International ATLAS overview

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ATLAS overview

- Introduction and background;
- Organisational structure (since late 99);
- Brief overview of activities;
- International considerations.

ATLAS overview

- Introduction and background:
  - ATLAS **Physics TDR** (2 vols.) submitted May 1999. Huge amount of effort over several years. Used **`Fortran/Zebra/Geant3'** software.
  - In parallel with TDR effort, major investment of effort over several years in **`OO/C++'** approach.
  - ATLAS internal Computing Review (H.Neal) reported in Feb 99. Raised some concerns.

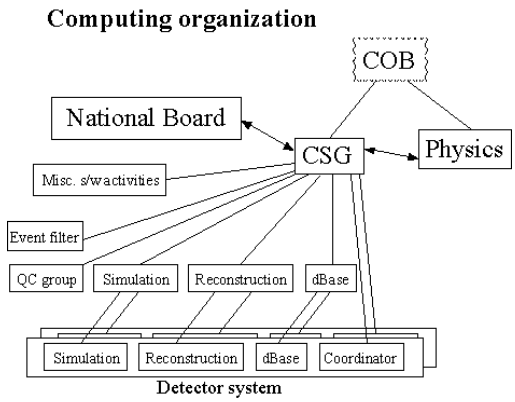
ATLAS overview

- Introduction and background (contd.)
  - Following recommendations of Neal review, ATLAS Management produced `Action Plan' with new organisation for Computing.
  - The `mission' is clear:
    - to merge algorithmic knowledge and experience from TDR approach with best practice of OO-based software engineering to produce OO-based version of ATLAS software.

ATLAS overview

- New organisational structure: (diagram)
  - `matrix' of sub-detector (e.g. Muon) and `general' (e.g. dBase) activities ;
  - emphasis on close liaison between `physics' and `computing' ;
  - National Computing Board to act as forum for regional and institutional interests.

ATLAS Computing Organization



ATLAS Computing People

	Offline Coordinator	Reconstruction	Simulation	Database
Chair	**N. McCubbin**	**D. Rousseau**	**A. Dell'Acqua**	D.Malon/ **RD Schaffer**
Inner Detector	**D. Barberis**	**D. Rousseau**	F. Luehring	**J. Pater**
Liquid Argon	**J. Collot**	**J. Schwindling**	M. Leltchouk	**S. Simion**
Tile calorimeter	**A. Solodkov**	F. Merritt	**A. Solodkov**	T. LeCompte
Muon	**G. Poulard**	**J.F. Laporte**	**A. Rimoldi**	S. Goldfarb
LVL2 trigger		**S. Tapprogge**		
Trigger/DAQ	**S. George**		**T. Hansl-Kozanecki**	**H.P. Beck**
Event Filter	**V. Vercesi**	**F. Touchard**		

ATLAS overview

- Overview of activities:
  - Reports produced (Nov 99) by Architecture Task Force (ATF) and Quality Control Group. (Architecture discussed further by Quarrie.)
  - Within sub-detector groups:
    - appraisal of existing reconstruction code (Fortran and C++) to assess design;
    - launch of `ab initio' design (USDP-like) ;
    - major effort to start using **Geant 4 ;**

ATLAS overview

- Development of PLAN: what, who (resources), when (milestones), leading to WBS and resource-loaded schedule.
- Parallel activities in dBase, simulation, and reconstruction groups:
  - broaden experience of use of Objy (base-line);
  - develop general approach to Detector Description;
  - interaction with Geant4 collaboration as we test G4 physics (against Geant3 and Test-beams);
  - address common issues (e.g. Event model);

ATLAS overview

- Training: combination of 'outside' courses run at CERN or Institutes, and ATLAS-run Geant4 course.
- Goals:
  - 2000: finalise PLAN; important year to 'get going' on many fronts (framework, G4, Objy, OO-design, C++ versions)
  - 2001-2: "consolidation, review, test, iterate".
  - 2003: MDC 1
  - 2003-4: TDR (?)

ATLAS overview

- International considerations:
  - LHC is `new' in **scale** (pB, channels, people,..) and **expectation** (functionally equivalent access by anyone, from anywhere, at anytime.)
  - CERN will provide smaller fraction of computing resources (people and hardware) than previously.
  - Assessing implications of the above is part of work of CERN LHC computing review.
  - Outcome of review will inform Computing MoU.

ATLAS overview

- International considerations (contd.)
  - software component of MoU is novel (Geant4) and ATLAS wanted to start the discussion and process in good time. Hence idea of **`software agreement'** as precursor to MoU.
  - Scope of software agreement and details of process are being considered. NCB has key role here. `Demand-pull' from USAtlas is helpful.

ATLAS overview

- International considerations (contd.)
  - hardware component of MoU is (relatively) straightforward: like a detector.
  - ATLAS are very active in MONARC;
  - US Grid `phenomenon' is very influential in discussion, bids etc. Discussions have started (Hoffmann) on how to set about EU bid to link national grids.

ATLAS overview

- Summary:
  - ATLAS computing has now entered an interesting and challenging phase of `transition'.
  - A significant USAtlas contribution is very timely and very welcome. There are areas where US expertise is likely to be very important.