

Ensuring communication among first responders, especially during a crisis situation, is a major challenge for public safety agencies. Interoperability is critical for success. The Cisco® Network Emergency Response Vehicle (NERV) is a mobile communication center, supported by a highly trained team, that is designed to establish interoperable communications in emergency situations.

Rapidly Deploy Field Mobile Communications

The Cisco NERV is a self-deployable command and communications resource for first responders, critical infrastructure, and other organizations that have been affected by a catastrophic event and require mission-critical networking to recover normal operations. It meets or exceeds the National Incident Management System (NIMS) standards for type II mobile communication centers.

The Cisco NERV, along with its NIMS certified team, helps organizations by:

- Arriving for disaster response missions ready for up to 72 hours of continuous operations that allows for immediate action without impacting already challenged resources
- Operating seamlessly as one team with police, fire, emergency medical services, National Guard, and other responders within an incident command system or unified command structure
- Receiving 24-hour, proactive intelligence and logistical support from the Cisco Tactical Operations Center in Raleigh, North Carolina

Deploy and Redeploy with Confidence

In a crisis situation it is imperative that field communications be highly mobile and rapidly deployable. The Cisco NERV meets these demands by being a self-contained vehicle in which all technology travels together as a preconfigured package (see Figure 1). Once on scene, the team can:

- Be fully operational within 15 minutes
- Shut down and redeploy in another location within 15 minutes
- Power its onboard systems using its own generator or a shore power connection to an external power source

Enable Communications via IP-Based Network

The Cisco NERV uses an IP-based network foundation because large-scale disasters require a range of interoperable communications beyond traditional push-to-talk (PTT) radio. IP-based communications can ensure that the team can:

- Engage and employ all resources on-scene, regardless of where those resources geographically reside (see Figure 2)
- Interoperate with existing communications systems while providing a path to emerging network-centric communications systems



Figure 1: The Cisco Network Emergency Response Vehicle (NERV)



Figure 2: The engineering section of the Cisco NERV brings together different technologies to provide situational awareness for the command staff.

Satellite-Based Connectivity

The Cisco NERV uses a 1.8-meter satellite antenna to provide up to 5 Mbps of bandwidth for voice, video, and data applications that require access to the Internet or other remote networks. It delivers these advantages:

- Unlike older systems, there is no need for operators to manually point the antenna to the correct azimuth and elevation.
- Auto-acquire capability of the control unit enables vehicle crew to operate other systems while the satellite antenna is being deployed or stowed.
- Requires only a clear view of the southern sky, and the satellite control systems take care of the rest.
- Cisco Wide Area Application Services (WAAS) technology helps maximize network performance across the satellite WAN link.

Wired and Wireless Network Infrastructure

The core network of the Cisco NERV consists of Cisco Integrated Services Routers, which provide highly secure virtual private network (VPN) tunneling services to back-end resources, firewall, and telephony services using Cisco Unified Communications Manager Express, and controllers for the wireless network infrastructure. Wireless network services are provided by Cisco 1240 Series Wireless Access Points in the interior of the vehicle and Cisco 1500 Series Wireless Mesh Access Points on the external mast of the vehicle.

Radio and Voice Interoperability

Responders often struggle with different frequency bands and different proprietary radio protocols. The Cisco IP Interoperability and Collaboration System (IPICS) uses the Land Mobile Radio (LMR) feature set in Cisco IOS® Software and the numerous radio systems on the Cisco NERV to enable radio interoperability across all existing radio technologies.

Voice over IP

The Cisco NERV provides a full suite of telephony services through Cisco Unified Communications Manager Express software, which enables voice communications over wired Cisco Unified IP Phones 7960 and 7970 and the on-board cache of wireless Cisco Unified IP Phones 7925.

Network-Based Video Surveillance

Video surveillance increases the situational awareness of field personnel and commanders by enabling them to observe nearby activities. The Cisco Video Surveillance Manager solution encompasses a suite of products that can incorporate both analog legacy CCTV cameras and newer IP-based cameras into a unified monitoring and recording environment.

High-Definition Video Conferencing

The conference room on the Cisco NERV is equipped with a Cisco TelePresence™ 1000 high-definition video conferencing solution (see Figure 3). The Cisco TelePresence solution enables leaders and remote personnel to quickly and easily have high-definition, high-security video conferencing, and collaboration.

Why Cisco?

- Cisco is a leader in providing the intelligent, secure, resilient network infrastructure with mobility that is the platform for this solution.
- Cisco is a leader in unified communications, which is core to the solution and uses the network as the platform.
- Cisco has a proven record in introducing technologies in the safety and security market that easily integrate with Cisco network architecture.
- Cisco collaborates with safety and security technology partners to meet your requirements for a converged network solution.



Figure 3: The Cisco NERV conference room enables decision makers to manage crises with a range of voice, video, radio, and data communications at their disposal.

Learn More

Cisco NERVs are available for emergency response throughout the continental United States during the acute phase of an emergency. To engage a Cisco NERV, or any of the other services provided by Cisco Tactical Operations, please contact your Cisco account team. For general information, please email nerv-info@cisco.com.