

# EMERGENCY MANAGEMENT: ENHANCING SITUATIONAL AWARENESS WHEN DISASTER STRIKES



**Helping Emergency Response Teams Work Effectively**  
PUBLIC SAFETY WHITE PAPER



**Natural disasters, terrorist attacks and school shootings all demand emergency response from public safety and government workers on the front line. Whether they're EMS, firefighters, law enforcement or other response personnel, their ability to remain continuously aware of changing conditions and coordinate with other agencies and teams is critical to mission success.**

**Situational awareness is priority one when it comes to keeping emergency responders working effectively.**

Managing and protecting citizens during and after extreme weather events and other disasters takes an enormous amount of planning, coordination and communication. It also requires access to critical information, whether you're an emergency responder on the scene or part of the team at the command center.

For emergency responders, that vital communication and information provides awareness of what's happening around them. Mission success hinges on the entire team's level of situational awareness and its ability to respond efficiently to events that can change suddenly and drastically. Imagine a change in wind direction during a major wildfire, reports of flash flooding or the impact of a fast-approaching storm during a search-and-rescue effort.

Situational awareness also enhances collaboration, makes team operations more cohesive and coordinated, helps commanders plan and assign resources—and significantly increases the potential for mission success overall.

One of the biggest challenges emergency responders face is obtaining reliable information. Consider the example of a wildfire in a stretch of land that borders a suburban neighborhood. Where is that fire heading? What equipment do you have (or need) to fight it? Which agencies can provide additional resources of manpower and materials? What are the lead times for each resource to be available? Do residents need to evacuate?

There's also the constant challenge of maintaining uninterrupted connectivity, which can be disrupted by terrain and topography, impeding communications and complicating access to that information. Additionally, in some disasters such as hurricanes or earthquakes, cell towers can get damaged or malfunction—or civilian calls can congest the lines and make it difficult for first responders, command centers and supporting agencies to communicate effectively.

**In a recent survey, the biggest barrier to information sharing and collaboration between organizations and emergency responders was found to be the lack of technology to enable real-time collaboration.<sup>1</sup>**



1. Public Safety Trends 2022: Emergency Responders Need Better Resources. Rave Mobile Safety (June 6, 2022)

# Understanding situational awareness



About situational awareness, one expert put it like this: "Understanding is more than information gathering. It implies gathering the right information (all that is needed, but not too much), being able to analyze it and making projections based on the analysis."<sup>2</sup> The three important stages of situational awareness are:

- **Perceive**—gathering information and knowing where to look for information
- **Process**—comprehension of the current situation and interpreting the information into insights
- **Predict**—making projections for smarter decisions and action plans

Gathering information is just the first step in achieving situational awareness, but without it, the other steps can't happen. With accurate, on-the-spot information, field teams have what they need to analyze and make sense of the situation. They can then make smart, informed decisions and more accurate projections of the situation that can keep operations efficient and effective and help boost the well-being of everyone involved.

## Technology and mobile solutions are vital to increasing situational awareness

To gather, analyze and act on information, today's emergency responders are turning to technology. With the right applications and armed with mobile devices, responders and command staff can efficiently collect data on potential and active threats and communicate with responders in the field to ensure

everyone involved has accurate and critical information they need, in real time.

Technology is a must-have component in each phase of situational awareness.

### Perceive—gathering information

Responders can access important data on their devices from a variety of sources, including computer-aided dispatch (CAD), alerts, mapping programs, social media, traffic cameras, geographic information systems (GIS), drone feeds, dashboard cameras, IoT-enabled smart devices, mass-alert systems, body cameras, security systems and cameras, sensors, and wearables.

### Process—analyzing the information

Specialized software and applications can help emergency responders aggregate previously siloed sources of information and analyze it so teams can get a holistic, bird's-eye view of what's happening and where, as well as other data that will provide them with actionable insights.

### Predict—making projections

With the right applications, command and responder teams can use aggregated data and get predictions for how a situation could progress. Based on these projections, the manpower and other resources can be allocated where they are needed most. These projections also help in smart resource allocations as to the timing, amount, duration and type of resource needed.



# Emergency responders want more technology



## First responders are using technology (and want more)<sup>3</sup>



### Important technology tools developed for emergency responders

Because emergency responders rely so much on getting the right information—and because lives are often on the line—some important tools have been designed specifically to help them stay in communication and increase situational awareness.

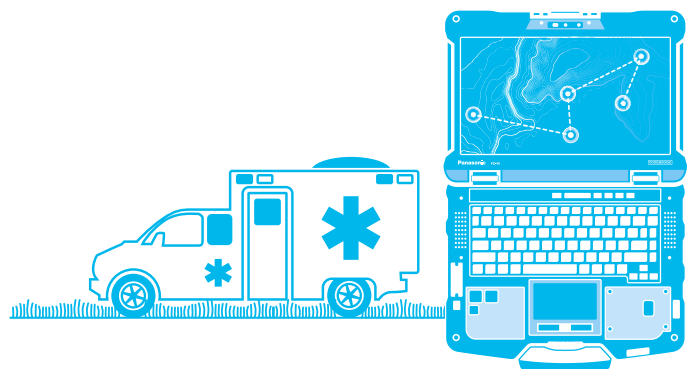
#### First Responder Wireless Solutions

The First Responder Network Authority (FirstNet) and Verizon Response Solutions provide police, fire and EMS teams with network priority and preemption so they can avoid network congestion and communicate intra- and interagency during an emergency. This overcomes the problem of slowed-down cell networks congested with civilian calls during a disaster.

3. All statistics from Voices of First Responders—Nationwide Public Safety Communication Survey Findings: Mobile Devices, Applications, and Futuristic Technology Phase 2, Volume 2. NIST (2020)

### Other specialized technologies

Additional valuable technologies include real-time video, mapping/navigation, incident simulations, weather tracking/prediction, body-worn cameras, vehicle sensors, in-vehicle or in-helmet video and thermal imaging systems, surveillance drones, triaging software, voice-to-text applications, speech translation and more.



# Mobile solutions when lives are on the line



Technology is the first component to achieving situational awareness, providing a greater potential for mission success.

## Panasonic Connect has what emergency responders need to stay situationally aware in chaotic, dynamic situations

Dedicated to helping public safety agencies and emergency responders work more efficiently for the best possible outcomes, Panasonic Connect offers solutions and services that can help emergency response teams increase situational awareness and achieve mission success.

### Software and accessories

Working with industry-leading partners, Panasonic Connect can provide complete solutions with software, services and accessories that operate with TOUGHBOOK® rugged devices.

- Solutions that locate responders during emergencies or in hazardous environments, for better coordinated responses and asset management.
- Push-to-talk capabilities to connect any device to any radio channel, for enhanced communications between teams across county and state borders.

- Applications that provide first responders with information about the location, building, floor plans, fire hydrant locations, road closures, construction and infrastructure.
- Integration of telemetry data and operations into a single platform.
- Secure wireless wide area network (WWAN) services that provide reliable communications in emergency situations.
- A wearable automatic injury detection (AID) system, which sends an emergency alert when the sensing panel has been pierced by a bullet, knife or shrapnel.
- Wearable accessories for TOUGHBOOK devices, including hand and shoulder straps and harnesses that make it easy to use devices in highly active scenarios.
- Other accessories such as vehicle mounts, docks, adaptors, chargers, styluses, antennas, routers and mobile printers—designed to work specifically with TOUGHBOOK mobile devices and to help make your device easier and more convenient to use.

# Purpose-built TOUGHBOOK mobile devices



## Rugged mobile devices

Panasonic Connect has been an industry leader in rugged mobile solutions for decades. Our team knows the immense challenges that emergency response teams face in the field every day, and how devices and applications matter when lives are on the line. Devices purpose-built for emergency responders include:

## TOUGHBOOK 40

This 14" fully rugged laptop offers unrivaled flexibility in the most demanding and unpredictable environments.

- Eight modular areas, including modular expansion packs (xPAKs). Optical drives, authentication readers, I/O ports and even the barcode reader are all user upgradeable, so first responders can customize their devices with the capabilities they need most.
- ANSI-C1D2 certified for safe use in hazardous locations, including potentially explosive environments.
- Optional dedicated GPU (late availability) for high performance, plus up to 64 GB of RAM, up to 3 TB of storage, all-day battery life, four microphones, color-selectable backlit keyboard and dual SIM (physical and e-SIM). This gives users high performance throughout any scenario.
- Choice of two cellular modems: 4G modem that provides up to 2 Gbps, or 5G modem (Sub-6, C-band and mmWave) that delivers the ability to seamlessly connect to the best available network without any disruption or loss of connectivity.



TOUGHBOOK 40



# The TOUGHBOOK advantage



## TOUGHBOOK G2

This Windows-based 2-in-1 laptop/tablet is fully rugged with three expansion areas offering 36 different combinations to deliver the ultimate computing experience and protect agencies' investments.

- ANSI-C1D2 certified for safe use in hazardous locations, including potentially explosive environments.
- Keyboard option, infrared webcam, thermal imaging option and simple biometric user authentication assist in information gathering even in harsh environments.
- Rugged features specialized for extreme environments include large programmable buttons for easier access to applications while wearing gloves and patented rain-sensing technology that distinguishes between raindrops and a finger (or glove) touch on the screen—making use during rainstorms easier and more reliable.
- 18.5-hour battery life and optional second battery hot swap for continuous use.



TOUGHBOOK G2

## THE TOUGHBOOK ADVANTAGE

All of our TOUGHBOOK devices offer:

- **Rugged durability**—Tested to meet military standards (MIL-SPEC) and ingress protection (IP) standards, our devices can withstand bumps, spills and drops in a physically active environment. They can also handle dust, dirt, vibration, extreme temperatures and exposure to substances like oil, grease and caustic fluids.
- **Exceptional reliability**—TOUGHBOOK rugged devices are 72% more reliable than other rugged devices, based on a comparison of device failure rates.<sup>4</sup> In the moments that matter, you can depend on TOUGHBOOK devices to perform.
- **Connectivity**—TOUGHBOOK devices feature wireless options including Wi-Fi, 4G LTE, 5G and Bluetooth®, with powerful embedded antenna modules that provide connectivity even where signals may be blocked by industrial buildings and large machinery. They're also certified for use on the FirstNet<sup>®5</sup> and Verizon networks for first responders.
- **Ease of use**—Our mobile devices have common forms and features that users are already familiar with, while also offering some functionality geared specifically toward emergency responders' needs: touchscreens that users can operate while wearing heavy gloves, lighting options for readability in a bright or dark space, AC adaptors/power cables that work across all devices and models, and the F11 button with raised bezel for easy identification.

4. Compares Panasonic actual data for TOUGHBOOK computers to data gathered by IDC on consumer and rugged laptops and tablet devices reported in [The Case for Deploying Rugged Devices in Your Organization](#), IDC (November 2021).

5. FirstNet Ready™ device approved to use with FirstNet SIM with Band 14 support.

## Support services

Mobile devices used for emergency management need robust service and support to help enhance and strengthen first responders' efficiency and effectiveness.

- **Kitting and deployment**—We can help you get your TOUGHBOOK mobile computers into the field quickly and ready to work. Our deployment services include kitting with third-party accessories such as network adaptors, barcode scanners, straps/holsters and expansion modules.
- **TOUGHBOOK Smart Essentials**—Get real-time, actionable insights into the health and utilization of your mobile devices with our Smart Service Suite, a cloud-based tool that helps you understand device and battery health.
- **Security apps**—Defend your TOUGHBOOK devices against security risks with secure, third-party software for device and data protection.
- **Strong warranties and add-on services**—In manufacturing, even a few hours of downtime can be detrimental to performance. We offer not only a robust basic warranty, but also extended warranty services and augmented services, such as accidental damage coverage, 24-hour “hot swap” or exchange service, or even on-site service.
- **CORE asset management**—A complete web solution provided at no additional cost with your TOUGHBOOK purchases, CORE enables real-time management of all the assets in your fleet.

## TOUGHBOOK FOR EMERGENCY RESPONDERS

**Panasonic Connect mobile technology helps keep emergency responders situationally aware to help improve outcomes.**

**FOR MORE, VISIT TOUGHBOOK MOBILE SOLUTIONS FOR  
FIREFIGHTING ▶ | LAW ENFORCEMENT ▶ | EMS ▶**

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