

Keeping the Canadian Coast Guard Connected

Enterprise solution



Canada's harsh climate and geography continue to play an integral role in this country's telecommunications prowess. However, today's rapid growth in wireless networks across North America is increasingly driven by innovators that are choosing wireless technologies over wired installations for more basic reasons such as convenience, reliability, high speed and low cost. Combined with advances in wireless technologies, these factors are rendering many past wired solutions obsolete.

Keeping a keen eye on the bottom-line, the Canadian Coast Guard is tackling its connectivity challenges using a wireless system that enables its ships to tap into their network whenever they dock along Ontario's Great Lakes. With the application of wireless spread spectrum technology from Ottawa's EION Wireless, sea-going personnel can now review E-mail and access the Internet, as well as the Federal Government's intranet, without a wired land connection.

Bitterly cold temperatures and icy conditions have long hampered attempts to improve shore-based communications. Prior to adopting wireless, docked ships used landlines to connect to a local LAN to access information from one of 11 dedicated servers. However, cables often broke due to the extreme temperatures, frequent handling or after being damaged by heavy equipment.

The Canadian Coast Guard began using wireless technology around the year 2000. Prior to that, the organization was budgeting approximately \$100,000 per base and \$15,000 per

vessel for a fibre optic drop. Realizing that fibre optics would be cost-prohibitive and carry heavy front-end work, the Coast Guard decided on a wireless solution.

"There's no real comparison between our wireless implementation and wiring a Coast Guard base with fibre optics. First, you have to hope there is a big enough conduit to put a line out to a pier. If not, installing the conduit would entail hiring a construction company. That involves a lot of work and expense even before you factor in the cost of fibre optic cable. With a wireless network, you hook it up once and that's it."

Roger Doucett, Acting Chief, Ship Electronics.

The six base units located at Prescott, Burlington, Amherstburg, Sarnia, Parry Sound and Thunder Bay cost the Coast Guard about one-third of the amount needed to outfit a vessel with cable and just one-twentieth of the cost of a land cable.

Currently, four Canadian Coast Guard Ships—CCGS Samuel Risley, CCGS Griffon, CCGS Simcoe and CCGS Limnos—have this system installed on board. When ships approach port, the EION equipment automatically connects; the wireless products on shore are programmed with a table of each ship's "address" and constantly emit a secure signal that connects with each ship's signal when it enters a one-kilometer zone.

"We move around quite a lot—from Lake Erie to Lake Superior—and we anchor at islands throughout the journey. Thanks to our wireless technology, we no longer have to plug anything in."

Arthur Coughtry,
*Acting Chief Engineer
of the 69.7 metre CCGS
Samuel Risley*

The Risley serves as an icebreaker on Lake Erie, Lake Superior and the other Great Lakes from December through April, depending on the weather. Coughtry and his crew spend 28 days at sea before being replaced by a second crew, so reliable communication is vital for handling unexpected changes such as emergency search and rescue operations.

The Coast Guard's VHF radiophone and cellular phones are still used for the verbal communication as well as facsimile transmission from the middle of the Great Lakes. But the benefits of wireless spread spectrum technology are eroding the use of cell technology as the wireless data transmissions are secure and can be transmitted with little or no interference. The 2 Mbps data rate means the wireless transmissions are twice as fast as the former system, and since only one ship is typically in port at any one time, ships have full access to the bandwidth.

"The Wireless Net is a superb tool. It's fast—about twice the speed of the old system."

Coughtry,
*23 years of experience
with the Coast Guard*

Coughtry and his crew use their computers to retrieve information from suppliers, for example, and receive engineering expertise from the Internet. Daily news is also available from news sites and electronic papers.



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EION Wireless, a division of EION Inc., is a global provider of Broadband Wireless Access products that enable effective, economic and secure wireless high-speed communications solutions. EION is a Principal Member of the WiMAX Forum and was named one of the fastest fifty growing wireless companies in North America by Deloitte and Touche. With over ten thousand broadband wireless installations worldwide, the company's licensed and unlicensed frequency products are used by wireless ISPs, private network operators, and remote rural networks and in voice and data backhaul applications to solve last mile challenges. EION Wireless works with more than 165 worldwide channel partners to support its diverse global customer base.