



Hubei, China Hubei Mobile Communications

CASE STUDY

Overview

Thousands of music concerts, trade shows, sporting events and political gatherings take place throughout the world every week. As anyone who's been to a big event knows, receiving quality mobile phone service while in a crowd is a major problem.

Many such events take place in communications blackspots and the existing network quickly gets saturated. Either way, this lack of service is frustrating for users, and results in lost revenues for operators, who simply cannot afford to invest heavily in cellular infrastructure that is only going to be used for a few days a year. Hubei Mobile Communications, a provincial branch of China's largest mobile communications operator, China Mobile, faced just such a dilemma.

The challenge was to find an inexpensive way of providing quality cellular voice and data services to people attending big events and to ensure that this solution was interoperable with Hubei's existing cellular network. The Chinese operator wanted a cellular system that could be set up quickly and easily – and which also could be transported from one venue to another. They started researching the possibilities and quickly discovered that when it comes to cost-effective, compact and portable cellular systems, there was only one solution that could meet their needs, ADC's Network-on-Wheels. The Network-on-Wheels solution uses a unique GSM Network-In-a-Box system that has all the equipment to create a ready-to-go GSM network in a single van or sports utility vehicle.



The van contains a monitoring system, test equipment and patch panel as well as ADC's unique GSM Network-In-a-Box – a fully integrated system that combines a mobile switching center (MSC), Base Station Controller (BSC) and Base Transceiver Station (BTS) in a cabinet about the size of a tower PC. Within just 30 minutes of arriving in an area, the network can be up-and-running and serving up to 7,000 people. The van also includes an antenna system on the roof consisting of a pneumatic mast that extends up to 25 meters in the air and is stored horizontal to the roof when not in use.

The whole system is powered from local AC (110VAC, 220VAC, 50-60Hz) and - 48VDC or an internal or external generator. Backup batteries are also provided and can be charged from vehicle engine power.

The network operates in the GSM 900MHz, DCS 1800MHz, PCS 1900MHz and the 900/1800 dual bands with coverage reaching over 15 kilometers. And the Network-on-Wheels is flexible supporting several methods to backhaul traffic to suit individual operator requirements:

- Local wired E1/T1 connection
- Integrated microwave link
- Integrated satellite link

The Result

Now whenever there is a major event, Hubei simply drives its Network-on-Wheels to wherever extra cellular capacity is required. When the event is finished, the van simply moves on to another location, thus creating a temporary, or permanent cellular network which is a new revenue stream for Hubei. These temporary events do not block the existing cell site infrastructure.

The Future

ADC's GSM Network-on-Wheels can be used in a variety of environments including cruise ships and airplanes and, with its ability to be airlifted in a container, can also serve remote or hard-to-access areas.

For example, the GSM Network-on-Wheels has been used by operators around the world to:

- Fill network gaps during military operations
- Replace communication systems lost or damaged during natural disasters such as floods and hurricanes
- Augment coverage in key traffic areas during emergencies
- Provide a temporary network prior to the deployment of a permanent network
- Enable private, self-contained networks in various applications.

Having had such a positive, and profitable, experience so far, Hubei is now exploring new uses for its Network-on-Wheels.



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