PSA Singapore Terminal

The world's busiest port deploys digital TETRA network

MOTOROLA

PSA solves communications problems with Motorola's advanced digital communications

"The old system reached a point where we needed to make a move on investing in the latest technology to be efficient and reliable," said Christopher Ong, Head of Engineering, Singapore Terminals, PSA Corp. "The existing analogue system had reached its limit in terms of capacity, and we would have needed to ask the iDA (Infocomm Development Authority of Singapore) for more channels and frequencies," said Christopher Ong. "So, while technically we could have continued on analogue, it would have been very expensive and nearly impossible in practical terms."

BACKGROUND

When the traffic volume at the world's largest transshipment hub tripled, the PSA Singapore Terminal's (PSA) analogue radio system began to experience frequent channel congestion, it needed reliable, clear, and instant communication on the ground to maintain frequent contact among personnel, facilitate decision-making, exchange information and coordinate movement of shipments.

CUSTOMER NEEDS

This was precisely the reason why PSA Singapore Terminal decided to upgrade their disparate analogue radio systems to an integrated digital platform to cope with the increasing traffic volume at four of its terminals. The US$5.4 million worth of Motorola TETRA digital system and radio equipment may seem like a hefty investment for PSA but it is a cost-effective and long-term solution for the port's increasing container traffic volume at the terminals - which handles a record volume of 20.6 million TEUs (figure from 2004).

THE MOTOROLA SOLUTION

PSA started to deploy Motorola's TETRA (Terrestrial Trunked Radio) digital communication system – which offers integrated voice and data capabilities, at its four terminals since late 2004. The deployment at Pasir Panjang was completed in February 2005 and since then the terminal has experienced no voice traffic congestion.   Instead, the users experienced improved clarity in their communications.

The analogue system was less flexible and it hampered productivity. For example, the ground operators had to switch sets to communicate when a truck moved from one terminal to another because the old communication devices could not interoperate. With the new system, the ground crew is able to communicate with a truck driver even when he is at a far distance away.

This is particularly important for PSA, which has multiple party communications requiring dialogue between berth operations, key crane operators, and supervisors working on the ground and aboard the ship, the control centre, prime movers and quay crane operators.

> "PSA is constantly applying technology to make operations more efficient and speedy for our customers. A reliable, secure and efficient flow of information is vital to our operations, and allows us to deliver consistent and quality service to our customers. We have chosen the Motorola TETRA system because it offers a robust and technologically advanced network that reinforces the excellent connectivity of our four terminals."

- Grace Fu, CEO, PSA South East Asia and Japan.

SERVICE AND SUPPORT

Working in tandem with PSA, the project team comprising both Motorola and partner Mecomb, the engineers worked relentlessly round the clock to ensure the smooth transition of the migration without disrupting the port's operation, switching seamlessly between new and existing systems. Even the Motorola product and quality team were activated to provide support in rectifying technical or quality issues that were encountered during the course of the project.

By mid-December 2005, PSA's terminals at Tanjong Pagar and Keppel were successfully migrated to the new TETRA system, transitioning all three shifts of the terminals' radio users from the existing Smartnet system to the new system using Motorola's TETRA portable and mobile radios such as the MTP850, MTP750 and MTM700.

The result was a smooth migration to a new digital radio communications system that enhances operational performance and enables PSA staff to deliver quality and reliable services.

CUSTOMER BENEFITS

PSA is currently putting the infrastructure and training of staff in place at its other terminals at Brani gearing up for completion by early 2006. With the new TETRA system, PSA is able to harness the state-of-the-art voice and data communications technology by Motorola to efficiently manage the increasing volume of container shipments whilst synchronising the operations of the four terminals under a centralised communication network for greater efficiency. The enhanced voice clarity and efficient channel utilisation offered by the TETRA solution also enables the Port to serve a larger user population with fewer channels.

Radio is also a critical communications medium at the ports in case of emergencies. In the event of an accident, a crew member could easily activate the emergency button, alert the team on the same talk group channel, and notify the control room, bypassing whoever is ahead of him in the communication queue to reach the control centre.

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