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September 9, 2005

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Federal Communications Commission
Office of Secretary

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 second 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

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WNET NEW YORK

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September 9, 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 12-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 FCC Progress Report for the FY05 GUARD summarizes 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,

Attachments

EBC 24272 v1

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WNET NEW YORK

Geospatially-Aware Urban Approaches for Responding to Disasters (GUARD)

For the FY05 GUARD Program, Thirteen/WNET has built directly on the existing Smart Nets demonstration prototype in New York City, both as an initial operational prototype for the City, and as an implementation model, demonstration and test capability for the national community and local communities across the country. The GUARD architecture is positioned as a *"Nationally Relevant Regional Model"* for emergency response using EBS spectrum for transport. The philosophy of GUARD is that a set of nationally connected, regionally-based emergency response capabilities is the best approach for comprehensive emergency response, and that within a region there will be a number of distinct implementations to serve the needs of local responders. Thus, at its very core, the GUARD model is one of information sharing in a distributed, heterogeneous communications environment.

The GUARD program, formerly known as Smart Dissemination Networks (Smart Nets), began with two separate phases and two separate implementations. In Phase I we prototyped a Frequency Division COFDM system, where we notched out 50 of the downstream COFDM carriers and injected an upstream carrier. The system worked, but had line-of-sight and mobility issues, leading us to switch to a more cellular-like architecture for Phase II. See Appendix I at the end of this Progress Report for simple architecture diagrams of Smart Nets Phase I and Phase II. Using the Phase II architecture, we recently implemented full end-to-end capability, including a satellite link from New York to Washington. Demonstrations included live video being fed to and from a vehicle driving in New York City and returned through the wireless broadband air-link onto the satellite link that interconnected with Washington.

With the Smart Nets initiative, Thirteen/WNET demonstrated two-way broadband wireless video and data sent over its EBS spectrum channel allocation to standard laptops and PDAs in vehicles moving through the urban canyons of New York as well as to a fixed location incident site. Smart Nets also integrated two applications of interest to public safety operations – a prototype Electronic Command Board (ECB) specified by FDNY and Automatic Vehicle Location Tracking (AVL) capability.

Under the current GUARD activity, Thirteen/WNET plans to mature the demonstration prototype into an initial operational prototype, and position the architecture and interfaces for easy replication of the GUARD model into a second or third metropolitan area as additional funding permits. For the operational prototype, the intent is to:

- Aggregate additional spectrum for experimental use.
- Expand the coverage area in New York City.
- Continue to mature the application set and add accepted Geospatial toolsets.
- Conduct initial operational tests with DoITT, FDNY and NYPD.

- Conduct experiments connecting the New York GUARD implementation over the Global Broadcast Service (GBS) to a second location, demonstrating inter-regional connectivity.

Going forward, Thirteen/WNET and its partners will seek Congressional support to replicate the demonstrated capabilities in other markets, e.g., St Louis, Missouri and Washington, DC. We are actively working to ensure integration and consistency of the GUARD approach with national DHS initiatives such as SAFECOM and other programs.

Participants in Thirteen/WNET's GUARD activity have included the National Technology Alliance (Congressionally-mandated program under DoD auspices); Rosettex Technology & Ventures Group (overall management); NextNet (wireless equipment); Raytheon (EMS/Fire applications); Grey Island (automatic vehicle tracking); and KenCast (reliable transport). Additional participants will become involved as the program progresses.

The major applications that have been demonstrated are two-way video using laptops, PDAs and handheld cameras as the mobile equipment, running over KenCast, Inc. reliable transport software applications; vehicle tracking and related Geospatial applications from Grey Island; and the EPTS and Electronic Command Board (ECB) applications from Raytheon. Other partners are working some additional applications that may become relevant as well; we will decide on adding those as appropriate.

The GUARD architecture has implemented a centralized content server and "WiMax-ready" hub, wireless receiver and server (laptop) in vehicle(s), along with 802.11 routers for re-transmission to wireless PDAs and laptops in the vicinity of the vehicle in the field. Next steps will include the addition of multiple "WiMax-ready" hubs to enable the demonstration of seamless handoff across sector hubs and mobile data management over the system. The intent is to put in place 2-3 hubs, each with multiple sectors (2-4 sectors per hub depending on geographic considerations for demonstration). GUARD hopes to coordinate with the City of New York on this activity.

The goal will be to achieve some or all of the following objectives:

→ Demonstrate the utility of two-way wireless broadband for Emergency Response communities and demonstrate representative applications for both vehicle-borne and dismounted emergency responders.
→ Demonstrate wireless capability beyond that shown previously:
  - Multiple channels, dual coverage to some locations, e.g., a St Louis and/or Washington, DC link to New York City.
  - Seamless handoff across hubs and channels.
→ Characterize differences between broader area coverage versus concentrated urban coverage (e.g., difference in covering a market like St Louis versus a market like New York City).
→ Solicit feedback from Emergency Response community on usefulness of demonstrated system and applications, and identify shortcomings and concerns.

APPENDIX I

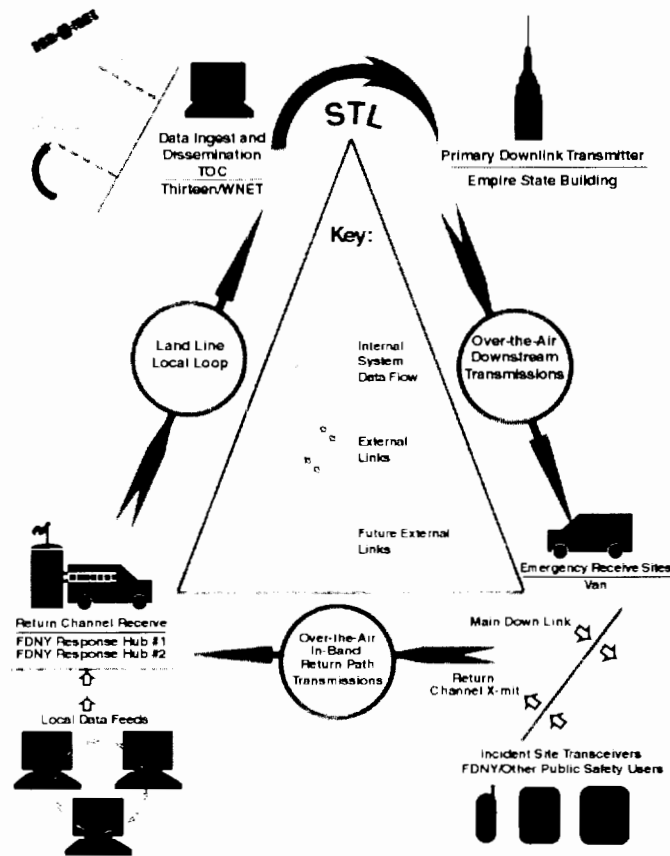## Figure 1. Smart Nets Phase I Prototype System Diagram

Figure 2. Updated Smart Nets Phase II Infrastructure Diagram