EUDET-NA2: Detector R&D Network

Status report - Extended SC meeting 31/08/10
K. Desch – Bonn University

Networking Activity

Objectives:

• provide common framework for detector R&D

• develop and deploy common tools for all JRAs

• integrate with world-wide R&D efforts for ILC detectors

• create human network between partners

Well focused individual tasks to provide specific common tools
to be used by all partners with clear prospects for durable benefit

universität**bonn**

EUDET-NA2: Organisation

6 Tasks:

		Partners	Task leader
COMP	High performance computer cluster	DESY, IPASCR, TAU,UBONN	P. Wienemann (UBonn)
ANALYS	Common analysis framework	DESY, IPASCR, UBONN	F. Gaede (DESY)
WEBINFO	Web-based information system	TAU	H. Abramowicz (TAU)
VALSIM	Simulation tools for hadronic showers	CERN	J. Apostolakis (CERN)
MICELEC	Access to deep-sub-micron technology	CERN	A. Marchioro (CERN)
EXCHG	Human network for information exchange	All	F. Sefkow (DESY)

Upshot

- All NA2 milestones had been reached already in 2009

- No (significant) spending of EU resources in 2010
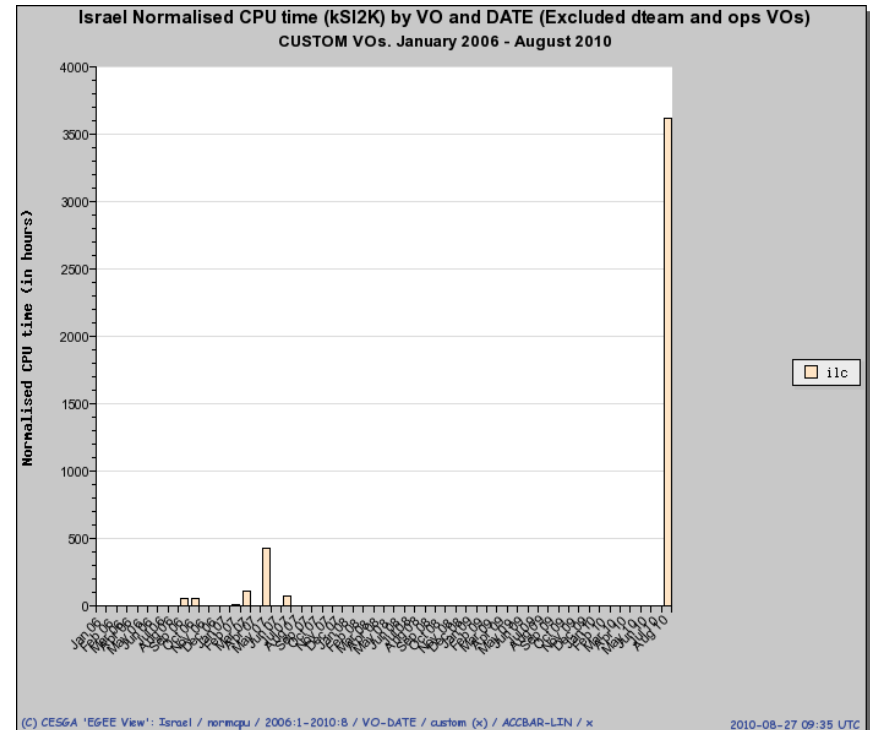
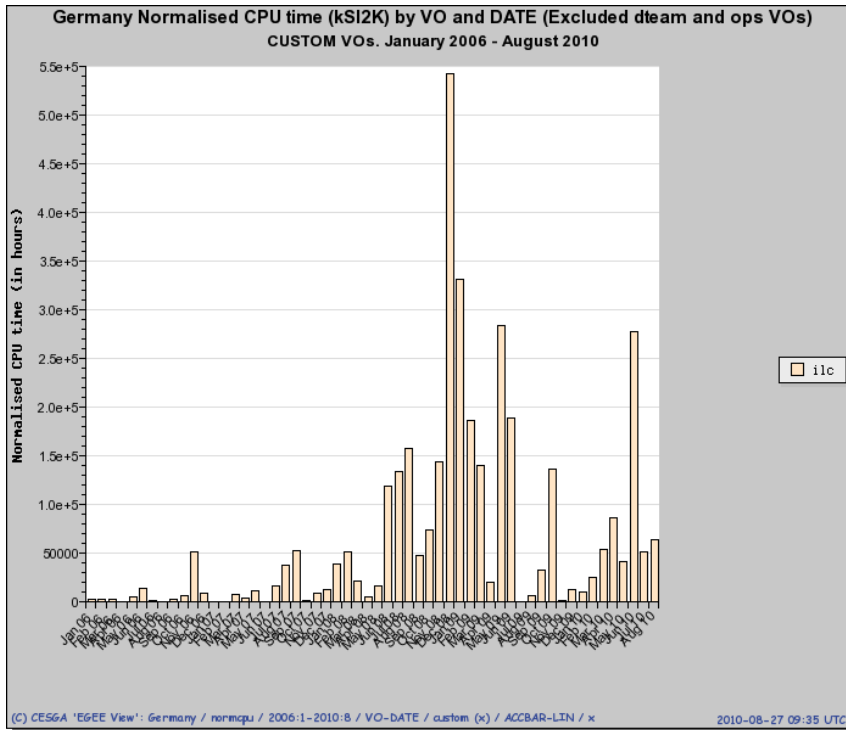- Keep using the networking tools

NA2-COMP

Installation and deployment of a distributed (grid-enabled) computing facility for the analysis and simulation of test-beam data

Status:

• Clusters at DESY, UBONN, TAU, IPASCR installed

Final deliverable: NA2-D8: „Final report" due month 60

NA2-COMP

DESY is providing by far most of the (used) resources – mainly from own contribution (not EUDET money)

Finally Israel (TAU + Technion) contribute!

UBONN currently in longer maintenance (switch storage model)

NA2-ANALYS

Development of a common data analysis and simulation infrastructure (software)

→ slides from Frank

Milestones and Deliverables:

		planned	achieved
M	Version 1	18	18
NA2-D3	Version 1 deployed	18	18
NA2-D8	Final report	60	on track

NA2 - task ANALYS

- **development of a common data analysis and simulation infrastructure:**

  - for exchange, analysis and comparison of tbeam data

  - for simulation of test beam experiments

  - GRID data repository and processing infrastructure

  - done on close collaboration with detector concepts

- milestone: first version of core framework reached in 2007 (after 21 month) – see EUDET Report 2007-11

- since then continuously improved the software tools based on feedback from JRA groups

- all three JRAs

  - have their data analysis frameworks based on **common core software tools**

  - use the **Grid** for data processing and storage

1

task ANALYS – activities in 2010

- additional funding (6ppm) from EUDET for software developer in 2010

- further improvements and bug fixes for core tools

- extensions of LCIO for tbeam:
  - implemented proper **direct access** to events
  - added optional **ROOT dictionary** for LCIO
  - TrackerPulse: added error matrix to charge and time measurements
  - (Sim)TrackerHit: added EDeposited() and error

- improvements in LCCD (conditions data toolkit):
  - more robust handling of missing conditions data (as requested by Calice and LCTPC)

- developed a new test infrastructure for ilcsoft
  - web based reports (dashboard)
  - unit and integration tests run in Nighlty Builds
  - adaption by tbeam groups ongoing

EUDET & ILD Core Software Tools

http://ilcsoft.desy.de

Frank Gaede, DESY, EUDET ESB-Meeting, 31.08.10

- **Mokka** (LLR)
  - geant4 simulation application
- **LCIO** (DESY/SLAC)
  - international standard for persistency format / event data model
- **Marlin**
  - core application framework for reconstruction & data analysis
- **GEAR** geometry package f. reconstruction
- **LCCD**
  - conditions
  - data toolkit (DB)
- **CED**
  - 3d event display
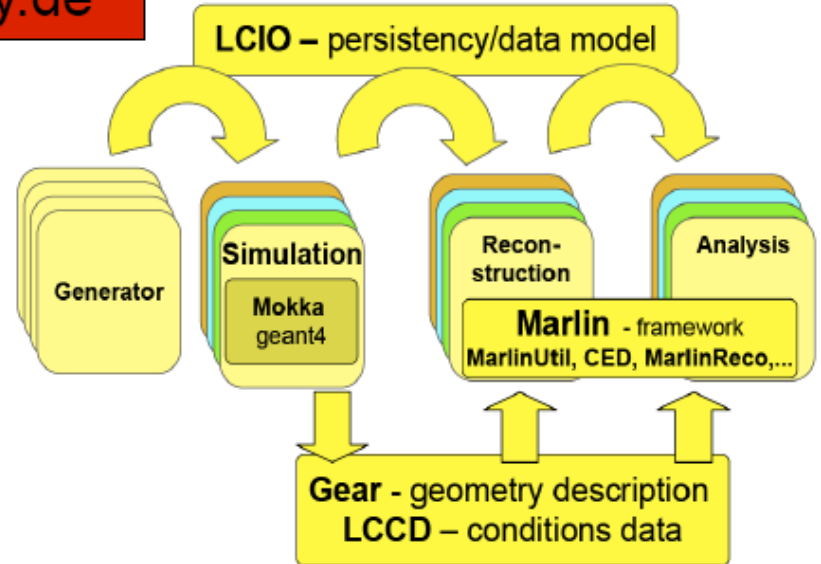
LCIO – persistency/data model

Generator | Simulation — Mokka geant4 | Recon-struction | Analysis

Marlin - framework
MarlinUtil, CED, MarlinReco,...

Gear - geometry description
LCCD – conditions data

MyInput2.slcio
MyInput1.slcio
MyInput0.slcio

LCEvent
collection0

read and add collections

MyInput.slcio

marlin::main
- Digitization
- Tracking
- Clustering
- ...
- PFlow
- OutputProcessor

- complete framework used in Monte Carlo & real experiments:
  - **ILD detector concept** studies
  - **Calice** calo testbeam
  - **LC-TPC** testbeam
  - EUDET - **Pixel Telescope**
- **synergies between testbeam and global detector optimization**

NA2-WEBINFO www.eudet.org

http://www.eudet.org/stats/awstats.eudet.0912.html

Statistics for www.eudet.org (2009-12)

* Not viewed traffic includes traffic generated by robots, worms, or replies with special HTTP status codes.

Monthly history

2009

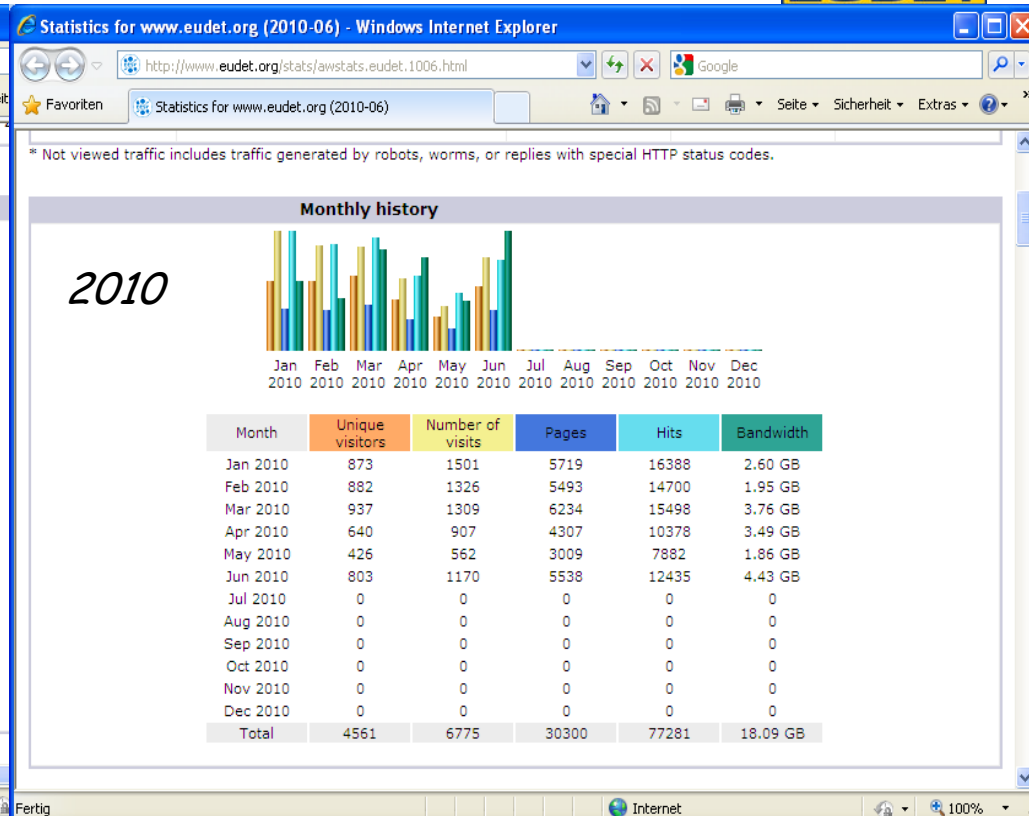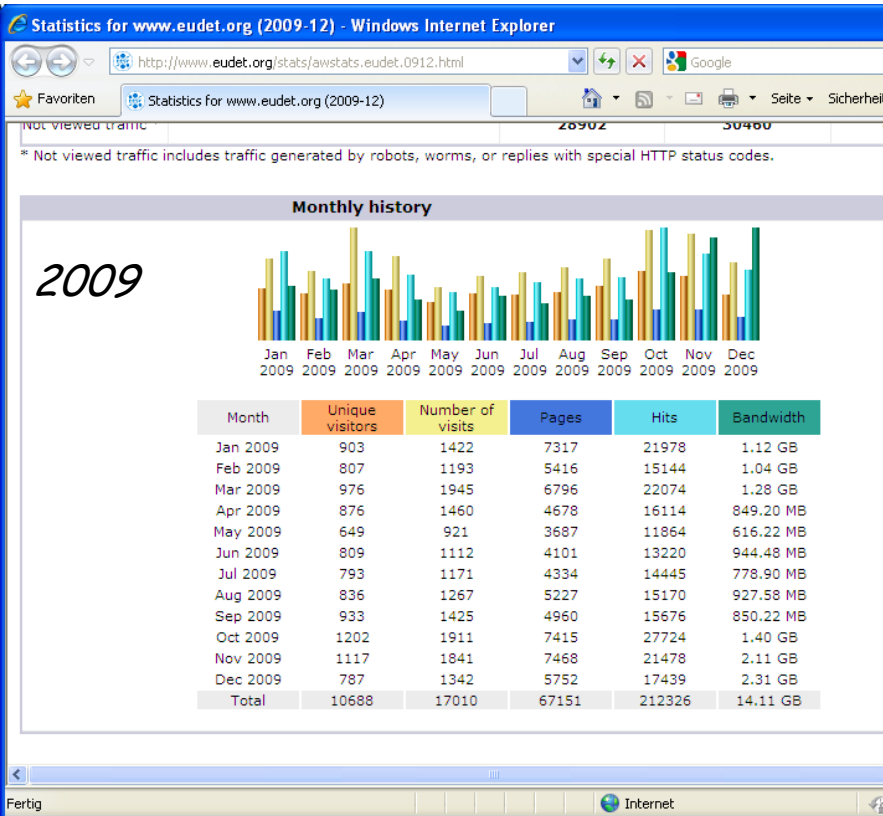| Month	Unique visitors	Number of visits	Pages	Hits	Bandwidth
Jan 2009	903	1422	7317	21978	1.12 GB
Feb 2009	807	1193	5416	15144	1.04 GB
Mar 2009	976	1945	6796	22074	1.28 GB
Apr 2009	876	1460	4678	16114	849.20 MB
May 2009	649	921	3687	11864	616.22 MB
Jun 2009	809	1112	4101	13220	944.48 MB
Jul 2009	793	1171	4334	14445	778.90 MB
Aug 2009	836	1267	5227	15170	927.58 MB
Sep 2009	933	1425	4960	15676	850.22 MB
Oct 2009	1202	1911	7415	27724	1.40 GB
Nov 2009	1117	1841	7468	21478	2.11 GB
Dec 2009	787	1342	5752	17439	2.31 GB
Total	10688	17010	67151	212326	14.11 GB

http://www.eudet.org/stats/awstats.eudet.1006.html

Statistics for www.eudet.org (2010-06)

* Not viewed traffic includes traffic generated by robots, worms, or replies with special HTTP status codes.

Monthly history

2010

Month	Unique visitors	Number of visits	Pages	Hits	Bandwidth
Jan 2010	873	1501	5719	16388	2.60 GB
Feb 2010	882	1326	5493	14700	1.95 GB
Mar 2010	937	1309	6234	15498	3.76 GB
Apr 2010	640	907	4307	10378	3.49 GB
May 2010	426	562	3009	7882	1.86 GB
Jun 2010	803	1170	5538	12435	4.43 GB
Jul 2010	0	0	0	0	0
Aug 2010	0	0	0	0	0
Sep 2010	0	0	0	0	0
Oct 2010	0	0	0	0	0
Nov 2010	0	0	0	0	0
Dec 2010	0	0	0	0	0
Total	4561	6775	30300	77281	18.09 GB

-main source of information for EUDET
- still heavily used (~ level as 2009)

NA2-VALSIM

Improve and develop simulation tools modeling of hadronic showers and create the validation tools for fine-grained calorimeters

- no update for this meeting

- joint session with JRA3 planned for annual meeting

NA2-MICELEC

Facilitate access to deep submicron technologies for radiation-tolerant microelectronics. Design support and coordinated access to a commercial silicon foundry for prototyping and production of integrated circuits in deep submicron CMOS technologies.

status:

- all milestones met

- training activities at CERN ongoing (but not „free" for EUDET)

- no update for this meeting

- special session at annual meeting