Invisible Antenna, Yet Real Sensation, for a Pleasant Tour of “China International Import Expo”

National Exhibition and Convention Center (Shanghai)
- The building area above ground is 1,270 square meters, and the overall building area reaches 1,470 square meters.
- The world’s current second largest building to accommodate exhibitions

Country/Region
China/Shanghai

Current demand
The huge building (that looks like a clover), located to the west of Shanghai Hongqiao Central Business District, is meant to be an eye catcher; this is the location of the National Exhibition and Convention Center (Shanghai).

Challenge
How to realize smooth wireless communication given such a huge exhibition room and such a huge flow of people visiting the expo?

The first China International Import Expo will take place here. There will be more than 3,000 enterprises from more than 130 countries attending the event. The huge scale will encompass a far-reaching influence. Hence, ensuring smooth wireless access and communication—given the massive flow of people—becomes a stern challenge for the operator. Like many ultra-large venues, sufficiently ensuring the wireless access rate and reducing interfering signals experienced by users requires high-quality antennas in the National Exhibition and Convention Center (Shanghai) so wireless coverage—and the huge capacity of the encompassing network—may be realized at the same time despite limited spectrum conditions.

Under normal circumstances, the quality of antennas used in a large venue, good or bad, primarily has to do with key indicators such as third-order intermodulation, beamforming, and frequency range. To ensure the success of the China International Import Expo—and for the exhibitors and visitors to enjoy smooth...
wireless communication—the operator had extremely strict requirements regarding the solution.

First, quality and indicators of the product  
Second, prior similar successful examples of the suppliers, if any  
Third, technical and service levels of the supplier

Solution

CommScope, as the specialized supplier of wireless communication solutions, offers excellent solutions—the venue-formed antenna. This is a “dual” solution: First, it has full band coverage that is able to satisfy the smooth adaptation despite the various customized and various band wireless networks of different operators. Second, there are a complete series of products with different beamforming, different dimensions and different gains available to satisfy different design and traffic requirements.

In an ultra-large venue, interference among signals of the same frequency is also a difficult issue to be addressed as it seriously undermines the user experience. The Andrew forming antenna solution of CommScope easily takes care of this issue. Its narrow beam and outstanding horizontal/vertical sidelobe inhibiting features effectively control the level of interference. In addition, the excellent third-order intermodulation indicator effectively guarantees ultra-high capacity and rate.

The National Exhibition and Convention Center (Shanghai) is much bigger than other venues; hence, the requirements for design and installation are higher and more difficult to be fulfilled, too.

According to CommScope experts, its antennas are smaller and lighter and can be easily installed. In addition, it is easier to make them invisible—ensuring the beautiful appearance of the venue. CommScope’s antennas, for example, may be installed horizontally or vertically; the orientation can be freely adjusted for planning and design and optimized coverage.

During construction and installation, CommScope provides one-stop services, including field investigation, solution proposal, testing and comparison, installation training, supervision over installation, and optimization of the network.
After the current comprehensive overhaul, the tests performed prior to the start of the first China International Import Expo rendered a 75 percent increase in the expected capacity and coverage of the antenna used in the venue, and a 45 percent increase in the access rate; the pre-established design goals are fulfilled.

CommScope has successfully provided antenna solutions with complete coverage for multiple large and ultra-large venues at home and abroad. To support the China International Import Expo—which will have an international influence—the requirements for the quality, capacity and coverage, installation, and optimization of antennas are even higher. Despite the limited time and the daunting task, CommScope impressively helped the operator accomplish the antenna overhaul project to sufficiently ensure the quality communication for people inside the venue and to thoroughly address issues such as signal coverage and system usage. The needs of the operator are satisfied by making the best of the outstanding products of CommScope, setting another benchmark for wireless coverage in a venue because it truly feels the needs of customers and thinks what users think.

What is particularly worth mentioning is that CommScope is an expert in antennas, with many years of experience. Its Andrew antenna is unparalleled throughout the industry in either design, material, or workmanship. It is known for requiring no maintenance over a period of 10 years of practical use—eliminating the concern of users while they use the product.

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