Experimental Description

- Supporting Information for Form 442 File Number 0067-EX-ML- 2000

ArrayComm is requesting a modification to its existing experimental license 0274-EX-PL-1999 (call sign WB2XFZ) in support of the company's technology development efforts for third-generation wireless systems. In order to develop smart antenna technologies for this coming generation of wireless systems, the company must be able to perform over-the-air testing in likely operating bands and realistic operation environments for these systems. The field testing would include testing where the base station is located at different sites and the subscriber units are located at various places in the base station coverage areas. The company understands and agrees that any testing would have to be coordinated with the license holders of the bands in which the tests are performed.

ArrayComm is the acknowledged industry leader in adaptive antenna technology, so-called "smart antennas". Smart antennas are a combination of antenna arrays and sophisticated signal processing deployed at base stations (and potentially at subscriber units) of a cellular system. By adapting the effective pattern of the array in response of the radio channel, smart antennas can provide tailored, spatially selective, gain and interference mitigation for each of the systems users. Smart antenna technology can be incorporated into essentially any type of cellular system and is compatible with all air interfaces. Its benefits can be exploited in operation to extend cell ranges, for example, or to increase capacity by enabling a reduction in channel reuse distances.

ArrayComm is a developer and a provider of smart antenna technology which is subsequently incorporated into the product lines of base station manufacturers. To date, ArrayComm has developed smart antenna solutions for AMPS, GSM, PHS and Wireless Local Loop applications. More than 50.000 base stations incorporating the company's technology are in commercial service worldwide today in PHS and Wireless Local Loop applications. In PHS the technology is providing a measurable factor of six increase in network capacity (via improved reuse). In the Wireless Local Loop application, the technology allows conventional channels to be reused within a cell (e.g. intra-cell reuse or a reuse factor of less than 1), providing spectral efficiency far beyond that achievable without the use of smart antennas.

The company's ability to maintain its position of technology leadership and provide employment for its highly skilled staff is critically dependent upon an ability to develop, test and improve its technology via over-the-air experiments. In order to test the technology for tomorrow's (and today's) air interfaces efficiently and accurately, ArrayComm is requesting a modification to its experimental license as described above.

It is the company's to develop smart antenna technology for all major air-interfaces, promoting spectrally efficient delivery of all wireless services. The OET has recognized the company's technology leadership by asking the company to participate in its public forums and internet tutorial series relating to smart antennas.