

## Case Study

### Challenges

- Inadequate radar coverage
- Mountainous terrain
- Unreliable radar coverage
- Prohibitive radar costs
- Growth of operations

### Solutions

- Wide area multilateration
- Complete area coverage
- Cost-effective
- Reduced separation
- Radar type certification

## Multilateration



### Czech ANS - Ostrava

The Czech ANS manages the rapidly growing air traffic in the airspace of the Czech Republic. Ostrava, the country's third-busiest airport, is located among mountainous terrain in the northeast sector of the Prague flight information region (FIR).

### The Challenge

In 2000, members of the Czech ANS sat down to discuss the future of their air surveillance systems. One of the most pressing issues at the time was the lack of terminal area surveillance covering the Ostrava area. Due to the mountainous terrain surrounding the region, the nearest Secondary Surveillance Radar (SSR) could not provide coverage below 1000 m, as the surveillance range of the SSR could not dip below the crests of the mountain range. Concurrently, the Czech ANS needed to dramatically improve their radar data reliability in the entire northeast sector of the Prague FIR. Until this point, only expensive SSRs were certified for air traffic separation. In the eyes of the Czech ANS, SSR was not only a costly alternative but was also an ineffective one in the face of the Ostrava terrain. The Czech ANS surveillance experts began researching emerging technologies as alternatives to traditional radar solutions.



## The Solution

**“Era’s multilateration systems have a long track record of performance and reliability in both surface and en-route applications. The bottom line is that they just work and they work better and more economically than SSR”**

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In 2001, the Czech ANS concluded its research and selected MSS by Era’s wide area multilateration and ADS-B technology. The decision was based on a lengthy performance and cost/benefit analysis, which clearly determined that Era’s wide area multilateration solution could outperform traditional SSR at a fraction of the cost. At the same time, the system could cover both the northeast sector of the Prague FIR as well as the low altitude and final approach areas surrounding the Ostrava region. Perhaps most importantly, Czech ANS research indicated the system performance would support the critical industry standards necessary for operational acceptance.

Era’s system was fully installed by 2002 and type certified in 2003 against ICAO ANNEX 10 for interrogation and against Eurocontrol radar standards for surveillance performance after a year of flawless operation. The system performed so well during that year, it was certified for 3 NM separation and is believed to be the only operational multilateration system in the world with such certification to date.

The system consists of five receiving stations and two interrogators and provides ASTERIX data to the ATC systems both in Ostrava and in Prague along with remote control and monitoring systems (RCMS) established in both centers. Coverage extends 80 NM from the Ostrava airport all the way down to the airport surface.

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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.

For more information,  
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