

The Office of the Chief Technology Officer of the District of Columbia (OCTO)

Request for Modification of Experimental License: Integrating two sites into the experimental network and extending the duration of the experiment license

Experimental Radio Station License - Call Sign WD2XHO

Background

In order to demonstrate that affordable technologies exist today to support critical broadband public safety applications, the District of Columbia has decided to deploy a wide area (within Washington DC city limits) broadband wireless data network that will serve as a pilot for next generation of public safety applications. The intent is to specify technology and features that best suit public safety applications requirements. To this end, the District has filed for an experimental license in January 2004. The FCC has granted this experimental license (Call sign WD2XHO) in February 2004.

The Office of the Chief Technology Officer of the District of Columbia (OCTO) selected Motorola and Flarion Technologies to provide, install and support a 10-site Flash OFDM broadband wireless network: the Wireless Accelerated Responders' Network (WARN).

In order to allow the vendors to deliver the equipment on an expedited fashion, a modification of the experiment license was filed and granted in August 2004. The modification did consist in swapping uplink and downlink frequencies.

The existing WD2XHO license authorizes the District of Columbia to operate ten base stations and associated mobile units within the geographic boundaries of the District of Columbia. The WD2XHO experimental license expires on September 1st 2005. This experimental license modification request aims at improving the capacity and coverage of the network by integrating two additional sites in the network, and also at extending the duration of the experimental license to July 31st 2007, for the reasons explained below.

No other changes to the authorized WD2XHO facilities are proposed.

Integrate two additional sites into the experimental network

After an optimization phase, the operations of the network started on December 1st 2004. The District formally accepted the network from the vendors on December 31st, 2004.

As pointed out in the second progress report filed by OCTO on February 20, 2005, WARN, the experimental network has been heavily used during several key events such as the Presidential Inauguration and the State of the Union address. Those first network experiments as well as the field tests performed during the optimization phase, revealed several geographical areas presenting not enough throughput capacity.

In order to fully evaluate the benefits that the technology deployed can bring to our first responders, it is important to improve those capacity and coverage issues.

As explained as well in the Second Progress Report, the District identified that the deployment of two additional sites are necessary to improve the network coverage and capacity performance.

This modification request consists in integrating the two following sites into the existing network.:

- **Metropolitan Square** is a building located in the vicinity of the White House. For obvious reasons, this area requires a high network capacity. To support various local and federal agencies during the Presidential Inauguration, the District did deploy a temporary single sectorized site (based on an STA). Following the success of the operations of this temporary site, the District intends to deploy a 3-sector site on this building for the remaining of the duration of the experimental license.
- The **RFK Stadium** will alleviate the coverage issues along the Anacostia River, and support the increase of capacity expected in and around the stadium itself.

The coverage of those two sites will be well within the footprint of the existing network. Therefore it is not expected that interference will be created into adjacent stations.

Extend the duration of the experiment license:

Although the operations of the experimental network has started a couple of months later than expected, the capabilities this technology did already greatly benefit first responders during the Presidential Inauguration, the State of the Union, or more recently during the investigation of the Cardozo School mercury spill, as well as during other routine operations.

The Metropolitan Police Department, the DC Emergency Management Agency, the DC Fire and Medical Emergency Services, the DC Office of the Chief Medical Examiner, The Washington Metro Area Transport Agency, the US Park Police, the US Secret Service, are all agencies that found an immediate operational usage of the deployment of this pilot network.

The successes of the first operations of the network have triggered interest from additional federal and local agencies in participating to the pilot. The District plans to integrate those agencies in the experimental program in the coming weeks.

Moreover, the perspective of accessing anytime-anywhere applications and information that were until now non-accessible, allows those public safety agencies to consider enhancing their operational processes, and trying new models and applications to maximize those benefits.

On another hand, software developers have had an opportunity to test-field their applications in a mobile environment and realize the specific associated constraints, and are diligently developing the corresponding improvements.

Significant advances on the performance of the wireless technology are also expected to be available in the coming months.

As a consequence, it appears that the schedule of full execution of this pilot program needs to be extended beyond what was originally anticipated.

Therefore the District of Columbia is requesting the extension of this experimental license to July 31st 2007.