CMS/XA

En-route control and monitoring system for United Kingdom

Nationwide ERCAMS infrastructure programme to monitor all 23 NATS en-route radar sites.

About NATS

NATS is the UK's leading provider of air traffic services, handling 2.5 million flights and 250 million passengers in UK airspace, covering the UK and eastern North Atlantic. It delivers air traffic services to 13 UK airports, Europe, the Middle East and Asia.

NATS and Frequentis Comsoft's relationship stretches back to 1993 when they joined forces to accomplish UK-RADNET, the first countrywide radar data distribution network. Another major success is ERCAMS, a nationwide infrastructure programme to monitor all 23 NATS en-route radar sites based on Frequentis Comsoft's CMS/XA.

About CMS/XA

CMS/XA is an integrated control and monitoring system for ATC environments. An open architecture, high reliability, outstanding performance and cost efficiency form its solid base. The integrated architecture of CMS/XA covers on-site data acquisition technology, remote communications as well as centre-based processing and visualisation equipment.

It is ideally suited to supervising a large number of remote sites simultaneously from one or several central locations, underlining its status as a fully unified solution. Designed to meet the highest standards of reliability, CMS/XA is appropriate for use in safety-critical environments.

Project Highlights

- Control and monitoring of 25,000 supervision points
- End-to-end response time < 3 sec.
- Fully redundant and scalable system
- Future-oriented software architecture

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The Challenge

The reliability requirements for ERCAMS were a particular challenge of the project. NATS requires a total system MTBF of 10^6 hours , i.e. the equivalent of more than 100 years without total system failure. Designed particularly for ATC applications, CMS/XA includes redundancy concepts for its components at hardware, software and networking levels, enabling it to fulfill these stringent availability requirements. A prerequisite for ERCAMS was the customisation of the system to different environments. Despite 20 different radars, hundreds of different signal types and thousands of individual monitoring points, NATS wanted it to be easy to make changes to the configuration.

"I think that we have built a superb relationship between the NATS and Frequentis Comsoft teams over the years. This has enabled us to always deliver the system, whatever the technical challenges. I hope that we continue this for many more years."

Ali Bruce, retired,
former Senior Radar Engineer,
NATS

The Solution

For the ERCAMS project Frequentis Comsoft's CMS/XA has been configured to monitor 23 en-route radar stations. By 2006, NATS planned to upgrade the whole infrastructure, and once again chose Frequentis Comsoft as its supplier, backed by the confidence of almost a decade of positive experience. This second generation of the solution is called ERCAMS-II. Based on the CMS/XA architecture, ERCAMS-II represents a new generation of control and monitoring systems. It provides an integrated architecture covering on-site data acquisition technology, remote communications, and centrally based processing and visualisation.

With ERCAMS NATS is in a position to control all radars from a central service management centre. The system has been active in the UK since the year 2000, operationally supervising radar sites from the English Channel coast up to the Scottish Hebrides and the Irish Sea.

Across both generations, ERCAMS has proven to be one of the most successful projects in NATS history. It has saved a significant amount of operating and maintenance costs, allowing the air traffic service provider to maintain control over a large and heterogeneous set of geographically distributed radars and related infrastructure from a single central point of control.

Radar station Great Dun Fell

Benefits at a glance

- Outstanding potential to be customised to different environments.
- NATS achieved significant cost savings.
- Supervision beyond radar borders, including electricity and building facilities.
- Almost 20 years of proven service in unmanned radar stations.
- Planned system lifetime: 30+ years.
- Employee-friendly through centralisation of expertise at convenient locations.

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