

Case Study

Park Air Systems

era
Beyond Radar

PRM & Surface Surveillance

Challenges

- Surface management
- PRM
- Growth of operations
- Safety enhancements
- Airport infrastructure growth

Solutions

- Wide area and surface multilateration
- Cost-effective
- High accuracy and coverage
- Scalable

Beijing Capital International Airport (PEK)

Beijing is home to one of the fastest growing airports in the world, Beijing Capital International Airport (PEK). In 2005, Beijing Capital International Airport was the world leader in passenger growth, with a staggering 17.5% upswing in passenger traffic. This number is only expected to rise, especially as Beijing prepares for the 2008 Summer Olympics. Sixty-six airlines serve Beijing Capital International Airport offering flights to more than 88 cities in China and 69 cities abroad, accounting for over 5,000 scheduled flights.

The Challenge

Beijing's unprecedented growth and success represented an immense challenge for airport officials. The large increase in demand could not be met by capital improvements and construction alone. Further, safety concerns became paramount in the face of the rapid expansion.

Beijing Capital International Airport currently has two runways with the third under construction. All runways are parallel to each other, necessitating the need for a Precision Runway Monitoring (PRM) system.

Additionally, with the extreme upswing in aircraft movements, Beijing Capital International Airport needed improved airport ground surveillance. ATM officials decided to research systems that could leverage next-generation technologies based on multilateration and ADS-B to provide a complete solution for both parallel runway monitoring and surface surveillance, as well as future-proof their investment in this surveillance infrastructure.

The Solution

The North China ATMB evaluated multilateration and ADS-B solution providers and selected the team of Park Air and Era to deliver two separate Mode S Multilateration (MLAT) systems including ADS-B reception, decoding and transmitting capabilities. NCATMB selected Park Air as the prime contractor to deliver the system, based on its track record of success in integrating component technologies to offer a turnkey air traffic control solution, and MSS by Era, based on its proven wide area multilateration and ADS-B technology. The Era solution will provide parallel runway monitoring as well as surface surveillance for Beijing Capital International Airport by utilizing the same "MSS by Era" network of sensors.

This groundbreaking project will provide higher accuracy, greater update rate, better coverage and improved reliability when compared to traditional radar technology, as well as dramatically lower initial and maintenance costs.

The solution utilizes the MSS by Era multilateration and ADSB surveillance data to provide air traffic controllers with uninterrupted identification of aircraft and equipped vehicles. The surface sensors at Beijing Capital International Airport cover all manoeuvring areas with the added ability to cover a future undeveloped fourth runway.

Park Air Systems provides Communication, Navigation and Surveillance (CNS) solutions for the world's airspace. It currently has an installed base encompassing 167 countries. A multi-national operation with facilities in Europe, USA and Asia, the company is dedicated to implementing advanced air traffic control systems.

Throughout Park Air Systems' history the organisation has specialised in providing leading-edge systems to both aviation and other transport applications. Today Park Air Systems dedicates itself completely to designing, manufacturing and installing ground-based systems for use in air traffic control and air defence applications. The company is a wholly owned subsidiary of Northrop Grumman Corporation.

Park Air Systems knows that consistently high quality products and services are vital for its customers' safety-critical operations. Our organisation and methods are designed to achieve high quality results and are certified to the international quality standard ISO9001.

Developing individual products is part of the process. Combining these equipments to form complete, turnkey CNS solutions requires extensive systems knowledge of the ATC environment. Park Air Systems, as a company uniquely positioned in dedicating itself to the development of CNS systems for advancing safe flight, has many years' experience in implementing complex Air Traffic Control and Air Defence systems throughout the world.

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Era Corporation is a pioneer and leading supplier of next-generation surveillance and flight tracking solutions for the air traffic management, military, security and airport operations markets. With proven multilateration and ADS-B technologies delivering high-performance, high-reliability surveillance solutions, the company has over 100 airport, air traffic management and military customers throughout North America, Europe, the Middle East, Africa, South America and Asia. Era systems are providing high performance, high reliability surveillance with hundreds of operational sensors covering the airspace of over 35 different countries around the world. Era's investment in research and development and its track record of product innovation has resulted in a substantial patent portfolio. Era is headquartered in Reston, Virginia with leading product research and development centers of excellence in the U.S. and Czech Republic.

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