



**ORIGINAL**

March 10, 2005

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**RECEIVED**

**MAR 10 2005**

**Federal Communications Commission  
Office of Secretary**

**VIA HAND DELIVERY**

Ms. Marlene H. Dortch  
Secretary  
Federal Communications Commission  
Room TW-B204  
445 Twelfth Street, S.W.  
Washington, DC 20554

Attention: OET Experimental Licensing Branch – MS 1300E1

**Re: WD2XJG Experimental Authorization Progress Report**

Dear Ms. Dortch:

Transmitted herewith in triplicate on behalf of Educational Broadcasting Corporation, licensee of experimental station WD2XJG, New York, NY, is its initial progress report as required by the station authorization (FCC File No. 0090-EX-PL-2004).

Respectfully submitted,

*Barbara K. Gardner*

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Enclosures



**Joshua C. Nathan**  
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March 10, 2005

Experimental Licensing Branch  
MS 1300E1  
Office of Engineering and Technology  
FCC  
Washington, DC 20554

Re: Experimental Authorization WD2XJG

Dear Sir/Madam:

EBC intends to continue to use the above-referenced experimental authorization in its current form for the next 18-month period. The experimental authorization has been used to date to support the GUARD program (Geospatially-Aware Urban Approaches for Responding to Disasters) formerly known as Smartnets. The attached GUARD FY-2006 Proposed Program statement together with the attached GUARD Accomplishments statement summarize the achievements to date and the plans for going forward with the next phase of the GUARD project. We continue to maintain our ITFS educational service with a group of schools who historically have been receiving this service and will continue to do so. Moreover, we will continue to coordinate all experimental activity in compliance with our obligations as an ITFS licensee.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Joshua C. Nathan", written over a horizontal line.

Attachments

**GEOSPATIALLY-AWARE URBAN APPROACHES FOR RESPONDING TO DISASTERS (GUARD)  
EXPANDING GUARD FOR INTER-REGIONAL COVERAGE  
FY 2006 PROPOSED PROGRAM**

**The Need**

The need exists for urban communications and geolocation capabilities to be built, using existing commercial infrastructure and supporting both domestic emergency response and military urban operations. The efforts of this program will provide significant new capability for First Responders and military personnel as they guard our nation's security.

**Background**

Management of emergency response personnel and resources requires detailed awareness of their locations and activities. Operation in cluttered urban environments increases the technical and incident management difficulties, an issue common to both emergency responders at home and military forces abroad. The National Technology Alliance (NTA), working with the Rosettex Technology and Ventures Group, put in place a robust program during FY03 and FY04 to address some of the difficult technology and policy issues involved in Incident Communications. As part of this program, Rosettex prototyped a two-way broadband capability built on licensed television spectrum and equipment, a capability now being tested for operational use by NYPD and FDNY in New York City. The program has conducted a Command Post Exercise at the University of Missouri in conjunction with the emergency management community of the State, to understand both policy issues and technical requirements for communications. With Congressional support in FY05, the GUARD program continued the earlier Rosettex work by implementing a commercial WiMax (802.16) capability as the communications backbone, installing Incident Command applications requested by users, linking the capability in New York to a site in Washington using DISA's Global Broadcast Service (GBS), adding Geospatial toolsets, and linking more closely to Homeland Security activities also under way.

**Program Approach**

- Requested funds will be used to mature the operational prototype of the current GUARD capabilities into a nationally relevant regional model, and expand its functionality and geospatial awareness by:
  - Converting the prototype in New York City into an operational FDNY and NYPD capability. Expanding coverage area to include parts of New Jersey and Pennsylvania. Adding additional capability at the University of Missouri in Columbia, MO and in St. Louis, MO, Las Vegas, NV and Washington, DC, to test regional variations in capability and need.
  - Prototyping additional first responder capabilities to include additional Incident Command applications; in-building communication, unit tracking and external position relay; and robust satellite inter-regional connectivity, all referenced to existing open source and commercial map applications such as those in current automobiles.
  - Continuing policy evaluations through training exercises in conjunction with existing partners such as the University of Missouri, and including DHS, NORTHCOM, CECOM, and others.
- Outcomes of this activity will establish:
  - A functional inter-regional capability incorporating the new commercially based two-way Broadband Emergency Alert System for information dissemination to first responders.
  - Proven commercially viable applications that solve the challenges of geospatial tracking of emergency and response assets, and other emergency response needs.

## **Projects**

The following three projects will be completed that together result in the desired operational capability:

**Use of digital broadcast spectrum for two-way broadband communications.** Television broadcasters have traditionally served the public interest by providing emergency broadcast of information, when needed, to millions of people, instantaneously. In partnering with Rosettex, Thirteen/WNET, the New York City PBS affiliate, has led the way in prototyping GUARD's two-way Broadband Emergency Alert capability. This capability, being tested in FY05 by New York emergency responders for broadband information dissemination, uses a unique portion of licensed spectrum, already supported by national infrastructure and licensed to organizations dedicated to public service. The success of this two-way broadband information flow in meeting first responder needs motivates expansion of the initial prototype into a regional demonstration and model for national use. Building additional capability for test at the University of Missouri in Columbia, MO, and in St. Louis, MO, Washington, DC and Las Vegas, NV will ensure that the capability developed in New York will be useful nation-wide. Adding operationally relevant applications for use by firefighters, police and other emergency responders will significantly enhance their operational capabilities.

**Evaluation of policy, training and needs affecting emergency responders.** In 2004, the University of Missouri at Columbia hosted a Command Post Exercise, bringing together more than seventy local and state emergency responders from Missouri, Kansas, Tennessee and other locations along with national level representatives from DHS, NORTHCOM, and other agencies. The exercise was recommended to DHS as a national model for training emergency response personnel, but also in highlighting policy issues with existing response plans and in identifying technical needs and requirements for disaster response. This project will build on this successful model and the experience and support of the University to conduct additional exercises throughout the country.

**Precise locations aboard commercial enhanced digital maps.** Commercial companies have successfully developed and marketed the now widely available in-vehicle map-based navigation systems that provide an indication of position of the vehicle and directions to desired locations. Government uses for such systems would be ideally served by approaches that encourage these existing commercial companies to expand their offerings world-wide, specifically to international conflict locations. Adapting these commercial digital maps and applications to support the navigation needs of First Responders and military forces can provide such a mechanism. This project will implement a process to adapt and convert maps from the National Geospatial-Intelligence Agency (NGA) national repositories into standardized, open source commercial formats, and then use these commercially formatted maps and vehicle devices for purposes of unit tracking in urban operations. A particular focus will be the ability to locate and track individuals inside of buildings where GPS does not penetrate, and make this information accessible externally, providing a capability of strong interest to both emergency response and DoD/Intel communities. Commercial companies involved in this activity will retain commercial rights to find new uses for these applications, adding features and lowering prices available to the Government as the commercial markets succeed.

## **Points of Contact**

David Ihrie, Rosettex Technology and Ventures Group, (703) 310-1256

Stephen Carrol Cahnmann, Thirteen/WNET, (212) 560-8840

Kathleen Rae, Thirteen/WNET New York, (212) 560-2072

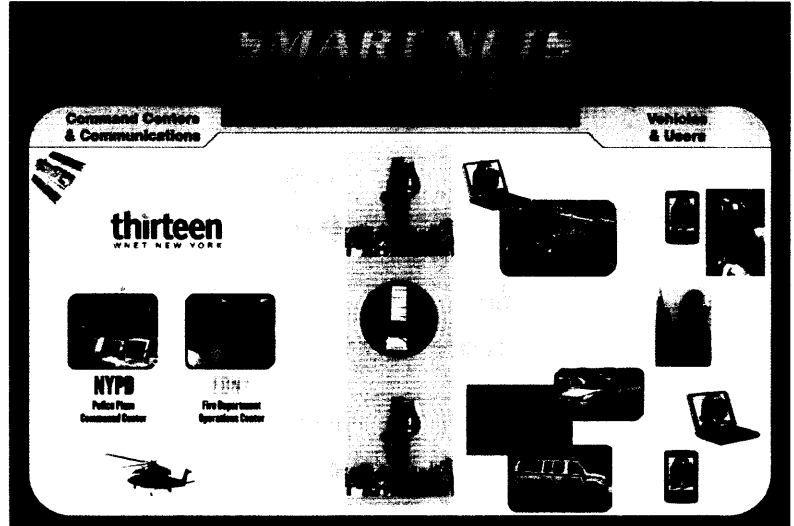
**GEOSPATIALLY-AWARE URBAN APPROACHES FOR RESPONDING TO DISASTERS  
(GUARD)**  
*A NATIONALLY RELEVANT REGIONAL MODEL FOR EMERGENCY RESPONSE OPERATIONS*



**ACCOMPLISHMENTS**

**Key Accomplishment: *Demonstrated Value of Unique, Nationally Relevant, Instructional Television Fixed Service (ITFS) Spectrum***

The ITFS spectrum provides dramatically wider, licensed bandwidth than conventional emergency response communications systems, enabling broadband voice, video and data to mobile response vehicles and individual First Responders. This spectrum is licensed across the country to educational institutions, not-for-profit organizations, and public broadcasters, each dedicated to serving their local communities. By taking advantage of this in-place, national infrastructure, GUARD enables rapid, lower cost implementation of advanced systems to protect our communities.



**Key Accomplishment: *Urban Mobile Communications With Advanced WiMax (802.16) Network***

Communications in "urban canyons" is notoriously difficult. GUARD proved the ability of WiMax networks to deliver reliable two-way broadband data and video in New York City, one of the most severe urban communications environments in the world. Within the coverage area, connectivity is maintained even through tunnels from a single rooftop antenna. Special Forces users and emergency responders are exploring adopting the demonstrated capability.

**Key Accomplishment: *Inter-Regional Connectivity Via Global Broadcast Service***

A nationally relevant regional model requires connectivity between regions and the ability to easily bring supplemental communications to an emergency scene. GUARD has shown live transmission of two-way "emergency" video and data to/from the streets of New York over DISA's Global Broadcast Service (GBS) to a simulated control room in Washington, DC.

**Key Accomplishment: *Demonstrated Power of Open System to Easily Integrate Third Party Vehicle Tracking and Decision Support Applications***

The Fire Department of New York (FDNY) has established requirements for Electronic Command Boards (ECBs) for Incident Commanders, and the ability to track FDNY vehicles and resources at an incident site. GUARD proved the ability of its open architecture to rapidly integrate third party applications into the GUARD infrastructure. GUARD allows local communities to make technology selections that fit local needs, in the context of a larger operational infrastructure.



**Key Accomplishment: *Emergency Preparedness Exercises at West Point and University of Missouri Validate Technical Architecture***

Live exercises with emergency response communities in West Point and the State of Missouri (hosted by University of Missouri, Columbia) delivered important training opportunities for the local and State responders and validated the technical needs and operational approaches for the developing architecture. More exercises and tests of the operational prototype are planned as GUARD matures and expands its operational reach.