ArrayComm

June 2004 Interim Progress Report

FCC Experimental License Number 0033-EX-RR-2002
Renewal File Number 0074-EX-RR-2004

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Background

Experimental license number 0033-EX-RR-2002 permits ArrayComm to perform technical and market testing of its wireless technology and products in the general vicinity of San Jose, California, in the 1910-1920 MHz band. Operations in the band must be coordinated with UTAM and interference to adjacent band operations is prohibited. This report describes ArrayComm's use of the license from March 2002 through May 2004.

ArrayComm's principal use of the license has been the testing and development of its iBurst technology and products. iBurst is a mobile broadband wide-area wireless technology targeted at exclusive use spectrum. Designed to fully leverage the benefits of adaptive antennas, iBurst provides a highly spectrally efficient and low-cost wide-area wireless edge access technology. iBurst transparently bridges IP traffic, extending the core networks and business practices used today by wired providers to deliver broadband IP services. ArrayComm's iBurst products include the iBurst protocol specification, base station and subscriber device reference designs, and iBurst baseband ASICs for subscriber devices.

Commercial iBurst equipment is manufactured and sold by established equipment manufacturers under license to ArrayComm. These companies include Kyocera Corporation of Japan, Dewell Corporation of Korea, LG Electronics of Korea and EADS of France. Today, iBurst is commercially deployed in Australia in the 1905-1910 MHz band, with trials and announced commercial deployments in the United States, Korea, Asia, Mexico, Europe and Africa at various frequencies from 1.7-2.5 GHz.

Commercial Equipment Progress

At the time of the previous progress report, ArrayComm had developed prototype iBurst equipment and was beginning to enable its licensees to produce commercial iBurst products. Of the iBurst licensees mentioned above, Kyocera is now producing base stations and subscriber devices with Dewell expected to begin commercial shipments of their iBurst products later this year.

The Kyocera iBurst base station is a modular design incorporating tower top electronics and support for antenna arrays with up to 12 elements. Peak "goodput" (throughput less protocol overhead) is approximately 32 Mbps/sector/5 MHz in a network environment. In a practical deployment with 5 MHz of total available spectrum, goodput is approximately 20 Mbps/sector. For subscriber devices, Kyocera is producing PCMCIA cards for laptops and PDAs, and desktop units with Ethernet and USB interfaces for SOHO and desktop PC applications. Off-the-shelf access routers, including WiFi access routers, can be attached directly to the desktop unit in the same manner as they would attach to a DSL or cable modem.

The availability of commercial equipment and the iBurst ASIC, is a significant step forward for iBurst during the current report period. ArrayComm's experimental license

continues to be a key enabling tool for developing ArrayComm's iBurst products and validating those of its licensees.

Trial Network Progress

At the time of the previous progress report, ArrayComm was beginning RF surveys in the San Jose area. Today, the San Jose iBurst trial network comprises three base stations and is depicted in Figure 1. Base locations are located at the Cisco campus, ArrayComm's offices and Santa Clara University from North to South, respectively. Morphologies are principally suburban and light urban. Both city streets and major highways are included in the coverage area. The antennas at the Cisco and ArrayComm sites are mounted on short masts atop 3-4 story buildings. The antennas at the Santa Clara site are mounted atop a 14 story building that is by far the tallest building in its vicinity. Performance at that site is therefore representative of what would be expected from a tower-top deployment. The broad mix of morphologies, and possible vehicle speeds and sitings make the trial network an indispensable tool ideal for iBurst performance validation, interoperability testing for our licensees' iBurst products and core technology development.

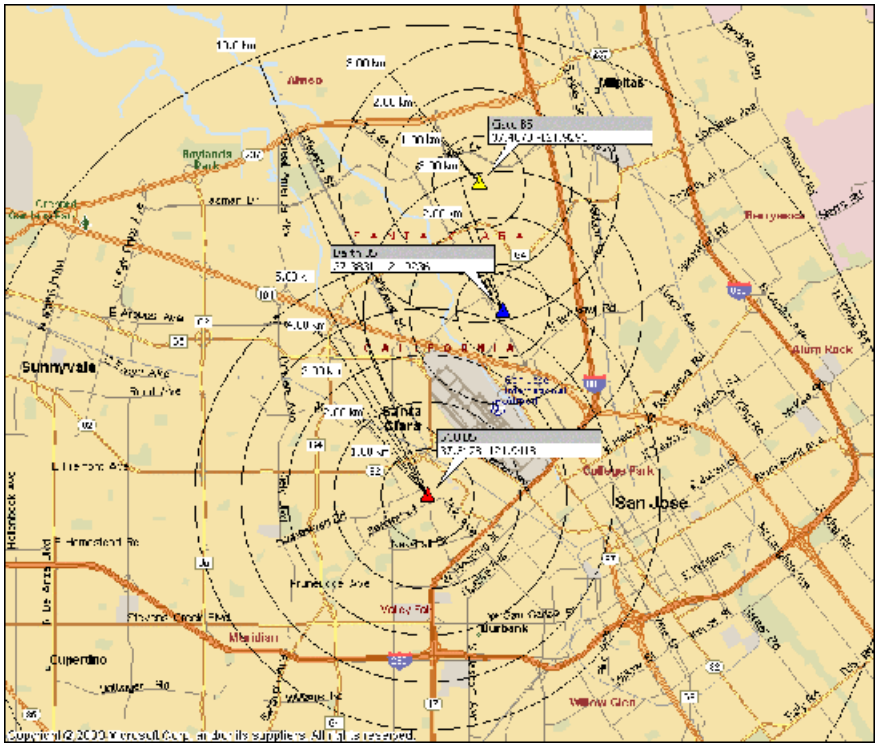

Figure 1: San Jose Trial Network

Radio equipment in the trial system is presently a mixture of Kyocera commercial subscriber devices and ArrayComm prototype base stations. Long term, we plan to replace the ArrayComm base stations with Kyocera commercial base stations. UNII-band wireless backhaul is used to connect the Cisco and Santa Clara University sites to ArrayComm's facility for interface to the trial's core network. The core network, which handles provisioning, billing, connectivity to the Internet and other backend services, is

built around standards-based equipment from vendors such as Cisco, UTStarcom and Redback.

In addition to its engineering purposes, the trial network is an invaluable sales and marketing tool. The network has been used for everything from simple capabilities demonstrations to multi-week performance validations for potential customers and partners.

Significant technical and commercial progress has been made on the trial network since the last reporting period. Enabled by the experimental license, the network continues to be used daily for technology development, validation, interoperability testing, and marketing and sales support.

Future Plans

We plan to continue using the trial network as an integral part of our iBurst business. From a technology perspective, it will be an invaluable platform for testing planned advancements to iBurst's Quality of Service features and VoIP performance. The network will use in interoperability testing will expand as new licensees are secured and as existing licensees introduce new products. Finally, from a commercial perspective, the network will continue to be an important marketing and sales tool for licensees and their customers, the wireless network operators.

Summary

Since the last reporting period, significant progress has been made in iBurst's commercialization, and in the deployment and use of the San Jose trial network. The network is an integral tool in ArrayComm's technology and commercial development efforts for iBurst. We thank the Commission for the experimental license under which the network is operated, and request that the license be renewed.

Respectfully submitted,

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