

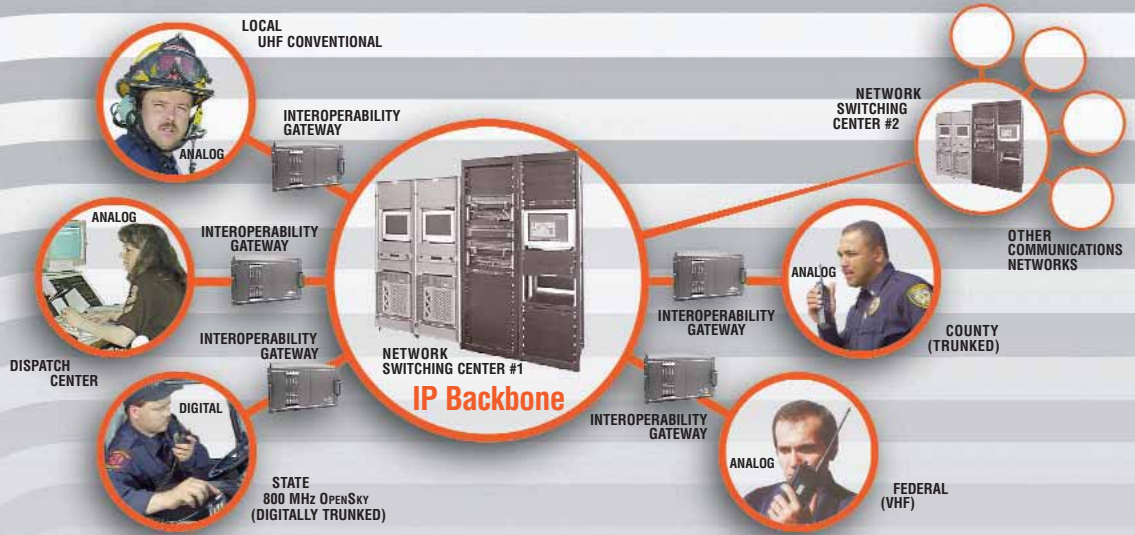
# INTEROPERABILITY SOLVED

***NetworkFirst** provides easily expandable and cost-effective interoperability among multiple Federal, State, County and Local public safety and homeland security agencies, regardless of frequency, manufacturer, bandwidth or air-link protocol.*



**NETWORKFIRST**  
*A VIDA Network Application*

**NetworkFirst:**  
*Connecting legacy systems  
 on an IP backbone*  
 NetworkFirst creates an IP-based,  
 packet-switched network that routes  
 voice calls between member organiza-  
 tions, regardless of legacy equipment.



## The Cost-effective, IP-based Solution for Interoperability

Since its introduction in early 2002, NetworkFirst has emerged as the single most significant advancement in the cause of interoperability among our Nation's first responders. The reason is clear: It works.

Until NetworkFirst, the most frequently discussed solution to the problem of interoperability was to scrap and replace the millions of radios and radio systems used by first responders. But these new radios and systems would have to operate on a common frequency, bandwidth, and protocol – a scenario that is extremely unlikely both for technical and political reasons. Even if such a task could be accomplished, the projected costs put it beyond reach.

According to the Public Safety interoperability planning group PSWN, it would require more than \$18 billion for hardware alone. And it could require as many as ten years to execute such a plan on a national scale.

### Proven Concepts Used in New Ways

NetworkFirst provides rapid, multi-agency connectivity without the need for all-new radios and infrastructure. It accomplishes this by converting the radio's audio into digital packet data. This data is easily transported over a private and secure wide-area network (WAN) using the Internet Protocol (IP).

NetworkFirst is structured in a way similar to local area networks (LAN) that characterize modern digital communications used in Enterprise networks. The same industry-standard routers and servers that connect organizations around the globe are configured for the critical, reliable, secure communications required by public safety first responders – all on a secure, private IP network.

### NetworkFirst Components

The primary components of NetworkFirst include Interoperability Gateways (analogous to Ethernet cards) which convert

analog audio into IP packets, and a Network Switching Center (NSC). Industry-standard routers are used to transport the IP packets to and from the NSC, helping to keep costs down and reliability up.

The NSC contains an industry-standard software switch to control the routing of calls among the different agencies in the network. Since each audio node in the packet-switched network has an IP address known by the switch, it's easy to segregate or combine callers into interoperability talk groups.

The Interoperability Gateways are installed at analog audio access points, which are typically located in base stations or dispatch centers. The NSC is typically located at an existing agency operation center, or at interoperability command centers. Multiple NSCs can be connected through redundant IP paths.

### Field Proven

NetworkFirst has undergone stringent and demanding field tests by numerous public safety and other organizations. In an interoperability pilot program conducted in Oakland County, Michigan, NetworkFirst successfully linked seven agencies across six technologies from dif-

ferent manufactures operating on:

- Both conventional and trunked systems
- Analog and digital voice radios
- UHF and 800 MHz frequencies

Additionally, NetworkFirst has been selected by the U.S. Department of Defense for deployment throughout the National Capital Region, where it will provide interoperability between numerous military installations and approximately 60 civilian public safety agencies in the region.

### And Ready For the Future

NetworkFirst is ready for tomorrow's technology, today. NetworkFirst provides more than just immediate interoperability; it can form the framework for the migration of any system toward advanced technology capabilities of M/A-COM's VIDA Network because it is:

- Data-capable to support future mobile data applications.
- Ready for the addition of spectrally efficient, high capacity air links such as the emerging P25 Phase II standard.
- Designed for growth and scalability. All agencies, including county and municipal, can seamlessly connect with statewide or nationwide networks.

### It's the VIDA Network that Makes the Difference

NetworkFirst is a fully-supported VIDA Network application that can also serve as your gateway to other standard IP-based networks. Either way, it delivers:

- Digital and tone control of base stations and desk sets
- PSTN connectivity
- Network diagnostics
- Easy fleet mapping
- Easy connectivity to Telco, fiber or microwave backhaul
- Conventional interface to console switches
- Redundancy
- Data transport capability

### NetworkFirst Benefits Are Clear:

- **Connectivity**– NetworkFirst links historically independent radio systems over a private IP network, maximizing the use of existing radios, stations, and sites.
- **Scalability**– NetworkFirst's packet-switching architecture makes a system that can be scaled to connect literally millions of users.

- **Affordability**– The ability to keep existing radios and systems as well as the use of standard hardware within the network minimizes overall costs. NetworkFirst is a network solution to a radio problem.
- **Availability**– Because NetworkFirst links its software solutions with standard hardware, it can meet your scheduling requirements today.

## **NETWORKFIRST** A VIDA Network Application

NetworkFirst is a fully-supported VIDA Network Application that provides interoperability with legacy communications equipment regardless of frequency, manufacturer, protocol, software application or bandwidth. Contact your M/A-COM representative to learn more about NetworkFirst and other VIDA Network systems and applications.

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