

# Report from the 2012 Networking Task Force

December 21<sup>st</sup> 2012

We report on the accomplishments and recommendations from the 2012 Networking Task Force charged by Jon Bakken, Division Head CCD, in June 2012.<sup>1</sup> A summary of this report was presented at the meeting on Dec 21<sup>st</sup>. The full set of information gathered is published at <https://sharepoint.fnal.gov/cd/sites/nvs/NetworkTF/>.

The lessons learned from the 2011 task force were given by Computing Sector management as: the model of network planning and implementation is not simple due to the interplay among investment, sustaining, EOS, technology advances, and so forth; network planning—short term and long term—needs continual interaction with the science stakeholders; and requirements should be more clearly communicated from the science communities to avoid ad-hoc changes in priority and scope.

## Outcomes

The main outcomes of the 2012 task force are:

- Review, discussion and agreement to the FY13 plans for Networking.
- Review, discussion and agreement to the Five Year Plan for Networking.
- Made a list of new building and facilities that will need networking in the next 5-8 years.
- Analysis that (outside of the new buildings) all needs for scientific stakeholders known to date can be accommodated by the current plans for networking.
- Agreed on a process for requesting changes of service for End Of Life and End of Support equipment based on the scientific service request and design procedures.
- Acted upon 19 identified short-term issues, for example monitoring requirements for scientific applications, and definition of the 100Gigabit Testbed Environment. Following the task force completions any continuation in these activities will continue as part of the ongoing program of work in the Computing Sector and/or is the subject of one of the recommendations below.
- Provided a forum for information transfer of new technologies, marketplace directions and plans of the networking group and scientific customers.
- Made a series of recommendations (below) for how the networking group and scientific stakeholder interactions can be effectively implemented in the future.

## Recommendations

- Have a forum across CCD and SCD that meets at the start of the annual Network budget planning in order to get scientific stakeholder inputs.
- Have a forum across CCD and SCD that meets, probably in the summer, to review and agree on the annual Network budget plan and any revisions to the 5-year plan. The meetings should include discussion of costs and actions to manage of the budget both in the short and long term. Update the spreadsheet of new and/or reconfigured buildings and facilities as part of this activity.
- Have a forum across CCD and SCD that meets quarterly where network experts communicate changes and opportunities in the marketplace, and technologies available.
- Create an activity, jointly owned by CCD and SCD that meets quarterly for discussion, reporting, and organization of network research and testbed activities.

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<sup>1</sup><http://tinyurl.com/bv2s8e5>

- Ensure needs for network infrastructure, services and issues are included in all processes and activities that are planning, budgeting, re-planning and operations across elements of the scientific program and the Computing Sector. The current venues include the SCPPM, liaison and business relationship manager meetings, operations, scientific projects such as artdaq.
- Scientific and business customer liaisons are the authoritative points of contact between the Network group and each customer organization.
- A more detailed documented set of procedures for Scientific Customer ↔ Networking interactions and needs should be developed:
  - The life-cycle of the customers program or project;
  - Authoritative roles and points of contact in each organization.
  - Development of MOUs and SLAs. These should address the needs of both local area and wide area networking.
  - Recommendation that this is done as part of a broader initiative to work on such procedures and processes for other Computing Sector services.

### Addressing the Charge

The task force worked to address the charge as follows:

- Develop strategic goals and vision for the Fermilab campus and wide-area networks in support of scientific computing.
 

*The scientific stakeholders endorsed the following strategic goals and vision as documented in the Five Year Plan for Networking.*
- Convey the application, computing, data models and networking needs of the Fermilab scientific communities to the networking team. Provide feedback to the network planning group to guide the 5 year networking design and architecture to help achieve these needs of the lab.
 

*The scientific stakeholders documented and presented their needs. The Network Planning group developed a Five Year Plan for Networking which was reviewed by the Task Force.*
- Generate a series of questions that the networking planning group will investigate as part of their design process. Understand and confirm that networking answers and responses will effectively satisfy our laboratory needs.
 

*The Task Force spawned a set of Action Items. Work was done by subgroups. The results were reviewed and the Action Items closed out by the task force.*
- Suggest and comment on areas of network research and development in which Fermilab might invest and contribute.
 

*As a result of the needs of CMS and the opportunities afforded by the new 100Gigabit connections to ESNET a Fermilab 100 Gigabit Network Testbed Environment plan was developed, consisting of activities from both CCD and SCD. Fermilab decided to join the revitalized ESNET 100 Gigabit wide area testbed, formerly the ANI testbed, and plans are underway to contribute to the federated environment policies and controls, and to execute a program of research using the available hardware.*

*Other research possibilities were discussed: application level network management for data movement services, distributed repositories for network data collected by perfSONAR and other probes, and advanced monitoring.*
- Attend regular meetings of the Network Task Force committee. Read, comment on, and verify the five-year strategic vision and the five-year strategic plan and roadmap for both campus and wide area networking will meet Fermilab's needs.
 

*The Five Year Plan for Networking was written by the network planning group and commented on and agreed to by the members of the task force.*

## Documents, List of Action Items and Links to Agendas

<https://sharepoint.fnal.gov/cd/sites/nvs/NetworkTF/SitePages/Network%20Task%20Force%202012.aspx>