss***

# What should be the feature set of Gaudi?

Back then a **“Scenarios and Requirements”** document guided the Gaudi architecture team

- Which features to support?
- Does the design fulfill all requirements?
- What are hard and what are soft requirements?

Looking at it two decades later we see

- Requirements that seem obvious nowadays
- Entirely forgotten subdomains (e.g. trigger)
- Only LHCb requirements (obviously!)

Started **updating that document**

- incorporating input from multiple user communities
- reflecting change of technology

**Can we get a common understanding by the end of this workshop?**

# Agenda

- Wednesday Morning
  - Input and Summaries from Stakeholders
- Wednesday Afternoon
  - Use Cases and Requirements
- Thursday Morning
  - Control and Data Flow
- Thursday Afternoon
  - Conditions Handling
- Friday
  - Design Document and Conclusions

This workshop is meant to be dynamic - if some ideas emerge from discussions there is plenty of room for short-notice “lightning talks”

**Every idea not brought up this week, may be a lost opportunity!**

# Workshop Dinner

Given the still OK'ish weather we'd propose to have a barbecue at the LHCb site tomorrow afternoon / evening

**Any volunteers to help us with the organization?**

# My Hope for this Workshop

Strengthen the team-spirit across the Gaudi user community

**There is no shortage of smart and motivated individuals!**

Create a new vision and common for the goals of the Gaudi project

**Don't limit it to LHC only!**

## In concrete

- Agree on the main points of the use case document
- Have a sketch of the future design and some documentation
- Identify stakeholders to “fill the gaps” in the sketched design
- Define the most important design deliverables and timescales
- Have a list of features to push from experiment code to Gaudi



**Welcome and enjoy the workshop!**