U.S. Atlas Computing: Overview and Management

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18 March 1999

Background

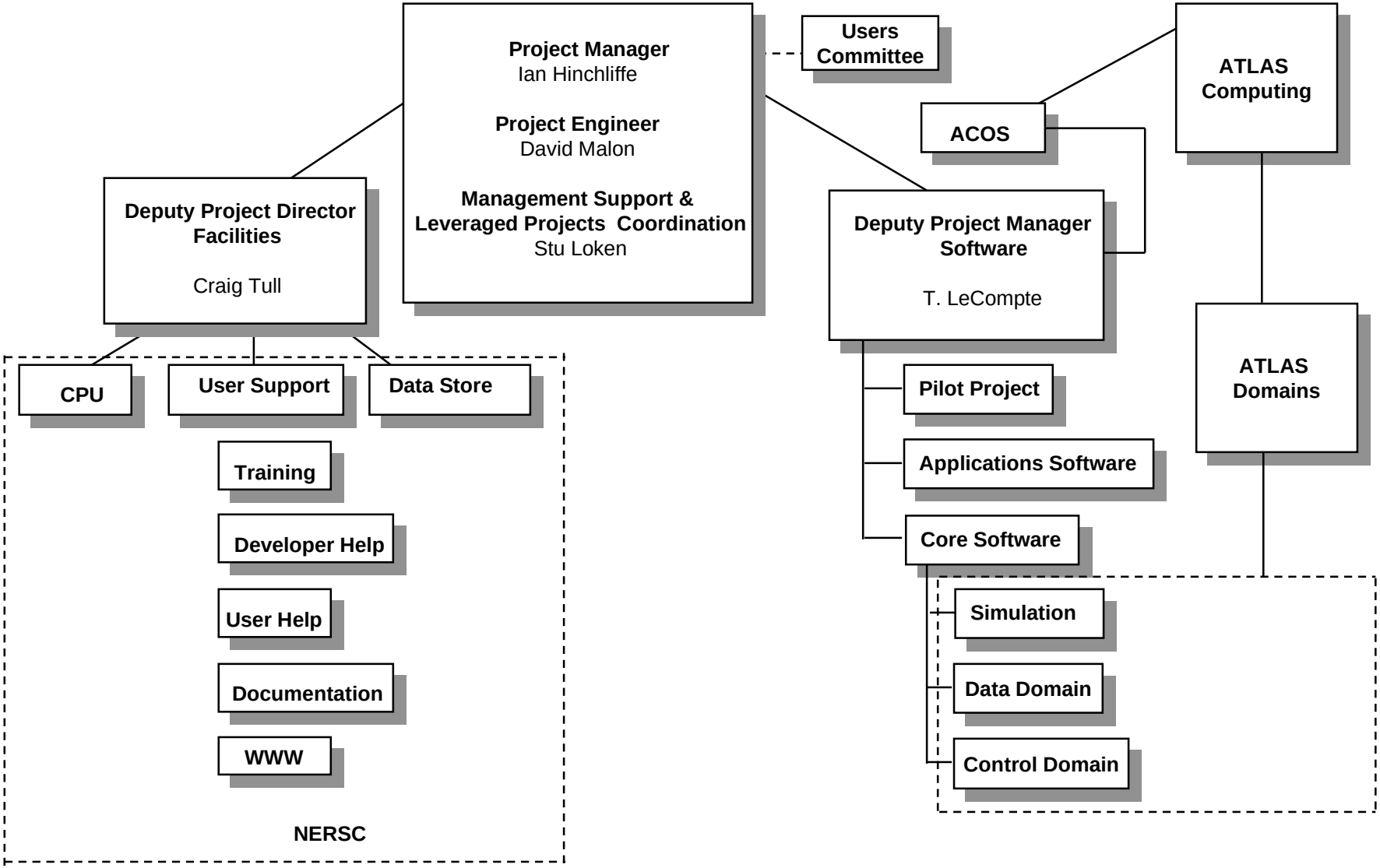
- Task Force formed almost one year ago
- Charge included seeking funds and recommending organization for U.S. ATLAS Computing
- Initial proposal submitted and reviewed in November 1998
- Response by funding agencies was to require an organization before any significant funding
- U.S. ATLAS Management set up a process to define computing organization

U.S. Atlas Computing

An LOI was submitted to U.S. ATLAS to be the Lead Lab for Computing (see http://arc.nersc.gov/) A review committee was used by U.S-ATLAS to evaluate the LOI's. It met in Washington Feb 2-3.

LBNL was selected by U.S. ATLAS as the Lead Lab for U.S. Atlas computing with Ian Hinchliffe as the Project Manager. ANL shares management.

Immediate task is preparation of Proposal for review by DOE/NSF on May 3-4. This will cover the scope and detailed funding request for near term.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Core Software
Training
Developer Help
User Help
Documentation
WWW
Simulation
Data Domain
Control Domain
NERSC

U.S. Atlas Computing Management

Deputy Director Oddone is oversight within LBNL.
A computing advisory panel will be appointed by him.
This panel will review the proposal before it is sent to DOE/NSF.

NSF funding is coordinated through U. Chicago (F. Merritt). Funding is directed by project manager.
U.Chicago has major ATLAS involvement in hardware and a committement to be involved in software

U.S. ATLAS Computing

Consultation with collaboration underway now in preparation for proposal. This will:

- **Identify areas of expertise and interest.**
- **Identify areas of ATLAS computing where need and where U.S impact will be greatest.**

Already good progress in building links to BNL and to key university groups who have been active in ATLAS Computing.

Base hardware infrastructure will be at LBNL. Use NERSC as a partner. Leverage their expertise in HPSS.

We plan to involve BaBar professionals as they are released.

Key Ingredients of Proposal

- Clearly defined set of software deliverables negotiated with ATLAS computing.
- Identification of U.S. personnel and funding needed to meet these deliverables,
- Scope of hardware and support needed in analysis phase.
- Ramp up plan.

Interim support

- Intend to use PDSF as the facility to provide support for U.S. ATLAS code developers and users.
- NERSC has replaced all the old SSC hardware.
- NERSC/Phys/NSD provides system support
- Need little additional hardware for the next few years.
- Only need limited personnel to support the ATLAS-specific software

Scope of Analysis System

- Reconstructed data sent from CERN
- ~ 250 TB per year, stored in HPSS
- ~50000 SPECint95 of analysis CPU
- 50 TB of user disk
- ~120 active users
- ~40 intensive users
- Need 10% system in ~2003 for Mock Data/testing.

Software contributions

- Must exploit areas where U.S. has major expertise on BaBar, CDF, D0, Grand Challenge
- Database is one example.
- Must start now so that these seasoned professionals can be integrated smoothly as they are released by other projects
- Vital to have short term deliverable, get physicists involved now, start training. We have proposed a pilot project.

Leveraged Projects

- Plan to exploit projects outside ATLAS to prototype critical aspects of U.S. ATLAS Computing model
- These will bring in funding from non-HEP sources such as the DOE-MICS
- On-going projects include HENP Grand Challenge and Clipper
- New proposal being developed for a Particle Physics Data Grid

Data Grid

- In response to a DOE-MICS call for proposals on NGI
- Total MICS funding of $17M
- Project funding of up to $2M/year
- Partners include Caltech, SLAC, LBL, ANL, BNL and SDSC
- Extends the concept of a “computational grid” to the handling of PByte data samples
- Pre-proposal received encouragement and a full proposal is being developed