

DigitalBridge Communications
Application for Special Temporary Authorization
Sugar Grove, West Virginia
File No:

Narrative describing program of research:

DigitalBridge Communications has been requested by the Navy Information Operations Command, at Sugar Grove, West Virginia, to participate in a program of research that evaluates the effect of WiMAX technology in addressing the need for broadband communications in remote and rural parts of the United States and the need for broadband communications by military personnel on active duty.

WiMAX technology, an emerging standard developed by the IEEE (i.e., IEEE 802.16,) holds great promise for delivering broadband communications services in a range of environments that have traditionally been underserved. The technology is still new, and much of the equipment is still experimental in nature. To further the development of this technology, demonstrations and testing are required in a real-world environment. This demonstration at Sugar Grove is intended to be the first in a series of experiments that DigitalBridge Communications hopes will become a roadmap for delivery of broadband connectivity to underserved and rural communities.

This research is to be conducted in two parts: first, the Navy Information Operations Command has requested a demonstration of WiMAX technology to be deployed on and around the base in Sugar Grove. If the deployment and demonstration of the WiMAX technology proves fruitful, then more extensive technical tests are planned.

Experimentation:

The Navy has immediate need to deploy broadband technologies throughout its facility, for applications including distance learning and specialized training. The demonstration proposed here, and further experimentation, will be to determine first if WiMAX is a viable technology to address the broadband needs of this environment. Following upon that determination, DigitalBridge Communications will work with the Navy and the community of Sugar Grove to determine the following:

- What is the optimal radius of operation for a WiMAX base station, and what volume of users can be optimally served with adequate signal strength in that area of operation? This examination will include a study of the trunking efficiencies that are available for specific bandwidths used.
- Can WiMAX be configured to offer efficient VOIP? This will address questions regarding system configuration, equipment integration, and also the utility of using WiMAX for emergency field deployment, should that need arise.

- Can WiMAX effectively deliver rich media content to an entire community in ways that are effective for distance learning, as well as other more targeted communications needs?
- What data throughput is reasonable to expect for WiMAX, and how can that throughput be optimized?

Because this technology is still new, it is important to put the equipment through real-world tests and performance analyses. The information generated from this program will help to establish standards for the efficient and lower cost deployment of the technology as it develops.

Explanation why an STA is appropriate:

This application is being filed as part of a demonstration project. At this time, DigitalBridge Communications does not have a formal contractual relationship with the Navy. The demonstration has been initiated by a request from the Navy, which is making some of its facilities available to DigitalBridge Communications for purposes of the demonstration. These facilities are not normally under the control of DigitalBridge Communications. If the initial demonstration proves viable, then the more extensive program of experimentation and testing will begin. That experimentation will be supported by a series of grants that are aimed at addressing questions of how to provide adequate connectivity to underserved and rural areas.

At this point, to meet the needs of the Navy and to be prepared with technical information to launch the full experiment, DigitalBridge Communications is requesting special temporary authorization to operate for six months to test and demonstrate WiMAX equipment (equipment is available immediately to utilize 3.5GHz spectrum, while equipment to utilize other frequencies is still pending).

A letter from the base commander will be attached to verify that the Navy Information Operations Command supports this application.