

TETRA/VIDA Network adds advanced IP functionality and open architecture to international standards offerings

REGARDLESS OF THE EXISTING LEGACY SYSTEM, A CLEAR, STEP-BY-STEP MIGRATION PATH TO A TETRA/VIDA IP NETWORK ALLOWS PROFESSIONAL MOBILE RADIO (PMR) SYSTEM USERS TO MIX AND MATCH TECHNOLOGIES FOR MAXIMUM FLEXIBILITY, PERFORMANCE AND LOWEST TOTAL COST OF OWNERSHIP.

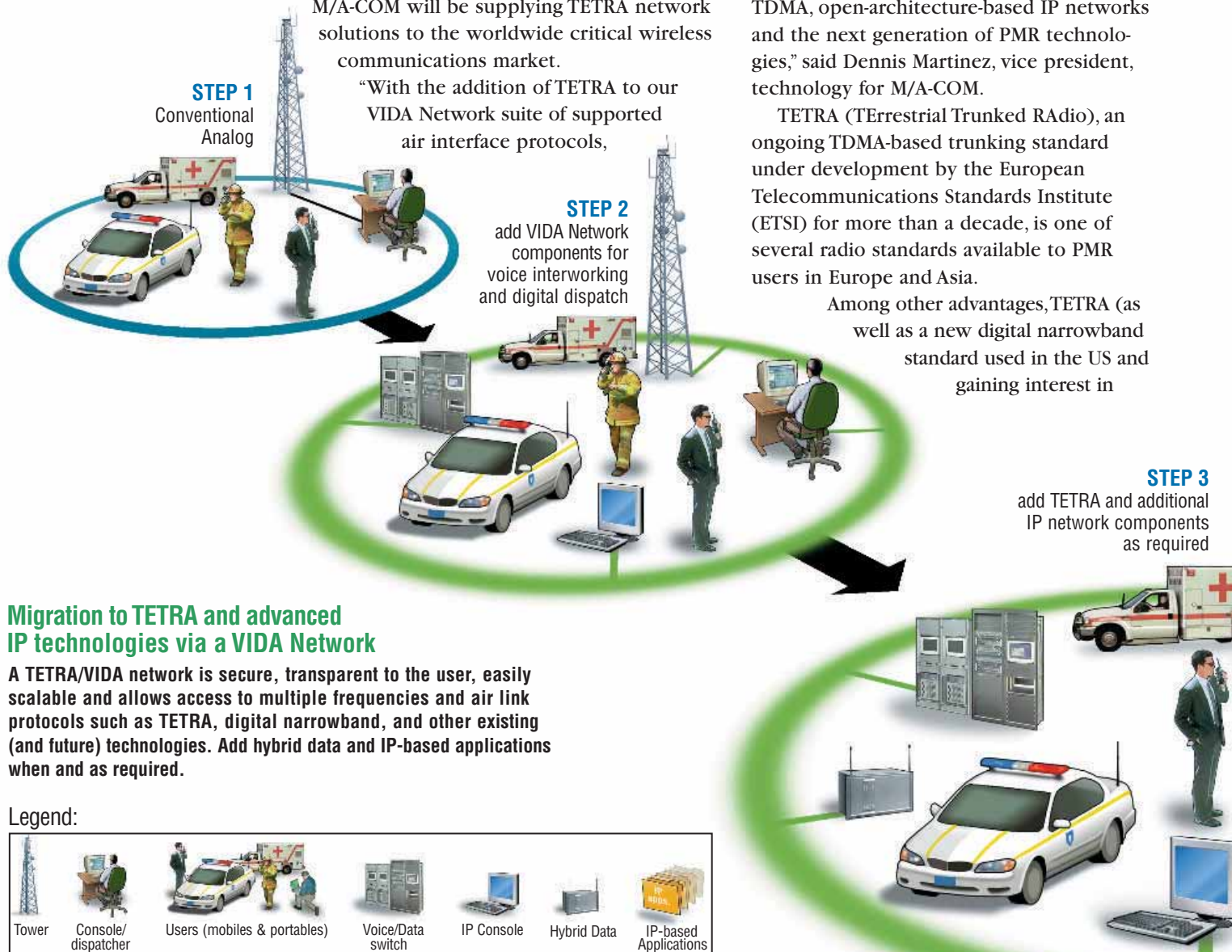
As announced at the TETRA World Congress in Frankfurt on November 28, 2005, M/A-COM will be supplying TETRA network solutions to the worldwide critical wireless communications market.

“With the addition of TETRA to our VIDA Network suite of supported air interface protocols,

international customers now have a clear and easily executed migration path to digital TDMA, open-architecture-based IP networks and the next generation of PMR technologies,” said Dennis Martinez, vice president, technology for M/A-COM.

TETRA (TErrestrial TRunked RADio), an ongoing TDMA-based trunking standard under development by the European Telecommunications Standards Institute (ETSI) for more than a decade, is one of several radio standards available to PMR users in Europe and Asia.

Among other advantages, TETRA (as well as a new digital narrowband standard used in the US and gaining interest in



Europe) provides improved interworking by specifying the interfaces between critical components and peripheral devices, such as the air interface used between radios and systems.

“Wireless standards are important for users, especially those in public safety, and M/A-COM fully supports the worldwide standards effort,” Martinez said. However, as users worldwide contemplate the migration from older, often proprietary radio systems to new, standards-based systems, there are many decisions to be made.

Immediate, cost-effective transition with future in mind

“Worldwide, those responsible for public safety and service need to be able to communicate, at all levels, with neighboring agencies and jurisdictions operating on separate radio systems,” said Robert Jastram, business development, international markets for M/A-COM. “But it will take many years before every user, from local to regional to nationwide, can realistically be expected to replace their legacy radio system with a new one. So the question is, how do you provide voice interworking immediately, and at a cost that can be borne by even the smallest agencies, while simultaneously planning a migration to

TETRA or a digital narrowband standard?”

The answer, says Martinez, is a hybrid network using IP technology in addition to traditional radio technology. “It’s only natural for radio people to think in terms of radio solutions to whatever problems they may have. But there is a hybrid solution. By converting voice calls from legacy radio systems into IP packets and sending them through a secure, public-safety-grade IP net-

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Dennis Martinez

work, we can connect voice calls from any radio system and provide interworking between different radio technologies. It’s a proven technology that exists today. You don’t need a whole new radio system to get seamless voice interworking.”

The IP-based voice network can be established at a reasonable cost with the addition of a single voice/data switch, a voice gateway for each radio system within a region and an IP-based console that allows digital dispatching.

Just as important, with a VIDA Network the investment in the IP network infrastructure for voice interworking becomes the framework for migration to a full TETRA system. “Nothing is lost,” said Jastram. “The VIDA Network provides a clear migration path to all the existing – and future – features of TETRA, while simultaneously providing a more complete access to other types of radio systems, regardless of frequency or air interface. In addition, it allows the seamless use of IP-based peripheral devices and applications while providing a migration path to future technologies now under development.”

Radio technology becomes an application on the network

The overwhelming majority of public safety organizations in the world today have an IP-based enterprise network connecting all of their fixed resources. VIDA is M/A-COM’s architecture for a wireless network that leverages that infrastructure by integrating the radio system with the organization’s existing local or wide-area network.

“The radio system then becomes another IP-based application running on the network,” explains Martinez. “With the result being that whatever resources are available to those in the organization’s fixed environment are also available to the mobile environment. And vice versa.”

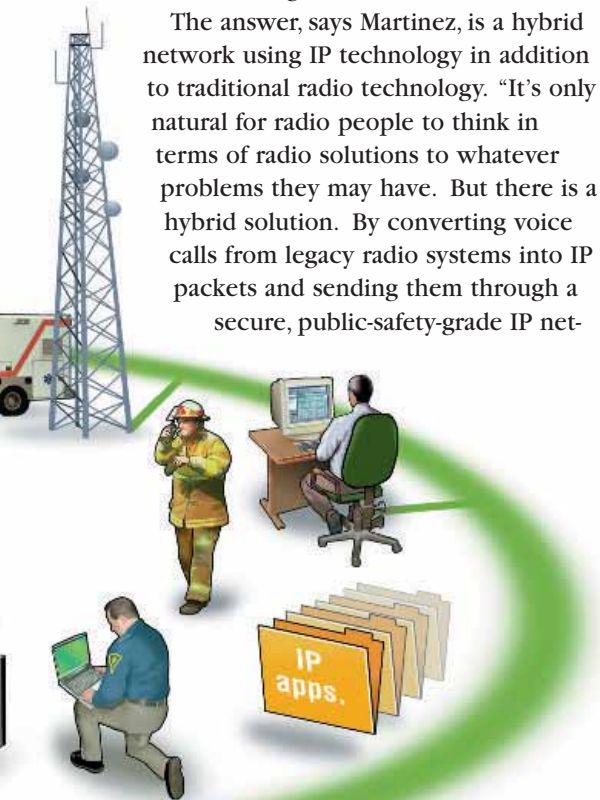
Another key advantage of a VIDA Network is the unprecedented flexibility it allows in the choice of technologies used in the wireless network. The State of New York, which recently announced a US \$2 billion contract for a statewide wireless communications network that will ultimately connect 65,000 users, will employ VIDA architecture in its Statewide Wireless Network.

“One reason for the state’s selection of the

continued →

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A TETRA/VIDA Network solution

is transparent to the user, easily scalable and provides:

Mix-and-match air interfaces –

- Future
- TETRA
- Digital Narrowband (P25)
- MPT 1327
- Other Manufacturers
- Conventional

Mix-and-match frequencies –

- VHF (low and high bands)
- 700 MHz
- 800 MHz

Seamless connectivity to the IP enterprise network

Advanced encryption methods

Analog and/or Digital communications

Current and future hybrid mobile data services –

- WLAN
- WiMax
- TETRA Enhanced Data Service (TEDS)

Wide-area networking (local, region, nationwide)

Open architecture based on international standards

Access to IP-based applications and peripheral devices

public, not proprietary, protocols. It's a true client-server environment, identical to that used in enterprise networks."

This is important because even though other solutions use IP in elements of their design, they are nonetheless limited in their ability to connect with other IP-based products and applications. "On a TETRA/VIDA Network, virtually any IP-based hardware, application, or peripheral device can be connected," said Martinez.

In such a network, physical location no longer matters

to accessibility. If a resource is on the network, it is available to whoever has a need and permission.

"But to be seamless," added Martinez, "the information from many, often third-party, applications needs to pass freely across the network. That requires open architecture throughout the network design."

Again, cost is also a factor. Non-propri-

etary, open protocols allow the use of industry-standard components, routers and servers throughout the network. Often called COTS (Commercial Off-The-Shelf) equipment, these compo-

nents are typically low in cost and high in performance because of their worldwide acceptance on a vast scale. Furthermore, COTS equipment is continually being upgraded due to a continuing investment in research and development.

In the end, the user can only gain from the hybridization of their radio system and a secure, public-safety-grade IP network.

"M/A-COM pioneered the use of IP-based wireless radio systems in 1995, and our record has shown that we are committed to providing clear, easy migration to future technologies and features. The TETRA/VIDA network solutions we offer today continue that tradition by offering increased design flexibility, enhanced security and protection of our customer's investment in infrastructure over time," said Martinez. ■

For more information, contact Robert Jastram at jastramr@tycoelectronics.com.

VIDA network was its ability to allow the use of multiple frequencies – 700 MHz, 800 MHz and VHF – where required for coverage and availability," said Martinez. "This allows New York State to mix and match frequencies – and air interfaces if required for interoperability with legacy systems – to specific regions. By selecting the most cost-effective technology for each region, the state can greatly reduce their costs over time."

The same ability to mix and match technologies and frequencies, all while providing an easy migration path to future developments, makes the marriage between a

TETRA system and a VIDA Network practical and extremely cost effective, notes Jastram.

"In a region such as Europe, which is comprised of many political jurisdictions and levels of government, flexibility and security are paramount. Interworking between these various groups and jurisdictions needs to be under supervision and control in order to prevent chaos. While direct radio-to-radio communications is important, only a network-based communications system can provide the necessary control over who is talking to who, and when," Jastram said.

IP and open architecture address critical issues

As many in public safety and service are aware, there are several IP-based TETRA offerings currently available. "But," Martinez cautions, "not all IP-based TETRA solutions are the same. M/A-COM's is the only end-to-end, open-architecture IP solution, and by that I mean that our IP network design is based on

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