

Status of EUDET NA2 - ANALYS Common Analysis and Simulation Software

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EUDET – Extended Steering
Committee, DESY
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Objectives for task ANALYS

- **development of a common data analysis and simulation infrastructure**
 - development of a **software framework** using modern software technology to exchange test beam data and software for common analysis and comparison of measurements
 - development of a **software framework** for the simulation of test beam experiments needed for the interpretation of the measurements
 - creation of a **repository for experimental and simulation data**
 - **embedding into existing GRID infrastructure** to allow easy exchange of data and transparent exploitation of other available computing resources.

(from annex1)

Deliverables and Requirements

- **requirements:**
 - documentation and its regular update are of utmost importance
 - “spread the information”
 - other EUNET participants should contribute by:
 - properly defining the *requirements* of the framework
 - *providing* and interfacing *simulation and reconstruction* software for the various detector technologies
 - testing the framework.
- **deliverables:**
 - we expect to have a **first version** of the common data analysis and simulation framework ready **after 18 month**
 - **-> already available**
 - development however must continue throughout the whole duration of the project to cope with

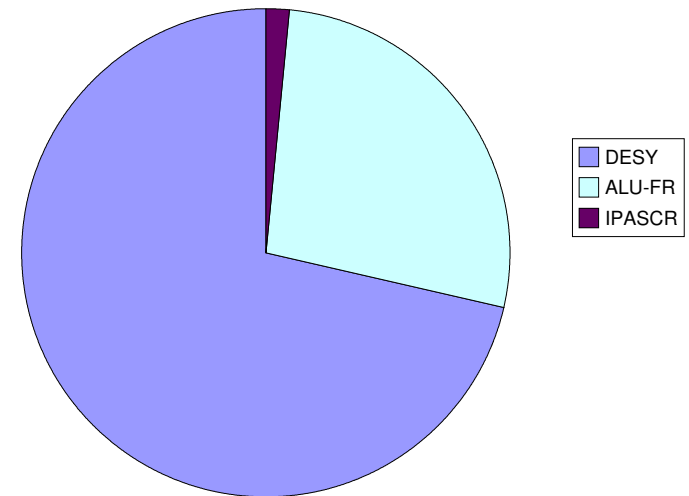
(from annex1)

Contributors for task ANALYS

	DESY	ALU-FR	IPASCR	TOTAL
REQUEST				
Perm Staff ppm				
Temp Staff ppm	12.000	8.000		20.000
Perm Staff Cost kEUR				
Temp Staff Cost kEUR	62.500	46.875		109.375
Travels kEUR	1.300	0.867		2.167
Consumables kEUR				
Overheads kEUR	12.760	9.548		22.308
Total Manpower ppm	12.000	8.000		20.000
Total Cost kEUR	76.560	57.290		133.850
COMMITMENT				
Perm Staff ppm	12.000		3.000	15.000
Temp Staff ppm				
Perm Staff Cost kEUR	62.500		9.000	71.500
Temp Staff Cost kEUR				
Travels kEUR				
Consumables kEUR				
Overheads kEUR	12.500		1.800	14.300
Total Manpower ppm	12.000		3.000	15.000
Total Cost kEUR	75.000		10.800	85.800
TOTAL BUDGET				
Perm Staff ppm	12.000		3.000	15.000
Temp Staff ppm	12.000	8.000		20.000
Perm Staff Cost kEUR	62.500		9.000	71.500
Temp Staff Cost kEUR	62.500	46.875		109.375
Travels kEUR	1.300	0.867		2.167
Consumables kEUR				
Overheads kEUR	25.260	9.548	1.800	36.608
Total Manpower ppm	24.000	8.000	3.000	35.000
Total Cost kEUR	151.560	57.290	10.800	219.650

ALU-FR now RFWU-Bonn

Contributors ANALYS
(Request+Commitment)



Usage of budget - ANALYS

- **DESY**

- commitment 12ppm: F.Gaede 25% for full project length
- 12ppm (scientist) converted to hire a programmer for 18 month
 - **started August 2006**
 - (possibly extend position with other funding sources)

- **RFWU-Bonn (ALU-FR)** (K.Desch)

- request: 8ppm (scientist): plan to combine with funds (8ppm) from COMP to hire a postdoc that works part-time on COMP and ANALYS
 - will start in October (Nov.) 2006

- **IPASCR** (J.Cvach)

- commitment: 3ppm: PhD student that works part time on calorimeter simulation with geant4
 - not yet

General strategy for ANALYS

- there will be no EUDET/testbeam specific simulation and analysis software framework !
 - avoiding of double work
 - a lot of what's needed already exists
- the testbeam software effort is tightly integrated with the overall common ILC/LDC software effort !
 - implement tools and functionality specific to testbeams
 - benefit from synergies where possible, e.g. use geant4 application for full detector also for testbeam (Mokka/Calice)
- same for grid tasks: integrate with common ILC grid activities

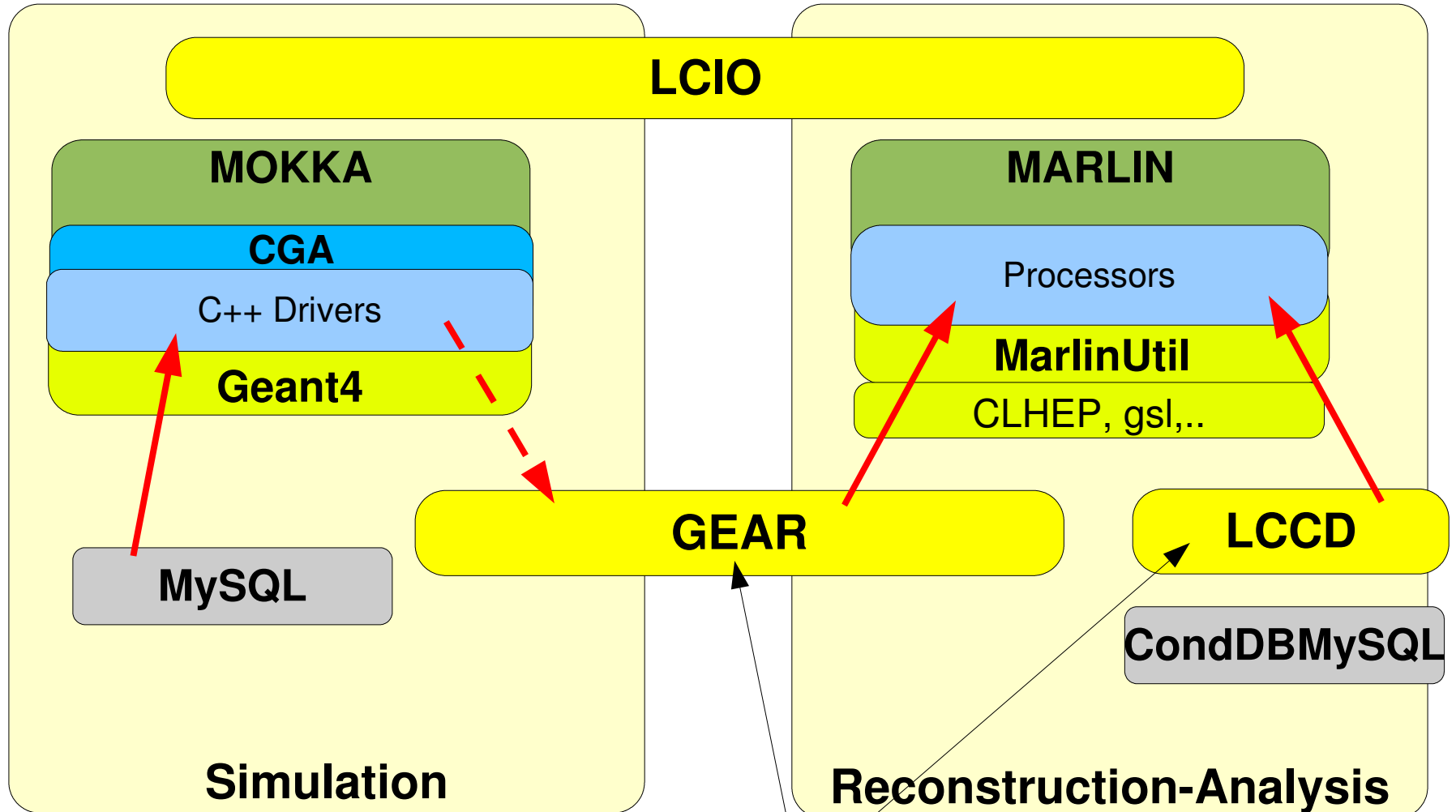
Software packages for ILC framework

- **LCIO**
 - data model & persistency
- **Mokka**
 - geant4 full simulation
- **Marlin**
 - C++ application framework
 - **(MarlinReco)**
 - Marlin based reconstruction
- **LCCD**
 - conditions data toolkit
- **GEAR**
 - geometry description

all packages developed at
or with contributions
from DESY

-> DESY will naturally continue
to develop and improve these
tools in the context of EUDET

LDC software framework



requires work that is specifically related to testbeam program

testbeam software developments

- CALICE PPT-testbeam (now at CERN)
 - usage of LCIO, Marlin, Gear, LCCD
 - specific extensions developed by CALICE
- TPC prototypes
 - usage of LCIO, Marlin, Gear, (LCCD planned)
 - special raw data classes for Tracker hits in LCIO
 - Gear geometry description of TPC prototype
- VTX prototypes
 - usage of LCIO, Marlin, Gear
 - development of VTX geometry definition in Gear

Grid activities

- ongoing grid activities (not related to EUDET):
 - DESY
 - H1 and ZEUS Monte Carlo production
 - Tier2 for Atlas and CMS
 - ILC Monte Carlo production started
 - (ALU-Fr)
 - Tier2 for Atlas
- use existing experience to create grid infrastructure:
 - job submission scripts (computing grid)
 - data catalogue (data grid)

Plan: mainly RFWU-Bonn (postdoc) activity
in close collaboration with DESY groups (FLC,IT)

Summary

- NA2 task ANALYS: “Provide a software framework for simulation and analysis (of testbeam data)”
- developer hired at DESY (18 month)
- postdoc to be hired at RFWU-Bonn
- spending profile for 2006 ~fulfilled
- testbeam specific software has been developed within common software framework

All EUDET software activities
(also those within the JRAs)
should be carried out in the context of
the existing software framework/ grid installations