ALWAYS-ON VOICE, DATA AND APPS

KEEPING FIRE CREWS CONNECTED WHEN LIVES ARE ON THE LINE

SOLUTION BRIEF | FIRE & RESCUE

THE CHALLENGE: CONNECTED CREWS SAVE LIVES

For firefighters, every deployment is unpredictable. Incident locations range from dense urban centres to remote rural zones, where network coverage can fluctuate or fail entirely. Reliable connectivity enables faster situational awareness, access to digital building plans, live telemetry, and coordination with command.

A recent European Fire Safety Alliance report found that communication breakdowns contribute to 1 in 5 operational delays during complex incidents. In Australia, connectivity gaps in regional areas remain a major challenge, with fire services reporting up to 10% loss of mobile data coverage during major bushfire deployments. These gaps hinder access to mission-critical applications and slow the transfer of vital information from the field.

As incidents grow in scale and complexity, resilient, secure and interoperable communications have become essential to keeping fire crews and the communities they protect safe.

KEY CHALLENGES FOR FIRE & RESCUE SERVICES

LIMITED NETWORK COVERAGE DURING OPERATIONS

CHALLENGE	Fire trucks often operate in remote or infrastructure-damaged areas where LTE coverage is weak or absent.
IMPACT	Loss of live updates, telemetry and digital mapping from the field.
SIMOCO RESPONSE	Acts as a multi-bearer platform combining LTE, 5G, satellite and Wi-Fi, using InStream SD-WAN to maintain seamless connectivity. Each fire appliance becomes a mobile command node with 99.999% uptime, keeping crews online even in the harshest conditions.

FRAGMENTED VEHICLE COMMUNICATION SYSTEMS

CHALLENGE	Multiple standalone routers, radio gateways and onboard PCs increase installation complexity and maintenance cost.
IMPACT	Reduced reliability, space inefficiency and slower vehicle rollout.
SIMOCO RESPONSE	Both platforms deliver all-in-one communication capability — integrating broadband, LMR/TETRA/P25 voice, Wi-Fi and telemetry in one compact chassis. Fire services gain a single, manageable platform for vehicle connectivity, eliminating redundant hardware.

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TRANSITION TO BROADBAND AND MCX TECHNOLOGIES

CHALLENGE	Many fire services still rely on narrowband systems that cannot support next-generation data and video applications.
IMPACT	Limited situational awareness, slow command-and-control data sharing and future interoperability risks.
SIMOCO RESPONSE	The VX4700 is built for broadband evolution, supporting MCx/ESN-equivalent standards with full compliance to 3GPP and ETSI frameworks. It connects seamlessly with LTE and private 5G networks, enabling HD video streaming, live mapping and digital command integration. It also supports Ethernet plug-in connectivity — replacing bulky devices such as legacy Toughbooks with a compact, integrated solution.

CAD AND MOBILE APPLICATION INTEGRATION

CHALLENGE	CAD systems and mobile data apps are often supplied by different vendors, creating compatibility challenges.
IMPACT	Data silos between command, vehicles and field units reduce operational efficiency.
SIMOCO RESPONSE	Both VR950 and VX4700 platforms feature open standard APIs for CAD and AVL integration. They are engineered to work with leading providers, which powers a significant portion of the UK fire service CAD ecosystem — simplifying integration and accelerating deployment.

LIMITED RESILIENCE AND CONTINUITY IN MAJOR INCIDENTS

CHALLENGE	Large-scale fires, multi-agency incidents and prolonged operations place sustained load on vehicle communications, power and network availability. Many in-vehicle systems are not designed for extended uptime under extreme heat, vibration and power fluctuations.
IMPACT	System resets, dropped connections or equipment failure during critical phases of an incident undermine command confidence and operational continuity.
SIMOCO RESPONSE	The VR950 and VX4700 are purpose-built for mission-critical environments, with ruggedised hardware, extended temperature tolerance and intelligent power management. Designed for continuous operation, they support high availability architectures and resilient network failover, ensuring vehicle communications remain stable throughout long-duration and high-intensity incidents.

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CYBERSECURITY AND COMPLIANCE

CHALLENGE	Fire services increasingly manage sensitive data, incident reports, personnel tracking and building schematics, all subject to GDPR and national data protection laws.
IMPACT	Vulnerable devices can lead to data breaches or operational disruption.
SIMOCO RESPONSE	Both platforms employ AES-256 GCM encryption, secure boot and firmware integrity validation to protect all communications. Centralised management ensures proactive monitoring, patching and audit compliance.

PROTECT YOUR CREWS WITH SEAMLESS CONNECTIVITY

The VR950 and VX4700 together deliver a unified communications framework for modern fire operations.

- VR950: Provides resilient, always-on connectivity across LTE, Wi-Fi and satellite through InStream parallel bearer routing, ensuring uninterrupted communication even beyond cellular coverage.
- VX4700: Enables a smooth migration to broadband and MCx environments, integrating data, voice and video services for richer situational awareness and future-proof interoperability.

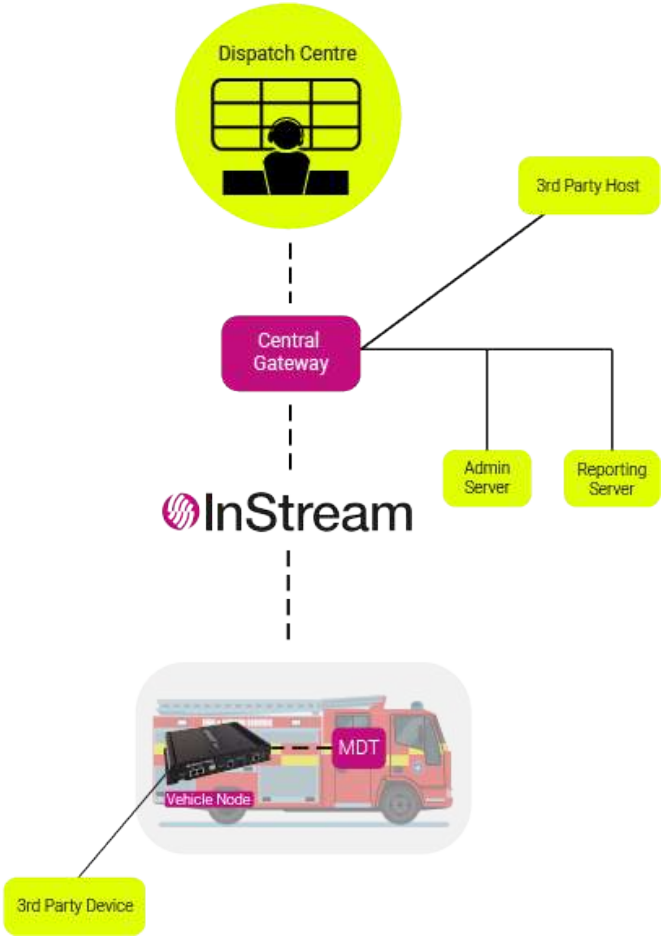
Together, they turn each fire vehicle into a connected command hub, ensuring data, voice and mission-critical apps remain active — everywhere the crew operates.

THE FIRE VEHICLE AS A CONNECTED NODE

Modern fire appliances are more than transport; they are mobile network nodes extending connectivity to the incident ground.

With the VR950, every vehicle can provide Wi-Fi coverage at the scene, enabling firefighters to access building maps, safety documents and digital forms directly from their tablets or radios. This connectivity bridges operational gaps and empowers teams to make faster, data-driven decisions in the field.

By combining this with the VX4700's MCx-ready capabilities, fire services can gradually transition to broadband-enabled communications without disrupting existing workflows or infrastructure.



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KEY FEATURES & BENEFITS

ALWAYS-ON CONNECTIVITY

InStream multi-bearer routing with 99.999% uptime.

BROADBAND-READY

VX4700 supports MCx/ESN integration and future-proof 5G capability.

UNIFIED PLATFORM

Combines routing, radio integration and telematics in one chassis.

WI-FI HOTSPOT CAPABILITY

Fire trucks become mobile network nodes at incident scenes.

API GATEWAY

Seamless integration with CAD, AVL and command platforms (e.g., Motorola 3TC).

SECURE BY DESIGN

AES-256 encryption, secure boot and managed device integrity.

REDUCED HARDWARE FOOTPRINT

Replaces multiple standalone units and simplifies maintenance.

LONG-TERM SUPPORT

7–10 years of manufacturer-backed hardware and software lifecycle.

CUSTOMISATION OPTIONS

Modular design tailored to specific fleet and incident-ground requirements.

WHY SIMOCO

Simoco has been delivering mission-critical communications to public safety agencies for over 70 years. Our technology powers emergency services worldwide, combining engineering excellence with deep domain expertise.

The VR950 and VX4700 platforms represent the next generation of connected fire service technology — providing reliability, flexibility and readiness for the broadband era.

Whether the objective is enabling vehicle-based Wi-Fi at incidents, ensuring uninterrupted multi-bearer connectivity, or preparing for MCx migration, Simoco's solutions keep fire services connected, coordinated and future-ready.

BOOK A VEHICLE DEMONSTRATION

Experience how the Simoco VR950 and VX4700 transform fire service communications — keeping crews connected, data flowing and operations protected, wherever the mission takes you.

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