

# MIS SYSTEMS ENGINEERING

Guaranteeing uptime all the time for UK Ambulance Services



At the same time as the UK government consolidated the number of Ambulance Trusts covering England from 33 to 10, they introduced some challenging performance targets, requiring 75% of all priority one calls to have an appropriate resource on scene within 8 minutes from time of first ring in the Control Centre. In addition, all emergency calls were on the up and continue to increase by 5% to 10% each year.

## Business Situation

Ambulance Command and Control Centres in the UK were under immense pressure as were their IT infrastructures.

MIS Systems Engineering's sister company, MIS Emergency Systems Command and Despatch (CAD) solution is in place in 75% of UK and Ireland Ambulance Services, covering more than 37 million people and dealing with nearly 6 million calls each year. To meet this ever increasing workload their customers told them: 'we need a fast, flexible and cost-effective solution and with the best possible uptime'.

MIS were intent on supplying one.

## Key Benefits

### Solution Profile

- Uptime assurance for UK ambulance command and control centres, due to extreme pressure from changing legislation and increasing demand

### Products

- MIS's C3 NEXUS command and control system
- EISEC, advanced mobile data
- AVLS/GPS
- Embedded GIS
- Stratus® ftServer systems

### Services

- Stratus Support Services

"The Ambulance Service does a magnificent job, often in very difficult circumstances. MIS understands that every second counts and can quite often save lives. That's why we are focused on building MIS Command and Despatch system solutions with the best possible uptimes using Stratus hardware."

### Mark Appleyard

Managing Director, MIS Systems Engineering

### Business Objectives

“The objective was to review our existing CAD solution and to quickly develop it into something that would deliver the exceptional levels of performance and availability demanded of our clients. Failure to do so could cost lives,” Mark Appleyard, Managing Director at MIS Systems Engineering explains.

Downtime is just not an option for the ambulance service and MIS knew that the generic Intel server data replication and clustering technology it had in place was not good enough for the ‘super’ Trusts. They had to find an ultra-high availability solution which fitted within the Trust’s budgets and didn’t require expensive skills to maintain.

“We needed a rock solid foundation to underpin our software solutions. Clusters don’t protect ‘in-memory’ data; if a node crashes there is a possibility that database structures could get corrupted. The ambulance service couldn’t afford that risk. In addition, clusters do not prevent downtime, they simply deal with it after the event, and even though a clustered Microsoft® SQL Server® failover can happen quite quickly, the loss of service for even a few seconds can cause major operational difficulties for the ambulance control room staff.

Also, occasionally, depending on the nature of the problem, a cluster may automatically failover for a non-critical problem.

Getting the configuration balance correct between automatic and manual failover events can be very tricky. With fewer ambulances covering larger geographic regions, the risks were too high,” Mark explains.

“Then there were the complexities and costs of maintaining a cluster, in terms of skills for both MIS support technicians and the end user ICT staff. To guarantee continuous availability we were going to need something else.”

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Managing Director, MIS Systems Engineering

### Stratus ftServer Systems

“We knew we needed to find a highly resilient hardware infrastructure that eliminated single points of failure and downtime, including failovers. We needed guarantees that it would perform well during high levels of activity and we needed it to integrate seamlessly into the many third-party interfaces/ systems that encompass the C3 NEXUS Command and Despatch solution.

Such interfaces include EISEC, advanced mobile data, AVLS/ GPS and a full embedded GIS which tracks over 1000 vehicle movements at any given time with required sub-second responses,” advises Mark.

“The hardware also needed to be Intel® based and run industry standard software. Most of all, deployment had to be simple and the supplier had to have a proven track record of working in the high availability market with high profile businesses.

I cannot stress enough how crucial it was to ensure we chose the correct hardware supplier. Any failure, at any level, could literally cost lives.”

Mark spent several months looking at the various technologies and supplier products before deciding on Stratus.

The main reason for choosing Stratus, he says, was that an ftServer® system looks and feels just like any other standard Intel server, but with added advantages. “Fully fault-tolerant, redundant components mean the hardware keeps on running, even if something critical such as a processor fails. This is really important for us in achieving our zero downtime goals. Stratus servers constantly monitor themselves via the Automated Uptime Software Layer™ technology, which automatically isolates and reports any potential issues to their global network of support engineers.

This gave us absolute confidence that nothing could go wrong. Nothing did,” says Mark. “What’s more, because ftServer is so easy to implement, deploy, support and manage, our systems engineers could use their existing skill sets. There was no need to retrain.

This meant significant savings in terms of both money and time. It allowed us to develop a fast to deploy ‘straight out of the box’ solution, without changing even a single line of code,” concludes Mark.



### Business Impact

“Results have been outstanding. Not only does the hardware comfortably deal with everything we throw at it, but there is still plenty of resource left over for future expansion, protecting our clients’ investments,” explains Mark.

“Thanks to Stratus and ftServer, we were able to develop our MIS C3 NEXUS solution to be one of the quickest, most efficient and reliable real-time Ambulance Command and Despatch System available, anywhere. A quick review of the Department of Health returns for Emergency Operation Centre (EOC) control room handling times clearly shows that organisations using C3 NEXUS are consistently amongst the best performers both with regards to EOC times and overall operational performance.

“We chose ftServer because of the cast iron guarantee of 99.999+% uptime; the simplicity of installing, implementing and supporting it (and the associated savings) and Stratus’s track record. On reflection, Stratus’s approach to business has helped us to define our success in this sector too. As a technical organisation, it is important we can speak to technical people. One of the things we like about Stratus is they give us direct access to people who can answer our questions.”

“From day one, Stratus made us feel like a partner, not just another customer. Their people have worked closely with ours, providing resources and expertise whenever required to help us fully test and benchmark our solutions before we make any commitments to our customers. This is vital for us to ensure we can deliver what we promise,” concludes Mark

Andy Bailey, availability advisor with Stratus UK picks up on this theme: “MIS had been successfully working with the Ambulance Services for over 25 years before we came along.

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They had built really good relationships with many of the Trusts through carefully listening to what they needed and responding quickly.

This working style reflects ours and I look forward to celebrating the success of the many exciting developments we are currently working on together.”

Such developments include hosting virtualisation solutions on ftServer and offering affordable continuous availability to MIS’s Housing Association and SME clients via Stratus’s new availability software, include hosting virtualisation solutions on ftServer and offering affordable continuous availability to MIS’s Housing Association and SME clients via Stratus’s new availability software, everRun®.

### About MIS Systems

MIS Systems Engineering has been delivering system and network infrastructures with the highest levels of availability, fault-tolerance and resilience to the public sector since 1981.

Based in custom built premises on the outskirts of Northwich, Cheshire, UK, MIS has built a niche business based on technical excellence, long-term relationships with its customers and a commitment to best practice customer support and services.

[www.mis-se.com](http://www.mis-se.com)

### About Stratus

Stratus delivers uptime assurance for the applications its customers depend on most for their success. With its resilient software and hardware, backed by proactive availability management services, Stratus products help to save lives and to protect the business and reputations of companies, institutions, and governments the world over.

To learn more about worry free computing visit

[www.stratus.com](http://www.stratus.com)



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