Status of CALICE Software

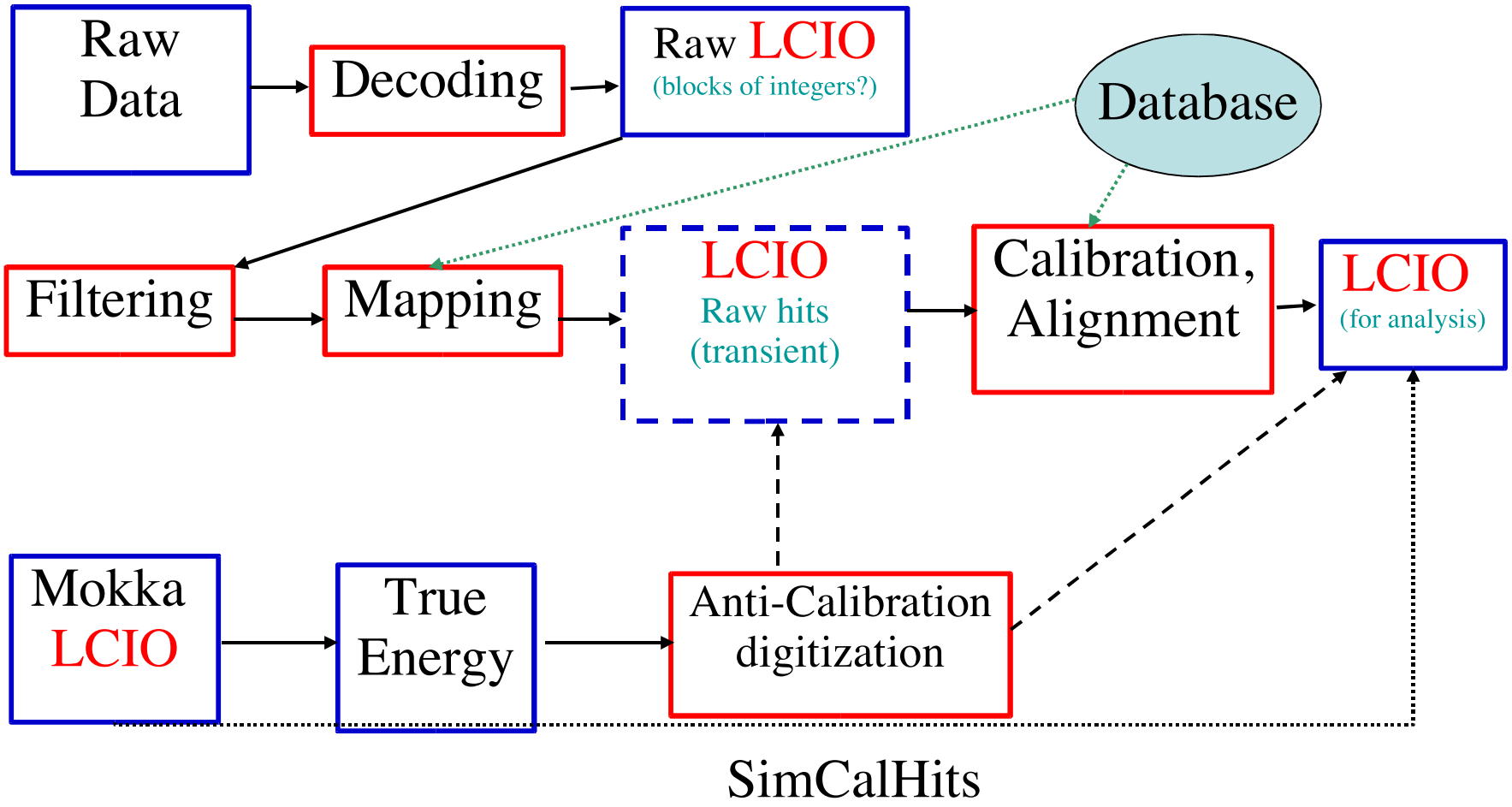
- Data Processing Issues -

CALICE Collaboration Meeting
13/10/05

- Reminder on LCIO conversion
- Major Software Release
- Handling of Conditions Data
- Discussion on next concrete steps

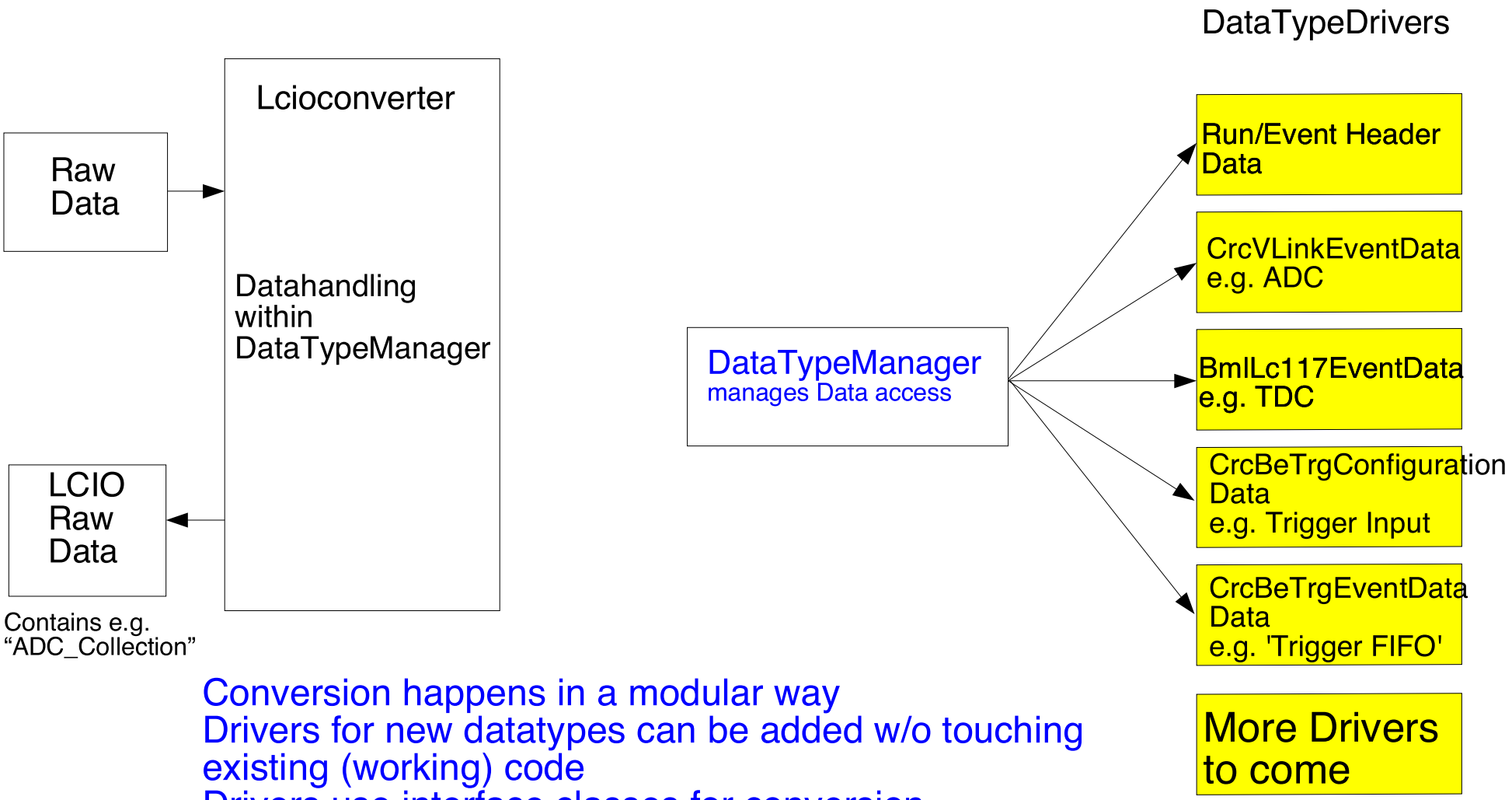
Dataflow in CALICE Testbeam

LCIO as backbone of Testbeam Analysis



Conversion to LCIO

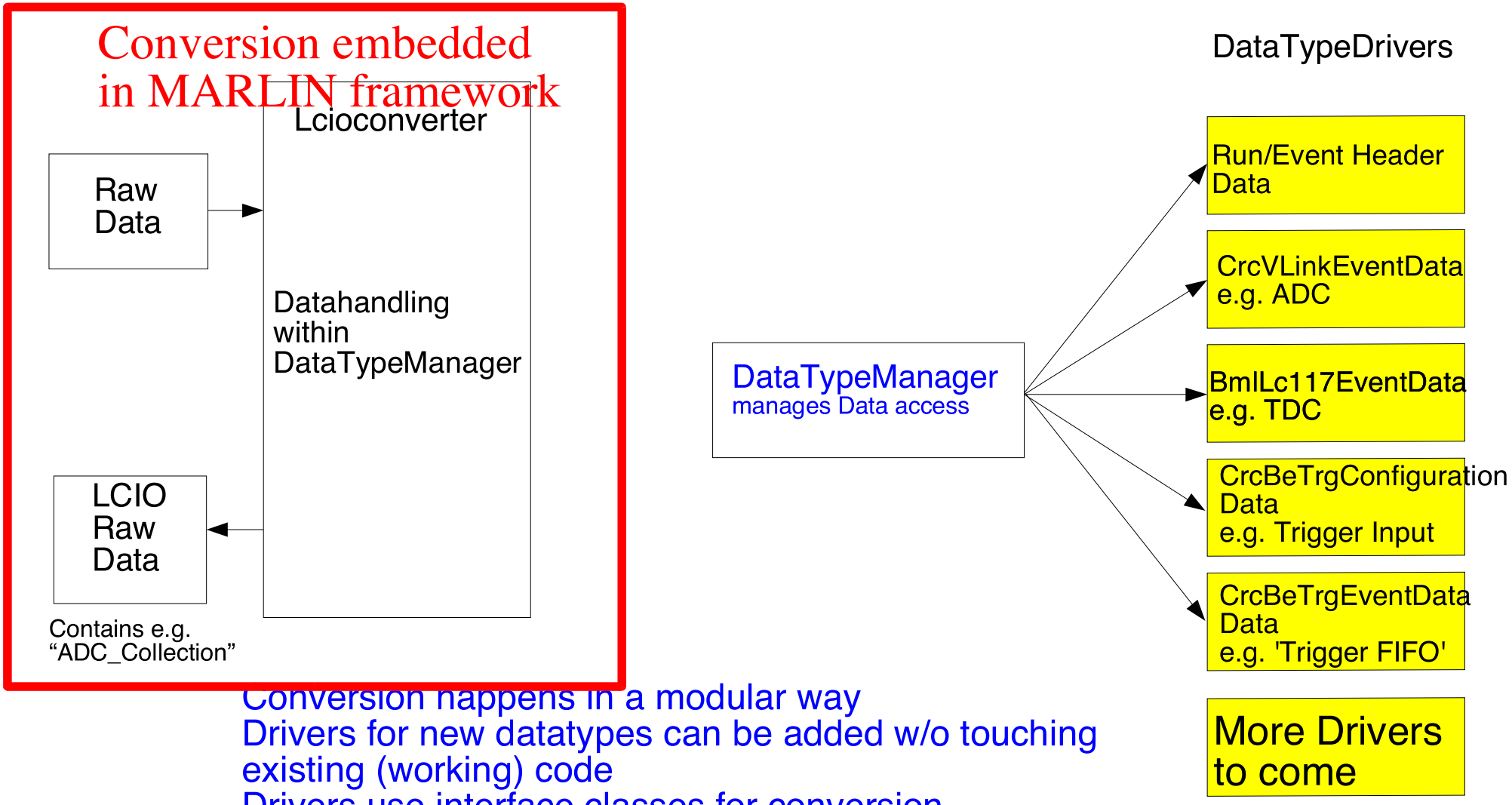
Documentation: http://www-flc.desy.de/store/hcal/simsoft/calice_soft/lcioconverter/v01-00-pre/doc/



Conversion happens in a modular way
Drivers for new datatypes can be added w/o touching existing (working) code
Drivers use interface classes for conversion

Conversion to LCIO

Documentation: http://www-flc.desy.de/store/hcal/simsoft/calice_soft/lcioconverter/v01-03/doc/



Conversion happens in a modular way
Drivers for new datatypes can be added w/o touching existing (working) code
Drivers use interface classes for conversion

Technical Remarks on Data conversion

- Filesize: 2 Gbyte .bin file with ~200k events
  (currently) leads to a ~1.3 Gbyte LCIO File

- Conversion time: 24 Minutes per File
  Lot of time spent by accessing file in dCache
  To be discussed with local experts
  On local disk ~ 15 Min.
  Intel(R) Pentium(R) 4 CPU 2.40GHz

Major Software Release

Release comprises four packages

1) calice_lcioconv v01-03: Conversion of native Raw Data to LCIO

Most interesting for users:
2) calice_reco: v01-02: Interface classes to access the converted data
No real reconstruction software so far
Local versions for Ecal exist

3) calice_online v01-01: Software tools needed to access the native raw data in the conversion job

4) calice_cddata v01-01: Small routines to populate the Calice database with conditions data entries
More on database issues later

Please consult the calice software archives for further details
e.g. Hints on example jobs
http://www.listserv.cclrc.ac.uk/archives/calice-sw.html

Converted Files and Data Access

- Ecal data from february are converted with new release
  Runs 100050-100224
  Software is in use to convert data taken with first Hcal Modules

- Data are centrally stored in DESY dCache pool
  i.e. For Hcal
  /pnfs/desy.de/calice/tb-desy/<year>/native/<month>/dat
  /pnfs/desy.de/calice/tb-desy/<year>/raw/<month>/conv_prelim

- Ecal Data are registered in the Grid
  Access is pretty easy after you have your certificate and are registered to the Virtual Organisation calice

  lcg-cp lfn:RunXXXXXX_lfn.slcio <your local directory>

  or create local replicas, see http://grid.desy.de for details

Datatypes currently available after conversion

- ADC Data

- TDC Data

- Event Data

- Trigger Data
  Configuration Data on active triggers (Conditions Data)
  Contents of FIFO storing event trigger information
  (see also entry in CALICE SW archive 21/5/05)
  to be done: need to attach trigger words to event header

Access to trigger data is currently provided by a TriggerHandlerClass and dedicated AccessClasses

Proposal to re-organize TriggerAccess purely within MARLIN processors and make

Data are ready for analysis but Re-Organization would lead to a new conversion series

Database server for CALICE

- Database server setup at DESY: flccaldb01.desy.de
  (thanks to Sebastian Schmidt, DESY Fellow)
  Hardware is a bit outdated but we wanted a quick start
  (Regular Pentium II PC)
  Buying of new equipment is under discussion

- Access will be granted to all calice institutes
  - Root user to administer db
  - User to write into the db
  - User to read from the db

- First tests successfully performed during September
  (Passwords will be communicated to institutes)

- Please send us the IP addresses of your sites !!!!!
  (First six digits)

Current Content of Database

1	0	20050823142748	/			0	1	1
2	1	20050823142748	/cd_calice			0	1	1
3	2	20050823142748	/cd_calice/CellMapHcal			0	1	0
4	2	20050828231215	/cd_calice/TriggerCheck			0	1	0
5	2	20050828231241	/cd_calice/TriggerAssignment			0	1	0
6	2	20050828231851	/cd_calice/HcalBoardsConn			0	1	0
7	2	20050828232002	/cd_calice/SiPMMapHcal			0	1	0
8	2	20050828232205	/cd_calice/ConnCellMap			0	1	0
9	2	20050828232332	/cd_calice/SiPMItep			0	1	0
10	2	20050828232439	/cd_calice/HcalCassVsCrc			0	1	0
11	2	20050828232527	/cd_calice/SiPMVolCorr			0	1	0

Trigger Info: Assignment of triggerbits
Info to validate Trigger information

Hcal Tables: Relation electronic channel and geometrical channel
Relation SiPM Number and geometrical channel
Dedicated info on SiPMs

Summary and Outlook

Significant progress in infrastructure to process calice data

- Major release of calice software end of August
- Database server installed at DESY
  flccaldb01.desy.de
- Tests of complete chain were successful
  First conversion of Ecal into LCIO
  Automized chain used for conversion of Hcal Data
  (need to sort out a few odds)
- Include proposals on how to improve the current code
- Calice Data are available on the Grid
- Need to increase the user community
  It's less strainful than you think
  Join e.g. The calice software mailing list to get informed on recent delevopments and also to pose your questions