

T/DAQ/Offline/Computing

- Preparatory group
 - ALICE: Pierre Vande Vyvre, Thorsten Kollegger, Predrag Buncic
 - **ATLAS: David Rousseau, Benedetto Gorini, Nikos Konstantinidis**
 - CMS: Wesley Smith, Christoph Schwick, Ian Fisk, Peter Elmer
 - LHCb: Renaud Le Gac, Niko Neufeld
- Overall goals are similar to those defined for the detector systems.
- Assess the requirements for the trigger and subsequent data processing, and the benefit from track triggering and higher rate at the input and output of the HLT.
- It should assess the availability and potential for technical solutions on the time scale of the projects, including cost considerations
- It will propose future actions, possibly common to all experiments

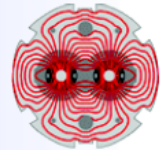
Definita la struttura della sessione

- 15+5 Technology overview
 - Data Transmission Technologies, Data Processing & CPU Technologies, Data storage, Detector Technologies
- 30+5 TDAQ
 - Requirements, architecture options, L1 Tracking Trigger, L1 Calorimeter, Muon, Global Triggers, HLT Processing, Sharing of CPU resources w/offline (Cloud), use of specialized processing (GPU, ARM...), Readout, Network, Event Building, Filter Farm
- 20+5 Software
 - Challenges of harnessing new CPU HW, common sw developments
- 20+5 Computing
 - Resource estimates, future of Grid technologies w.r.t cloud, production tools evolution (e.g. Panda)

Percorso: “topical meetings”



Topical meetings



We'd like to organise topical meetings on:

- Technology tracking for 2022 (cpu, disk, network, optical links etc...) (Bernd Panzer et al). And also on specific technology relevant to TDAQ.
- Concurrency, vectorisation. Common software (GeantN, Root and beyond) (John Harvey, Pere Mato et al)
- Grid/Cloud computing (Ian Bird et al.)

Not just the PG, but also more experts in experiments and beyond

Still should fit in B40 basement meeting room (to favor discussion)

First contacts being established

To be held before 15th July

Topical meeting on technology, software and computing in preparation of ECFA HL-LHC October workshop

chaired by David Rousseau (LAL-Orsay), Wesley Smith (University of Wisconsin (US)), Ian Fisk (Fermi National Accelerator Lab. (US))

Wednesday, 17 July 2013 from **09:00** to **19:00** (Europe/Zurich)
at CERN (40-S2-A01 - Salle Anderson)

Technology

Location: [40-S2-D01 - Salle Dirac](#)

09:00 **Technology tracking 30'**

Speaker: Bernd Panzer-Steindel (CERN)

Material: [Slides](#) 

09:30 **Discussion on resource forecasting 30'**

Computing

Location: [40-S2-D01 - Salle Dirac](#)

10:00 **Vision for Alice computing 20'**

Speaker: Predrag Buncic (CERN)

Material: [Slides](#) 

10:20 **Vision for Atlas computing 20'**

Speaker: I Ueda (University of Tokyo (JP))

Material: [Slides](#) 

10:40 **Coffee break 20'**

11:00 **Vision for CMS computing 20'**

Speaker: Ian Fisk (Fermi National Accelerator)

Material: [Slides](#) 

11:20 **Vision for LHCb computing 20'**

Speaker: Dr. Marco Cattaneo (CERN)

Material: [Slides](#) 

11:40 **WLCG vision 20'**

Speaker: Ian Bird (CERN)

Material: [Slides](#) 

Software

14:00 **Software Paradigm Shift 30'**

Speaker: Dr. Pere Mato Vila (CERN)

Material: [Slides](#) 

14:30 **R&D for the next generation simulation toolkit 20'**

Speaker: Mr. Federico Carminati (CERN)

Material: [Slides](#) 

14:50 **Software Consolidation tasks 20'**

Speaker: Benedikt Hegner (CERN)

Material: [Slides](#) 

15:10 **Coffee break 20'**

15:30 **Use of GPU in Alice and elsewhere 20'**

Speaker: Thorsten Kollegger (Johann-Wolfgang-Goethe Univ. (DE))

Material: [Slides](#)  

15:50 **Tracking at high luminosity in Atlas and elsewhere 20'**

Speaker: Nicholas Styles (Deutsches Elektronen-Synchrotron (DE))

Material: [Slides](#) 

16:10 **The HEP Software collaboration 20'**

Speaker: Ian Bird (CERN)

Material: [Slides](#) 

Report

- Focalizzato principalmente sul computing
 - Trends per CPU, GPU, dischi
 - Prezzo/prestazioni
- Per sfruttare l'HW → necessità di aumentare il livello di parallelismo a tutti i livelli
 - rivedere l'architetture di ricostruzione, selezione e simulazione
- Concurrency Forum → HEP SW Collaboration
 - Tentativo di identificare e sviluppare piattaforme comuni non solo in ambito LHC ma a tutto HEP
- Aprire collaborazioni con altri ambienti di ricerca
 - Sempre più difficile attrarre fondi per progetti solo HEP
 - Trasferimento del know-how HEP
- Cosa è mancato finora
 - Evoluzione del network (TDAQ)
 - Tracciatori h/w