



## INDOOR WIRELESS COVERAGE STADIUM AND ARENA COVERAGE

### CASE STUDY

#### BACKGROUND

Large facilities such as stadiums and arenas require wireless coverage. However, the sporadic and infrequent demands for coverage present challenges for service providers. If sufficient capacity and coverage is not available when needed, service providers risk lost revenue and subscriber churn. However, if dedicated capacity is placed within such facilities, it frequently goes unutilized when events are not taking place. The result is ineffective use of capital expenditure, lost revenue, and decreased profitability for the service provider.

#### THE PROBLEM

A wireless service provider wanted to provide improved coverage to a popular stadium in the New York metropolitan area. Some service was already being provided to the stadium through the outdoor macrocell network. But once the stadium started to fill for events, subscribers within the audience would experience dropped calls and lack of service. Due to the inefficient coverage of the macrocell, capacity could not be fully accessed because the signals would not penetrate the stadium. Installing a base transceiver station dedicated to the stadium would require a significant capital investment and result in inefficient use of capacity because the stadium was only used periodically for events.



## THE ADC SOLUTION

ADC worked with the client to configure a digital fiber optic microcell system that allowed a significant number of the RF channels to be redirected from the area outside of the stadium to the inside. This would improve coverage and increase capacity as people converged from the parking lots to the indoor areas during events. Two 50-watt remote units were placed inside the stadium to provide coverage within the stadium area, hallways, and boxes. These units were optically fed from host units centralized at an existing cell site about five miles away from the stadium. The host unit digitizes the RF signals, digitally transports them over fiber optic cable to the remote unit where the RF signals are perfectly reconstructed and distributed throughout the stadium. Digital optical RF transport provides superior signal quality with no added noise. The versatility of digital RF transport also allows placement of capacity and coverage wherever needed and the flexibility to accommodate future alternative technologies.

## BENEFITS REALIZED BY THE CUSTOMER

Because ADC expanded upon the existing network, costs were kept to a minimum. Use of ADC's digital fiber optic microcell system allowed the service provider to cost-effectively achieve increased coverage through redistributing the capacity when and where it is needed most. With the use of a zone selector, capacity could be redirected to the inside of the stadium as demands within the facility increase. When the stadium is not in use, capacity can be reallocated back to the surrounding areas. Subscribers have service when and where they need it both within and outside the facility, experience fewer dropped calls, and are less likely to churn. In addition, the service provider may capture additional revenues from mobile usage within the facility without sacrificing revenues from the surrounding area.



### Web Site: [www.adc.com](http://www.adc.com)

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