

Moscone Center

COVERAGE SYSTEMS



Neutral Host Distributed Antenna System

Reduce Initial Investment & Lifetime Costs

Complex Environments

Multiple Operator Solutions

Challenge

Provide in-building and underground wireless coverage with multiple operators, while considering aesthetics, cost and future technology.

Solution

A true neutral host solution provided by Powerwave. Distributed Antenna System solutions co-locate resources for multiple operators/bands, each operator can maintain full control of parameters critical to the performance of their cellular network.

Result

A turn-key, future ready solution in a complex environment for the building owner and network operators

The Customer and The Challenge

Downtown San Francisco Moscone Center convention facilities faced a formidable challenge in wireless communications. Since most of its 1.2million sq.ft. (111 500 m2) floor space is underground, radio signals simply would not penetrate, making traditional macrocellular coverage impossible. However, on a peak day, up to 20,000 visitors require wireless services, offering substantial profit opportunities to wireless operators. With as many as eight wireless operators looking to provide in-building coverage, the equipment, the contracts, and even aesthetics threatened to get out of hand. Finally, Moscone Center management decided they needed a single, shared, neutral host wireless system.

The Solution The Center required complete coverage for all current and future operators and technologies throughout, including loading docks and utility areas. Specific service requirements for individual operators called for a true neutral host system that would provide uniformly a high quality of service, regardless of which type of wireless technology used. For a solution to its wireless communications predicament, Moscone management turned to InSite Wireless, a leading in-building service provider. InSite would be responsible for leasing wireless capacity to interested operators through financing, implementing, and operating a multi-operator system throughout the facilities. InSite Wireless needed not just an equipment supplier but a solutions partner with extensive experience in similarly challenging environments. After thorough evaluation of all potential partners, InSite contracted with Powerwave Technologies.

Individual Scalability Moscone Center wireless operators' Base Transceiver Stations (BTS) are co-located in a centralized base station hotel where operators can easily redistribute or expand their capacity resources. From the BTS hotel, signals are fed to an active distributed antenna system. At every remote unit site, each operator has a dedicated amplifier, powering a single multiband antenna system. The Powerwave system supports independent cell topologies for each operator, with link budgets optimized to CDMA, TDMA, GSM, iDEN® specifications, ready and able to receive future technology footprints. Thus, modularity and flexibility of the Powerwave solution help reduce initial infrastructure requirements without limiting future expansion.

Cost Savings The single distribution backbone and antenna system limits costly implementation to one initial shared cost. Thus, this system ensures major cost savings, making a more attractive case for in-building business.

Return on Investment There is no capital outlay for wireless operators at Moscone Center. Operating costs, such as leasing fees are directly recovered through increased revenue from traffic in the facilities. InSite Wireless improve their return on investment through operator-specific segments being added to the system as it expands. Moscone Center revenue increases, with no need for operator coordination, which is handled by InSite.

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Convention Center



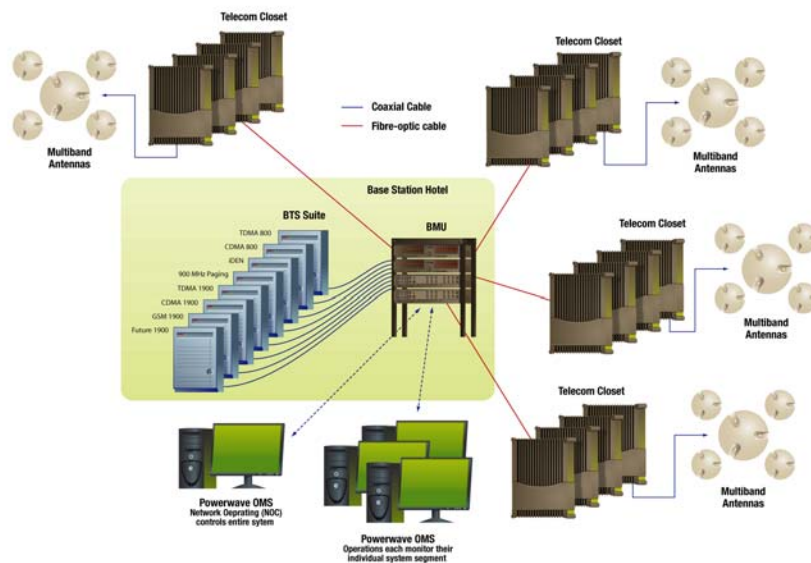
Coverage System Innovations
Team are a team of RF-and system engineers within Powerwave who manage, or assist you in, your projects for cellular coverage worldwide.

Increasing complexity of wireless systems today combines with regulatory restrictions and a variety of practical considerations to demand comprehensive experience and know how for cost-efficient cellular coverage solutions. Based on Powerwave's outstanding track record of customer projects completed, and on our extensive experience and know-how in wireless radio communications, Powerwave offers novel solutions that are carefully tailored to your specific needs.

Aesthetically Pleasing Powerwave's single multiband antenna system avoids the unsightly array of antennas and components so typical of in-building installations. Dedicated installer teams worked conscientiously around show schedules to make sure all installations in public-access areas blended in with Moscone Center's overall aesthetic profile.

Future With complete turnkey project responsibility from startup, Powerwave initially continue to operate and maintain the Moscone Center system. This allows InSite Wireless to gradually assume overall system control and responsibility as they continue developing this neutral host site. The system is designed to accommodate new operators as well as third-generation cellular technologies.

Easy Maintenance Using Powerwave Operation and Maintenance System (OMS) software, operators have remote access to their dedicated equipment through one gateway and a scalable IP network. Each operator can monitor and optimize their own performance without interfering with other operators. InSite and Powerwave have full overview of all active components, all located in areas with 24/7 access.



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