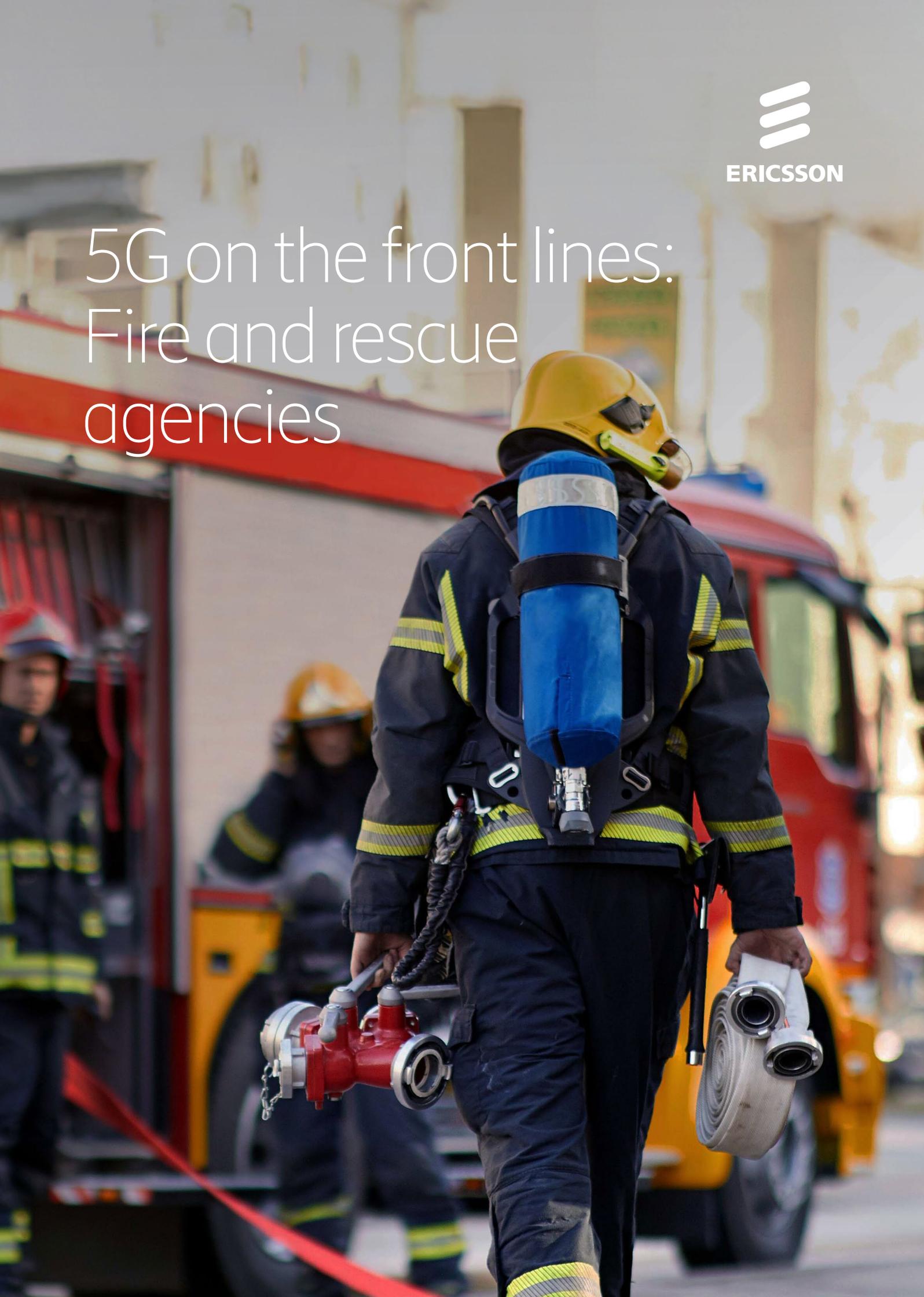




ERICSSON

5G on the front lines: Fire and rescue agencies



Why reliable connectivity is vital for fire and rescue services

Fire and rescue services have always operated under enormous pressure, but factors such as increased social and budgetary pressures – and even climate change – are adding additional complexity.

Globally, fire and rescue departments are seeing their roles constantly evolve. For example, 33 percent of the US population, around 115 million people, now live in wildfire risk zones.¹ Wildfires also are no longer contained to a season but are considered a risk almost year-round. Even within firefighters’ own career spans, the changing face of the sector is noticeable, with 87 percent reporting that they believe the scope of their work has expanded since they first joined the service.²

Speed, situational awareness, and strong communication that enables cross-team collaboration are all vital for safe, effective fire and rescue responses. Technology is viewed as a key enabler in modern firefighting, and is already having an effect in these areas – almost 90 percent

of firefighters report that technology has helped them save time in dangerous situations.³ Additionally, 60 percent of firefighters say that digital tools make them feel safer in the field.⁴ Drones are deployed as part of emergency responses by 30 percent of fire and rescue agencies, with drone and robotics adoption expected to triple in the next five years.⁵

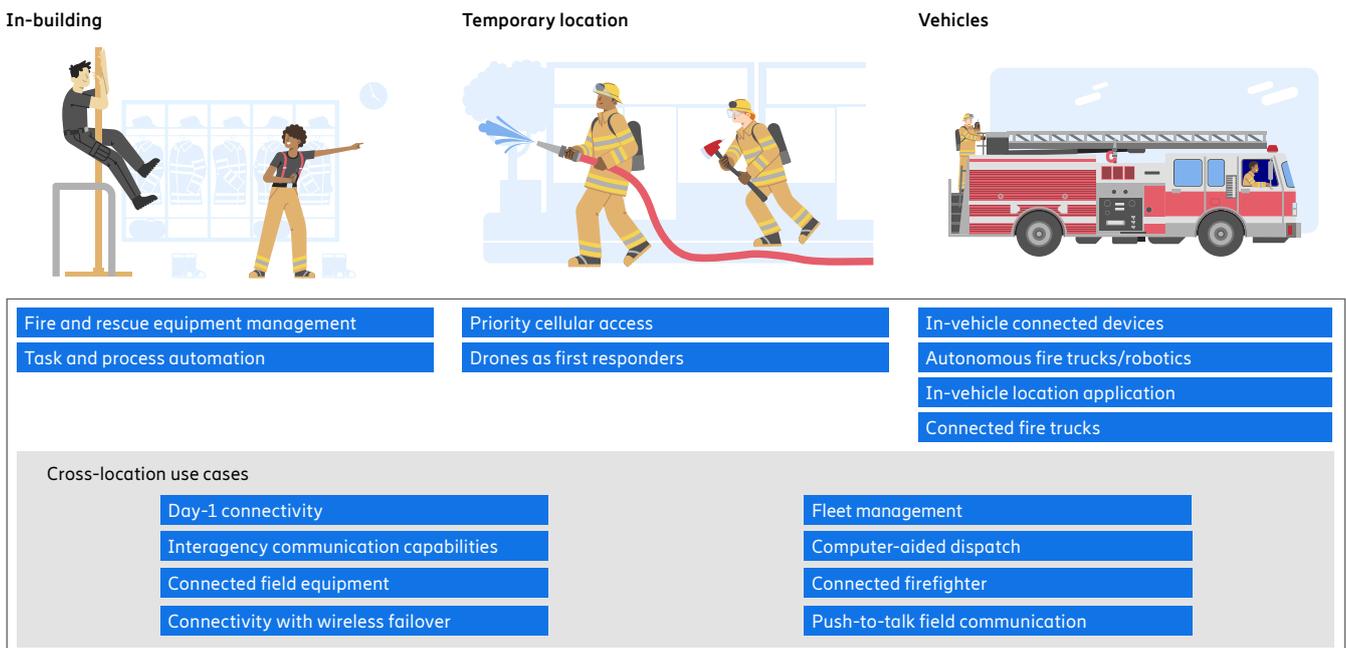
Use cases that offer value

This report explores research conducted on behalf of Ericsson⁶ into the benefits that wireless technologies can bring to fire and rescue departments. It focuses on three key locations where wireless technology can make a tangible difference: “in-building,” “temporary location,” and “vehicles.”

Almost half of the identified use cases can be scaled across multiple locations, including: inter-agency communication capabilities, connected field equipment, connectivity with failover, and fleet management. These solutions create data sharing and coordination between the station, vehicle, and incident site, ensuring that every part of the fire and rescue network operates and communicates seamlessly.

The Ericsson Enterprise Wireless Solutions portfolio supports the studied use cases with offerings such as Wireless WAN (WWAN) and 5G Secure Access Service Edge (SASE), which help fire and rescue departments adapt quickly to rapidly changing conditions, accomplish more with existing resources, and ensure operational resilience in constantly changing conditions.

Figure 1: Fire and rescue department digital transformation opportunities from Enterprise Wireless Solutions



¹ Vox, Why fire “season” is now all year long (28 August, 2025).

² FireRescue1, The multi-tool firefighter: Asked to do more with less (13 July 2023).

^{3,4} IDEX, Recent Study Shows Technology Will Be a Critical Factor in Firefighting Recruitment Efforts.

⁵ Verizon Frontline 2025 Public Safety Communications Survey.

⁶ All statistics in this report are from Arthur D. Little research on behalf of Ericsson, based on a theoretical, typical mid-sized fire department in Western Europe with an annual budget of USD 30 million. The department runs 18 stations and employs 300 full-time and on-call firefighters, responding to 4,350 incidents annually.

Use place: In-building

In-building use places are permanent, facility-based locations, such as fire stations or surveillance monitoring centers. Strong communication for seamless coordination and efficiency are key at these locations.

A fire can double in size every 30–60 seconds.⁷ This means that fast, efficient dispatch in response to emergency calls and quick arrivals at the scene are vital, as even very small delays could have disastrous consequences – just a five-minute delay in arrival could allow a fire to become 32 times bigger. A failure in communications systems at the wrong moment could be disastrous.

The research conducted on behalf of Ericsson shows that key use cases and benefits for in-building environments hinge on connectivity with wireless failover.

- Wireless failover is a vital business continuity function that provides backup connectivity using WWAN. This ensures uninterrupted operations during primary network outages, ensuring communications never go offline.
- A wireless failover link can reduce the number of network downtime events by 60 percent, and the duration of each event by 80 percent.⁸ These improvements facilitate an estimated 33 additional responses annually that would otherwise be delayed because of system interruptions.

Alongside safety and response times, budgetary concerns are also a concern for fire and safety departments. The research shows that the typical mid-sized fire department with an annual budget of USD 30 million could save USD 500,000 annually by implementing connectivity with wireless failover. Around 45 percent of this saving is due to productivity gains from reduced

personnel downtime, and the remaining 55 percent from improved IT operations.

Additionally, the economic impact should be considered – faster fire response times mean reduced property loss and/or damage. Additionally, there will be savings due to reliable connectivity enabling the flexibility to embrace new technologies in the future without the need for further investment.

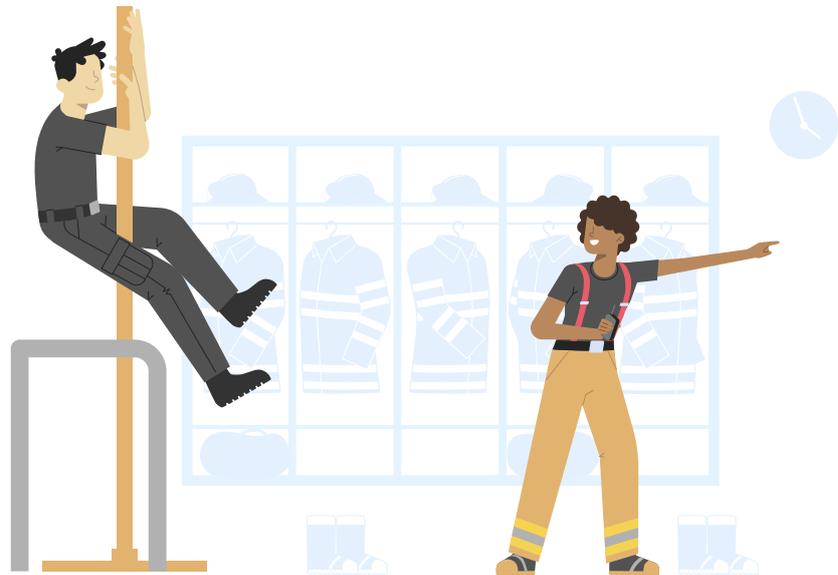
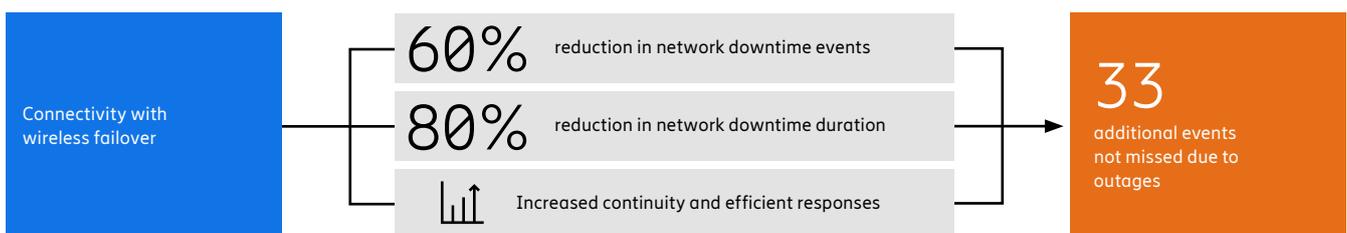


Figure 2: Operational benefits of the wireless failover use case at in-building locations



⁷ 3D Firefighting Safety Bulletin 4/2007.

⁸ Arthur D. Little analysis. Enterprise Strategy Group Economic Validation, Ericsson, "Analyzing the economic benefits of enterprise cellular solutions in branch locations" (September 2024).

Use place: Temporary locations

Temporary locations include the scene of a fire or disaster, and search and rescue operation areas. Collaboration, enabled by seamless communication, is key for effective, safe operations at these use places.

The sites of fires, disasters, and rescue operations are inherently dangerous, and situations can evolve quickly. Communication and collaboration between teams and individual team members is vital to keep personnel safe, as well as to ensure effective operations. It is striking then that around half of public-safety organizations say that their infrastructure and equipment do not currently ensure continuity of communications during out-of-the-ordinary emergencies.⁹

The research conducted on behalf of Ericsson shows that key use cases and benefits at temporary locations can include:

Drones as first responders

- To enhance situational awareness, drones can be deployed from fire trucks to provide rapid on-scene assessments and search large areas. Through live video, thermal imaging, and environmental sensors, they provide

dispatchers and command units with immediate situational awareness – identifying fire spread, hazardous zones, or trapped individuals.

- Drones add the most value for incidents such as large fires, severe weather, natural disasters and large rescue operations, which account for 7 percent of all incidents per year. Departments report that drones enable time savings of 10–15 minutes during on-scene assessments,¹⁰ which is equivalent to 51 hours annually in the typical agency.

Connected field equipment

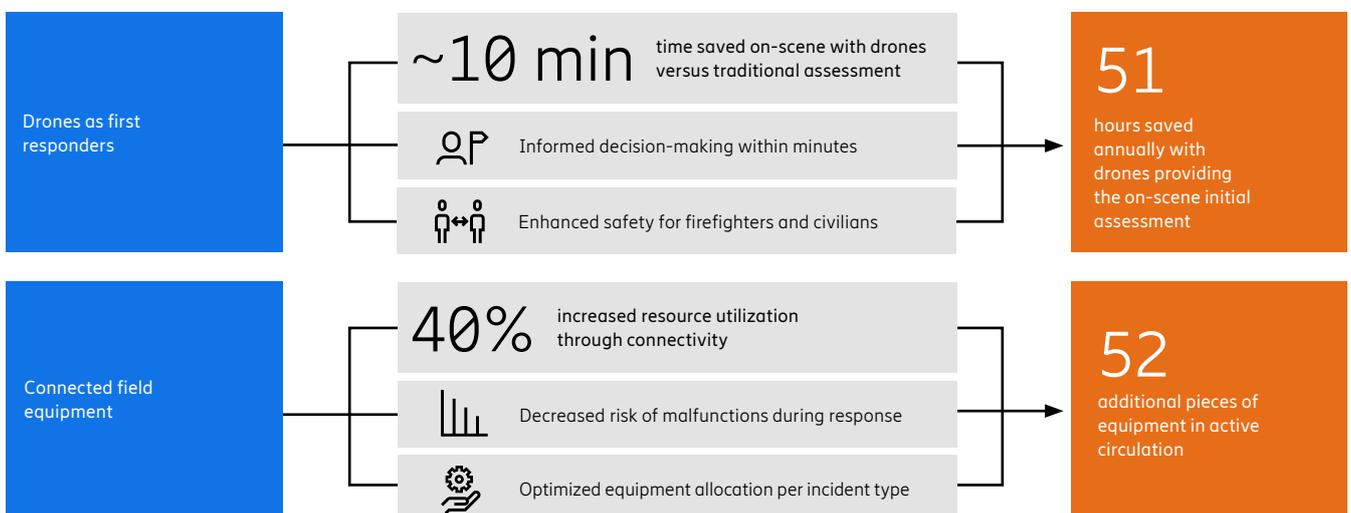
- Embedding connectivity into fire agencies' equipment enables real-time monitoring of usage, readiness and condition.
- This approach has been shown to deliver up to 40 percent higher resource utilization,¹¹ enabling teams to keep 52 additional pieces of equipment in active circulation without expanding their fleet.

The result is a 22 percent increase in available equipment capacity, achieved entirely through smarter management and predictive maintenance, without requiring investment in new equipment.

Both use cases – using drones during callouts and connected field equipment to ensure equipment quality – have clear benefits for protecting and supporting first responders, but there are tangible budgetary benefits too. For example, the research shows that, with connected field equipment, the typical mid-sized fire department could avoid USD 227,000 of capex through better resource utilization, a saving that equals 76 percent of the annual equipment-related budget.

Additional potential budget savings identified by the research could be realized through optimized fleet allocation (that is, only deploying vehicles or apparatus to temporary locations when necessary), increased crew availability, and predictive maintenance.

Figure 3: Operational benefits of the drones as first responders and connected field equipment use cases at temporary locations



⁹ CISA, SAFECOM Nationwide Survey Data Provides Real-World Insights to Improve Emergency Communications Preparedness (May 2023).

¹⁰ SAFESIGHT, 6 Firefighting Tactics – How Drones Are Revolutionizing Firefighting Tactics in 2025?

¹¹ IDC Info Snapshot, Sponsored by Ericsson, Ensuring Network Resiliency and Reliability for Emergency First Responders (January 2025).

Use place: Vehicles

Vehicle use places include fire engines, fire trucks, rescue trucks/squads, and mobile command units. The reliability of these vehicles when they are dispatched to incidents is extremely important.

Knowing where to go, how to get there as quickly as possible, and what situation they will encounter upon arrival is of utmost importance for first responders. Situational awareness decreases operational risk, and allows them to do their jobs efficiently. Uninterrupted connectivity with dispatch systems, navigation tools, and mission-critical data while in transit are vital – 73 percent of first responders believe that reliable networks are most important for them when communicating during an emergency response.¹²

Key use cases and benefits for vehicle use places in the research for Ericsson hinge on interagency communication capabilities.

- This use case strengthens first responders' ability to share vital information quickly and reliably across multiple disciplines, increasing firefighters' situational awareness and improving safety and continuity of operations.
- During a traffic incident, real-time data sharing and integrated coordination procedures can reduce overall incident response time by 30 percent.¹³

- This reduction equates to a time saving of approximately 2.9 minutes per traffic incident, which adds up to around 11 hours saved annually. This faster response time reduces the likelihood of secondary crashes by around 8 percent,¹⁴ meaning avoiding as many as 19 secondary crashes per year.

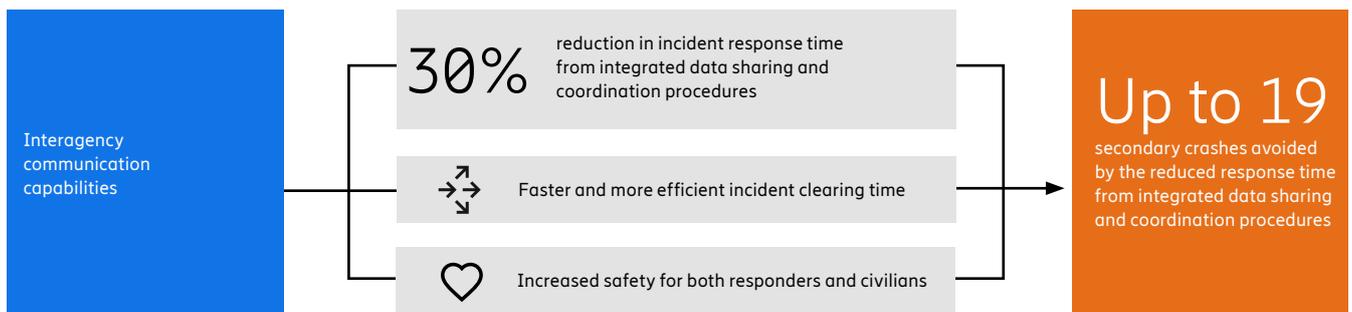
Alongside the clear benefits of reducing incidents and increasing public safety, the reduction in secondary crashes brought about by faster response times could equal cost savings for society of around USD 7.2 million per year – and

that's when assuming the best-case scenario of only minor injuries and vehicle damage. Monetary savings could also be reflected in fire and rescue departments' budgets – avoiding those 19 secondary crashes would save the typical mid-sized fire department USD 24,000 annually, representing a small, but not insignificant, saving.

To find out more about Ericsson Enterprise Wireless Solutions, visit cradlepoint.ericsson.com



Figure 4: Operational benefits of the interagency communication capabilities use case in vehicles



¹²Verizon Frontline 2025 Public Safety Communications Survey.

¹³U.S. Department of Transportation, Integrating Computer-Aided Dispatch Data with Traffic Management Centers.

¹⁴Mark43, U.S. Public Safety Trends Press Release (11 Dec, 2024).

About Ericsson

Ericsson's high-performing, programmable networks provide connectivity for billions of people every day. For nearly 150 years, we've been pioneers in creating technology for communication. We offer mobile communication and connectivity solutions for service providers and enterprises. Together with our customers and partners, we make the digital world of tomorrow a reality.

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