Computing at Victoria

- Computing resources and research at Victoria
  - Minerva (IBM-SP)
  - CFI Innovation proposal for storage and processing
  - Beowulf cluster
  - Grid computing
- ATLAS computing – a Victoria perspective
  - CFI International applications
- TRIUMF and particle physics computing

Computing resources at Victoria

- 128 processor IBM-SP (Minerva)
  - funded by a CFI application in 1999 and an IBM Shared University Research Grant (RS et al)
  - Largest university research computer in Canada (167th in world)
  - Used by many groups including particle physics and outside groups such as UBC medicine
- CFI Innovation fund application $12 million (RS et al)
  - 400 TB storage facility
  - 1 teraflop processor (5 times existing facility)
  - Viictoria, NRC Herzberg Institute for Astrophysics, Pacific Geoscience Centre and Pacific Forestry Centre
  - In same competition with WestGrid and other proposals from Toronto, …

Beowulf cluster

- 40-node Linux cluster
  - Funded by CFI New Initiatives program (Roney, Kowalewski)
  - Shared by cosmology and particle physics
  - BaBar Canada MC production site
  - Undergoing first upgrade to dual cpu's

Excellent testbed for ATLAS

- *Operation and management of a cluster*
- *Operating system – SLAC uses an old version of Linux*
- *Security – conflicts with our need to be open*
- *Database – using Objectivity OO database*
- *Network – sustained transfer of data to SLAC*

Grid computing

- Lead Canadian effort in particle physics on the Grid
- Funded by C3.ca Pioneer Program (Sobie and Kowalewski)
  - C3 is an organization, like IPP, that represents the HPC community
- Established a small grid testbed between Victoria, TRIUMF and NRC-Ottawa
  - Asoka De Silva is a BaBar research associate at TRIUMF
- Grid Canada (Canarie, C3 and NRC initiative)
  - Meeting in Toronto Nov 26

ATLAS Computing I

- Our goal is to have a large Regional Centre for ATLAS analysis
  - with smaller computing facilities will be located at each institution
- ATLAS-Canada submitted a $20 M project outline (from UToronto) to the CFI Int Joint Venture Fund
  - Was not approved to proceed (Oct 2001)
- ATLAS-Canada is currently discussing possible options
  - TRIUMF computing centre (next slide)
  - Grid of university facilities (shared with other sciences)

ATLAS Computing II

- Project outline to CFI International Access fund was approved to go to full proposal (RS et al)
  - $6 million for computer manpower and hardware at CERN
    - 5 people based at CERN for 2 years over a 6 year period
    - $1 M hardware contribution to computing hardware at CERN
  - Could be part of a Canadian common fund contribution to computing at CERN
  - Application due Feb 2002

Particle physics computing

- Canadian PP computing resources need strengthening
  - Canada lacks software physicists
    - Eg. BNL, ANL, LBL are leading the ATLAS software development
  - Canada has no central computing resources
    - We are asking CFI for (large) local resources
  - Canada should be participating in international Grid initiatives
    - We are active in the Canadian Grid activities

TRIUMF

- TRIUMF could play a critical role in particle physics computing
  - The next 5 year plan could include a request (both hardware and manpower) for significant computing resources
- UVic group is one of leading institutions in Canadian HEP computing
  - OPAL-Online reconstruction and local analysis facilities
  - Beowulf, Grid, Minerva, CFI-Storage, CFI-Access
  - Access to highly experienced and professional staff at UVic CC
- We are willing to take a leading role in helping TRIUMF develop a computing plan for the next 5 year request