

# Testbed for High-Speed End-to-End Communications in Support of Comprehensive Emergency Management

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As part of the project “Testbed for High-Speed End-to-End Communications in Support of Comprehensive Emergency Management” funded by the National Science Foundation’s Digital Government Program (award EIA- 9983463), Virginia Tech researchers are developing a prototype system to provide a high-speed backbone network for emergency and disaster response. It is intended to utilize a geographic information system (GIS) tool developed at Virginia Tech for rapid site planning and incorporate adaptive data link protocols based on a low-cost channel sounder, also developed at Virginia Tech, that will assess channel quality. Figure 1 displays a system concept for the given GIS map.

An early version of the system was demonstrated for federal, state, and local emergency personnel in 2001 and 2002. The demonstration for dg.o 2003 consists of a second-generation pair of LMDS radios forming a point-to-point link with a capacity of up to 100 Mbps. It showcases the operation of the novel, low-cost broadband channel sounder and the GIS tool capabilities. Web-based and other Internet applications will be demonstrated to show the utility of having a broadband connection on-site during an emergency response.

The demonstration scenario is in support of the paper “Methodology and Preliminary Findings Towards the Characterization and Evaluation of Non-Line-of-Sight (NLOS) Paths for Fixed Broadband Wireless Communications for Emergency and Disaster Response” appearing in the dg.o 2003 conference proceedings.

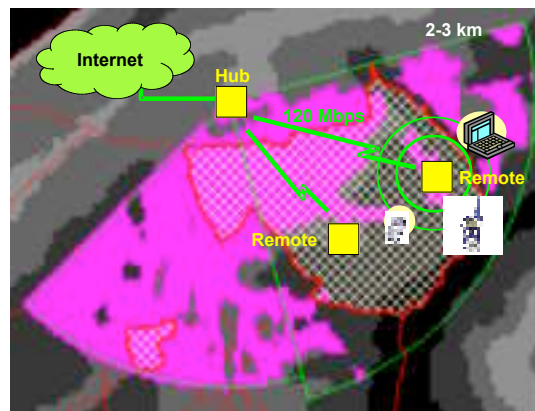


Figure 1: System concept for rapidly deployable fixed wireless broadband communication system for emergency and disaster response.