

International Communications and Navigation Ltd

International Communications and Navigation Ltd (ICAN) is a product development and systems integration company incorporated in 1996. The company has its headquarters in St John's, Canada with offices in Quebec City, Canada and Dallas in the US. ICAN was initially conceived as a systems integration company that focused on differential GPS infrastructure. This changed in 1997 as ICAN became involved in shipboard projects and started developing electronic charting technology.

The company focused from the beginning on delivering systems that provided utility to the customer. Navigation is an essential utility provided by electronic charting systems, but there are many other aspects of vessel operation that can be improved in some manner through the quick delivery of information. The focus of ICAN is to deliver this utility to the professional mariner and to provide excellent support for the products through training and customer service during the entire life cycle of the product.

ICAN's philosophy is to deliver a complete solution to the customer which includes exceptional support. Technical support is available 24 hours a day, seven days a week, for both the software products that we develop and the hardware platforms on which it operates. A measure of the success of ICAN's approach to business is the number of repeat customers using our software. We work very hard to ensure that our customers are satisfied and take great pride in having a customer list that includes long-term relationships with shipping companies, Coast Guards, Navies and fishing organisations.

ICAN initially focused on developing technology for the Canadian market and subsequently leveraged this capability into many other markets worldwide. ICAN is involved in the development and deployment of:

- Electronic Chart Systems (ECS)
- Electronic Chart Display and Information Systems (ECDIS)
- Automatic Identification Systems (AIS)
- Differential Global Positioning Systems (DGPS)
- Vessel Traffic Management Information Systems (VTMIS)

ICAN personnel are working with those involved in the International Maritime Organisation (IMO), the International Hydrographic Organisation (IHO), the International Electrotechnical Commission (IEC), and the Radio and Technical Commission for Marine Systems (RTCM). The work of all of these organisations has a major impact upon the implementation of technology that addresses the needs of the marine community. ICAN's involvement in the industry and close contact with these regulatory organisations ensures the company is on the leading edge of the decision-making process.

ICAN uses the basic standards as a foundation on which to build the ECS products, which are the focal point for information delivery on the bridge of vessels of all types. Added utility for mariners who have special needs on the water, is provided with add-on modules for navigation aids deployment and management, surveying, radar overlay, fishing and AIS. This customer oriented problem-solving approach, delivers utility to customers which goes beyond standard navigation. Utility is the key word that defines all ICAN products.

Products

ICAN produces two electronic chart systems, Regulus and Aldebaran, and a number of add-on modules to adapt these core navigation systems to specific applications.

Many electronic chart based navigation systems currently available have very limited utility. ICAN's software facilitates many tasks beyond basic navigation and includes numerous management and communication tools. For example:

- High resolution (8 bit) radar overlay with sophisticated signal processing which provides an extremely clean display
A state-of-the-art Automatic Identification System (AIS), used to promote collision avoidance by identifying and tracking neighbouring vessels using transponders
- *The collection and display of sea-floor survey data, including detailed multibeam echo sounder signals, used to generate near photographic quality images for research or resource management*
- *Assisting with search and rescue*
- *Managing the deployment and maintenance of Navigational Aids*
- *For fishermen, recording catch data and correlating it with position and environmental information, such as temperature, salinity and bottom type, as well as monitoring the location and performance of gear such as a trawl*

All software is designed to operate under Microsoft's Windows NT4, Windows 2000 and Windows XP operating systems and users may configure the system individually to suit their specific needs. Additional product details can be found on ICAN's website at www.ican.nf.net.

Chart Systems

ICAN's first product, Regulus, was developed specifically for the professional mariner and delivered functionality consistent with the requirements of a mariner working at sea. Regulus is the professional mariner's entry-level chart system which reads a single chart data format, such as BSB, S-57, NTX, ARCS or CM-93. It also provides the mariner with route planning, creation and monitoring tools as

well as seamless chart display and many other useful functions.

Aldebaran was ICAN's second product. It is more sophisticated than Regulus II with capability to display simultaneous multiple chart formats (raster or vector) while offering several more advanced features including an anti-collision guard zone and more advanced navigation tools.

ICAN also offers desktop versions of Aldebaran and Regulus. They are used for training, quality control of electronic charts, route planning and review, remote site monitoring and research.

ECS Add-on Modules

Survey Module

The Survey module facilitates data collection, whether for hydrographic surveying, seismic surveying, or environmental monitoring. Survey routes may be created, stored and distributed easily. The module graphically reports the position of the towed beacons in two and three dimensional views. It also allows the user to display 24-bit multibeam echo sounder images.

Radar Overlay Module

This module permits the marine radar display to be overlaid onto electronic charts. ICAN's radar overlay is unequalled in its ability to show radar cleanly upon charts. The high-resolution radar overlay increases the probability of detecting small targets, including people, in the water. ICAN's software also provides built-in search and rescue patterns for assisting in the thorough search of an area. The module was designed in conjunction with radar interface hardware designed by Sigma Engineering of St John's, Canada.

AIS Module

Automatic Identification System (AIS) is a technology designed to deliver vessel position and related information from ship to ship and from ship to shore. The system is designed to augment Vessel Traffic Services (VTS) systems and to provide collision avoidance capability on the ship's bridge. Ships will carry a transponder that broadcasts the ship's identity, position, speed, course, heading and other information. The International Maritime Organisation (IMO) requires all SOLAS class ships built after July 2002 to carry one of these transponders and carriage requirements for all other ships in this category will be phased in over the subsequent six years.

ICAN's AIS module has a comprehensive set of functionality features based on the AIS messages. Virtually all of the messaging for ship-ship and ship-shore communications has been implemented. The reality of AIS however, is that the technology is still relatively new to the bridge and the VTS Centre. Additional utility, beyond the basic safety functionality, is still a topic for exploration. ICAN is at the forefront of that effort with our customers and partners world-wide. ICAN also resells the Saab TransponderTech AIS products including mobile transponders base stations and carry-on pilot packs.

NavAids Module

ICAN provides a tool for navigational aids (NavAids) management which was designed in co-operation with the Canadian Coast Guard. The development was somewhat speculative with ICAN providing the entire investment to develop the software. This market-oriented approach exemplifies the philosophy held by ICAN - market driven utility is the best way to build a loyal customer group. The NavAids software module is designed to integrate with a national database for navigational aids. The module provides the vessel operator with a visual display of where the aid should be placed in the water, and the actual crane location on the ship from which the aid is to be deployed. This tool simplifies the process and allows the ship's master to automatically record all pertinent data regarding each deployment with a single operator action.

The management of information on board a ship related to navigational aids is a time-consuming and paper-intensive effort. The NavAids module automates the information handling process and removes the need for paper. The accuracy of buoy tending drops are improved and the operational efficiency is increased. Recognising these benefits, the Canadian Coast Guard has purchased and is successfully utilising this technology.

FINS Module

The most recent charting product released is the Fishing Information and Navigation System (FINS). This product addresses the needs of fishermen all over the world and incorporates many innovative features. FINS helps maintain records of good and bad fishing locations, collect bottom data and incorporate it with existing chart data. The system interfaces with fishing gear monitoring equipment and provides a display of the trawl door spread, trawl location, and fullness of trawl. It provides a facility to record catch data and correlate it with environmental information. It also has the capability to locate fixed gear when using acoustic gear location hardware.

Summary

The company's product line continues to evolve with new functionality and the constant effort to maintain simplicity in the user interface. The efforts to penetrate the mobile maritime market and the infrastructure market have been successful with a sales volume which more than doubles every year. The utility delivered by our products, the professional staff and a tremendous network of partners like Saab TransponderTech, HITT, Lockheed Martin and QPS are the reasons for that success. The addition of an investment by HITT provided ICAN with the ability to embark on a more controlled growth phase which is expected to deliver even stronger support to our customers. Further, the addition of sister company QPS has given ICAN access to the best hydrographic survey software in the world and rounds out ICAN's product offering to the maritime markets. ICAN is in the business of providing utility and backing that up with unmatched customer support. That has been the mantra from the beginning, and while products evolve, the fundamental premise on which they are built and supported will remain the same.