



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 that is designed to establish interoperable communications in emergency situations. The NERV is supported by Cisco Tactical Operations, a highly skilled and dedicated team that can mobilize and respond to natural disasters and other catastrophes when normal communications infrastructure have been degraded or destroyed.

### Rapidly Deployable Field Mobile Communications

The Cisco NERV is a 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 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 3 days of continuous operations without impacting already challenged resources.
- Operating seamlessly 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 Operations Centers.

The Cisco NERV and Tactical Operations team have been deployed in support of a variety of incidents, including hurricanes, tornadoes, floods, earthquakes, wildfires and man-made disasters.

### 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. Once on scene, the Cisco NERV can:

- Be fully operational within 15 minutes
- Be shut down within 15 minutes in order to redeploy to another location
- Power its systems using its on-board 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 ensure that the team can:

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



Figure 1: Cisco Network Emergency Response Vehicle



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

### **Fault-Tolerant Redundant Internet Uplink**

The Cisco NERV has multiple options for Internet connectivity, including satellite, cellular, and landline. It can be configured to failover from one connectivity source to another, providing a high level of fault tolerance and the most efficient use of bandwidth.

The 1.8 meter satellite dish provides high throughput satellite (HTS) bandwidth for voice, video, and data applications that require access to the Internet or other remote networks. It delivers these advantages:

- Auto-acquire capability of the control unit which eliminates the need for the vehicle crew to manually point the dish to the correct azimuth and elevation
- Dual-satellite operation for look-angle diversity and true network redundancy.

### **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 Wireless Access Points in the interior of the vehicle and Cisco Wireless Mesh Access Points on the exterior of the vehicle.

### **Radio and Voice Interoperability**

Responders often struggle with different frequency bands and proprietary radio protocols. Cisco Instant Connect 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 the Cisco Unified Communications Manager Express software, which enables voice communications over wired and wireless Cisco Unified IP Phones.

### **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 video conferencing solution. 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**

The Cisco NERV is available for emergency response throughout the continental United States during the acute phase of an emergency. To engage the Cisco NERV, or any of the other services provided by Cisco Tactical Operations, please contact your Cisco account team.

For more information about the Cisco Tactical Operations team, please visit our website <http://www.cisco.com/go/tacops>, or send email to [tacops-info@cisco.com](mailto:tacops-info@cisco.com).