



MOTOROLA SEAPORT SOLUTIONS – RADIOS, MOBILE COMPUTING & WIRELESS TECHNOLOGY

FOR SAFER AND SMARTER SEAPORTS IN VIETNAM



BACKGROUND

Maritime transport is an integral part of international logistics and accounts for 80 percent of the volume of global trade. In Vietnam – a country with a coastline of 3,260 km, the central government has plans to place more emphasis in its maritime economy with the hope that it will account for more than 50 percent of the GDP by 2020. Enhancing capacity of current seaports, as well as building new seaports, is fundamental investment to boost the maritime sector’s contribution to GDP which is currently estimated at approximately 30 percent. In addition, Vietnam needs to improve its shipping output, fleet size and efficiency of its sea terminals and ports.

Among the most modern seaports and terminals of Vietnam, Danang and Cai Lan emerge as leading practitioners in successfully applying technology in their business operation.

Da Nang port – the biggest seaport in Central Vietnam – is located in Da Nang city. It consists of the two main terminals: Han River terminal and Tien Sa terminal with a total berth length of 1,493 meters. Modern handling equipment, yards and warehouses serve the port’s operation capacity of up to 6 million tons per year. Han River terminal, with a

CUSTOMER PROFILE

Danang Port
Danang, Vietnam

Cai Lan International Container Terminal
Quang Ninh, Vietnam

Application Industry
• Transportation & Logistics

CASE STUDY

DANANG PORT – CAI LAN INTERNATIONAL CONTAINER TERMINAL

total berth length of 528 meters, facilitates domestic cargo transport. Tien Sa terminal is one of the few ports with favorable natural conditions and the potential to become a very large and modern seaport in the region. The terminal is projected to become a central gateway to the East Sea from the Sub-Mekong Region to support cargo, and urge economic development and tourism of provinces in the Central and the Western Highlands of Viet Nam, Southern Laos and North East of Thailand through the East-West economic corridor.

Cai Lan International Container Terminal (CICT)

– a newly established seaport – is located in Bai Chay, Ha Long, Quang Ninh province. CICT is a joint venture company between SSA Holdings International – Vietnam (SSAHVN), a subsidiary of the American Company – Carrix, Inc., and Cai Lan Port Investment Consortium from Vietnam (CPI). The terminal went into operation from August 2012 and fully completed its construction in February 2013. The project is expected to cost \$US155 million for the first phase with the container handling capacity started from 520,000 twenty-foot equivalent unit (TEUs) in 2012 and has increased to a capacity of 1.2 million TEUs at its full capacity. CICT holds a 50-year license to develop, design, finance, construct, equip and operate berths 2, 3 and 4 at Cai Lan port. The CICT has a 10 meter access channel draft at low tide, a 13 meter draft at the berth, a total quay length of 594 meters, a 18.1 hectare container yard. The port was initially equipped with four 17-wide quay cranes and will have another two cranes later.

THE CHALLENGES

Danang Port: Improve the process and efficiency of container-handling

Since 2000, Danang port has plans to upgrade Tien Sa terminal to become a

modern seaport - one of the key gateways to the East Sea from Sub-Mekong region. Under pressure of competition and integration, modernizing the information system has become one of its top priorities besides investments in infrastructure such as breakwaters, wharves, container yards, container handling equipment.

In the past, the information transfer using narrowband technology limited data transmission speed at 9,600 bytes/s and the old-fashioned mobile radio using a DOS operating system were the main contributing factors to a low capacity in container-handling. The port also had neither cable network nor fiber optic cables connecting to the fleet and container yards.

CICT: Enhance the communication for smarter and safer port operation

CICT has 36 talk groups in its fleet, with the old-fashioned analog conventional technology in the past, voice communication was limited because these 36 talk groups required 36 channels on 36 pairs of physical frequencies.

Communication in the port required a reliable system to coordinate the large number of terminal workers and trucking traffic on site. To overcome challenges of busy channels, high demand of calls and the noisy seaport environment, the management board decided to replace the current analog system with a more reliable and robust radio infrastructure.

SOLUTIONS

Danang port: Switching to Motorola mobile computing and Wi-Fi technology

The management board chose Motorola Solutions due to its leadership in the ICT industry and reputation for reliability. More importantly, Motorola Solutions' technology also fit the long-term development plans of the port.



CASE STUDY

DANANG PORT – CAI LAN INTERNATIONAL CONTAINER TERMINAL

Motorola Solutions' mobile computing and Wi-Fi technology successfully provided Danang full and reliable coverage, helping the operation and management in the port to become more productive and efficient. Moreover, the easy-to-use Windows CE platform provides compatibility with many of today's mobile applications and the deployment of Wi-Fi ensures the environment is cable-free.

CICT: Switching to Motorola digital radio system for easy deployment and managed group talks

CICT's evaluation of two-way radio systems was a critical part of the upgrade to ensure their teams could communicate with each other at all times. System efficiency and cost-effectiveness were two primary decision-making factors.

We chose Motorola brand because of the two main reasons. First, Motorola has a good reference from SSA Marine. Second, compared to other similar providers of the field, Motorola has good after-sales services, warranty policy and great support for installation.

Mr. Nguyen Thai Hoa
Customer Relations Director of Cai Lan port

CUSTOMER BENEFITS

Danang port: The process and efficiency of container-handling capacity were improved

The switch to new computing and Wi-Fi technology quickly delivered economic benefits to the port. With the data transmission speed at 15MB/s and the intuitive graphic supporting feature, operation in the fleet became faster and more accurate. Controllers are able to monitor and record container movements in real-time and at exact locations, leading to the reduction in manpower and paperwork in container yards. Time for

container uploading and unloading is also reduced, thus container-handling capacity is increased.

After the information technology system was upgraded, the container-handling capacity at Tien Sa increased by around 20% on average over the past 3 years.

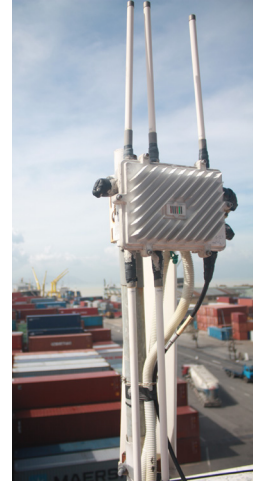
Mr. Nguyen Xuan Dung
Deputy General Director of Danang port

Modern technology, less manual handling, fewer auxiliary equipment and less paperwork make Danang port a safer and smarter place to work.

CICT: All calls reach out to the entire fleet with clearer voice, longer battery life and clear channels

The application of the MOTOTRBO™ Capacity Plus digital radio system brings great benefit to the communication in the terminal with its trunking feature – automatic find the rest channel on system. All private and group calls are now manageable with clearer voice, longer battery talk time and clear channels delivered by an expanded capacity. Overall, the seaport is far more efficient.

The 36 group talks in the fleet could easily communicate and coordinate with everyone by sharing 10 trunked channels which created from 5 pair of physical frequencies. Using the all call feature, the operation could also reach out to the entire fleet in an instant. MOTOTRBO™ Capacity Plus is proven to be a reliable radio system with greater capacity, coverage and clarity.



To find out how to build safety seaport in a smart way, contact your local agent at www.motorolasolutions.com/vn

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