

**LIST OF ATTACHMENTS TO
M/A-COM PETITION FOR RECONSIDERATION IN
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- Attachment 1: Product News: M/A-COM's OpenSky Network Accepted and Deployed By Central Arizona Project (Mar. 22, 2005).
- Attachment 2: Oakland County Michigan, Radio Communication System, Frequently Asked Questions, <http://www.co.oakland.mi.us/radio/faq/>.
- Attachment 3: Product News: M/A-COM Awarded Radio Communications Contract from City of Milwaukee, WI (Oct. 22, 2003).
- Attachment 4: Press Release: New Statewide Communications Network Announced; M/A-COM Selected Prime Contractor; Statewide Wireless Network Will Dramatically Improve Public Safety (Apr. 30, 2004).
- Attachment 5: Press Release: Icom Incorporated and Kenwood Corporation Technical Research Alliance Demonstration of a Very Narrowband Digital Communications Technology (Apr. 6, 2005).

Attachment 1

Product News: M/A-COM's OpenSky Network Accepted and Deployed By Central Arizona Project (Mar. 22, 2005)

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F

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M/A-COM's OpenSky Network Accepted And Deployed By Central Arizona Project

22 March 2005

M/A-COM, a business unit of Tyco Electronics and a worldwide leader of critical radio communication systems, today announced that its recently deployed OpenSky network solution has been accepted by the Central Arizona Project (CAP) to provide critical voice and data communications for more than 460 CAP personnel. OpenSky is a wireless private communications network based on Internet Protocol (IP) technologies that connects CAP internal crews and provides direct communications between CAP and outside agencies. OpenSky meets CAP's important objective of improving safety conditions for CAP employees who work in a challenging environment throughout the Arizona desert.

CAP operates and maintains a 336-mile-long aqueduct that delivers water from the Colorado River to central and southern Arizona, providing a renewable water source for residential, industrial and agricultural uses. The 800 MHz OpenSky digital wireless network provides integrated voice and data connectivity throughout the aqueduct system and along roads in the region. A key reason CAP chose OpenSky is its ability to incorporate Automatic Vehicle Location (AVL) functionality for increased safety and to improve day-to-day operational efficiency. In addition, by utilizing the 4-slot TDMA air interface afforded by OpenSky, CAP is able to maximize its radio frequency utilization, a priority concern for any new communications system.

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Attachment 2

Oakland County Michigan, Radio Communication System, Frequently Asked Questions, <http://www.co.oakland.mi.us/radio/faq/>

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Frequently Asked Questions

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Send questions about the Oakland County Public Safety Radio Communication System to radio@co.oakland.mi.us.

[Equipment and Coverage FAQ](#)

[Training FAQ](#)

[Why did we go with the M/A Com system over the Motorola \(or MSP\) system?](#)

[When will the radio system be completed?](#)

[When will our department go "on line" with the new radios?](#)

[Will the M/A COM system be interoperable with the State's system?](#)

[Will the M/A COM system be interoperable with hospitals in Region 2 North? What about government EMS providers and private ambulance companies?](#)

[I heard that, during the Ryder Cup, many users experienced their radios sticking "on the air." Is this a problem and has it been resolved?](#)

[Rumors are that the M/A COM system has had problems in Pennsylvania. What is the status of the Pennsylvania system deployment?](#)

Why did we go with the M/A Com system over the Motorola (or MSP) system?

The Radio Oversight Committee developed the specifications for a digital, Voice over IP system that would provide extensive in-building portable coverage and interoperability among all Oakland County agencies. It was also considered desirable that the system would utilize the County's fiber optic network for connectivity, affording greater reliability than microwave. Lastly, the system needed to maximize the efficiency of the relatively few frequencies that were available in Southeastern Michigan.

The MPSCS was evaluated. The MPSCS, which was designed for mobile only coverage, did not meet the in-building coverage requirements without an extensive addition of tower sites and frequencies. The State required that the County turn all frequencies over to them, with a promise that they would be returned should the County ever leave the MPSCS. However, once the frequencies are licensed by the State and reused throughout their network, there would be very little likelihood of returning them. Coupled with the user fees that the State required, and connectivity issues for the dispatch centers, this option was eliminated, and the County rejected the State's proposal.

M/A COM was the only system that met the specifications of the Radio Oversight Committee. It is the only system that is truly end-to-end digital voice over IP capable of utilizing the fiber optic network. Because it is IP based, it is also capable of transmitting data as well as voice communications. It uses TDMA technology, dividing each frequency into four time slots, so that four conversations can occur simultaneously on each channel. The other vendors offered traditional FDMA, or one conversation per channel. With the other vendors, our 32 frequencies

would have resulted in a maximum of 31 simultaneous transmissions, since one channel is dedicated to a control channel. With the MA COM system, the same 32 frequencies can allow 128 simultaneous transmissions, more than quadrupling the system capacity.

[Back To Top](#)

When will the radio system be completed?

The total radio communication project is scheduled for completion in July 2005.

[Back To Top](#)

When will our department go "on line" with the new radios?

The order in which departments will be transitioned depends upon several factors: the tower construction, the frequency licensing, the readiness of the dispatch center, and the connectivity of the site to the central electronics. Of these, the frequency licensing is the longest lead item. The Technical Advisory Subcommittee is monitoring all of these factors, and will present a draft implementation schedule to the Radio Oversight Committee as soon as more definite dates can be assigned to these events.

[Back To Top](#)

Will the M/A COM system be interoperable with the State's system?

Yes, the Oakland County M/A COM radio system will be interoperable with the Michigan Public Safety Communications System (MPSCS).

Oakland County has recently been awarded monies from a federal grant received by the City of Warren to provide for radio interoperability between Warren, Macomb and Oakland Counties. Because the City of Detroit will become Zone Seven on the MPSCS, the interoperability developed for the federal grant should enable the M/A COM users to be interoperable with the City of Detroit's radio system as well.

The technical solution will involve the acquisition of a message switch to connect these disparate systems. The M/A COM solution for a [NetWork First message switch](#) is discussed in the [Success Stories](#) section of this site.

[Back To Top](#)

Will the M/A COM system be interoperable with hospitals in Region 2 North? What about government EMS providers and private ambulance companies?

The [network message switch](#) will provide the gateway for communications between the Oakland County radio system and hospitals in Region 2 North (Oakland, Macomb and St. Clair Counties) as well as private ambulance companies.

[Back To Top](#)

I heard that, during the Ryder Cup, many users experienced their radios sticking "on the air." Is this a problem and has it been resolved?

Several software and training issues were discovered during the first few days of the Ryder Cup, including the "open microphone" issue. MA COM was very responsive and brought in additional engineers and technicians to resolve these issues, and for the last three days of the event the system performed satisfactorily.

The temporary, one-site system developed for Ryder Cup is not the same as the networked 36 site system being implemented County wide.

[Back To Top](#)

Rumors are that the M/A COM system has had problems in Pennsylvania. What is the status of the Pennsylvania system deployment?

The Governor of Pennsylvania commissioned an independent study to identify causes for the delay in implementing that State's radio communications system. The [final report](#) was issued in October 2004.

The report outlines issues that contributed to the delayed deployment of this system. One reason cited in the report was difficulty with tower acquisition and construction, which is challenging for any radio project. Another reason was the bankruptcy of the tower construction vendor chosen by Pennsylvania. Complete details are provided in the report, available in the [Publications](#) section of this site.

[Back To Top](#)

Attachment 3

Product News: M/A-COM Awarded Radio Communications Contract from City of Milwaukee, WI (Oct. 22, 2003)

NEWS

FOR IMMEDIATE RELEASE**M/A-COM Awarded Radio Communications Contract from City of Milwaukee, WI**

OpenSky IP-based Network to Provide Wide-Scale Interoperability for the City and Surrounding Agencies

Lowell, MA, October 22, 2003

M/A-COM, Inc., a business unit of Tyco Electronics and a leading manufacturer of IP-based public safety communication systems, was awarded a \$15 million contract by the city of Milwaukee to install its OpenSky network as the city's new communications system. The OpenSky system, coupled with NetworkFirst, M/A-COM's interoperability solution, will connect communications among all city and surrounding agencies including police, fire and public works. In addition, OpenSky's capabilities will allow these agencies to interoperate with other local, state, and federal agencies with operations in and around Milwaukee, further increasing their ability to respond to and manage emergencies.

"Milwaukee was in need of a communications system that offered reliable and effective interoperable communications with other departments," said Chief Arthur Jones, Milwaukee Police Department. "We are confident that M/A-COM's system is the most cutting-edge technology available, significantly increasing our ability to serve the citizens of greater Milwaukee."

The OpenSky system is a wireless private network based on Internet Protocol (IP) that enables efficient voice and data communications between municipal and public safety departments. All of Milwaukee's agencies will be connected through the OpenSky IP network, enabling different agencies to easily communicate. The Milwaukee Fire Department, for example, will be able to directly communicate with the Milwaukee Police Department and other City departments for the first time, improving collaboration among public safety and municipal agencies.

"It was important for the city of Milwaukee to provide its public safety agencies with what we consider the best communications technology available," said David Adolf, district sales manager, M/A-COM. "M/A-COM offers the most capable and complete public safety communications systems, providing the best in data and voice transmission, and true communication interoperability. M/A-COM is pleased to partner with the city of Milwaukee in this effort to better protect its citizens."

The technology behind OpenSky – end-to-end Internet protocol (IP) and a time-division multiple access (TDMA) airlink – allows for multiple features including:

- Digital and analog radio interoperability with systems of any type, including those not part of the OpenSky network
- Enhanced data capability for quick download of data and graphic files, including patient and criminal information and photos, to mobile devices
- Efficient use of radio frequencies by allowing four simultaneous conversations on each radio frequency channel
- Global positioning system (GPS) tracking capability for increased safety
- Remote software reconfiguration and easy upgrades

The Milwaukee OpenSky system is slated for completion in 2005.

About M/A-COM

M/A-COM, Inc., a business unit of Tyco Electronics, is a leading supplier of critical communications systems and equipment for public safety, utility, federal and select commercial markets. Products range from the most advanced IP-based voice and data networks to traditional wireless systems to offer customers the highest levels of reliability,

interoperability, scalability and security. M/A-COM is also a recognized leader in the design and manufacture of radio frequency (RF), microwave and millimeter wave solutions for the commercial wireless telecommunications, aerospace and defense industries. Headquartered in Lowell, MA, M/A-COM has offices and manufacturing facilities worldwide. Information about M/A-COM can be found on the Web at www.macom.com or www.macom-wireless.com.

About Tyco Electronics

Tyco Electronics is the world's largest passive electronic components manufacturer; a world leader in cutting-edge wireless, active fiber optic and complete power systems technologies; and is also rapidly developing extensive networking and building technology installation services. Tyco Electronics provides advanced technology products from over forty well-known and respected brands, including Agastat, Alcoswitch, AMP, AMP NETCONNECT, Buchanan, CII, CoEv, Critchley, Elcon, Elo TouchSystems, M/A-COM, Madison Cable, OEG, OneSource Building Technologies, Potter & Brumfield, Raychem, Schrack, Simel and TDI Batteries.

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[Back to top](#)

[Return to list of Press Releases](#)



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Attachment 4

Press Release: New Statewide Communications Network Announced; M/A-COM Selected Prime Contractor; Statewide Wireless Network Will Dramatically Improve Public Safety (Apr. 30, 2004)

George E. Pataki
Governor



James T. Dillon
Chief Information Officer

NEWS

FOR IMMEDIATE RELEASE

Contact: Rob Roddy
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www.cio.state.ny.us

NEW STATEWIDE COMMUNICATIONS NETWORK ANNOUNCED **M/A-COM Selected Prime Contractor** **Statewide Wireless Network Will Dramatically Improve Public Safety**

Albany, NY (April 30, 2004) -- New York State Chief Information Officer James T. Dillon today announced that M/A-COM has been selected as the proposed prime contractor to develop a public safety radio network for the State of New York. The new Statewide Wireless Network (SWN) will replace several outdated systems with a state-of-the-art digital land mobile radio network. State and local public safety and public service organizations across New York will benefit from improved communication and enhanced coordination while responding to emergency situations.

"September 11th and other large-scale emergencies in recent years, have underscored the need to have a reliable, integrated communication system so emergency responders can talk with each other and share critical information whenever necessary," Mr. Dillon said. "The establishment of this communication system is another important step in the State's efforts to protect New Yorkers."

The Statewide Wireless Network will be used as New York's day-to-day public safety radio system, as well as during emergencies. It will provide essential connectivity to enable on-demand and real-time coordination of police, fire and emergency medical services. Delivering continuous communication across multiple jurisdictions is imperative in the face of equipment failure, natural or manmade calamity or terrorist attack.

Jim Dillon said, "Current public safety communications systems across the state are outdated and differ substantially between agency and levels of government. Upgrading the system with newer technologies will make communication more dependable when emergency responders need it most."

This will be the first comprehensive upgrade to many of New York's emergency communication systems in more than 30 years, and will likely be one of the largest technology projects ever undertaken in the State. The new radio network will make it easier for all agencies to communicate in crisis situations, in real-time, where seconds count. SWN will provide essential connectivity to coordinate the delivery of services to citizens and enable immediate coordination of public safety resources -- federal, state and local.

James McMahon, Director of the Office of Public Security said, "From the homeland security perspective, I applaud the efforts to provide much needed interoperability in communications on a statewide basis. This system will allow first responders throughout New York to better communicate and work together in dealing with events ranging from routine law enforcement, to natural disasters, to responding to acts of terrorism."

A fundamental goal of SWN and a key component of the M/A-COM proposal was to minimize environmental impact to the State by maximizing use of existing infrastructure and limiting the number and height of towers. New technologies and innovative solutions will help prevent the need for building excessive numbers of new towers. The State Environmental Quality Review Act (SEQRA) process has already been initiated by the state Office for Technology as lead agency.

"From the very beginning of the project we have been very mindful of environmental issues," Jim Dillon said. "While our goal is to build a comprehensive radio system, preserving our state's environment will

remain a paramount concern.”

SWN will create a comprehensive infrastructure of radio sites interconnected by fiber-optic and microwave links, monitored and controlled by a pair of redundant network operation centers. The network and its components will have very high reliability and will strive to eliminate “dead spots.” Based on design requirements the system will provide coverage over 95% of the geographic area of the State and 97% of its roadways, a dramatic improvement over existing systems.

A significant number of local agencies have expressed interest in participating with SWN. Counties and local governments have the option of connecting to the radio infrastructure, to address their local emergency response and homeland security needs.

Two prime bidders responded to the request for proposal by the January 7, 2003 deadline. The evaluation was conducted during the past 15 months. The review was done by a team of public and private sector experts representing areas of public safety, environment, technology and finance.

Director of the Office for Technology, Michael McCormack said, “The Office for Technology was charged with developing and managing the SWN procurement. After extensive review and analysis, M/A-COM was judged to have the most technically and financially superior proposal. I want to thank everyone involved in the evaluation process for their diligence during this complex task.”

Following this announcement, the Office for Technology will begin contract negotiations with M/A-COM. The resulting contract would extend over a 20 year period. The project will be funded through the State Wireless Communications Service Surcharge. It is anticipated the contract negotiations and final review will be completed by November 2004. The completed project is expected to take 5 years to build.

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Attachment 5

Press Release: Icom Incorporated and Kenwood Corporation Technical Research Alliance Demonstration of a Very Narrowband Digital Communications Technology (Apr. 6, 2005)


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Press Release

Icom Incorporated and Kenwood Corporation Technical Research Alliance Demonstration of a Very Narrowband Digital Communications Technology

**April 6-8, 2005 - International Wireless Communications
Exposition and Convention, Las Vegas, NV.**

Icom Incorporated (Parent company of Icom America) and Kenwood Corporation, market leaders in Land Mobile and Amateur radio communications worldwide announced on February 25, 2005, a joint business and technology alliance to develop state-of-the-art digital communications technology for the Business & Industry sector. Both companies will be making a simultaneous announcement and showing working prototype samples at IWCE. You are invited to visit the Icom America booth (#5001) to get a first hand look at this groundbreaking technological advance.

These engineering samples are the result of this technical collaboration, and will demonstrate a very narrowband 6.25kHz digital communications technology using an FDMA 4-level FSK modulation method. This technology meets the requirements of the FCC Emission Mask E, for spectral efficiency. Both companies are also directly involved in the formation of efficient digital radio technologies in Europe (ETSI Digital PMR 446/DMR) and Japan. Both companies have committed to jointly continue research and development for the benefit of Business & Industry users, as well as offer a solution for existing system operators to migrate to an efficient digital solution.

Chris Lougee, Vice President of Icom America's Land Mobile Division, had the following comments regarding this exciting news.

"The demonstration samples Icom will display are the 'first steps' to present a migration solution to digital technology for the 'Business and Industrial' two-way radio user. Consumers have come to expect robust voice-and-data capabilities in their wireless communications devices. Digital radios will offer similar capabilities, enabling Icom dealers the possibility to provide radio communications solutions never before imagined.

With this technology, Icom digital radios could effectively 'double' or even 'quadruple' spectrum capacity with their 6.25kHz capability, although this depends a lot on final spectrum licensing and rate of migration in the future. A huge impediment to radio solutions growth in the past has been the lack of available spectrum. One of the solutions to this problem could be solved with 6.25kHz capable Icom digital radios.

Icom takes an industry leadership role with digital radios that meet the 6.25kHz equivalent efficiency standard set by the FCC (which was the original intention in the 'Re-farming' Docket) Our dealers and their customers will benefit from this Icom leadership and they can take comfort in the fact that Icom can provide them with exciting products for years to come, no matter what the final result of the FCC requirements are."

Some Technical Hints Regarding The Demonstration Samples To Be Displayed

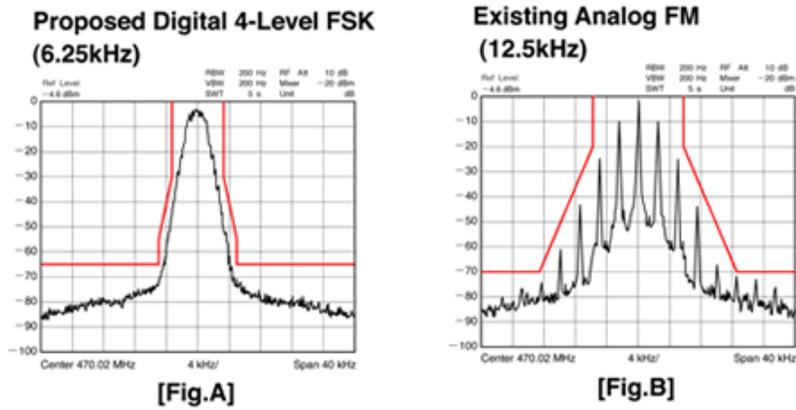
Modulation Method

- 4-Level FSK (FDMA)
- 6.25 kHz very narrow bandwidth (Fig. A).
Occupied bandwidth $1\frac{1}{2}$ of existing analog FM (Fig. B)

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[2002 Press Releases](#)
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- Uses existing FM power amplifiers
Linear amplifiers NOT required as with QPSK or Transparent-Tone-in-Band (TTIB) sideband methods: That means lower costs for development

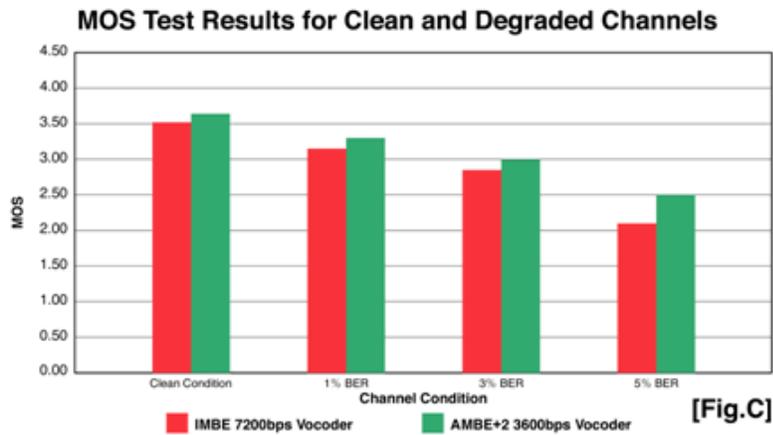


Data Baud Rate

- 4,800 bps
- Combined Voice & Slow Speed Data transmit
- GPS Location with Voice
- No Data Modems Required

Advanced VOCODER (Fig. C)

- DVSI AMBE+2 TM
- Half-rate of IMBE TM (P25)
- Superior Voice Quality/Performance



AMBE+2 and IMBE are the trademarks and property of Digital Voice Systems Inc.

Icom's Vision Of A System Solution



Function

In the 6.25kHz digital mode, it is possible to have a 4,800 bps data application in addition to voice communication without the need for adding a modem. It is possible to send data like messages at the same time while utilizing voice communication, and the sending of GPS position data information is also possible during voice communication.

Transmit and receive of existing status, messages can be offered as standard features. Also, as voice is digitized, construction of a remote site from a repeater via the Internet can be done, and it is possible to conduct dispatching.

Migration

With 6.25kHz digital mode operation capability in an existing 12.5/25kHz analog FM radio, it is possible to provide multi-mode portable and mobile radios and repeaters, making migration* from an existing analog system to a digital system easy.

*Multi-mode repeater/terminals would need to be purchased for a system, but initial system capability could be analog only. Option to add digital capability in the future, i.e. 'migrate' to digital, would be available via an easy software upgrade of repeater/terminals for example.

Icom America's parent company, Icom Inc., was founded in Osaka, Japan. Icom is a publicly held Japanese corporation; its stock is traded on the Osaka and Tokyo Stock Exchange. Icom began as an engineering and manufacturing company, making advanced, compact solid-state radio equipment for use by amateur radio enthusiasts. Icom has since grown to become an industry leader with a product line that includes state-of-the-art communications equipment for land mobile and marine use as well as avionics. Icom America's headquarters are in Bellevue, Washington.

[Back to top](#)

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