

Mesh Resilience White Paper

Challenge

Derbyshire and Nottinghamshire Fire & Rescue Services required a highly resilient station-end mobilisation solution capable of maintaining operational continuity across a geographically diverse estate.

With mobilisation forming a critical part of emergency response, helping maintain mobilisation capability during primary network outages was a key priority.



Solution

Critico delivered its next-generation Station End solution across the Services, incorporating an intelligent mesh network designed to provide automatic fallback via radio channels should the primary IP network become unavailable.

The implementation was carefully planned and delivered on schedule, with close collaboration between Critico and Fire & Rescue stakeholders to ensure a smooth transition and minimal operational impact.

Area Manager, George Darby, Strategic Lead for the project, commented:

"Critico delivered the project with exceptional professionalism and partnership.

Their team worked closely with both Nottinghamshire and Derbyshire Fire and Rescue Services to ensure a smooth transition at every stage, providing responsive technical support, clear communication, and a genuine commitment to operational readiness.

Critico's collaborative approach meant that both FRSs felt fully supported throughout implementation and confident in the system from day one."

Benefits

Since go-live, the mesh capability has already demonstrated its value.

The network enables stations to communicate with neighbouring sites, allowing mobilisation messages to continue routing even during IP outages. This additional layer of resilience provides reassurance that crews can still be alerted when it matters most.

The Services are also benefiting from enhanced system visibility through Critico's monitoring tools, enabling proactive identification of potential infrastructure issues and supporting ongoing operational reliability.

"Since going live, both Services have experienced significant improvements across their mobilisation environment.

The mesh based architecture has provided a level of resilience that ensures uninterrupted mobilisation - even in the event of localised outages or connectivity issues.

The PNC (our primary Controller/Server) operates in an active/passive configuration and is fully resilient, providing continuous availability and seamless failover.

This stability, combined with improved operational visibility, has delivered measurable benefits for crews and control staff alike."

Area Manager, George Darby

Evolution & Development

Post-implementation analysis has shown the mesh network is performing strongly across the majority of sites. Where opportunities for further optimisation have been identified (such as aerial enhancements) Critico is working in partnership with the Services to continuously strengthen network performance.

This proactive approach ensures the solution continues to evolve alongside operational requirements.



Final Thoughts

The successful rollout of the Station End solution marks an important step in enhancing mobilisation resilience for Derbyshire and Nottinghamshire Fire & Rescue Services.

"The true value of the Critico solution lies in its intelligent mesh capability, which provides a robust and fault tolerant foundation for mission critical operations.

Unlike traditional single point systems, Critico's distributed design ensures that no single failure can compromise mobilisation or operational visibility.

This level of resilience is essential for modern fire and rescue operations, and it has given both Nottinghamshire and Derbyshire FRSs the confidence that their systems will remain available, synchronised, and dependable when it matters most."

Area Manager, George Darby

By combining robust infrastructure with intelligent fallback capabilities, the Services are well positioned to maintain reliable alerting - supporting their mission to protect communities across both counties.



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