

ACEnet

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October 23, 2006

Vision

To provide Atlantic Canada with a distributed technology platform enabling researchers to gain access to the collaboration tools and high performance computing resources that are necessary to conduct world-class research

The important elements in the vision are:

Atlantic Canada – this means that ACEnet operates on a pan-Atlantic Canada basis and provides services openly to any qualified research institution.

Distributed technology platform – means that we deliver grid-enabled HPC services to our client base. The distribution of technology allows for efficient use of finances and computing across the region with no technical/geographic impediments.

Collaboration tools – we deliver the ability to share information, research and data within geographically dispersed teams and thus promote teamwork between institutions.

High performance computing resources – in addition to the collaboration tools, we deliver computing resources, people resources and software.

Conduct quality research – ACEnet's role is to free researchers to concentrate on their research by providing a reliable HPC service. ACEnet improves the quality and quantity of research conducted in Atlantic Canada. Quality is measured in terms of scientific value and in terms of economic "spin-off" activity.

ACEnet Institutes are "virtual" institutes that develop and enhance collaboration within research communities that have a critical mass within Atlantic Canada in areas that depend heavily on HPC resources. Three institutes were described in the ACEnet CFI proposal:

- Materials Physics
- Computational Chemistry
- Advanced Computing

ACEnet will look to establish others. These institutes are supported through ACEnet's sustaining funds and collaboration tools.

Objectives:

It is the belief of our partnership that in fulfilling this vision, ACEnet:

- Creates a network of connected and collaborating researchers
- Provides HPC resources that are critical for world-class research
- Is magnet to attract/retain highly-qualified people to our region
- Facilitates a pervasive High Performance Computing research culture
- Is an essential element in the growth and competitiveness of our universities, partners and Atlantic Canada's economy.

Terms of Reference

1. ACEnet

The Atlantic Computational Excellence Network (ACEnet): a pan-Atlantic HPC consortium of seven universities that has received over \$25 million funding from:

- The Canada Foundation for Innovation (CFI)
- The Atlantic Canada Opportunities Agency (ACOA)
- Sun Microsystems (Sun)
- Nova Scotia Research and Innovation Trust (NSRIT)
- The Newfoundland Industry, Research and Innovation Fund (IRIF)
- The New Brunswick Innovation Fund (NBIF)

The seven institutions are: Memorial University of Newfoundland (lead institution), Dalhousie University, Mount Allison University, Saint Mary's University, St. Francis Xavier University, University of New Brunswick and the University of Prince Edward Island.

2. ACEnet Infrastructure

ACEnet funds infrastructure of various types including high performance computing (HPC), visualization, buildings or portion of buildings, videoconferencing facilities, office space for ACEnet personnel, etc. A defining characteristic of the ACEnet funded Infrastructure is that it is equally accessible to all users and is governed by resource sharing policies (such as the Fairshare HPC scheduling system) as established by the Research Directorate; Resource Allocation Committee and Executive.

3. Membership in ACEnet

Membership in ACEnet is open to Institutions and Researchers. Any publicly funded University or College in Atlantic Canada may apply for membership. Researchers from Member Institutes are automatically eligible for membership, researchers from non-member Institutes will be approved for membership by ACEnet's Resource Allocation Committee.

3.1 ACEnet Member Institutes (MI)

ACEnet Member Institutes (MI's) currently are:

St. Francis Xavier University	Saint Mary's
Dalhousie University	University of New Brunswick
Memorial University	University of Prince Edward Island
Mount Allison University.	

All ACEnet MI's have access to

- All ACEnet Infrastructure
- Membership in the ACEnet Institutes
- ACEnet sustaining funds
- Support from ACEnet's Technical Team

in accordance with the appropriate policies established by the Board of Directors, Research Directorate, Resource Allocation Committee and Executive¹.

An ACEnet MI commits to the following:

- a) To establish a “local users group” of researchers who use the ACEnet facilities and are willing to provide guidance and feedback to the ACEnet on matters of policy and their application.
- b) To participate, where appropriate, in the preparation of any ACEnet led proposals, or national initiatives involving ACEnet, as approved by the Board, and to assist in securing the necessary matching funds through various provincial, regional and national funding agencies to ensure the success of such initiatives.
- c) To support ACEnet’s role as the region’s primary provider of HPC. As such any researcher, group of researchers or unit within an ACEnet MI that intends to acquire HPC resources will consult with ACEnet to determine whether ACEnet can provide these resources. If ACEnet cannot provide the necessary resources, then ACEnet will work with the researcher, group of researchers or unit to ensure that any planned acquisition of HPC resources creates the maximum benefit, for both parties².

In addition to the above any ACEnet MI that hosts ACEnet equipment must sign the ACEnet Inter-Institutional Agreement.

3.2 ACEnet Major Resource Provider (MRP)

An ACEnet MRP is an ACEnet MI that has made significant financial contributions towards the creation and development of ACEnet. ACEnet MRPs host or have committed to add and/or host a significant amount of the total ACEnet infrastructure, together with the technical support personnel required to operate the ACEnet infrastructure.

In addition to the commitments listed above for an ACEnet MI, an ACEnet MRP commits to the following

- d) To share equitably in financial responsibilities associated with ACEnet operations that the Board of Directors may deem necessary from time to time. These costs may include start-up costs and other expenditures for which no external source of funding can be identified but are deemed necessary or annual fees, as approved by the Board.
- e) To identify HPC as a major strategic institutional priority and to make explicit reference to it in the MRP’s Institutional CFI Strategic Research Plan.

The ACEnet MRPs currently consist of

St. Francis Xavier University	Saint Mary’s
Dalhousie University	University of New Brunswick
Memorial University	

Which ACEnet MI’s are designated as MRPs is determined by the ACEnet Board of Directors. Each ACEnet MRP is represented on the ACEnet Board of Directors.

¹ ACEnet’s access policy for private sector firms is presented on page 9.

² A more detailed policy regarding integration of ACEnet equipment is presented on page 9.

Organizational Chart

1. Board of Directors (BoD)

Voting members: VP's Research from the ACEnet MRPs (currently MUN, UNB, SMU, StFX and Dalhousie); and at least one member at large.

Ex-officio members (non-voting): the Executive Director and the Chair of the Research Directorate

2. External Advisory Committee (EAC)

The EAC consists of not less than three internationally recognized computational researchers, appointed by the Board and, when deemed appropriate by the BoD, the EAC will visit ACEnet as a group, to examine ACEnet's programs and facilities, against the progress documented in the most recent ACEnet Annual Report. The EAC will provide to the Board a report on ACEnet's progress, focusing on recommendations to strengthen ACEnet.

3. The Executive Committee (EC)

- a) **Executive Director (ED)**: Responsible for implementation and operations. Appointed by and reports to the BoD. Is a voting member of the EC.
- b) **Research Directorate (RD)**: Responsible for the strategic directions of ACEnet, both research and technical. Appointed by and reports to the BoD. The RD will consist of not less than three tenured or tenure-track faculty, each drawn from any ACEnet MRP or MI. Normally, the PI of any major current ACEnet funding initiative (either in preparation or recently funded) will be a member of the RD. Each RD member has one vote. Although RD members necessarily come from specific institutions, they do not represent the particular interests of those institutions when participating in RD decisions; they act solely in the best interests of ACEnet as a whole. The RD will elect a Chair from among its voting members.
- c) Ex-officio EC members (non-voting): **Operations Manager, Chief Technology Officer**

4. The Executive Branch (pink on org chart)

- Executive Director (as defined above)
 - Operations Manager
 - Chief Technology Officer (CTO)
 - Technical Staff

5. The Research Branch (blue on org chart)

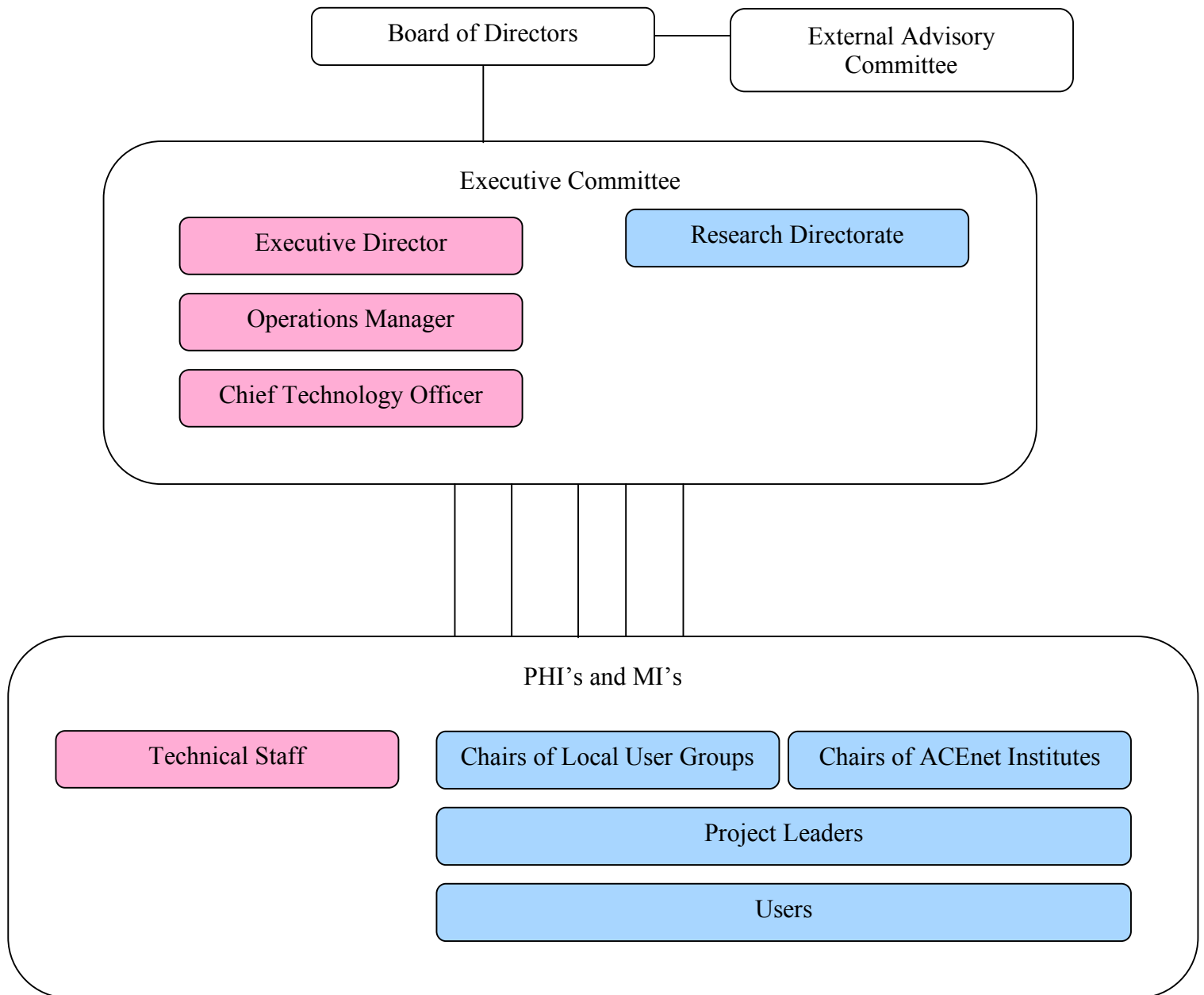
- Research Directorate (as defined above)
- The ACEnet user community consists of ACEnet Project Leaders and ACEnet Users.

- **ACEnet Project Leaders:** tenured or tenure-track faculty at the ACEnet MI's.
- **ACEnet Users:** Account holders, each to be associated with one ACEnet Project Leaders. Includes staff researchers, PDF's, graduate and undergraduate students, visiting faculty, collaborating personnel located at external locations (including private sector research partners).
- The interests of the user community are represented through **Chairs of the Local User Groups** at each of the ACEnet MI sites and the **Chairs of ACEnet Institutes**
 - Chair of the Local **User Group** (CLUG): one tenured or tenure-track faculty member from each ACEnet MI. A member of the RD cannot simultaneously be a CLUG. Each CLUG will be appointed by the Board, normally based on the recommendation of 2 or 3 candidates made by the VP Research of the member institution. Institutions are expected to consult widely among their ACEnet Members for suggestions for CLUG candidates.
 - The **Chairs of the ACEnet Institutes (CAI)** will be appointed by the Board.

6. Other Formal Groupings

- **The ACEnet Council:** the RD, CLUGs, ED and CTO. Forum for the EC to get input on major decisions; and through which the user community can communicate major issues to the EC. The Chair of the Council will be elected by the CLUGs from among the CLUGs.
 - **Local User Groups:** CLUG, Project Leaders and Users of an MI.
 - Determine usage policies (scheduling, disc quotas etc.)
 - Provide feedback on service levels
 - Recommend architectural & operational improvements
 - Advise on software acquisitions and licensing
 - Help ACEnet be the best that it can be
 - **ACEnet Institutes:** Project Leaders and associated Users in areas of research that rely heavily on HPC resources and which have a critical mass of researchers within Atlantic Canada. ACEnet Institutes are designated by the Board of Directors on the recommendation of the Research Directorate.
 - **ACEnet Technical Team:** ED, CTO, and Technical Staff
7. **Terms of reference** of for all positions listed above will be determined by the Board on the recommendation of the RD.

Org Chart



Policies

1. Access to ACEnet infrastructure

Any ACEnet Member (as defined in the Organizational Chart) may apply for an ACEnet account, on behalf of themselves or any ACEnet User for which they have direct responsibility.

Accounts for collaborating research personnel based at private sector firms may be granted so long as the account is used for research directly associated with an ACEnet Member. ACEnet encourages research that has a direct positive impact on Atlantic Canada's economy. However, ACEnet facilities must not be used directly to generate commercial revenue. (E.g. A researcher can partner with oil industry scientists to improve reservoir modelling, and the resulting software may evolve to the point where it becomes a viable commercial product; but ACEnet cycles must not be used to generate results, using the reservoir simulation program, that will be sold for profit.)

In return for the privilege of Access to ACEnet's resources, users will agree to report to ACEnet on their research projects and activities and, researchers will acknowledge ACEnet in any papers published which result from ACEnet-enabled research.

2. Integration of new equipment

In order to serve the computational needs of the research community in Atlantic Canada ACEnet will consider the integration of infrastructure in addition to that acquired through ACEnet funds. This equipment may consist of

- Existing or "legacy" infrastructure owned and operated by a research group or unit at an ACEnet MI.
- Infrastructure purchased by a research group or unit at an ACEnet MI.
- Equipment purchased by ACEnet through funds provided by a research group or unit at an ACEnet MI.

Infrastructure that is integrated into ACEnet will normally reside behind the ACEnet firewall and be managed and operated by ACEnet staff. The integration of new or existing infrastructure into ACEnet is at the discretion of ACEnet and will depend on several factors. These factors include:

- Compatibility with existing infrastructure.
- ACEnet's ability to manage and operate the infrastructure.
- Availability of machine room space.
- To what extent the infrastructure is consistent with the ACEnet's technology strategy and user needs.
- The benefits to ACEnet that will result from the proposed integration.

When infrastructure is integrated into ACEnet, the research group or unit responsible for the acquisition will enter into a service level agreement (SLA) with ACEnet. This agreement will commit ACEnet to providing the research group or unit access an agreed level of service. The standard SLA will normally include, but is not limited to

- Guaranteed access to a portion of ACEnet's computational resources over some specified period, typically 3~5 years.
- The licensing and maintenance of software.
- Backup of data.
- System support and management.

In addition to specifying the level of the service that ACEnet will provide, the SLA will normally specify the contribution that the research group or unit will be required to make towards the cost of integrating and maintaining the hardware into ACEnet.

Before entering into a service level agreement to support new or existing infrastructure, the ACEnet executive will engage and work with the research group or unit to help identify their needs and the role, if any, ACEnet might play in support and acquisition of the infrastructure. If these preliminary discussion identify a role for ACEnet in the proposal then the ACEnet executive will work with the research group or unit to prepare a draft SLA. Once complete the draft SLA will be submitted together with a report identifying of the costs and benefits of the proposed integration and how it will support ACEnet's strategic initiatives. This report together with the draft SLA executive will be submitted to the ACEnet Research Directorate, together with the recommendation of the ACEnet executive, for approval.