

Narrative for the Harris Stratex Networks WiMax Development Test and Demonstration Project

Harris Stratex Networks needs to set up a wireless network in the 3.4 – 3.6 GHz band in our San Jose California location in order to develop, test, and demonstrate WiMAX wireless equipment (base stations, fixed and mobile devices). The deployment and operation of this test network is **critical** in our efforts to develop and take to the export market an advanced WiMAX wireless equipment system.

Such equipment will be sold to customers located outside the United States and operated in accordance with the Rules of the foreign regulatory bodies. WiMax is an advanced 3G IP based point to multi-point wireless technology that enables bandwidth intensive services on fixed, nomadic and mobile subscribers to data, IMT, as well as public switched telephone networks. Harris Stratex's WiMax equipment conforms to IEEE 802.16e standards and FCC regulations.

The tests will be conducted by establishing a base station at the company's premises at 120 Rose Orchard Way, San Jose, CA. This base station consists of an IDU (In Door Unit) that is connected via a fiber optic data connection to a remote radio head manufactured by Axis Network Technology to the IEEE 802.16 (d) and (e) standards (fixed and mobile subscriber stations) Each base station transceiver is connected to a 120 degree sector antenna enabling the base station to provide coverage in a 360 degree pattern around the base station. The Equipment will use MIMO (Multiple In Multiple Out) techniques and adaptive antenna systems consisting of multiple beam forming antennas for countering multipath and enhancing signal levels. The WiMax transceiver will use SOFDMA (Scalable Orthogonal Frequency Division Multiple Access) modulation and will employ TDD (Time Division Duplexing) access methods.

The subscriber stations will be mounted at various sites and mobile stations in the areas around the base station. Initial testing will be fixed and mobile sites within a range of 40 km from the base test site. The following parameters will be assessed:

- (1) Quality of wireless services
- (2) Effectiveness of MIMO (multi-antenna)
- (3) Effectiveness of SOFDMA\
- (4) Effectiveness of Frequency Reuse Approached
- (5) Line of sight versus blocked paths due to buildings, trees, etc
- (6) Loss of signal and sector-to-sector hand off performance at various speeds and rates.
- (7) Performance of base station and subscriber station hardware (measurement of wireless transmission and reception, data (over-the-air) throughput measurements.
- (8) Performance of applications (voice calls, video streaming, web browsing)

We will be testing equipment capable of working within 5, 7 and 10 MHz.