

Experimentation Description

Supporting Information for Form 442 File Number 0274-EX-PL-1999

ArrayComm has filed for an experimental license in support of the development of its adaptive antenna technology. The license would permit the company to perform engineering field tests of its adaptive antenna technology in the geographic vicinity of the company's headquarters in San Jose, CA. The field testing would include testing conducted at the company's offices, in which case the base station is situated at the company's location and subscriber units are located at various locations within the base station coverage area. The field testing would also include testing with 1-10 base stations located on buildings within the testing area requested in the application and subscriber units located within the base stations' respective coverage areas. The requested experimental license is for the PCS and WCS bands; the company understands and agrees that any testing would have to be coordinated with the bands' respective license holders. This license is meant to replace a previous similar license which has expired (File Number 5420-EX-ML-96).

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 the base stations (and, potentially, subscriber units) of a cellular system. By adapting the effective pattern of the array in response to the radio environment, smart antennas can provide tailored, spatially selective, gain and interference mitigation for each of the system's 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 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 10,000 base stations incorporating the company's technology are in commercial service worldwide today in a Wireless Local Loop application and for the PHS air interface. 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 of less than 1), providing spectral efficiency far beyond that achievable with alternate approaches.

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. It has requested a license for the PCS and WCS bands so that it can continue technology development for today's (IS95, GSM,) and tomorrow's (cdma2000, WCDMA, packet switched data) air interfaces. It is the company's goal to develop smart antenna technology for all major air interfaces, promoting spectrally efficiency in the 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 internal tutorial series relating

to smart antennas.