

## **Sponsored Educational Group Participation (SEGP) In Internet2 Short Overview**

### ***What is Internet2 K20 Initiative?***

The Internet2 K20 Initiative brings together Internet2 member institutions, primary and secondary schools, colleges and universities, libraries, and museums to get new technologies—advanced networking tools, applications, middleware, and content—into the hands of innovators, across all educational sectors in the United States, as quickly and as “connectedly” as possible.

### ***What are Internet2 K20 Goals?***

- To bring innovators in K-12, community colleges, universities, libraries, and museums into appropriate regional, national, and international advanced networking efforts, via the "Sponsored Education Group Participant" (SEGP) process.
- To encourage and help sustain partnerships among these education institutions, the private sector, and government
- To enhance teaching and learning by facilitating projects that explore the ways in which advanced network applications, services, tools, and digital content can extend access to education and educational resources.
- To develop mechanisms for timely communication across all educational sectors and regions in order to enable quick, pervasive technology diffusion

### ***What is a Sponsored Educational Group Participant (SEGP)***

A SEGP is an aggregate of educational and education-related organizations (museums, libraries, etc.) interconnected by one or more networks within a state that is approved for participation in Abilene. To become a SEGP, the group of organizations must be sponsored by an Internet2 university member that is an Abilene primary participant (such as WPI). The SEGP and the university must be located in the same state (Massachusetts), and must attach to Abilene through the same connector (such as the Goddard GigaPop, L.L.C at 474 Main Street, Worcester). Candidates for SEGP include networked aggregates of educational institutions (including non-profit and for-profit K – 20, technical, and trade schools) which may also include museums, art galleries, libraries, or hospitals that require routine collaboration on instructional, clinical, and/or research projects, services, and content with Primary participants or with other Sponsored participants.

### ***What does becoming a SEGP provide?***

SEGP status allows members of the aggregation to send and receive traffic over the Abilene network. The initiative is just getting started, so there are not really any concrete projects or proof-of-concepts at this time.

### ***What is the relationship of SEGPs to Internet2?***

SEGPs have no relationship to, and are not members of, Internet2.

### ***What difference will the connection to Abilene provide to the average school?***

The connection to the backbone network does not alone guarantee any improvement in network performance over existing Internet connections. In addition to the backbone, local and regional networks at both ends of the network connection being used must be high-performance for users to experience improved performance.

What states have a SEGP?

- Auburn University sponsors Lee County Board of Education
- California, Indiana, Louisiana, Maryland, Michigan, Missouri, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, Virginia, Washington, and Wisconsin.
- [Drexel to Provide Internet2 Access for Pennsylvania's 14-School State System of Higher Education](#)

***What are some examples of an Internet2 application?***

The following eleven descriptions of potential applications are described on WPI's Internet2 web site: <http://www.wpi.edu/Admin/IT/Internet2/>. They were developed by Greg Marks, Special Assistant for the K-12 Outreach, Merit Network.

1. Language Students Talk with Students in a Foreign Country
2. Music students coached by virtuoso teachers from a distant site.
3. Virtual field trips to museums or remote sites made more meaningful because of greater detail, responsiveness, and "virtual reality" exploration of a room or space.
4. Interaction between a student teacher and an established classroom teacher, or involving college faculty
5. Science students who utilize rare or expensive remote instruments such as electron microscopes, telescopes, or other devices that allow them to explore worlds outside their classroom.
6. High quality video interaction with remote experts at the Smithsonian or astronauts working on the international space station.
7. Using multicast video technology to deliver lectures, demonstrations, and performances to large audiences distributed across the country that would normally require broadcast television or satellite video delivery.
8. The University of Michigan's Visible Human Project that makes it possible to "fly" through and view the detailed digital anatomical database of the human body that is being created by the National Library of Medicine.
9. Access to extensive photographic and video archives maintained by NASA and many other organizations.
10. Access to extensive archives of environmental, social, and other science data
11. Access to high performance computational clusters and other forms of "Grid" computing where computers, data, and other resources from many separate locations are coordinated to work on problems that are too large for any single site or organization to take on alone.

***Who can sponsor a Sponsored Educational Group Participant?***

Internet2 Regular (University) members can sponsor networked aggregations of educational organizations as Sponsored Educational Group Participants in Abilene. The sponsor must be in the same state as the networked aggregate. Requests for exceptions to the same-state requirement should be referred to the Internet2 Director of Member Activities.

***What is the process for adding a Sponsored Educational Group Participant to Abilene?***

An Internet2 Regular member that is also an Abilene Primary Participant, or a group of Internet2 Regular members and Primary Participants, can submit an application to sponsor a networked aggregate of educational organizations, such as a state K-20 network. The sponsor(s) submits an application to Internet2 that describes the network's applications, projects, and other activities involving Internet2, and documents its commitment towards implementing advanced networking capabilities. The Regular Member also submits a letter agreeing to the conditions of sponsorship. Internet2 senior staff reviews the application. Upon acceptance of the application, the sponsor is notified and the necessary network routing is enabled to allow the Sponsored Participant to use Abilene. A description of the process and application materials can be found at <http://www.ucaid.edu/abilene/html/sponsored-application.html>

***How is a Sponsored Educational Group Participant different than a Sponsored Individual Institution Participant?***

Sponsored Educational Group Participants are aggregates of organizations brought together in a statewide or other wide-area network within a state. The network serves as a means of connecting these organizations to each other as well as to external networks where all can share the cost of connection. Examples of these aggregates are statewide K-12 networks, community college networks, and similar collectives of educational organizations. These networks are engaged in applications development and other projects designed to enhance their use of advanced networking infrastructure and services. Sponsored Participants are individual research and education organizations that are engaged in collaboration with an Internet2 member or other sponsored participants on instructional, research, clinical or content-related projects.

***Are there any requirements of the Sponsored Educational Group Participant?***

Potential Sponsored Educational Group Participants are expected to engage in activities that make use of advanced network services and be able to document a commitment to deploying advanced networking capabilities.

***What are the costs associated with Sponsored Educational Group Participation and who pays them?***

Internet2 will charge the Connector for the Sponsored Educational Group Participant an annual fee of \$30,000 per connector per state, plus a variable fee of \$2,000 times the current number of Congressional representatives for that state. We estimate Massachusetts's costs at \$50,000 for the combined connector and variable fees. Sponsored Educational Group Participants may pay fees to the Connector and/or to the sponsoring Internet2 member, where these fees apply to the specific conditions of connection. Internet2 does not assess fees directly to the Sponsored Educational Group Participant. This fee structure will be assessed on an annual basis. Any questions about how this fee applies in specific situations should be referred to the Internet2 Director of Backbone Network Infrastructure.

***What other ongoing costs would the state incur?***

- Increase in fees to accommodate upgraded lines. Other costs TBD

***What are the start-up costs for Massachusetts?***

- Upgrade lines from T1. Other costs TBD

***Can the Connectors apply E-rate to this fee?***

This fee is not eligible for any discounting under the K-12 Schools and Libraries program of the Universal Services Fund.

***What are the responsibilities of the sponsor?***

Sponsors are principally responsible for:

- Ensuring that the potential Sponsored Educational Group Participant is appropriate for sponsorship, as described in the Abilene COU. If the Sponsored Educational Group Participant ceases to be so, the sponsor agrees to inform Internet2 in writing and arrange to have it disconnected from Abilene.
- Identifying an Abilene connector that will provide the proposed network's connectivity to Abilene
- Describing one or more advanced application for which either the sponsored network or schools therein will utilize Abilene

- Reporting periodically on the proposed participant's activities that make use of advanced network services and its commitment to deploying advanced networking capabilities
- Identifying any Carnegie Doctoral/Research-Extensive (D/R-E) institutions within the sponsored network that are not eligible to participate in Abilene without first becoming an Internet2 member

***What are the increased technical requirements for Abilene connectors supporting one or more Sponsored Educational Group Participants?***

A Connector supporting the Sponsored Educational Group Participant(s) must:

- Maintain a 7x24 Network Operations Center (NOC) that is accessible to the Abilene NOC
- Register its routing information and that of the Participant(s) in the Internet2 Routing Registry (I2db) or equivalent provide UCAID a quarterly report on the relative utilization of the Abilene connection by the Sponsored Education Group Participant(s)
- Assure compliance with the Abilene CoU by the Participant(s)
- Inform the Participant(s) that Abilene does not provide transit to the commodity Internet
- Use a distinct origin Autonomous System Number (ASN) so as to distinguish its routing information for that of other Participants using the same connection
- Not use Abilene to transit any intra-state traffic within its own network (in cases where the Sponsored Education Group Participant is multiply homed to Abilene)
- Take steps to avoid causing Abilene to establish any additional ATM permanent virtual circuits or BGP parings to the Connector.

***Contacts***

- **WPI**

**Tom Lynch**  
 Vice President  
 Information Technology Office  
 Worcester Polytechnic Institute  
 100 Institute Road  
 Worcester, MA 01609-2280  
[tlynch@wpi.edu](mailto:tlynch@wpi.edu)

**Allan Johannesen**  
 Director of Internetworking and  
 Telecommunications  
 Information Technology Office  
 Worcester Polytechnic Institute  
 100 Institute Road  
 Worcester, MA 01609-2280  
[aej@wpi.edu](mailto:aej@wpi.edu)

- **Internet2 K20 Initiative**

**Bill Mitchell**  
 Executive Director, MOREnet and  
 Associate Vice President  
 University of Missouri System  
 573-884-2666  
[bill@more.net](mailto:bill@more.net)

**Louis Fox**  
 Vice Provost  
 University of Washington  
 206-685-4745  
[lfox@u.washington.edu](mailto:lfox@u.washington.edu)

***References***

- The Internet2 web site provided a significant portion of the above text.  
 Internet2 <http://www.internet2.edu>  
 SEGP <http://www.internet2.edu/abilene/html/faq-sponsored.html>  
 K/20 Initiative <http://www.internet2.edu/k20/>  
 Sponsored Participant Application  
<http://www.internet2.edu/abilene/html/sponsorship-application.html>
- WPI <http://www.wpi.edu/>