

CALICE Software Framework

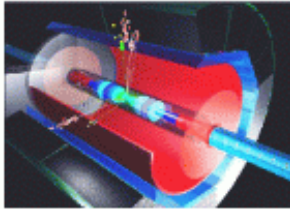


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CALICE Collaboration



JRA3/CALICE Testbeam Requirements

EUDET Kickoff Meeting
DESY
February 2006



The collaboration



190 physicists/engineers from 32 institutes and 9 countries
Coming from the 3 regions (America, Asia and Europe)



*CALICE is an open - and growing - collaboration:
Recently new groups from Canada, France, Korea, the UK, the USA*

- **Sharing of tasks and resources**
- **Organizational structure and procedures defined in a "Memorandum of Agreement"**
- **Regular internal reviews to monitor the progress**

Introduction

CALICE collaboration is preparing/performing large scale testbeam during the coming years (~2005-2008)

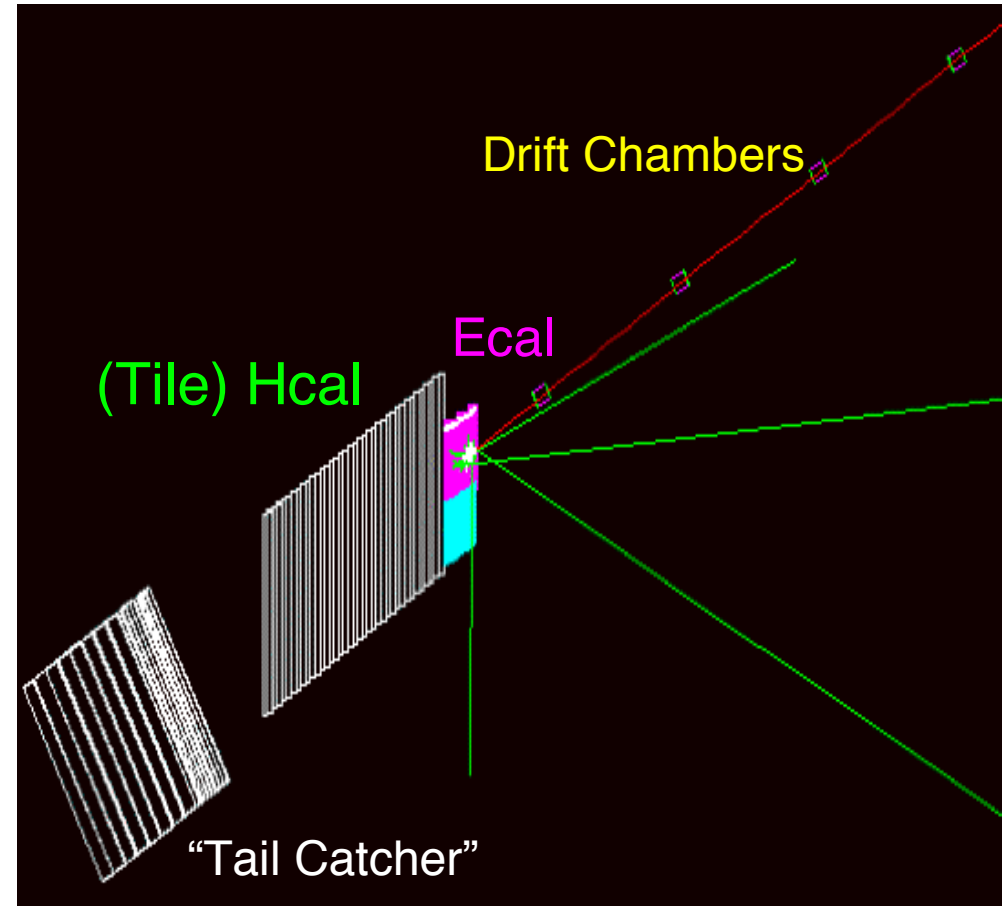
**Goals: Hardware Recommendation
for (central) ILC Calorimeters**

**Development of precise models
to describe shower development
in highly granular detectors
 $O(1 \times 1 \text{ cm}^2)$ cell size**

**Testbeam program poses
software “challenges”**

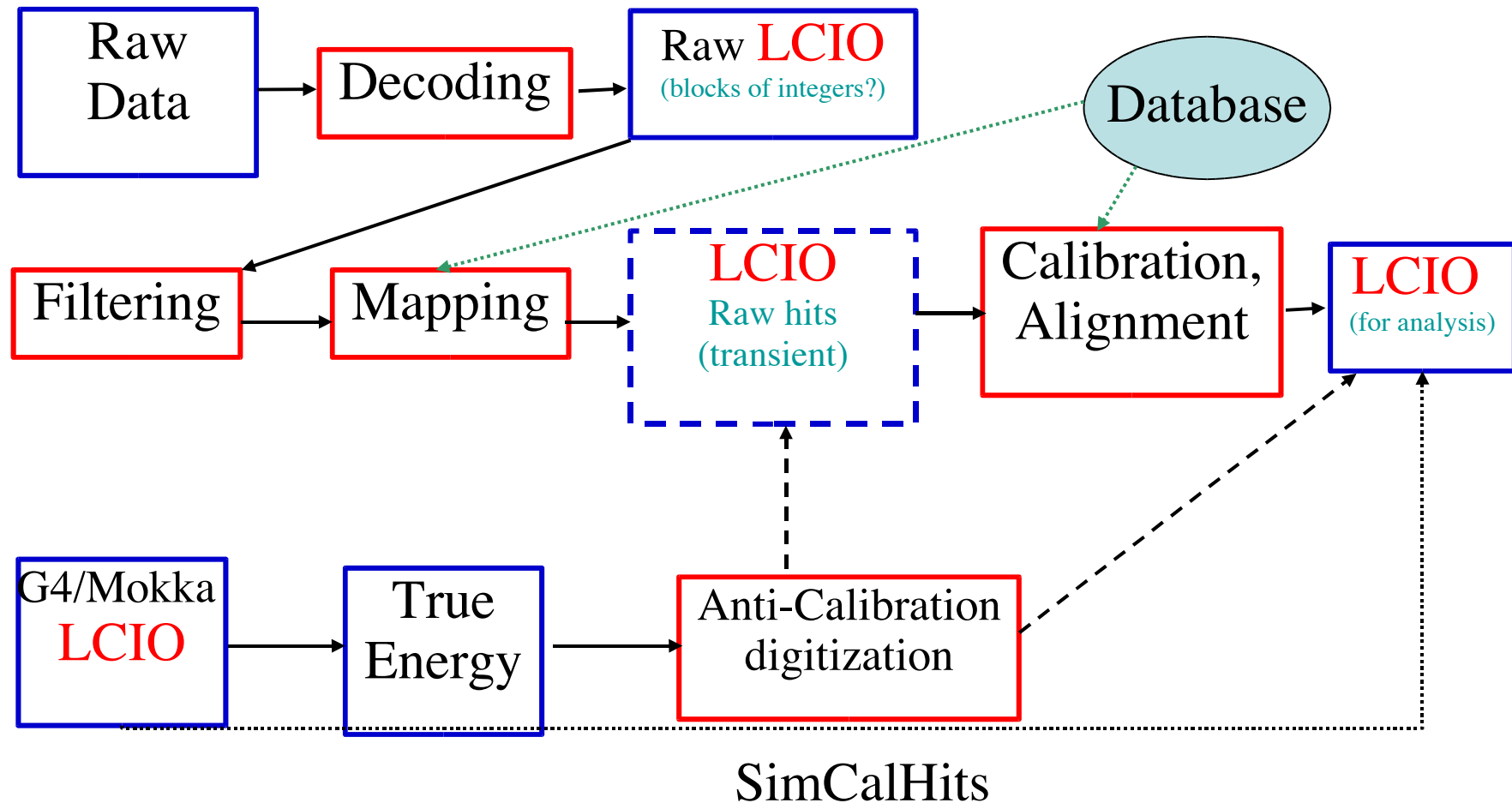
- Detailed simulation of testbeam setup
- Data processing from Raw Data to final Clusters in user friendly way
- Handling of Conditions Data

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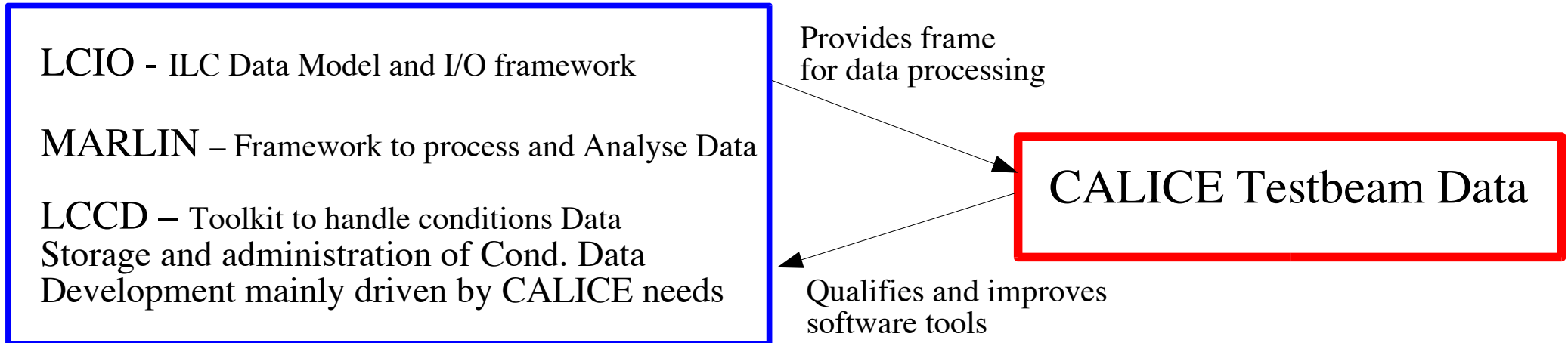
G4 based implementation of Testbeam Setup

Dataflow in CALICE Testbeam



Data processing and Simulation is based on ILC Software tools

Software Tools needed for Data Processing



CALICE 'expects'

- Continuous support of data processing software (as nicely provided so far)
- Quick response by ILC Software developers if shortcomings are observed

CALICE 'delivers'

- High quality testbeam data easily analyzable for everyone familiar with ILC Software tools
- Data to be used to improve G4 shower models

Short Term support – Data are taken as we speak

Data Storage/Access Issues

CALICE data taking ~ 1TByte raw data

Full CALICE Data Taking will add up to > 3 Tbyte of (raw) data

- Infrastructure for mass storage setup at DESY (dCache Pool)
Roughly 5 Pbyte disk space available
- Data are (to be) automatically copied to the pool
- (Recommended) access via Grid-Tools
Not very much experience gathered yet
Mastering this is essential for sharing of CALICE (and ILC) data
Established a vo calice hosted by DESY
- Would like to benefit/contribute from/to developments of Grid Tools
(e.g. access to CPU power for simulation)

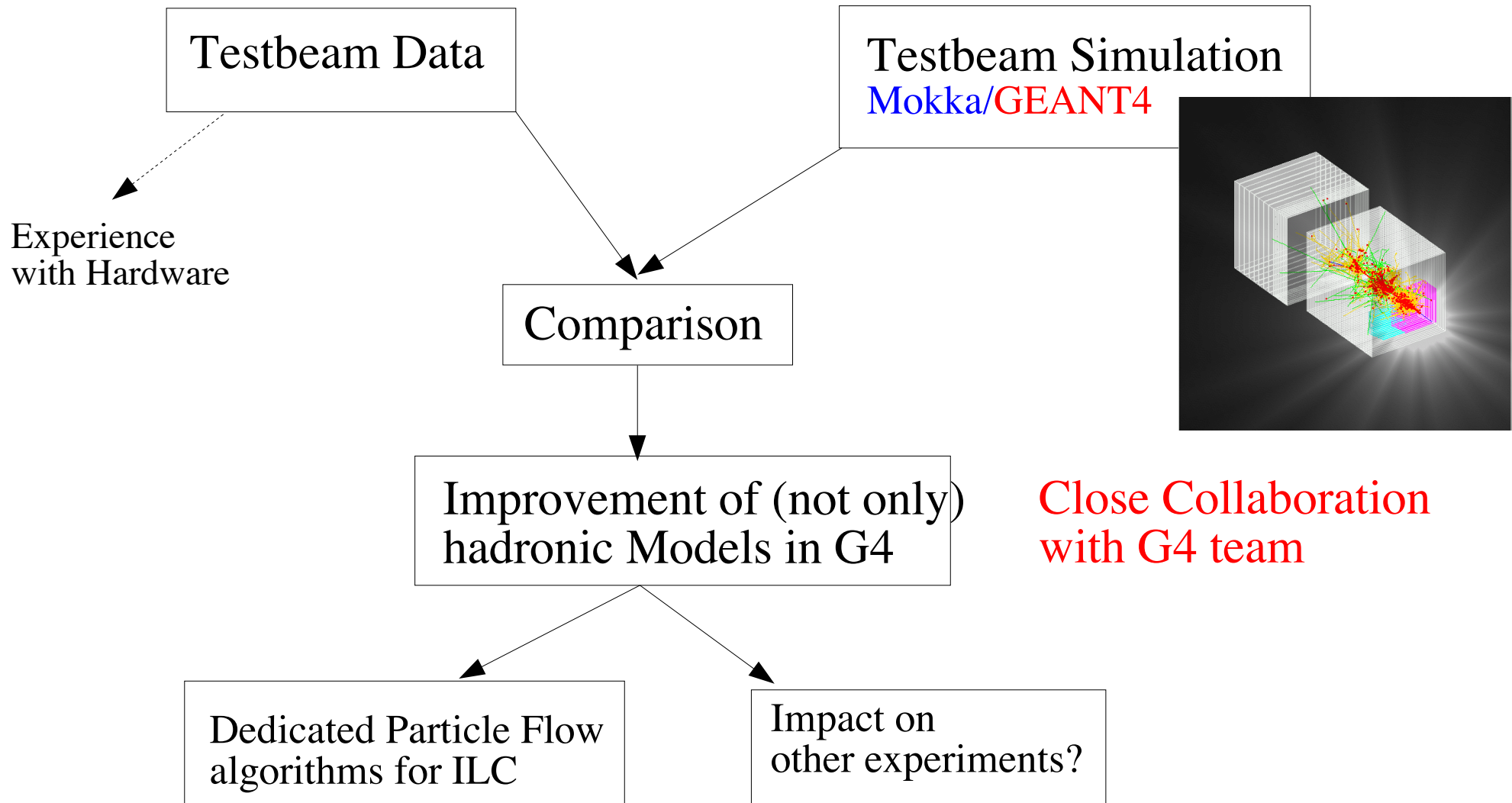
Managing Sizeable amount of data is challenging task

Difficult to manage 'on the fly'

GRID activities are still at the beginning

(sometimes discarded due to other 'everyday' problems)

Testbeam Simulation et al.



Short, medium and long term support (throughout testbeam period and beyond)
(Started nicely for data with elm. Calorimeter – Hadronic Calo data ~ Autumn 2006)

Summary and Outlook

- CALICE uses general ILC Software tools for data processing
Project would like to (will) make use of software developed within EUDET NA2
- Access to computing infrastructure highly desirable
- Need effective means of communication to exploit testbeam data as quickly as possible (travelling, [video] conferencing on short notice etc.)
Establish communication chain, e.g. who might be our contact persons ?