

Exhibit 1: Experiment Description

Prof Mariya Zheleva at the University at Albany and her Doctoral students are researching the potential of using unlicensed white-space spectrum with mobile clients. This mobility could be used, for example, to provide Internet access to first responder's moving vehicles, whereby previously-deployed TVWS networks serve as a wireless backhaul for Internet access. The experimental research will be carried out in two locations: Town of Thurman, NY and the University at Albany Campus in Albany, NY.

The goal of this research is to develop a robust model and protocols for wireless connectivity in support of rural emergency preparedness and response that leverages heterogeneous wide area network with infrastructure mobility. The project will create a data mule unit, which will be carried by vehicles of various agencies like fire, EMS and post office and serve two purposes: (1) To provide constant Internet access to emergency personnel and (2) To deliver emergency information to offline residents along the vehicle's path who lack any connectivity. More about the project can be found at: <http://www.cs.albany.edu/sccepr/>

This project will use off-the-shelf FCC-compliant TVWS equipment while introducing controlled mobility of the customer Premise Equipment (CPE) to answer the following research questions:

1. Link behavior with mobility and its impact on resource allocation and user experience
2. Handoff between the base stations with a moving client device in a TVWS network
3. Adaptive resource allocation with CPE mobility (e.g. rate adaptation, frequency and channel width selection)
4. Combination of TVWS and Wi-Fi technology to facilitate delay-tolerant access to emergency information.