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Broadband Technology Opportunities Program
U.S. Department of Commerce/NTIA
Room 4812
1401 Constitution Avenue
Washington, DC 20230

To Whom It May Concern:

IEEE-USA would like to take this opportunity to provide written comment on the new Broadband Technology Opportunities Program (BTOP) being established by the National Telecommunications and Information Administration (NTIA) as contained with Section 6001 of the American Recovery and Reinvestment Act of 2009 (Recovery Act).

IEEE-USA strongly supports the concept of the U.S. Government and the U.S. communications industry working together to provide nationwide and ubiquitous access to affordable high-speed broadband data services to facilitate use of new and demanding Internet applications. Such access will stimulate innovation, spur economic activity, and contribute to increased productivity for the nation.

A selected set of specific questions contained within the NTIA's Web site, e.g., http://www.ntia.doc.gov/frnotices/2009/FR_BTOP_RFI_090312.html are repeated and comments provided as follows:

Question (1.c.) How should the BTOP leverage or respond to the other broadband-related portions of the Recovery Act, including the United States Department of Agriculture (USDA) grants and loans program as well as the portions of the Recovery Act that address smart grids, health information technology, education, and transportation infrastructure?

Comment: The BOTP should coordinate fully with the portions of the Recovery Act that address the Smart Grid since the deployment of broadband will facilitate energy production, efficiency, and the conservation goals of the Administration. Many functions within the existing electric grid information infrastructure are using legacy protocols and low speed serial lines (e.g., 1200 to 2400 bits per second) which does not support the functionality needed in the Smart Grid.

The IEEE-USA position on advanced broadband (<http://www.ieeeusa.org/policy/positions/broadband.pdf>) cites advanced broadband as enabling infrastructure for the Smart Grid. It is timely to consider the deployment of advanced broadband as a factor in addressing Smart Grid bandwidth requirements, and to coordinate Smart Grid efforts with the broadband efforts.

Question: (4.c.) How should the BTOP prioritize proposals that serve underserved or unserved areas? Should the BTOP consider USDA broadband grant awards and loans in establishing these priorities?

Comment: Unserved areas should have the greater priority. The most important short-term goal is broadening ubiquitous availability. Data rates should be sufficient to provide the equivalent of several channels of bidirectional, high-resolution video, achievable by expanding the capabilities

of current technologies. This will enable or enhance the most important Internet services available today, as well as generate extra benefits that materialize as more and more people are connected. IEEE-USA advocates the achievement of at least 20 Mb/s bidirectional speed with 90 percent availability throughout the nation within five years.

Question: (4.g.) Should the fact that different technologies can provide different service characteristics, such as speed and use of dedicated or shared links, be considered given the statute's direction that, to the extent practicable, the purposes of the statute should be promoted in a technologically neutral fashion?

Comment: The spirit of the ARRA suggests that the most effective use of grant funds is more important than technological neutrality. Therefore, initial cost, deployment speed, and up-keep cost are more important than speed and dedicated vs. shared links in advancing the ARRA purpose of bringing threshold broadband connectivity to unserved and underserved populations.

IEEE-USA suggests the following general matrix to help prioritize the various Infrastructure Technologies and the goals they each need to achieve when building out an Internet infrastructure using grant funds:

Goal	Infrastructure Technology	Coverage Distances			
		Feet	Yards	Miles	Ten's of Miles
Cost to Deploy	Wireless	low	low	low	medium
	Copper	low	low	medium	high
	Fiber	low	medium	medium	high
Speed of Deployment	Wireless	very fast	very fast	very fast	fast
	Copper	very fast	fast	slow	slower
	Fiber	very fast	fast	slow	slower
Maintenance & Up-keep	Wireless	low	low	low	medium
	Copper	low	low	medium	high
	Fiber	low	medium	medium	high

Other important drivers for what technology should be used in a particular build-out might include:

- Affordability of a BB service provider's product costs using the particular Infrastructure Technology
- Density of Population
- Best coverage of the area

Question (6.) Grants for Expanding Public Computer Center Capacity: The Recovery Act directs that not less than \$200,000,000 of the BTOP shall be awarded for grants that expand public computer center capacity, including at community colleges and public libraries.

a. What selection criteria should be applied to ensure the success of this aspect of the program?

Comment: Basic criteria should include the grantee’s financial stability, length of its community service, quality of its service, and its current management competence.

Beyond such basic criteria, the two key criteria here should be:

1. Self-Sustainability, which means:

- a. Use of a robust and long-term & viable information and communication technology (ICT) that is widely available, easy to maintain, and simple to use and repair
- b. Use of services in or for the facility that create long-term value to community users
- c. A formal plan about how to support the facility financially or with volunteer labor or support to encourage community involvement.

2. Maintainability, which will provide all of the following:

- a. Support Resources (resources, once deployed, must be supported)
- b. Instructional Resources (resources provided must to some extent include teaching)
- c. Broadband Internet Access (having Internet or remote access and/or management of facilities in a Community Computing Center may allow for home-based use of Community Computing Center hardware or software resources).

Other optional criteria might include full or part-time staff, availability to check out ICT technology for home use, distance learning resources or partnerships, and/or numerous other resources that might help foster use/adoption of ICT resources provided.

b. What additional institutions other than community colleges and public libraries should be considered as eligible recipients under this program?

Comment: Community recreation centers or any type of centrally located facility that would allow for a secure location of computing resources, good access to Broadband Internet services, as well as enough space and facilities to create class room learning environment should also be considered.

Question (7.) Grants for Innovative Programs to Encourage Sustainable Adoption of Broadband Service: The Recovery Act directs that not less than \$250,000,000 of the BTOP shall be awarded for grants for innovative programs to encourage sustainable adoption of broadband services.

a. What selection criteria should be applied to ensure the success of this program?

Comment: Any criteria ought to include prior grantee success in related programs such as encouraging literacy, reducing student drop-out rates, providing special education, or teaching English as a second language.

Another criterion for success could be the availability of, or proposal for, a computer workshop to familiarize potential subscribers with computer programs and capabilities.

For any service provided in a marketplace, in order to determine the efficacy of the service “closing the loop” is usually required. So the grant applicant should propose to monitor and report subscribership and subscriber turnover as an incentive to manage the program diligently.

To provide the same incentive, the grant applicant might also propose regular follow-up participant surveys or studies to get the feedback that would indicate program success or failure.

It might also be reasonable to base selection on socio-economic data combined with already known underserved or unserved areas.

b. What measures should be used to determine whether such innovative programs have succeeded in creating sustainable adoption of broadband services?

Comment: Though it belies the complexity of determining and defining what “success” really is for a program trying to foster use and adoption of Broadband Internet Services, such a metric could be created by examining the volume of distinct Internet Users (i.e. source addresses) on a given “piece” of the Internet where the adoption program is being provided. In combination with the growth data from the ISP one could infer or measure any growth in adoption.

This assumes a partnership between an ISP (whom would have access to this type of data) and the organization running the program. This also assumes that the ISP servicing the adoption program could provide accurate information too.

Metrics aside, as offered in 7.a, the simple prerequisite of participants in a program would be that they are requirement to take a follow-up web-based survey at regular intervals. This may be able to determine a level/metric for success.

If one needed to motivate program participants to help with this, offering free broadband access for a finite period after a program finishes--contingent upon filling in a monthly or quarterly survey--might also work too. The same goal might also be pursued using a software-centric approach-- i.e., put a piece of software on a program participant’s computer to make actual Internet usage measurements -- again in exchange for some finite period of free Internet access. (for example 1 year).

Question (8.) Broadband Mapping: The Recovery Act directs NTIA to establish a comprehensive nationwide inventory map of existing broadband service capability and availability in the United States that depicts the geographic extent to which broadband service capability is deployed and available from a commercial provider or public provider throughout each State.

b. What specific information should the broadband map contain, and should the map provide different types of information to different users (e.g., consumers versus governmental entities)?

Comment: The map should contain network benchmark tests for broadband performance, and continually redefine them as usage and technology evolve. Different broadband technologies have more than raw speed differences. For the competitive marketplace to work in selecting broadband alternatives, there must be information on the alternatives. Users can select the performance best for their particular needs.

Question (13.) Definitions: The Conference Report on the Recovery Act states that NTIA should consult with the FCC on defining the terms “unserved area, underserved area,” and “broadband.” The Recovery Act also requires that NTIA shall, in coordination with the FCC, publish nondiscrimination and network interconnection obligations that shall be contractual conditions of grant awards, including, at a minimum, adherence to the principles contained in the FCC's broadband policy statement (FCC 05-15, adopted August 5, 2005).

b. How should the BTOP define ``broadband service?''

Comment: Initially, we advocate the achievement of at least 20 Mb/s bidirectional speed with 90 percent availability throughout the nation within five years. The wide penetration of such speeds will achieve most of the expected benefits and accommodate numerous simultaneous applications per household or small business. Of course, greater speeds can be had by those with greater needs.

c. How should the BTOP define the nondiscrimination and network interconnection obligations that will be contractual conditions of grants awarded under Section 6001?

Comment: The BTOP should require that facilities providers grant access to the physical infrastructure to all application, service, and content providers on equitable terms, so as to realize the benefits of innovation, content diversity, end-user choice, and competition.

IEEE-USA stands ready to help meet the challenges of implementing new cooperative initiatives between the U.S. Government and the U.S. communications industry. Such efforts will require strong national leadership focused on development of new policy and regulatory frameworks to stimulate investment in the enabling infrastructure for extending national access to the Internet; its widespread use; and competition in its facilities, service provision, and content.

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Sincerely,



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cc:

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