MOTOROLA'S AP5181 OUTDOOR ACCESS POINTS AND MOBILE COMPUTERS IMPROVE EFFICIENCY AND CAPACITY AT TERMINAL SAN GIORGIO S.R.L.

TERMINAL SAN GIORGIO S.R.L.

Terminal San Giorgio (TSG), in which Gavio Spa holds the majority stake and Finservice S.r.l. the minority stake, ranks as one of Genoa's premier multipurpose terminals. The company has been operating in the port of Genoa since April 2006 and is equipped to handle a full range of commodities, namely container, break bulk, project cargo, steel products, yachts and Ro-Ro. TSG covers a total surface area of 80,000 m², has 2 on-terminal rail tracks, a circa 600 metre long quay, a draft of 11 to 12m and one Ro-Ro berth. The terminal offers maximum security, including security guards and video surveillance, and complies fully with the ISPS anti-terrorism code. TSG has approximately 70 employees and achieved a turnover of 12 million Euros in 2009.

CUSTOMER PROFILE

Company
- Terminal San Giorgio S.r.l (TSG)
- Genoa Port, Italy

Industry
- Operations – port terminal

Motorola Products
- 9 AP-5181 Outdoor Access Points (dual-radio with sector based directed antennae to ensure quayside network coverage)
- 4 MC9090-G RFID Handheld Computers (for mobile operators)
- 4 VC6096 Mobile Computers (for in-vehicle use)

Partner
- Integra S.r.l. and CAP S.p.a.

"We previously used paper-based systems to manage the processing of containers at the port of Genoa. These systems were time consuming and subject to human-error. We have transformed our ability to manage operations by deploying an automated system to track and trace goods from the moment they arrive to processing and onward shipment. The technology comprises a Motorola wireless network deployed throughout the terminal for real-time voice and data communications and RFID technology with handheld computers used as scanners so our teams can scan RFID tags on containers. The technology helps us process more goods and deliver improved service to customers by providing accurate insights into the status of their shipments."

Antonio Suriano,
Direttore Generale, Terminal San Giorgio S.r.l.

THE CHALLENGE

To bring the Terminal San Giorgio operations up to date

TSG used a manual paper based system to manage operations that was time consuming and not cost effective. To become a leading terminal operator TSG required a modern, innovative intermodal container management system along the whole length of the supply chain to improve productivity, container tracking, throughput and the service it could offer to its customers.

The project presented various interesting challenges. Integra was particularly aware of two key issues presented by establishing radio-frequency coverage across a vast outdoor area. Firstly, installing equipment which needed to continually provide 365gg throughout the year at heights of 30 to 35 metres irrespective of the elements. And secondly in terms of the security of the radio-frequency transmitted data.

THE SELECTION PROCESS

The project was conceived in collaboration with CAP S.p.a., who are specialists in services, products, projects and development of IT software business solutions. CAP has over 30 years experience in the Italian market.

CAP and Integra understood the need for an efficient, technologically advanced solution supported by high quality hardware, ideally all from one supplier. Together they proposed a 360° system to TSG, including management software together with a real time data collection system and a very innovative MESH configured wireless infrastructure. The Motorola wireless network and handheld computer products were selected as part of this solution principally for their reliability, high performance, robustness and suitability. During the testing phase Integra ensured that the users fully understood all the practical benefits the new processes and functionalities would bring to the management of containers across the terminal.

Application(s)

- **Real time container management along the whole intermodal supply chain**: through RFID Container tracking, which uploads the position of the containers in transit between the terminal and their intermediary or final destination to the operational management system, Wifi communication and GPS
- **Real time container train location**: through the VC6096 integrated GPS
- **RFID Tracking and Tracing system**: provides a record of container movements in case of queries or disputes
- **RFID electric seals**: ensure container goods integrity
- **Webservice support and MESH outdoor wireless network**: for a reliable, high power, flexible radio frequency cover across the whole terminal for data, voice and image transfer
- **SOA Architecture**: allows for time scaled and adaptable procedures

Benefits

- **Enhanced productivity**: through significant time saving of loading and unloading container ships, real time communication with workers, customs officers and transport operators, effective real time tracking of containers and orders and ability to plan and optimise the means of transport
- **Increased capacity**: capacity is increased as a result of improved efficiency and throughput, while still respecting the constantly evolving regulatory standards
- **Reduction in operational errors**: a faster and more accurate throughput leads to improved customer satisfaction
- **Overall reduction in operational costs**: the reliable modern system delivers tangible return on investment
- **A more user friendly system**: the users appreciate the ergonomic, robust design, the technical strengths and reliable high performance of the products

THE SOLUTION

It took approximately six months to design the radio-frequency infrastructure, install the wider management system and ensure the handheld computers were fully operational. There was then a two-month testing phase before full project roll out. Individual issues such as the secure radio-frequency coverage were suitably addressed by installing sector specific directional antennae and using the AP5181 for data transfer authentification and encoding. Moreover, all areas of the project are covered by a service level agreement; TSG has an official hardware service contract with Motorola, while CAP and Integra are responsible for system servicing and support, as and when requested by TSG.

RFID

The future for goods tracking

In the future RFID technology for complete goods tracking and the subsequent simplification of operational and customs related procedures will be key to successful terminal management. Already RFID UHF passive tagging for containers and crates are due to be introduced into ISO/TS 10891 regulations, in accordance with ISO 18000-6C (EPC Gen 2) standards. The market specific tags have been designed to withstand the worst weather conditions and rough handling. The unique, non-modifiable code is set into the tag memory at production and each code can be used to access basic container specific information, such as the owner and type, without having to refer to external databases.

THE RESULT

Terminal San Giorgio has firmly established itself as one of the premier terminal operators in the Port of Genoa

TSG's recent investment in advanced Motorola technology, modern handling equipment, such as cranes, and qualified staff have all led TSG to rapidly increase the speed and efficiency with which it handles goods, both in terms of Lo-Lo traffic, specifically full-container and break bulk, and Ro-Ro traffic.

TSG has consequently started to promote full container traffic to be transported via rail with the aim of decreasing HGV traffic in port, maximising the use of its quayside area and ultimately further increasing its annual throughput.

Integra S.r.l.

Integra S.r.l. is the market leader in mobile computing in Italy supplying software solutions and IT Management services for all parts of the supply chain from production, to logistics and distribution. In its capacity as IT partner, Integra is able to guarantee a detailed control of production processes and a noticeable improvement in workforce efficiency. Integra has a wealth of knowledge and experience in the development of mobility sector specific software and radio frequency infrastructures, specifically in MESH configured wireless networks. Integra has 10 employees and achieved a turnover of 1,2 million euros in 2009.

CAP S.p.a.

CAP is a systems integrator offering clients strategic analysis, understanding of business processes and business needs, marketing, communication and technological expertise. The Business Solutions unit operates in the areas of process consultancy, Tracking and Tracing, Rfid, Mobile, Software as a Service (SaaS) and application integration.

Over the years, CAP has developed skills and solutions in various strategic vertical markets such as intermodal transport, logistics, ports, interports and shipping. With in the region of 200 employees, CAP has offices in Milan, Genoa, Turin, Padua, Sassari and Cagliari. CAP reached a consolidated turnover of 21,200 million Euro in 2009.

For more information on how Motorola Solutions can help you enhance the productivity, efficiency and performance of your logistics operations and reduce costs, please visit us on the web at www.motorolasolutions.com or access our global contact directory at www.motorola.com/enterprisemobility/contactus

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