

DigitalBridge Communications
Application For Special Temporary Authority
Muncie, Indiana
File Number:

Narrative describing program of research:

DigitalBridge Communications, in partnership with the State of Indiana, the Muncie, Indiana Office of Economic Development and Ball State University, is filing for special temporary authorization to demonstrate broadband wireless equipment as part of the Digital Middle Town initiative.

DigitalBridge has been requested to start the demonstration with deployment of WiMAX equipment. The Digital Middle Town initiative is part of a collection of grant-funded research studies that are examining the impact of the telecommunications revolution of the late 20th and early 21st centuries on smaller towns and cities in the US. This is the next step in addressing an issue known as the digital divide. The focus of this effort is to look at technologies that can be effectively deployed in smaller, rural, or remote communities from several perspectives: engineering efficiency of the radio links, optimal system configuration – including examination of the best hardware and software for use in this setting- realistic coverage footprint, network operations management, and economic viability.

Experimentation:

The demonstration proposed here, and further experimentation will be to determine first if WiMAX is a viable technology to address the broadband needs of rural Indiana communities. Following upon that determination, DigitalBridge Communications will work with Ball State University and the government of Indiana 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 multimedia 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 necessary:

DigitalBridge Communications has been requested by Ball State University to start this demonstration project as soon as possible. The project described here will be used to explore the delivery of broadband services to expand the reach of the university – its on-line course content, its distance learning initiatives, and its interactive course offerings – to students who live in their home communities.

To be able to offer effective technological solutions, and then to have a pilot educational project ready for the beginning of the fall term, it is necessary to install and test this radio equipment as soon as possible (Equipment is available immediately to utilize 3.5GHz spectrum, while equipment to utilize other frequencies is still pending). Following upon that installation and testing, the demonstration project will begin. DigitalBridge Communications anticipates that working with Ball State University, it will begin the full program of experimentation by September or October 2006, in conjunction with the launch of pilot distance learning projects offered by the university.

The demonstration will provide the essential technical information required to define the experimentation that will follow.