2022C04

EXHIBIT 1
Narrative Statement of Research

Introduction.

The New York City Department of Information Technology and Telecommunication (DoITT) seeks to develop a high-speed broadband data system that pushes the state-of-the-art to new limits. The City intends to use the network for its public safety personnel in the City's Police Department, Fire Department, Emergency Medical Services and other agencies in the performance of critical first-responder and public safety functions.

The City's specifications lie outside the current state-of-the-art of radio communications science. To meet the City's demanding requirements and develop a new state-of-the-art wireless broadband network for New York City, Nextel Communications requires temporary, experimental access to spectrum resources in the New York City metropolitan area as specified in this application.

Background.

On March 24, 2004, DoITT issued a request for proposals that seeks a systems integrator to provide the following services:

- Wireless broadband public safety (high speed data and video);
- Wireless Automatic Vehicle Location (AVL);
- Wireless call boxes for emergency services; and
- Wireless traffic signal control.

To perform these functions, New York City has demanded state-of-the-art technology and performance from all potential vendors. For example, the City's operational and technical specifications require the system to include the following:

- The ability to support full motion video (30 frames per second) or data transmission speeds in excess of 2 Mbps at anytime to any one user regardless of any other network activity;
- Expandability to increase capacity and coverage;
- Dynamic bandwidth allocation and variable quality of service;
- Geo-location using the network infrastructure or GPS;
- Interface with Public Switched Telephone Network;
- Peer-to-peer data, voice, and video communication capabilities;
- Ability to transmit slow scan video when connected to the PSTN or at any other time.
- Data broadcast capability;
- 99% in-street coverage throughout the City;
- 99.9% predicted system reliability; and
- 99.999% predicted network backbone reliability.

Program of Research

Nextel personnel will test and determine if the equipment identified in this application can meet the performance and reliability requirements that DoITT has specified, withstand the effects of scaling, and provide the level of quality and coverage that DoITT has determined is necessary to meet the needs of the city's first-responder and public-safety personnel. The testing will include:

- Performing limited functional testing of the systems described in this application;

- Validating network operations for reliability, performance, penetration, and scalability;

- Verifying defined network processes and functionalities; and

- Performing limited functional testing of the end-state systems.

Objectives to be Accomplished

Nextel seeks to test and deploy a high-speed wireless broadband network that can meet the capabilities that DoITT requires. The tests planned are designed to eliminate or reduce uncertainty about the viability of a high-penetration, high-speed, wireless broadband data network in New York City. Nextel will use tests to uncover and solve fundamental operational and process issues prior to deployment. The test objectives are to validate the capabilities, reliability, scalability, and consistency of the network architecture described in this application.

Reasonable Promise

The program of research that Nextel proposes to implement holds the promise of significantly advancing the radio art and allowing Nextel to provide the quality and capabilities that New York City needs to meet the critical needs of its first-responder and public-safety personnel.

Conclusion

The plan and objectives described herein will allow Nextel to test a proposed response to the City's need for a reliable, high-speed wireless broadband data network.

4. Is this authorization to be used for fulfilling the requirement of a government contract with an agency of the United States Government?

No. The authorization will be used to respond to the requirements of a New York City request for proposals (RFP) to develop a high-speed broadband data system. *See New York City Department of Information Technology and Telecommunication, Request for Proposals* Citywide Mobile Wireless Network, PIN No. 85804CSP0009 (March 24, 2004), *available at* <http://www.muniwireless.com/reports/docs/NYCwirelessnetworkrfp.pdf>.

5. Is this authorization to be used for the exclusive purpose of developing radio equipment for export to be employed by stations under the Jurisdiction of a foreign government?

No.

6. Is this authorization to be used for providing communications essential to a research project? (The radio communication is not the objective of the research project).

No. Radio communication is essential to the nature of the project, which seeks to provide a broadband data service to the City of New York in response to a municipal RFP.

7. If all the answers to Items *4.* 5, and 6, are "NO", attach as EXHIBIT No. 1 a narrative statement describing in detail the following:

- **(a) The complete program of research and experimentation proposed including description of equipment and theory of operation.**
- **(b) The specific objectives sought to be accomplished.**
- **(c) How the program of experimentation has a reasonable promise of contribution to the development, extension, expansion, or utilization of the radio art, or is along line not already investigated.**